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TECHNICAL MEMORANDUM

February 21, 2025

Project# 31336

To: Development Review
Marion County Board of County Commissioners
412 SE 25th Avenue
Ocala, FL 34471

From: Misbaou Bah and Kok Wan Mah, PE

RE: Proposed Methodology for WEC Sports Complex TIA

Introduction & Project Description

This technical memorandum provides a recommended Transportation Impact Study (TIS) methodology for the proposed World Equestrian Center (WEC) Sports Complex located on the north side of SR 40 and west of NW 87th Court (the existing access to the WEC). This development is an expansion of the existing WEC and consists of approximately 155 acres. The proposed development is also located adjacent to Marion County's Farmland Preservation Area. Figure 1 shows the project location with the site boundary.

The development proposes to include the following facilities:

- Athletic Fields (LUC 488): 36 Fields
 - Twelve (12) Soccer Fields
 - An indoor facility with approximately 18 basketball/volleyball/pickleball courts, and
 - Six (6) baseball fields.
- Hotel (LUC 310): 300 Rooms
- Miniature Golf Course (LUC 431): 18 Holes
- Retail (LUC 822): 17500 Square Foot
- Hight Turnover (Sit-Down) Restaurant (LUC 932): 13500 Square Foot

The development also plans to provide a concession and restroom building. Based upon the site-generated trips, a TIS will be conducted per the Marion County Traffic Impact Analysis Guidelines (Reference 1).

The development will be constructed in a single phase, with an anticipated buildout year of 2028. Access to the development will be provided via full access onto SR 40 at the existing intersection of NW 92nd Avenue, and a right/left in with a right out west of the full access on SR 40. The location of the development's access point is depicted in the site plan provided in Attachment A.

Figure 1. Project Location



Trip Generation

The trip generation analysis was conducted using information published by the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition (Reference 2). Table 1 summarizes the resulting trip generation analysis for the total weekday daily trips and weekday AM, weekday PM, and Saturday peak periods. Due to the nature of sport complexes, the Saturday peak hour is included in the analysis to capture the site-specific trip generating peak, which can include special events such as sport tournaments. The ITE trip generation information sheets are included in Attachment B.

Table 1. Trip Generation

Land Use Type	ITE Code	Intensity	Weekday Daily	Saturday Daily	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips			Saturday Peak Hour Trips		
					Total	In	Out	Total	In	Out	Total	In	Out
Soccer Complex	488	36 Fields	2,568	14,576	36	22	14	591	390	201	1349	648	701
25% reduction ¹	-	-	(642)	(3,644)	(9)	(5)	(4)	(148)	(98)	(50)	(337)	(162)	(175)
Net Soccer Complex	-	-	1,926	10,931	27	16	11	444	293	151	1,012	486	526
Hotel	310	300 Rooms	2,828	2,581	143	80	63	177	90	87	213	119	94
Mini Golf	431	18 Holes	-	-	-	-	-	6	2	4	-	-	-
Retail	822	17.5 Sq. Ft. GLA	968	-	41	25	16	115	58	57	115	59	56
HT (Sit-Down) Restaurant	932	13.5 Sq. Ft. GLA	1,447	1,652	129	71	58	122	75	47	151	77	74
New Net External Trips			7,169	15,164	340	192	148	864	518	346	1,491	741	750

Source: ITE Trip Generation, 11th Edition; ¹ A 25% reduction was applied because not all fields are expected to be in use concurrently.

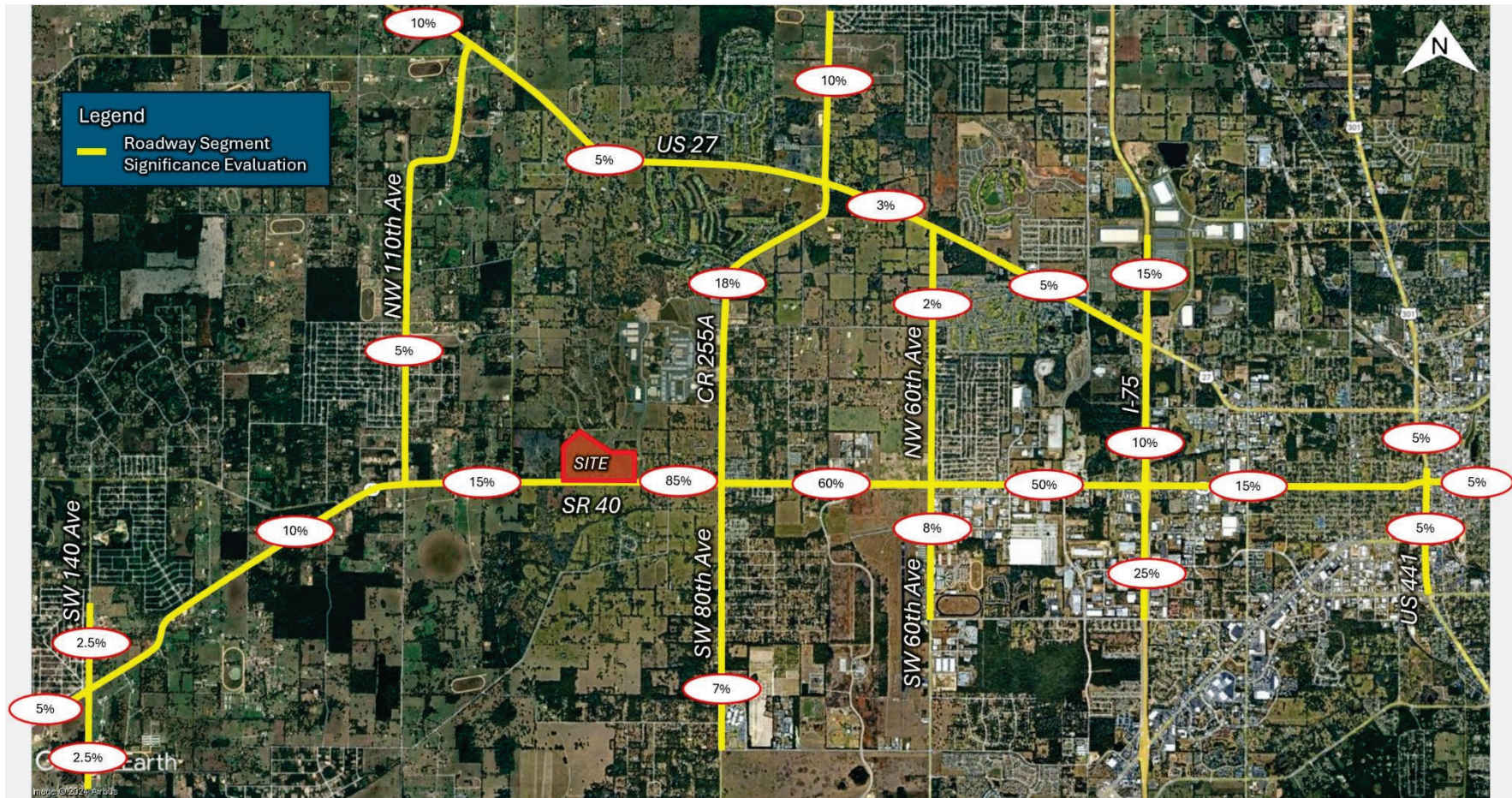
Based on ITE's Trip Generation rates, the proposed development is projected to generate 7,169 new net external weekday daily trips of which 340 trips occur during the weekday AM peak hour, 864 trips occur during the weekday PM peak hour. It is projected to generate 15,164 new net external Saturday daily trips of which 1,491 trips occur during the Saturday peak hour.

The average rate was used to calculate the estimated site-generated trips for land use codes with R² values lower than 0.75 because the respective trip generation formulas do not represent statistical significance due to small sample sizes.

Trip Distribution & Assignment

The project trip distribution and assignment were estimated based on general knowledge of local traffic patterns and the socioeconomic land use patterns in the region. Figure 2 shows the proposed trip distribution on roadway segments within the study area.

Figure 2. Trip Distribution



Study Area Determination

Per Marion County Traffic Impact Analysis Guidelines, a study area for a Traffic Study level of analysis includes public roadways where the net new project's traffic consumes at least three (3) percent of the maximum service volume based on the adopted level of service. Table 2 presents the project's significance review. Roadway segment maximum service volumes and the existing traffic counts were obtained from the Ocala Marion Congestion Management Process (CMP), dated August 2023, included in the Attachment C. Project trips were calculated using trips generated by the proposed development and trip distribution presented in previous sections. Although Saturdays present the generator's peak periods, the weekday time periods are the critical periods of the overall system and, therefore, the weekday project trips were used in determining project's significance.

Based on the expected trip generation, distribution, assignment, and significance review, it is recommended that the following roadway segments and intersections be evaluated in the TIA:

- Roadway Segments:

- SR 40 (between Urban Boundary Area (approximately SW 159th Court) and (US 441),
14 segments
- CR 225 (between SR 40 to CR 326)
2 segments
- NW 110th Avenue (between SR 40 and US 27)

- Intersections

1. SR 40 / SW 140th Avenue (Signalized)
2. SR 40 / CR 328 (Signalized)
3. SR 40 / NW 110th Avenue (Signalized)
4. SR 40 / NW 92nd Avenue (Access)
5. SR 40 / Second Access
6. SR 40 at NW 87th Court Road
7. SR 40 / 80th Avenue (Signalized)
8. SR 40 / 60th Avenue (Signalized)
9. SR 40 / I-75 SB Ramp (Signalized)
10. SR 40 / I-75 NB Ramp (Signalized)
11. SR 40 / 27th Avenue (Signalized)
12. SR 40 / 16th Avenue (Signalized)
13. SR 40 / Pine Avenue (US 441) (Signalized)
14. CR 225 / US 27

Counts from the intersection turning movements will be used to develop existing baseline volumes.

Figure 3 presents the roadways and intersections included in the study area.

