



MEMORANDUM

March 23, 2021

Re: **Falls of Ocala**
Traffic Assessment Methodology
Marion County, Florida
Project No 21051

2106073

The following is an outline of the methodology for the proposed Traffic Assessment for the above referenced project. The study will conform to Marion County procedures and requirements.

Project Description

The proposed development consists of 92 residential units with an anticipated buildout year of 2024. The site is located on SW 8th Street, east of SW 80th Avenue and south of SR 40, in Marion County, Florida. The development is proposed to access SW 80th Avenue via a cross access driveway on SW 6th Place. **Figure 1** depicts the site location. A conceptual plan is included in the **Attachments**.

Trip Generation

The trip generation analysis was conducted using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. The ITE information sheets are included in the **Attachments**. **Table 1** summarizes the resulting trip generation analysis.

Table 1
Trip Generation Calculation

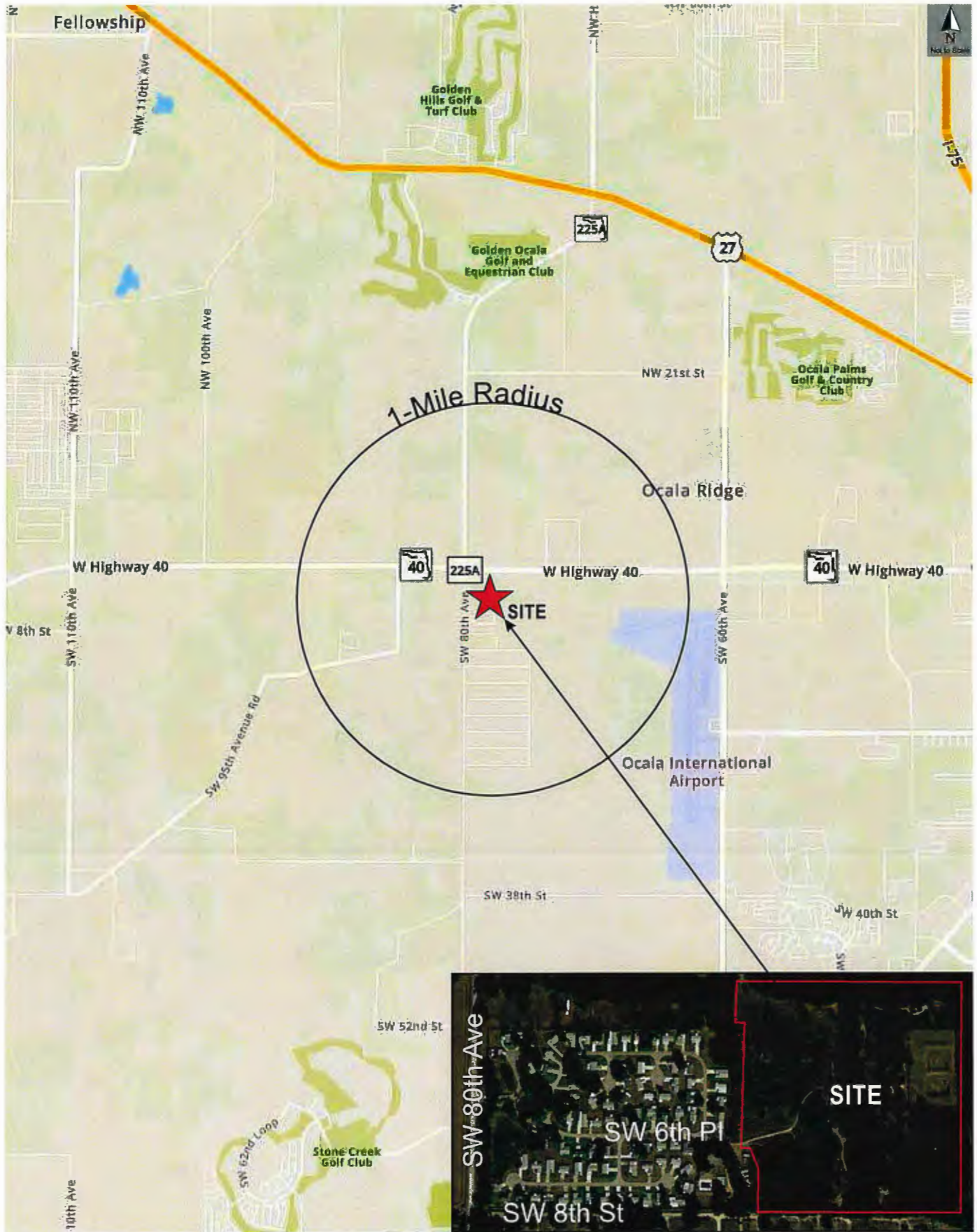
ITE Code	Land Use	Size	Daily		Rate	AM Peak Hour			Rate	PM Peak Hour		
			Rate	Trips		Total	Enter	Exit		Total	Enter	Exit
210	Single Family Residential	92 DU	10.47	963	0.76	70	18	52	1.02	94	59	35

Regression Equation used to calculate rates when R2 is greater than 0.75 or has more than 20 studies

The proposed development is projected to generate 963 daily trips, of which 70 trips occur during the AM peak hour and 94 trips occur during the PM peak hour.