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Study Area Determination

Table 2. Project Trip Significance

Segment ID	Road Name	Roadway Segment		Roadway Attributes ¹			Existing Roadway Capacity ¹			Weekday Peak Hour Project Trips ²		Weekday Significant Test ^{3, 4}			
		From	To	No. of Lanes	LOS Std.	PK – Dir Cap	2021 AADT	2021 PHDV ⁵	V/C	Assign %	Dir Trips	Max % Impact	Sign?	Adjacent to Site?	In Study?
3510	CR 225A	SR 40	US 27	2	E	1,449	7,400	354	0.24	18.0%	93	6.4%	YES	NO	YES
1030.1	CR 225A	US 27	CR 326	2	B	486	1,500	72	0.15	10.0%	52	10.7%	YES	NO	YES
2290	I-75	SR 200	SR 40	6	D	6,080	90,900	4,352	0.72	25.0%	129	2.1%	NO	NO	NO
2300	I-75	SR 40	US 27	6	D	6,080	90,200	4,319	0.71	10.0%	52	0.9%	NO	NO	NO
5580.1	NW 110 AV	SR 40	US 27	2	B	486	5,700	273	0.56	5.0%	26	5.3%	YES	NO	YES
3480	NW 60 AV	SR 40	US 27	4	E	1,800	11,100	531	0.30	2.0%	10	0.6%	NO	NO	NO
5610	SW 140 AV	CR 484	SR 40	2	D	999	2,500	120	0.12	2.5%	13	1.3%	NO	NO	NO
5630	SW 140 AV	SR 40	CR 328	2	D	999	2,200	105	0.11	2.5%	13	1.3%	NO	NO	NO
5170.1	SR 40	US 41	URBAN AREA BOUNDARY	2	D	730	8,500	407	0.56	5.0%	26	3.5%	YES	NO	YES
5170.2	SR 40	URBAN AREA BOUNDARY	SW 140 AV	2	C	430	8,500	407	0.95	5.0%	26	6.0%	YES	NO	YES
5180	SR 40	SW 140 AV	CR 328	2	C	430	17,500	838	1.95	10.0%	52	12.0%	YES	NO	YES
5190	SR 40	CR 328	SW 110 AV	4	C	970	17,500	838	0.86	10.0%	52	5.3%	YES	NO	YES
5200.1	SR 40	SW 110 AV	SW 85 AV	4	C	1,785	19,300	924	0.52	15.0%	78	4.4%	YES	YES	YES
5200.2	SR 40	SW 85 AV	SW 80 AV	4	C	1,785	19,300	924	0.52	85.0%	440	24.7%	YES	NO	YES
5210	SR 40	SW 80 AV	SW 60 AV	4	D	1,943	22,800	1,092	0.56	60.0%	311	16.0%	YES	NO	YES
5220	SR 40	SW 60 AV	SW 52 AV	4	D	1,901	27,100	1,298	0.68	50.0%	259	13.6%	YES	NO	YES
5230.1	SR 40	SW 52 AV	I-75 RAMP (WEST)	4	D	1,901	31,500	1,508	0.79	50.0%	259	13.6%	YES	NO	YES
5240	SR 40	I-75 RAMP (WEST)	I-75 RAMP (EAST)	4	D	1,996	32,200	1,542	0.77	15.0%	78	3.9%	YES	NO	YES
5250	SR 40	I-75 RAMP (EAST)	SW 33 AV	4	D	1,901	32,200	1,542	0.81	15.0%	78	4.1%	YES	NO	YES
5260	SR 40	SW 33 AV	SW 27 AV	4	D	1,901	32,800	1,570	0.83	15.0%	78	4.1%	YES	NO	YES
5270	SR 40	SW 27 AV	SW MARTIN L KING AVE	4	D	1,880	23,200	1,111	0.59	15.0%	78	4.1%	YES	NO	YES
5280	SR 40	SW MARTIN L KING AVE	US 441	4	D	1,880	20,900	1,001	0.53	15.0%	78	4.1%	YES	NO	YES
5300	SR 40	US 441	NW 2 AV	4	D	1,880	29,300	1,403	0.75	5.0%	26	1.4%	NO	NO	NO
6940	US 441	SW 10 ST	SR 40	6	D	2,951	40,500	1,939	0.66	5.0%	26	0.9%	NO	NO	NO

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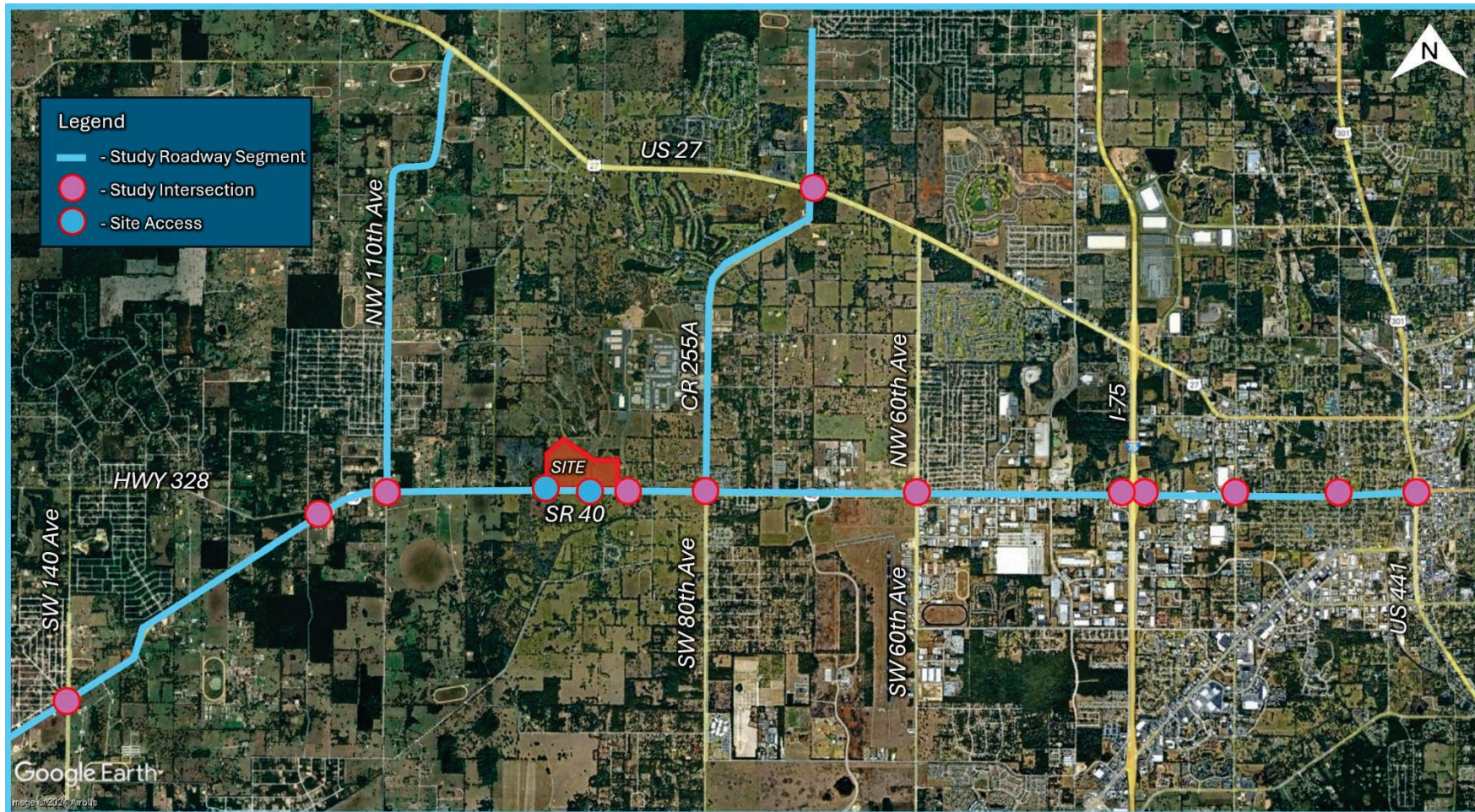
Study Area Determination

Segment ID	Road Name	Roadway Segment		Roadway Attributes ¹			Existing Roadway Capacity ¹			Weekday Peak Hour Project Trips ²		Weekday Significant Test ^{3, 4}			
		From	To	No. of Lanes	LOS Std.	PK – Dir Cap	2021 AADT	2021 PHDV ⁵	V/C	Assign %	Dir Trips	Max % Impact	Sign?	Adjacent to Site?	In Study?
6960	US 441	SR 40	NW 2 ST	6	D	2,951	29,500	1,412	0.48	5.0%	26	0.9%	NO	NO	NO
6190	SW 60 AV	SW 20 ST	SR 40	4	E	1,800	16,000	766	0.43	8.0%	41	2.3%	NO	NO	NO
6260.4	SW 80 AV	SW 38 ST	SR 40	2	E	1,449	8,900	426	0.29	7.0%	36	2.5%	NO	NO	NO
6400	US 27	COUNTY LINE (W)	CR 464B	4	C	2,390	8,500	407	0.17	10.0%	52	2.2%	NO	NO	NO
6410	US 27	CR 464B	NW 80 AV	4	C	2,390	13,300	637	0.27	5.0%	26	1.1%	NO	NO	NO
6420	US 27	NW 80 AV	CR 225A	4	C	2,390	13,300	637	0.27	5.0%	26	1.1%	NO	NO	NO
6430	US 27	CR 225A	NW 60 AV	4	D	2,910	18,100	867	0.30	3.0%	16	0.5%	NO	NO	NO
6440	US 27	NW 60 AV	NW 49 AV	4	D	2,910	18,100	867	0.30	5.0%	26	0.9%	NO	NO	NO
6450	US 27	NW 49 AV	NW 44 AV	4	D	2,910	21,700	1,039	0.36	5.0%	26	0.9%	NO	NO	NO
6460	US 27	NW 44 AV	I-75	4	D	2,910	21,700	1,039	0.36	5.0%	26	0.9%	NO	NO	NO

Notes:

1. Data obtained from the latest Ocala TPO Marion CMP Database
2. Directional trips calculated as the maximum of the PM Peak entry and exit trips
3. Percent Impact was calculated as the PM peak directional project trips divided by the PM peak directional service volume
4. The minimum threshold for significance is at least 3% of the directional capacity
5. 2021 peak hour directional volumes derived from applying a K-factor of 0.09 and D-factor of 0.532 (taken from the closest FDOT count station) to the 2021 AADT volumes

Figure 3. Study Facilities



Future Volumes (Year 2028)

Traffic counts will be collected at the study intersections, including heavy vehicle percentages. The seasonal factor will be applied to the existing peak hour traffic data unless the seasonal factor is less than 1.0, in which case, the existing counts will not be seasonally adjusted.

Historical average annual daily traffic (AADT) volume data along the study roadways were initially reviewed from Ocala Marion Transportation Planning Organization (TOP) Database included in Attachment C. A composite growth rate of 1.42% annually is proposed for future conditions analyses for all study roadway segments. This is based on the weighted average growth rate for the study area roadways published in the Ocala Marion CMP Database. Table 3 presents the calculation of the composite rate.

Table 3. Growth Rate Determination

Segment	Limits	2023 AADT	Annual Growth Rate	Weighted Growth
CR 225 A	SR 40 to US 27	7,400	1.00%	370
CR 225 A	US 27 to CR 326	1,500	1.00%	395
NW 110 AV	US 27 to SR 40	5,700	6.19%	1,764
SR 40	SW 140 AV to URBAN AREA BOUNDARY	8,500	1.00%	425
SR 40	CR 328 to SW 140 AV	17,500	1.97%	1,724
SR 40	SW 110 AV to CR 328	17,500	1.97%	1,724
SR 40	SW 85 AV to SW 110 AV	19,300	1.00%	965
SR 40	SW 80 AV to SW 85 AV	19,300	1.00%	965
SR 40	SW 60 AV to SW 80 AV	22,800	1.39%	1,585
SR 40	SW 52 AV to SW 60 AV	27,100	1.00%	1,355
SR 40	I-75 RAMP (WEST) to SW 52 AV	31,500	1.70%	2,678
SR 40	I-75 RAMP (EAST) to I-75 RAMP (WEST)	32,200	1.17%	1,884
SR 40	SW 33 AV to I-75 RAMP (EAST)	32,200	1.17%	1,884
SR 40	SW 27 AV to SW 33 AV	32,800	1.00%	1,640
SR 40	SW MARTIN L KING AVE to SW 27 AV	23,200	1.00%	1,160
SR 40	US 441 to SW MARTIN L KING AVE	20,900	2.03%	2,121
Composite Annual Average Growth Rate				1.42%

To account for the continued expansion of the WEC, vested trips will be included in the development of future traffic volumes and will be provided in the TIS. Other in-process developments will be included at the request of the County. The County shall provide any traffic impact analyses of nearby developments to be included in the development of future traffic volumes for this TIS.

Future Conditions Operational Analysis

The TIS will provide an analysis of weekday PM, and Saturday peak hour traffic operations at study intersections, and driveways within the study area for existing conditions and Future Year 2028 Background (No Build) and Buildout conditions. The intersection operations analyses will use the HCM 7th Edition methodology included in Synchro 12 software

The intersection operational analyses will include an assessment of overall intersection delay and level of service (LOS), as well as queues, delays, and LOS by movement, for the study intersections.

Roadway segments will be analyzed for existing and Future Year 2028 No Build and Future Buildout conditions using roadway capacities published in the Ocala Marion TPO CMP Database 2023. For segments where capacities are not provided in the CMP Database, then FDOT Generalized LOS Tables (2020) will be used. For roadways or intersections found to be operating deficiently due to the addition of site-generated trips, recommendations will be provided to address the identified deficiencies.

Turn lanes access to the property will be evaluated according to the FDOT Multimodal Access Management Guidebook (October 2023): Turn Lanes and U-Turns.

References

1. Marion County. *Marion County Traffic Impact Analysis Guidelines*. September 2022.
2. Institute of Transportation Engineers (ITE). *ITE Trip Generation Manual, 11th Edition*. 2021.

Attachments

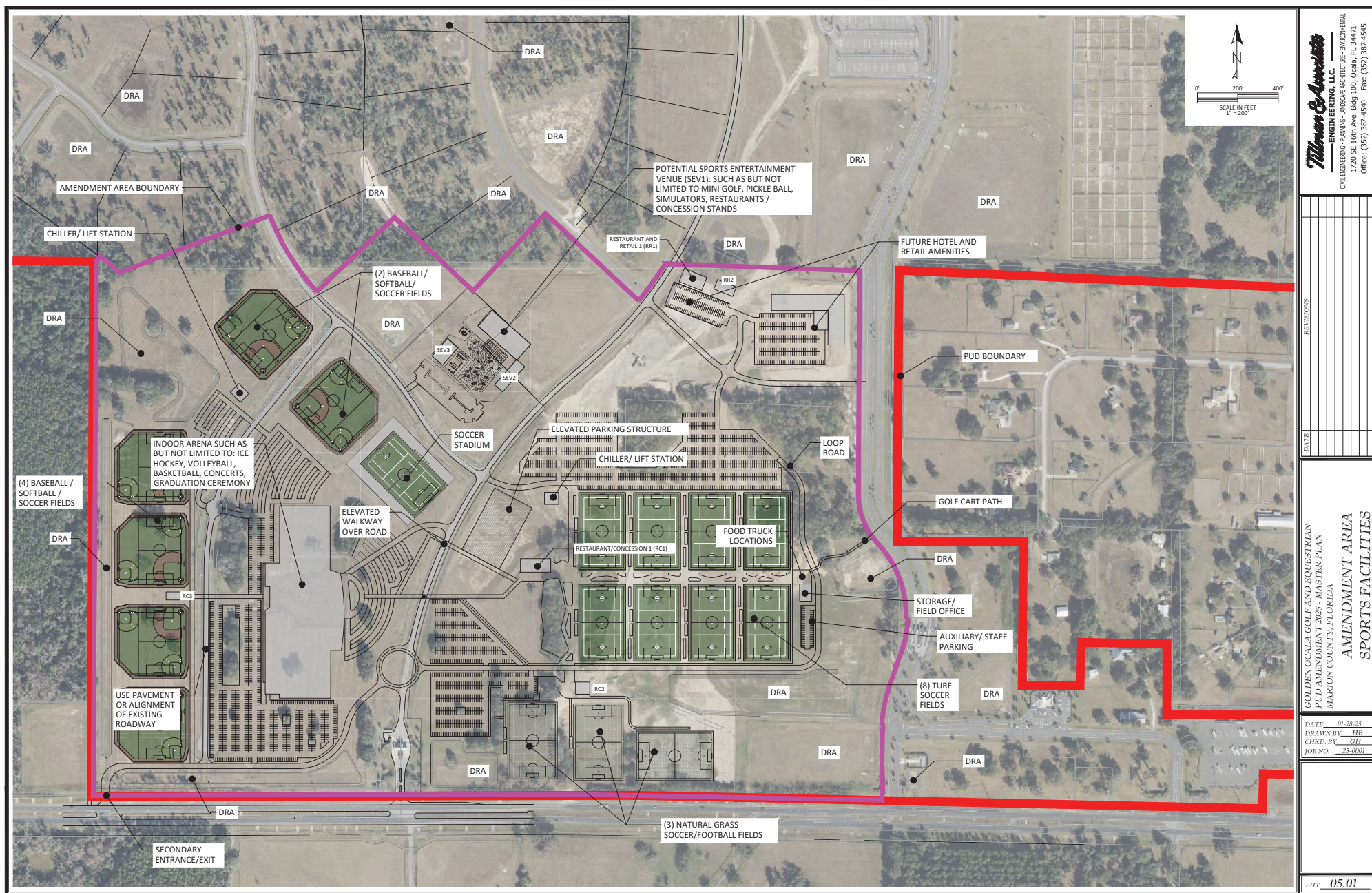
Attachment A WEC Sports Complex Proposed Site Plan

Attachment B ITE Trip Generation Information Sheets

Attachment C Ocala Marion Congestion Management Process (CMP) Database

Attachment A

WEC Sports Complex
Proposed Site Plan



NOT VALID UNLESS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER

Attachment B

ITE Trip Generation Information Sheets

Soccer Complex (488)

Vehicle Trip Ends vs: Fields
On a: Weekday

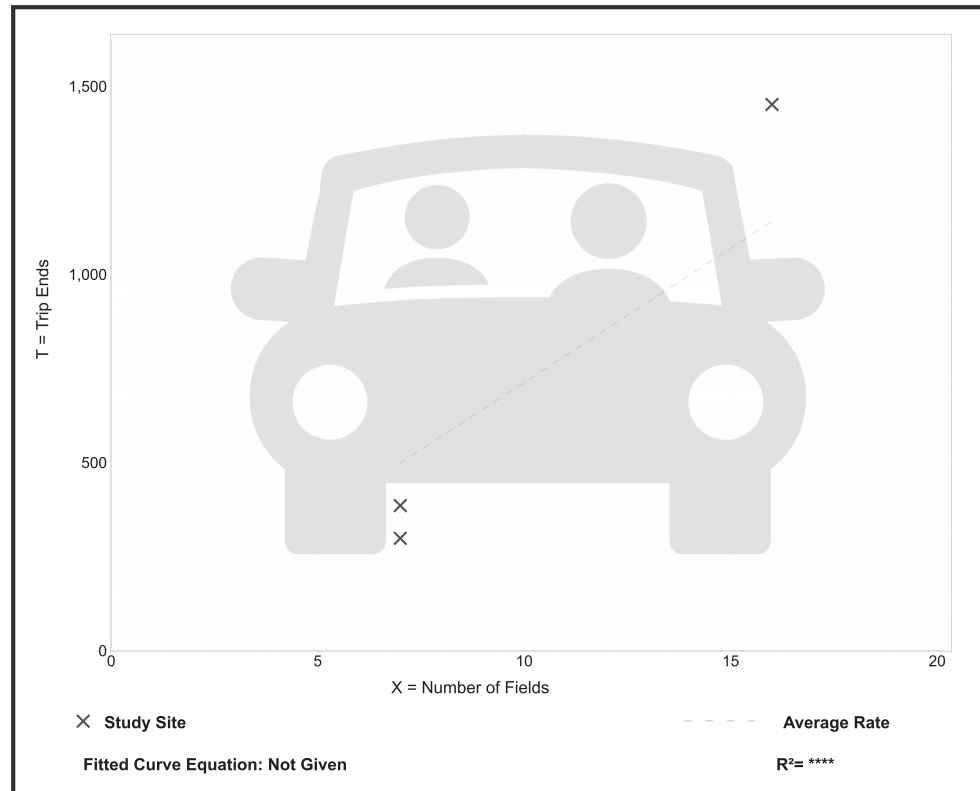
Setting/Location: General Urban/Suburban
Number of Studies: 3
Avg. Num. of Fields: 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
71.33	42.86 - 90.81	26.03

Data Plot and Equation

Caution – Small Sample Size



Soccer Complex (488)

Vehicle Trip Ends vs: Fields
On a: Saturday

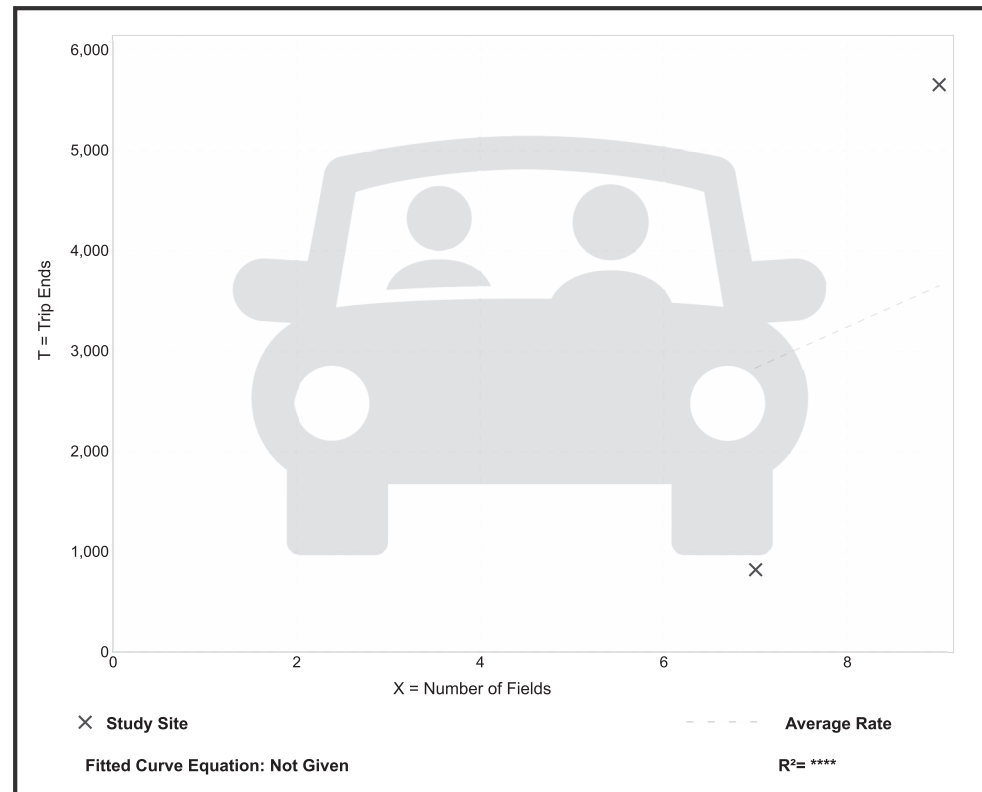
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Fields: 8
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
404.88	117.43 - 628.44	*

Data Plot and Equation

Caution – Small Sample Size



Soccer Complex (488)

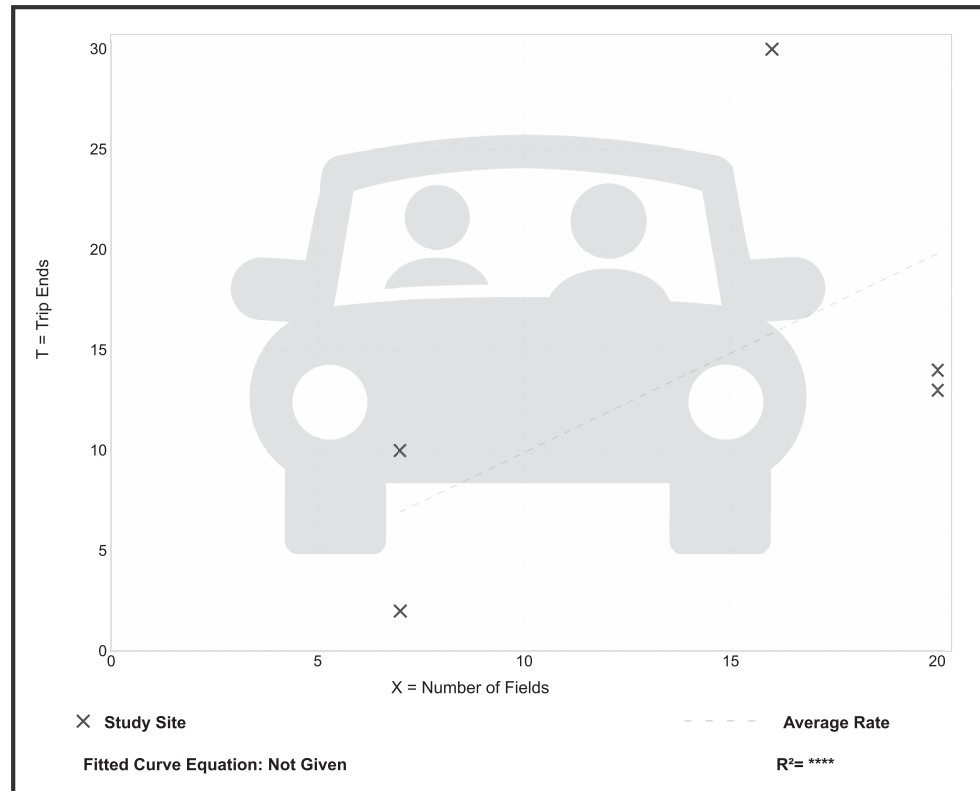
Vehicle Trip Ends vs: Fields
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. Num. of Fields: 14
 Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
0.99	0.29 - 1.88	0.62

Data Plot and Equation

Caution – Small Sample Size



Soccer Complex (488)

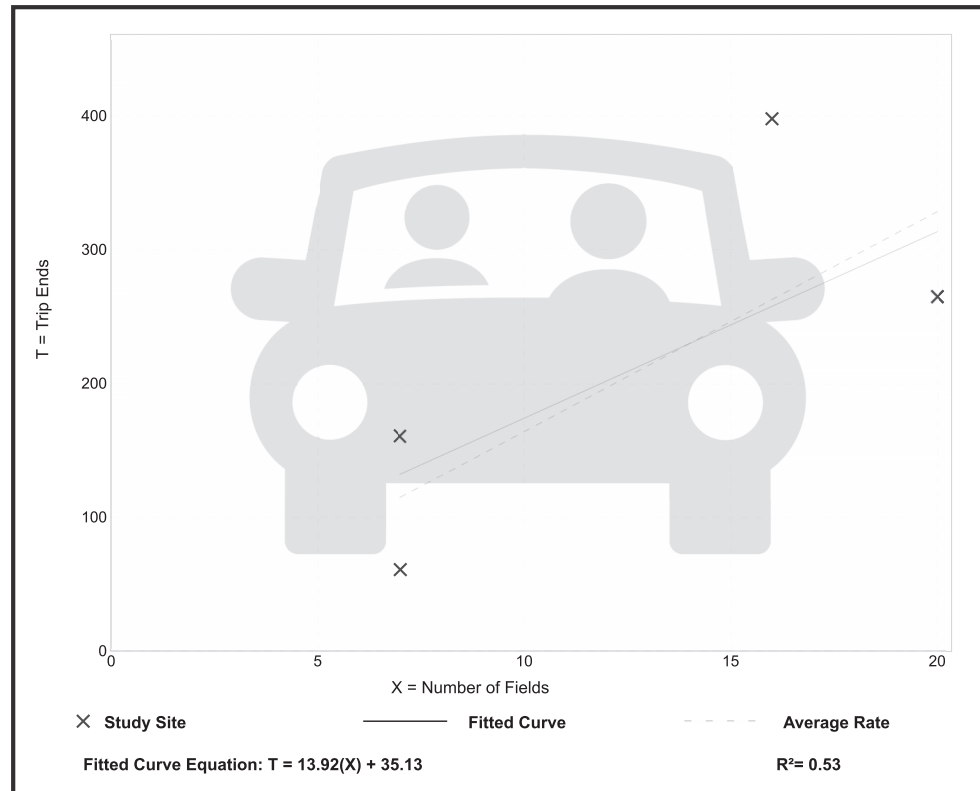
Vehicle Trip Ends vs: Fields
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. Num. of Fields: 14
 Directional Distribution: 66% entering, 34% exiting

Vehicle Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
16.43	8.71 - 24.88	6.36

Data Plot and Equation

Caution – Small Sample Size



Soccer Complex (488)

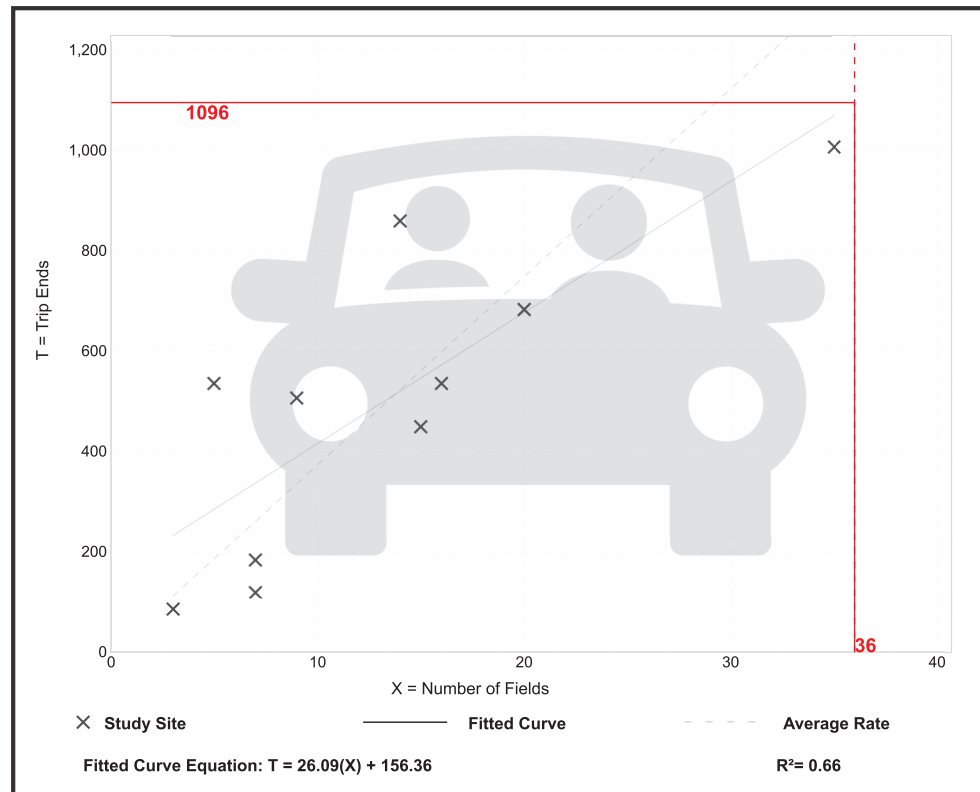
Vehicle Trip Ends vs: **Fields**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 11
Avg. Num. of Fields: 14
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
37.48	17.14 - 107.40	17.87

Data Plot and Equation



Hotel (310)

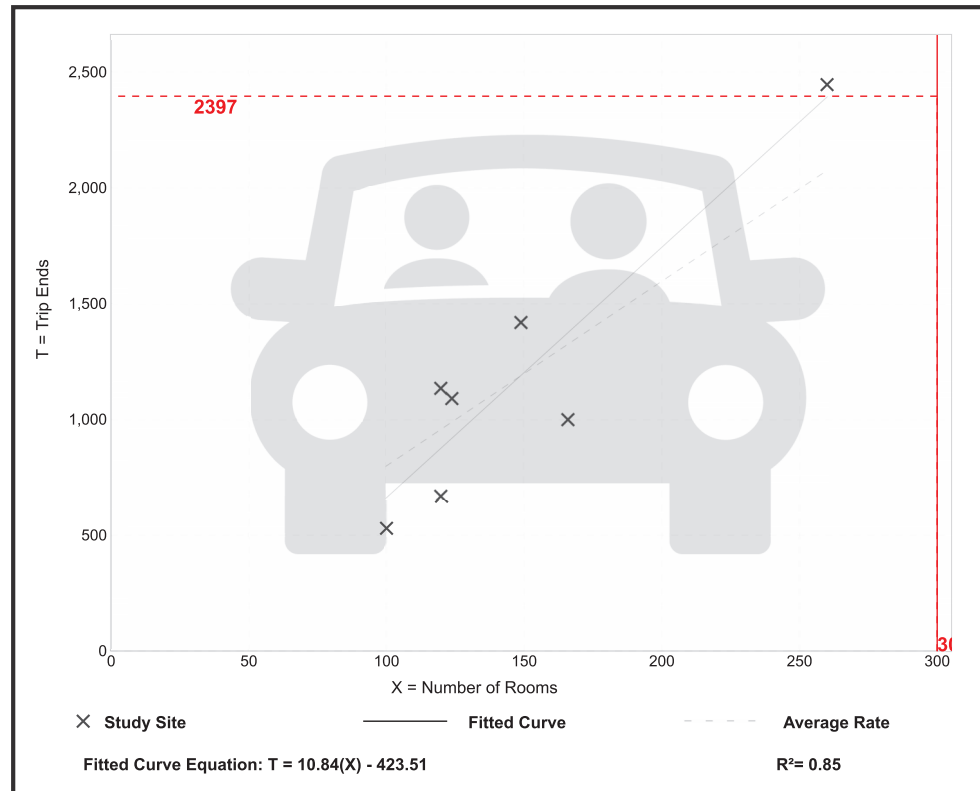
Vehicle Trip Ends vs: Rooms
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. Num. of Rooms: 148
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
7.99	5.31 - 9.53	1.92

Data Plot and Equation



Hotel (310)

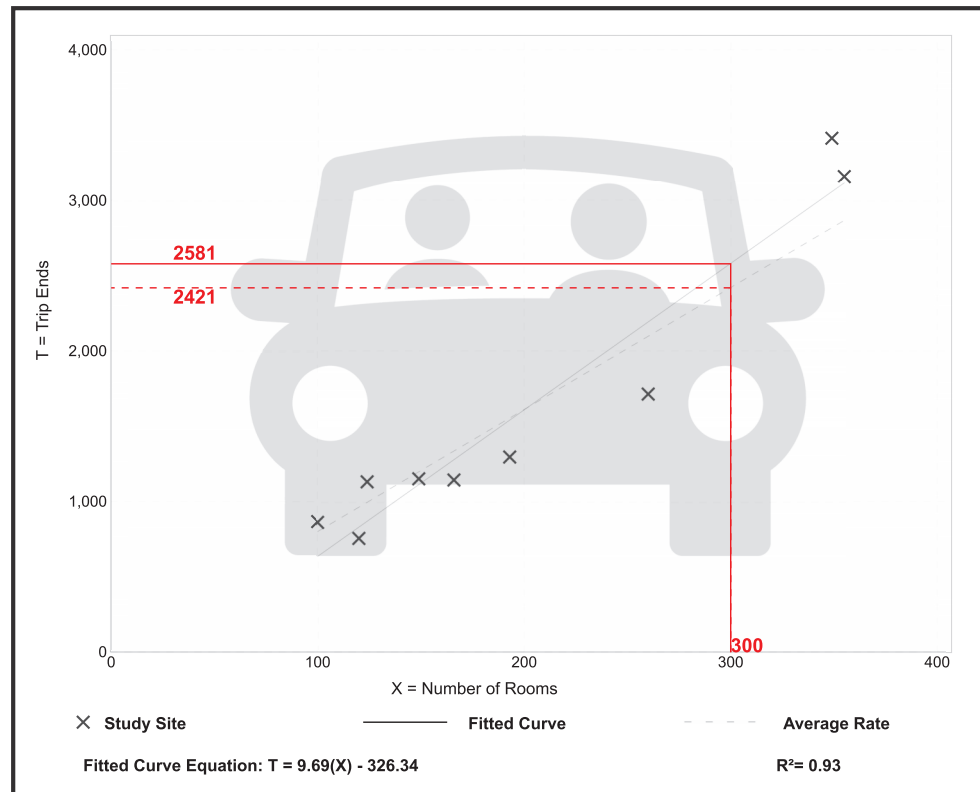
Vehicle Trip Ends vs: Rooms
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 9
Avg. Num. of Rooms: 202
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.07	6.35 - 9.79	1.35

Data Plot and Equation



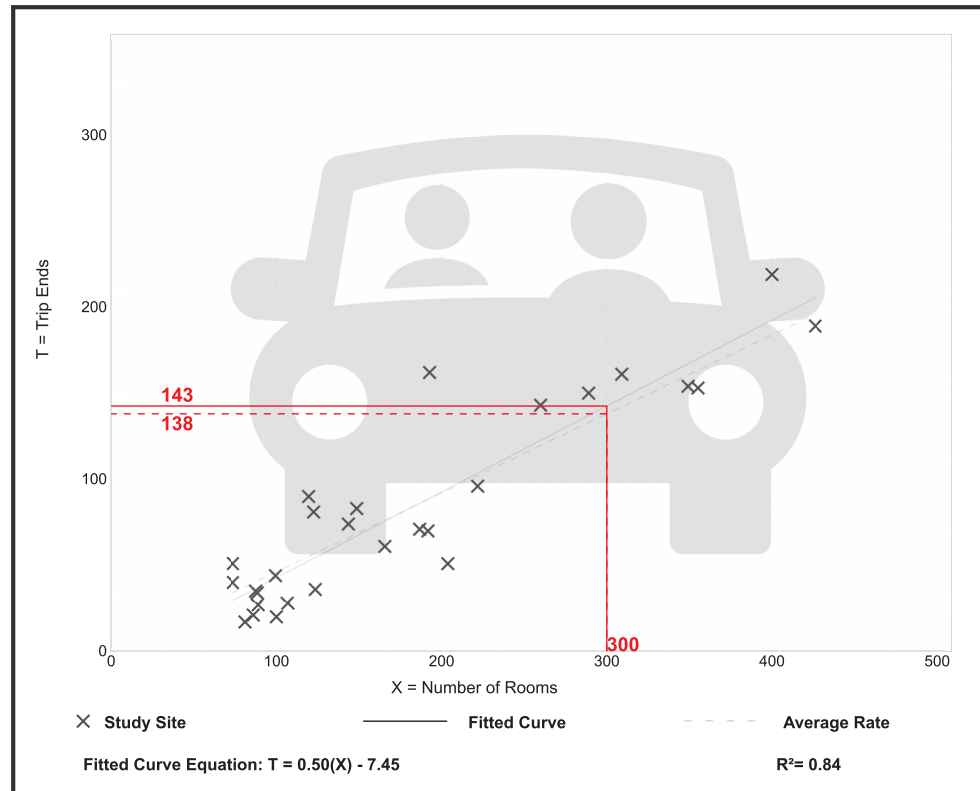
Hotel (310)

Vehicle Trip Ends vs: Rooms
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: 28
 Avg. Num. of Rooms: 182
 Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.46	0.20 - 0.84	0.14

Data Plot and Equation



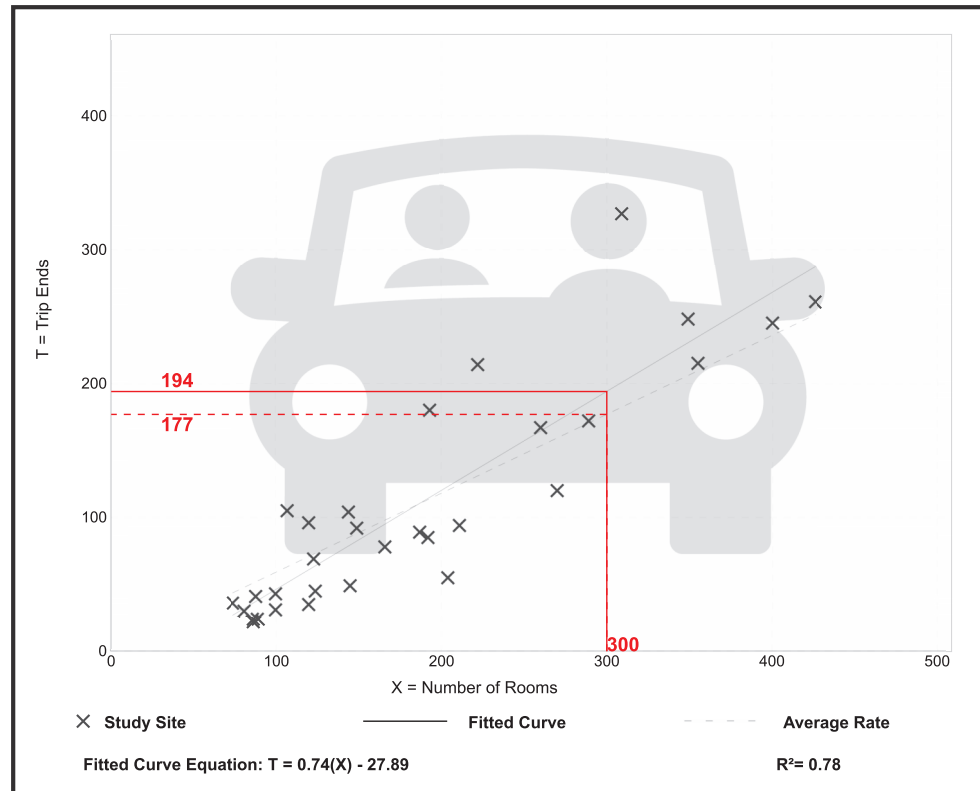
Hotel (310)

Vehicle Trip Ends vs: Rooms
 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: 31
 Avg. Num. of Rooms: 186
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.59	0.26 - 1.06	0.22

Data Plot and Equation



Hotel (310)

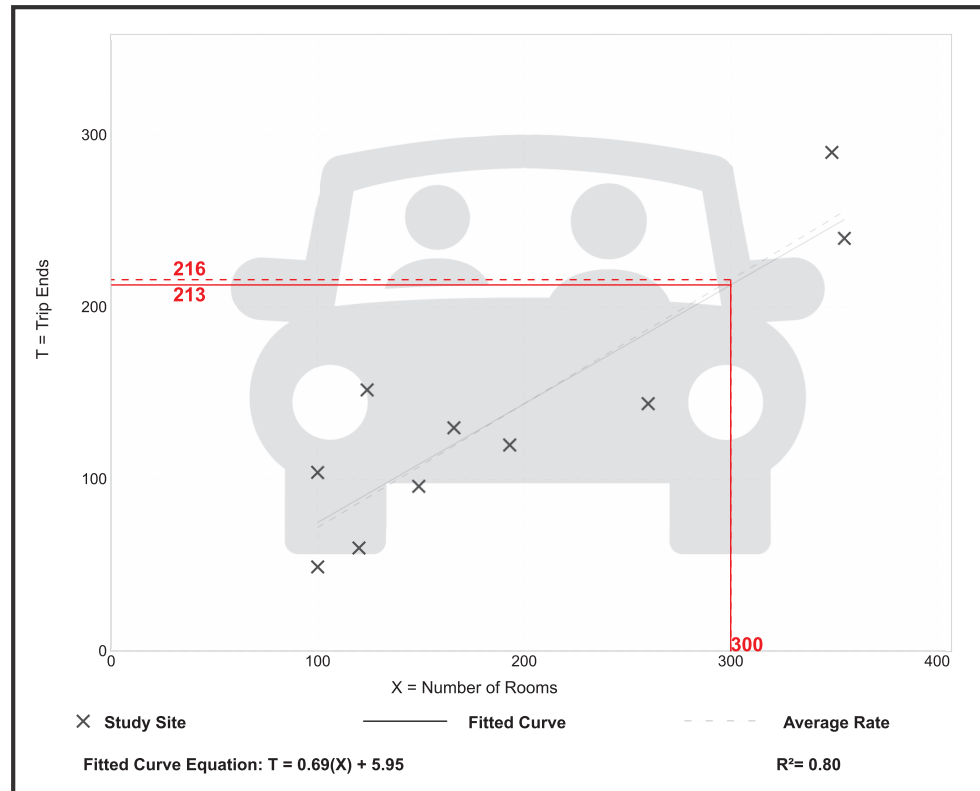
Vehicle Trip Ends vs: Rooms
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
 Number of Studies: 10
 Avg. Num. of Rooms: 192
 Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.72	0.49 - 1.23	0.20

Data Plot and Equation



Miniature Golf Course (431)

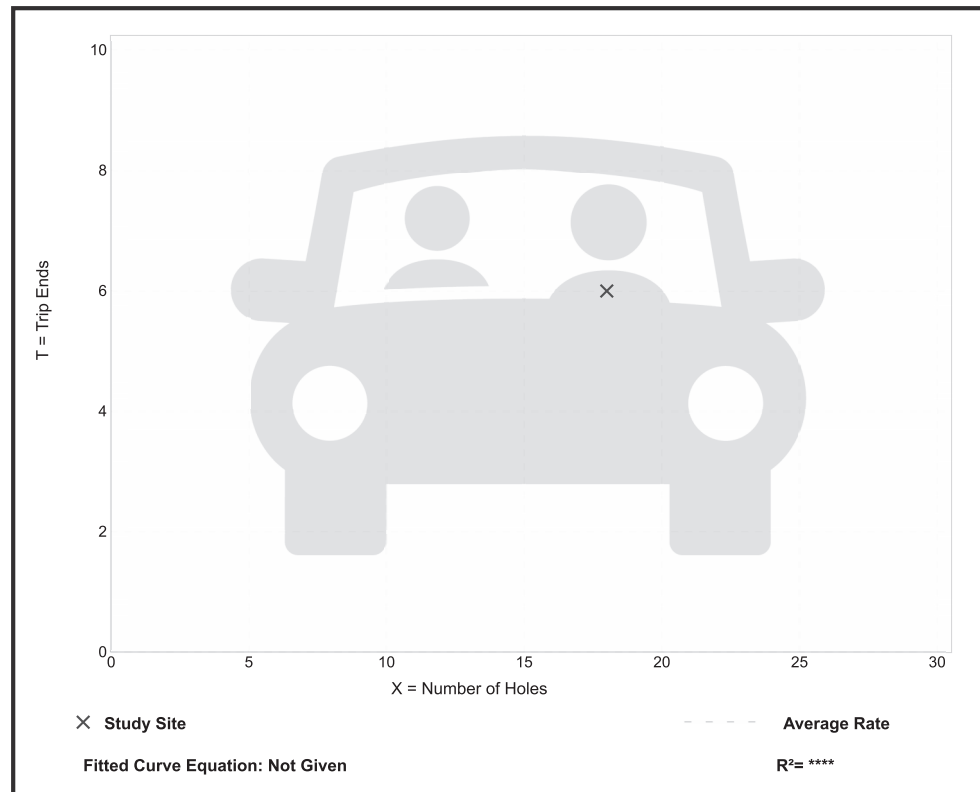
Vehicle Trip Ends vs: Holes
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 1
 Avg. Num. of Holes: 18
 Directional Distribution: 33% entering, 67% exiting

Vehicle Trip Generation per Hole

Average Rate	Range of Rates	Standard Deviation
0.33	0.33 - 0.33	*

Data Plot and Equation

Caution – Small Sample Size



High-Turnover (Sit-Down) Restaurant (932)

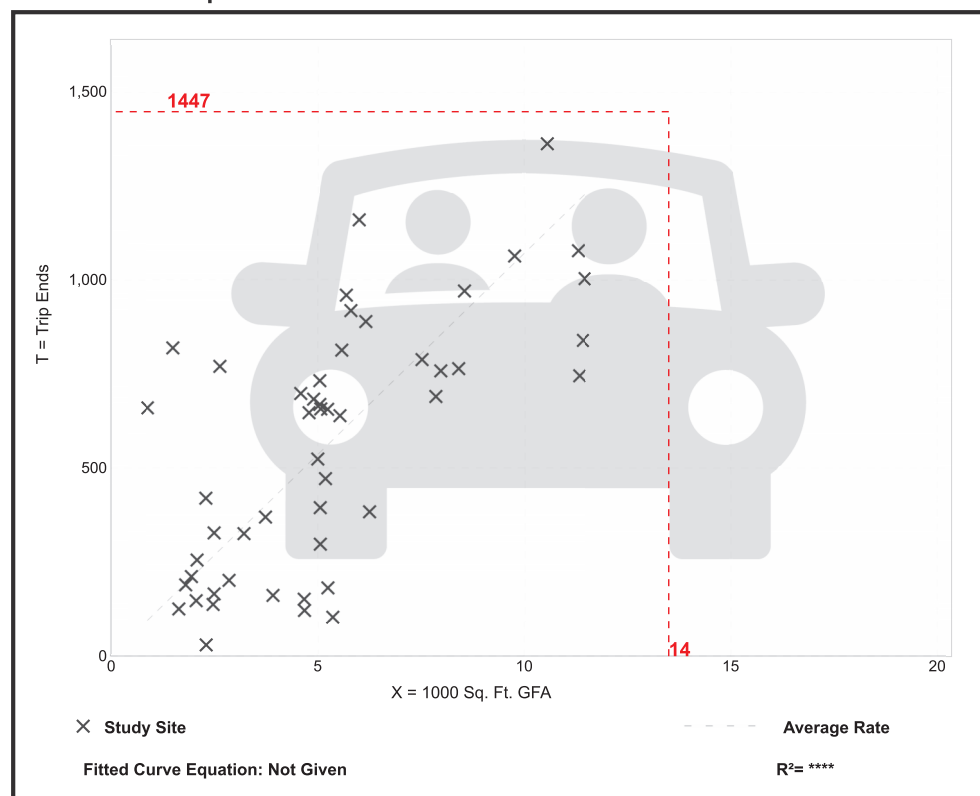
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
107.20	13.04 - 742.41	66.72

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

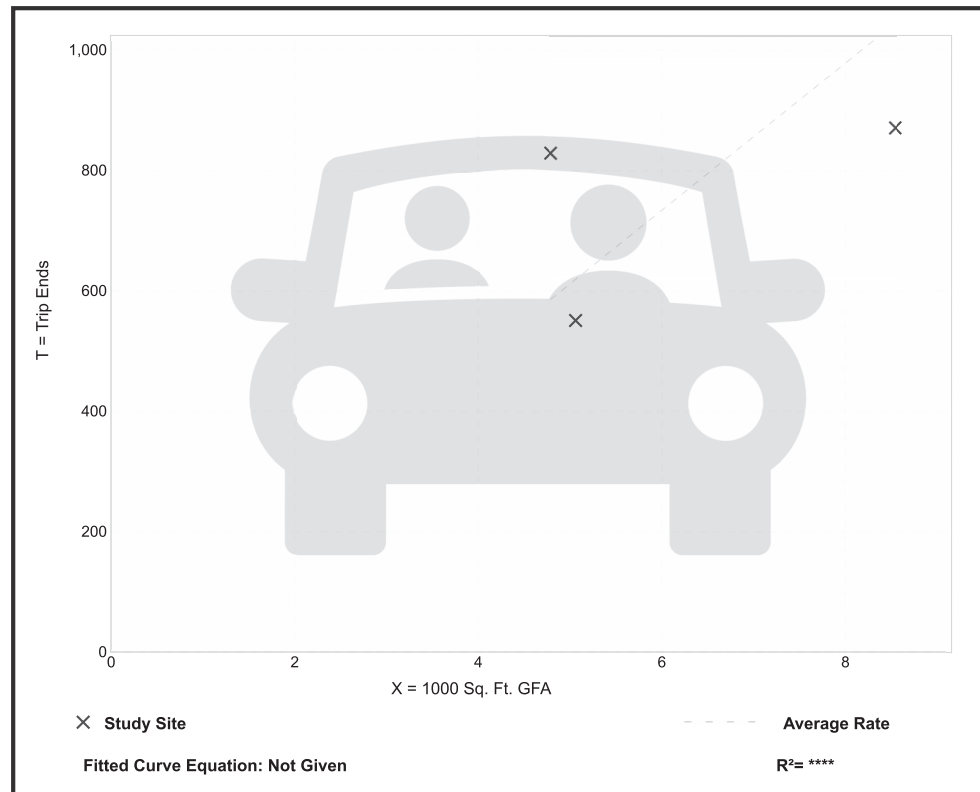
Setting/Location: General Urban/Suburban
Number of Studies: 3
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
122.40	101.99 - 173.07	36.99

Data Plot and Equation

Caution – Small Sample Size



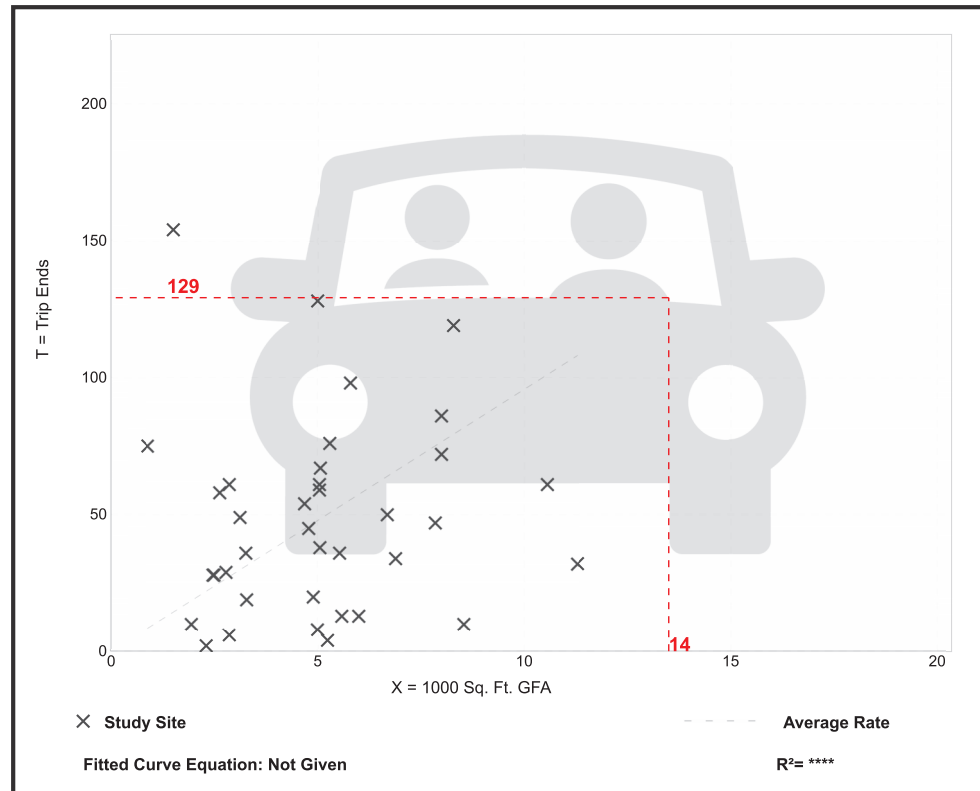
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 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: 37
 Avg. 1000 Sq. Ft. GFA: 5
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



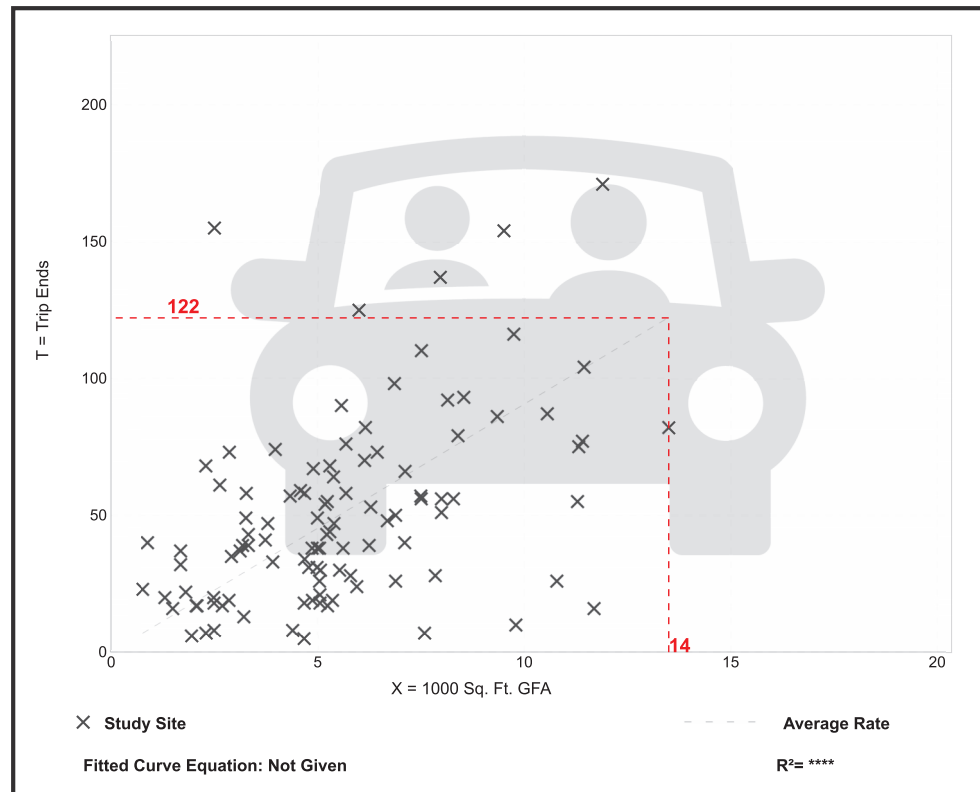
High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 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: 104
 Avg. 1000 Sq. Ft. GFA: 6
 Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

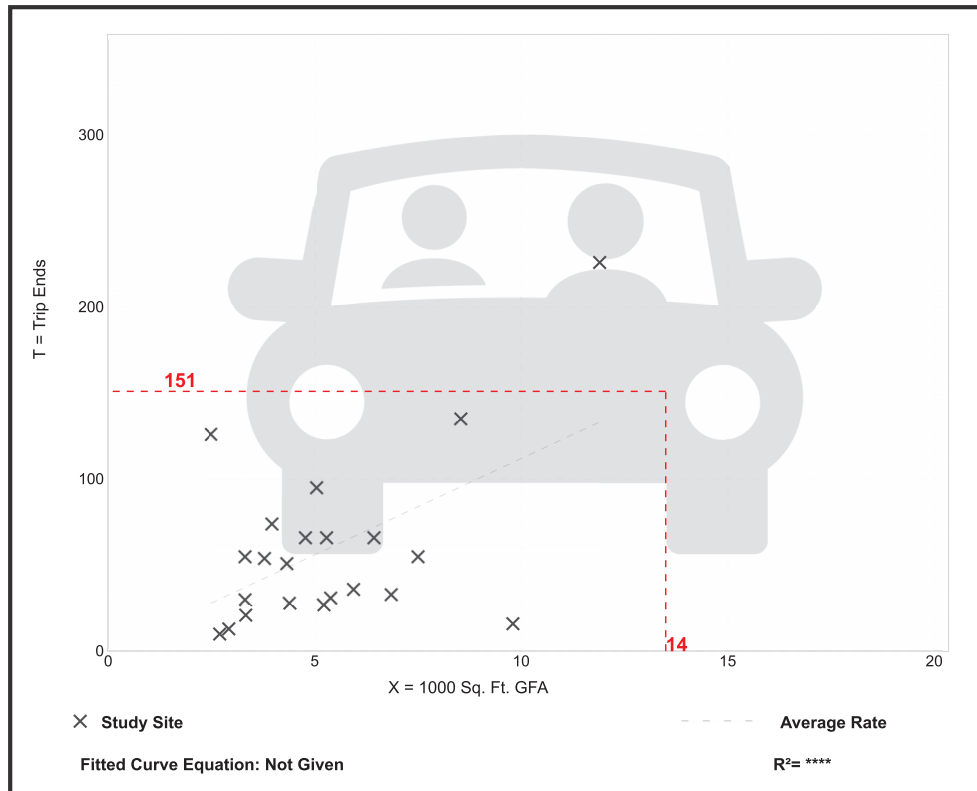
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.19	1.63 - 50.40	8.30

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

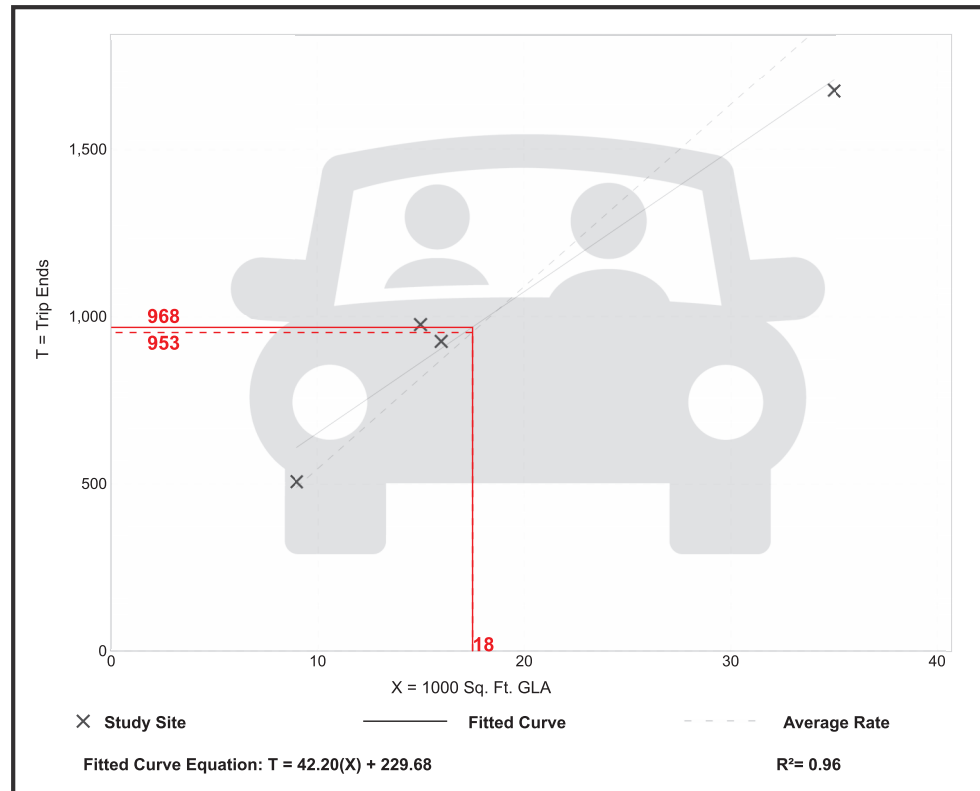
Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

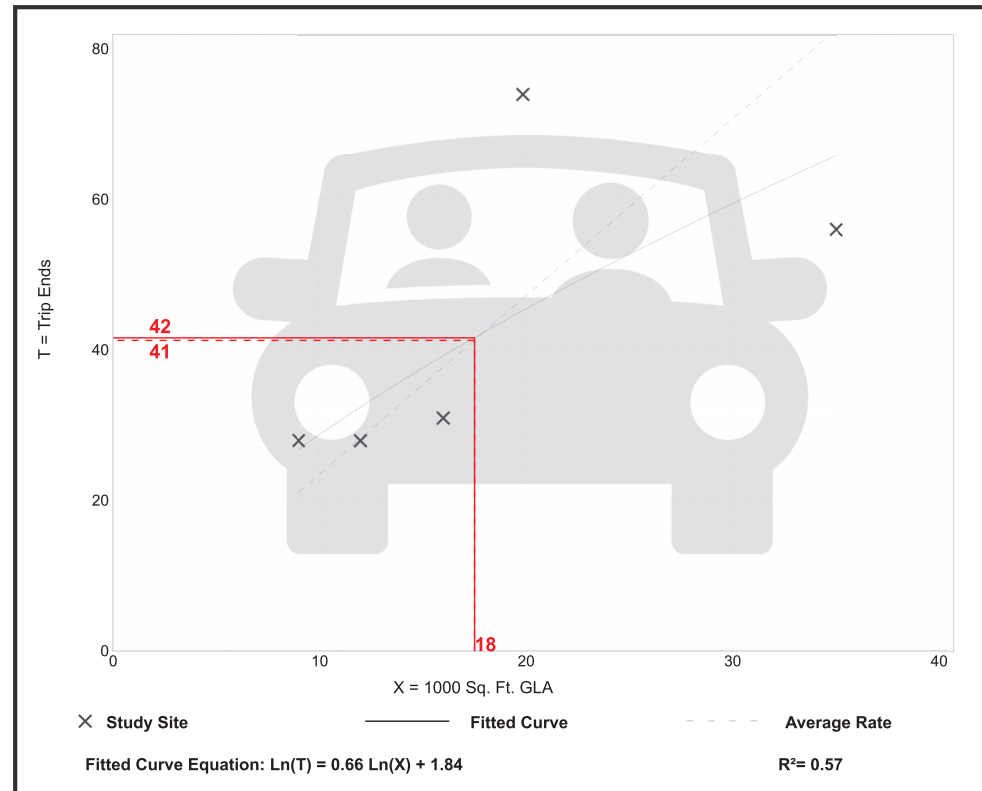
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GLA: 18
 Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



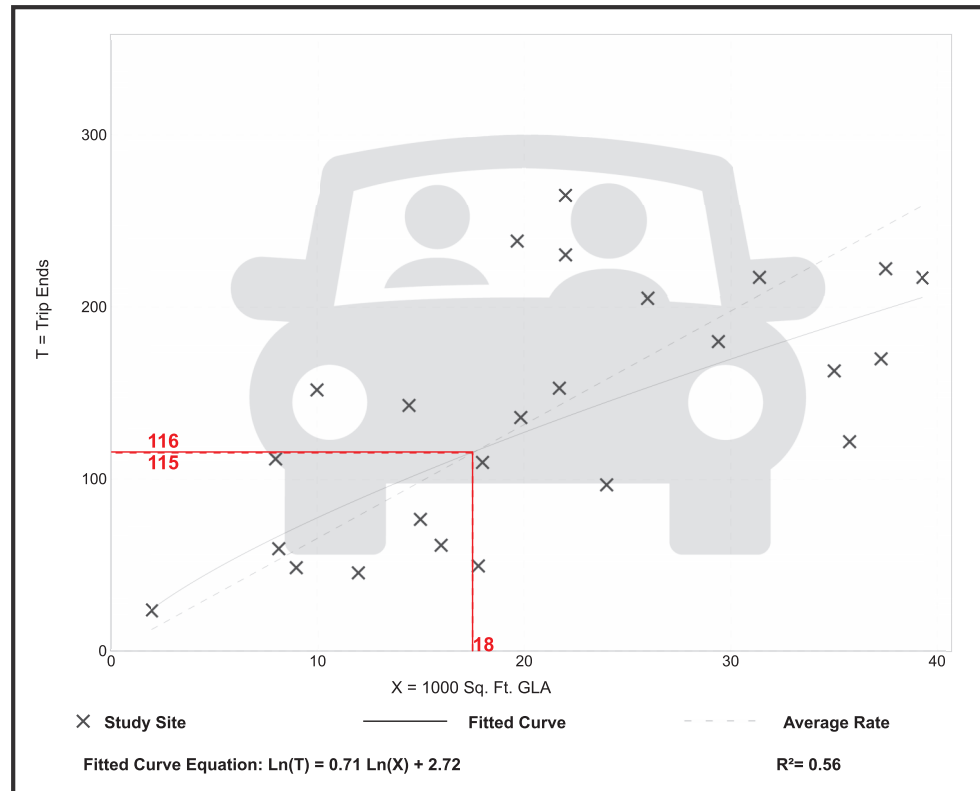
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 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: 25
 Avg. 1000 Sq. Ft. GLA: 21
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

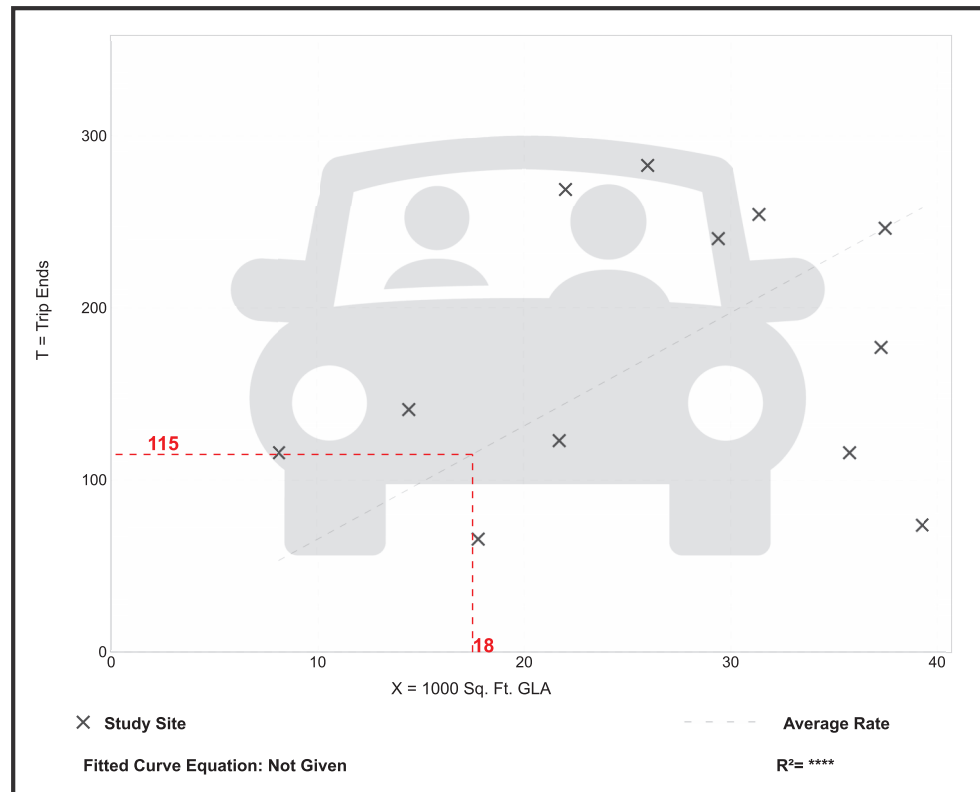
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 12
Avg. 1000 Sq. Ft. GLA: 27
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.57	1.88 - 14.23	3.45

Data Plot and Equation



Attachment C
Ocala Marion Congestion
Management Process (CMP) Database

Ocala Marion TPO CMP Database - August 2023

SEGMENT ID	ROAD NAME	FROM	TO	LANES (2022)	FUNCTIONAL CLASSIFICATION	FLOW	PODT CLASS	DAILY SERVICE VOLUME (2022)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2022)	LANES (2028)	DAILY SERVICE VOLUME (2028)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2028)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	NHS	ADOPTED LOS STANDARD	2022 ADOT	2022 DAILY V-MINUS	2022 DAILY LOS	GROWTH RATE	2025 ADOT	2025 DAILY V-MINUS	2025 DAILY LOS
3510	CR 225A	SR 40	US 27	2	COLLECTOR	UNINTERRUPTED		29,340	1,448	4	35,820	2,518	Urban	U	COUNTY	Other CMP Network Roadway	E	7.403	0.21	B	1.00%	7,300	0.15	B
3590	US 27	SR 40	SR 40	6	INTERSTATE	FREEWAY		122,800	1,080	6	122,800	1,080	Urban	DN	STATE	NHS - Interstate	D	90,300	0.74	C	1.00%	90,500	0.78	C
3300	I-75	SR 40	US 27	6	INTERSTATE	FREEWAY		122,800	1,080	6	122,800	1,080	Urban	DN	STATE	NHS - Interstate	D	90,300	0.73	C	1.13%	95,100	0.86	D
3501.1	NW 110 AV	SR 40	US 27	2	COLLECTOR	UNINTERRUPTED		9,211	406	2	9,211	406	Rural	U	COUNTY	Other CMP Network Roadway	B	5,103	0.61	B	1.00%	7,200	0.81	B
3400	NW 60 AV	SR 40	US 27	4	ARTERIAL	INTERERRUPTED	I	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	Other CMP Network Roadway	E	11,100	0.31	C	2.38%	12,400	0.31	C
5170.1	SR 40	US 41	URBAN AREA BOUNDARY	2	ARTERIAL	UNINTERRUPTED		14,000	730	2	14,000	730	Urban	U	STATE	NHS - Non-Interstate Roadway	D	8,500	0.61	D	1.00%	8,900	0.64	D
5170.2	SR 40	URBAN AREA BOUNDARY	SW 140 AV	2	ARTERIAL	UNINTERRUPTED		8,500	430	2	8,500	430	Rural	U	STATE	NHS - Non-Interstate Roadway	C	8,500	1.04	D	1.00%	8,900	1.09	D
5180	SR 40	SW 140 AV	CR 328	2	ARTERIAL	INTERERRUPTED		8,200	430	2	8,200	430	Rural	U	STATE	NHS - Non-Interstate Roadway	C	17,500	2.11	E	1.97%	18,300	2.35	E
5190	SR 40	CR 328	SW 110 AV	4	ARTERIAL	INTERERRUPTED		19,600	970	4	19,600	970	Rural	D	STATE	NHS - Non-Interstate Roadway	C	17,000	0.89	C	1.97%	19,300	0.98	C
5200.1	SR 40	SW 110 AV	SW 85 AV	4	ARTERIAL	INTERERRUPTED		36,015	1,785	4	36,015	1,785	Rural	D	STATE	NHS - Non-Interstate Roadway	C	19,300	0.54	C	1.00%	20,900	0.56	C
5200.2	SR 40	SW 85 AV	SW 80 AV	4	ARTERIAL	INTERERRUPTED		36,015	1,785	4	36,015	1,785	Rural	D	STATE	NHS - Non-Interstate Roadway	C	19,300	0.54	C	1.00%	20,900	0.56	C
5210	SR 40	SW 80 AV	SW 60 AV	4	ARTERIAL	INTERERRUPTED		36,165	1,943	4	36,165	1,943	Urban	D	STATE	NHS - Non-Interstate Roadway	D	22,800	0.58	C	1.39%	24,400	0.63	C
5220	SR 40	SW 60 AV	SW 52 AV	4	ARTERIAL	INTERERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	NHS - Non-Interstate Roadway	D	27,200	0.71	C	1.00%	28,400	0.74	C
5230.1	SR 40	SW 52 AV	I-75 RAMP (WEST)	4	ARTERIAL	INTERERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	NHS - Non-Interstate Roadway	D	34,500	0.82	C	1.70%	34,900	0.89	D
5240	SR 40	I-75 RAMP (WEST)	I-75 RAMP (EAST)	4	ARTERIAL	INTERERRUPTED		40,352	1,996	4	40,352	1,996	Urban	D	STATE	NHS - Non-Interstate Roadway	D	34,200	0.8	C	1.17%	34,100	0.85	D
5250	SR 40	I-75 RAMP (EAST)	SW 32 AV	4	ARTERIAL	INTERERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	NHS - Non-Interstate Roadway	D	32,200	0.84	C	1.27%	34,100	0.89	D
5260	SR 40	SW 32 AV	SW 27 AV	4	ARTERIAL	INTERERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	NHS - Non-Interstate Roadway	D	32,800	0.85	D	1.00%	34,500	0.90	D
5270	SR 40	SW 27 AV	SW MARTIN L KING AVE	4	ARTERIAL	INTERERRUPTED		37,905	1,880	4	37,905	1,880	Urban	D	STATE	NHS - Non-Interstate Roadway	D	21,200	0.61	C	1.00%	24,400	0.64	C
5280	SR 40	US 441	SW MARTIN L KING AVE	4	ARTERIAL	INTERERRUPTED		37,905	1,880	4	37,905	1,880	Urban	D	STATE	NHS - Non-Interstate Roadway	D	20,000	0.55	C	2.03%	23,100	0.61	C
5290	SR 40	US 441	NW 2 AV	4	ARTERIAL	INTERERRUPTED		37,905	1,880	4	37,905	1,880	Urban	D	STATE	NHS - Non-Interstate Roadway	D	20,200	0.77	D	1.00%	20,800	0.81	D
5310	SR 40	NW 2 AV	W MAGNOLIA AV	4	ARTERIAL	INTERERRUPTED		37,905	1,880	4	37,905	1,880	Urban	D	STATE	NHS - Non-Interstate Roadway	D	20,300	0.77	D	1.00%	20,800	0.81	D
5610	SW 140 AV	CR 484	SR 40	2	COLLECTOR	UNINTERRUPTED		19,170	999	2	19,170	999	Rural	U	COUNTY	Other CMP Network Roadway	D	2,500	0.13	B	1.00%	2,300	0.14	B
5630	SW 140 AV	SR 40	CR 328	2	COLLECTOR	UNINTERRUPTED		19,170	999	2	19,170	999	Rural	U	COUNTY	Other CMP Network Roadway	D	2,200	0.11	B	1.00%	2,300	0.13	B
5700	SW 80 AV	SR 40	SW 31 ST	4	ARTERIAL	INTERERRUPTED	I	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	Other CMP Network Roadway	E	16,000	0.45	C	1.18%	18,000	0.55	C
5300.4	SW 80 AV	SW 31 ST	SW 30 AV	2	COLLECTOR	UNINTERRUPTED		29,340	1,448	2	33,340	1,448	Urban	U	COUNTY	Other CMP Network Roadway	E	8,900	0.3	B	1.67%	9,700	0.31	B
6400	US 27	COUNTY LINE (W)	CR 4648	4	ARTERIAL	UNINTERRUPTED		45,800	2,390	4	45,800	2,390	Rural	D	STATE	NHS - Non-Interstate Roadway	C	8,500	0.19	B	1.00%	8,900	0.19	B
6410	US 27	CR 4648	NW 80 AV	4	ARTERIAL	UNINTERRUPTED		45,800	2,390	4	45,800	2,390	Rural	D	STATE	NHS - Non-Interstate Roadway	C	13,300	0.29	B	1.00%	14,000	0.31	B
6420	US 27	NW 80 AV	CR 225A	4	ARTERIAL	INTERERRUPTED		45,800	2,390	4	45,800	2,390	Rural	D	STATE	NHS - Non-Interstate Roadway	C	13,800	0.29	B	1.00%	14,000	0.31	B
6430	US 27	CR 225A	NW 60 AV	4	ARTERIAL	INTERERRUPTED		55,700	2,850	4	55,700	2,850	Urban	D	STATE	NHS - Non-Interstate Roadway	D	18,100	0.32	B	1.00%	20,000	0.34	B
6440	US 27	NW 60 AV	NW 48 AV	4	ARTERIAL	INTERERRUPTED		55,700	2,850	4	55,700	2,850	Urban	D	STATE	NHS - Non-Interstate Roadway	D	18,100	0.32	B	1.00%	19,000	0.34	B
6450	US 27	NW 48 AV	NW 44 AV	4	ARTERIAL	INTERERRUPTED		55,700	2,850	4	55,700	2,850	Urban	D	STATE	NHS - Non-Interstate Roadway	D	21,700	0.39	B	1.00%	23,800	0.41	B
6460	US 27	NW 44 AV	I-75	4	ARTERIAL	INTERERRUPTED		55,700	2,850	4	55,700	2,850	Urban	D	STATE	NHS - Non-Interstate Roadway	D	21,500	0.39	B	1.00%	23,800	0.41	B
6500	US 441	SR 40	SW 50 ST	6	ARTERIAL	INTERERRUPTED		59,640	2,951	6	59,640	2,951	Urban	D	STATE	NHS - Non-Interstate Roadway	D	45,500	0.68	C	2.45%	45,700	0.77	C
6550	US 441	SR 40	NW 2 ST	6	ARTERIAL	INTERERRUPTED		59,640	2,951	6	59,640	2,951	Urban	D	STATE	NHS - Non-Interstate Roadway	D	29,500	0.49	C	1.82%	31,900	0.54	C