Trip Distribution

A trip distribution pattern was estimated using the *Central Florida Regional Planning Model* (CFRPMv6.1). The model distribution was manually adjusted to account for the interactions at local activity centers and to reflect the local network. Local attractions within 1-mile of the proposed development include West Port High School, Ocala International Airport and other commercial attractions. The model output is included in the **Attachments** and the adjusted trip distribution is shown in **Figure 2**.





Study Level and Area

The project generates less than 99 PM peak hour external trips and the surrounding roadway segments have an existing V/C less than 0.80, meeting the required threshold for a Traffic Assessment. Accordingly, the Traffic Assessment includes all roadway segments where project traffic is consuming 3% or more of the adopted LOS volume plus one segment beyond.

Table 2 presents the project significance test, the proposed development is projected to consume 4.24% of the roadway's two-way peak hour adopted LOS volume on SW 80th Avenue. The proposed development is projected to consume less than 3% of the two-way peak hour adopted LOS volume for the remaining roadway segments within a 1-mile radius.

The adopted LOS standards for the roadway segments were obtained from the Marion County's *Land Development Code (LDC)* and their respective service volumes were obtained from the *FDOT 2020 QLOS tables*. The existing traffic count data was obtained from the Marion County *2020 Traffic Counts Manual*. The Marion County LOS standards, FDOT QLOS tables and the traffic counts are included in the **Attachments**.

Table 2
Significance Test

Roadway Segment	# of	A	LOS	Map #	Daily Cap	Count	V/C	PM Peak Hour Cap	% Dist	Trips	% Cap
SR 40											
W of CR 225A	4	R	C	A-03	29,300	20,500	0.70	2,790	10%	9	0.32%
W of SW 60th Ave	4	U	D	A-04	39,800	21,300	0.54	3,580	40%	38	1.06%
NW 80th Ave											
N of SR 40	2	U	E	A-40	15,930	5,400	0.34	1,440	15%	14	0.97%
SW 80th Ave											
S of SR 40	2	U	E	G-37	15,930	8,200	0.51	1,440	65%	61	4.24%

The study area will include the roadway segments and intersections listed below:

Study Segments:

- SW 80th Avenue
 - South of SR 40
- NW 80th Avenue
 - North of SR 40

Study Intersections:

- SR 40 & SW 80th Avenue
- SW 80th Avenue & SW 6th Place

Projected Traffic

Background traffic will be projected to the buildout year (2024) based on traffic growth and committed trips from the developments approved by the County. Growth rates will be obtained or calculated from traffic count data available in the Marion County *2020 Traffic Counts Manual*. A minimum 2% annual growth rate will be applied if there is no data available to establish the growth rate of the roadway segment and a 1% growth rate will be used for roadway segments with a negative growth rate. Projected traffic is calculated as the sum of background traffic and project trips.

Planned and Programmed Improvements

The FDOT *Tentative 5-Year Work Program* and the *Ocala Marion TPO Transportation Improvement Program (TIP)* were reviewed to determine if any roadway or intersection improvements are planned and funded for construction. No planned or funded improvements were identified in the published information. However, if funded roadway or intersection improvements are identified, they will be included in the analysis.

Traffic Analysis

The traffic study will analyze existing and buildout conditions. Buildout condition traffic will include projected background traffic and project trips. In cases where the buildout conditions analysis requires mitigation as the result of the proposed development, the buildout conditions analysis with inclusion of the recommended mitigation will be provided.

Roadway segments will be analyzed for the daily and PM peak directional volumes. The roadway segment counts will be obtained from the Marion County *2020 Traffic Count Manual*. The analysis will be based on Marion County's LOS standards and their respective service volumes as obtained from Section 1.8.3 of the County's LDC and the *FDOT 2020 Quality/Level of Service (Q/LOS) Handbook*. Intersection analysis will be conducted for the PM peak hours, based on field counts, buildout traffic, *Highway Capacity Software (HCS)*, and the methods of *Highway Capacity Manual (HCM)*, 6th Edition.

Proportionate Share

If the development results in offsite impacts, the development will mitigate its impact to the deficient facilities by contributing a proportionate share. The proportionate share calculation will be based on Marion County guidelines and requirements.

Report

A report detailing the methods and findings of the study, including all associated graphics, tables, calculations, and supporting information, will be prepared for submittal to the County.

ATTACHMENTS

Single-Family Detached Housing (210)

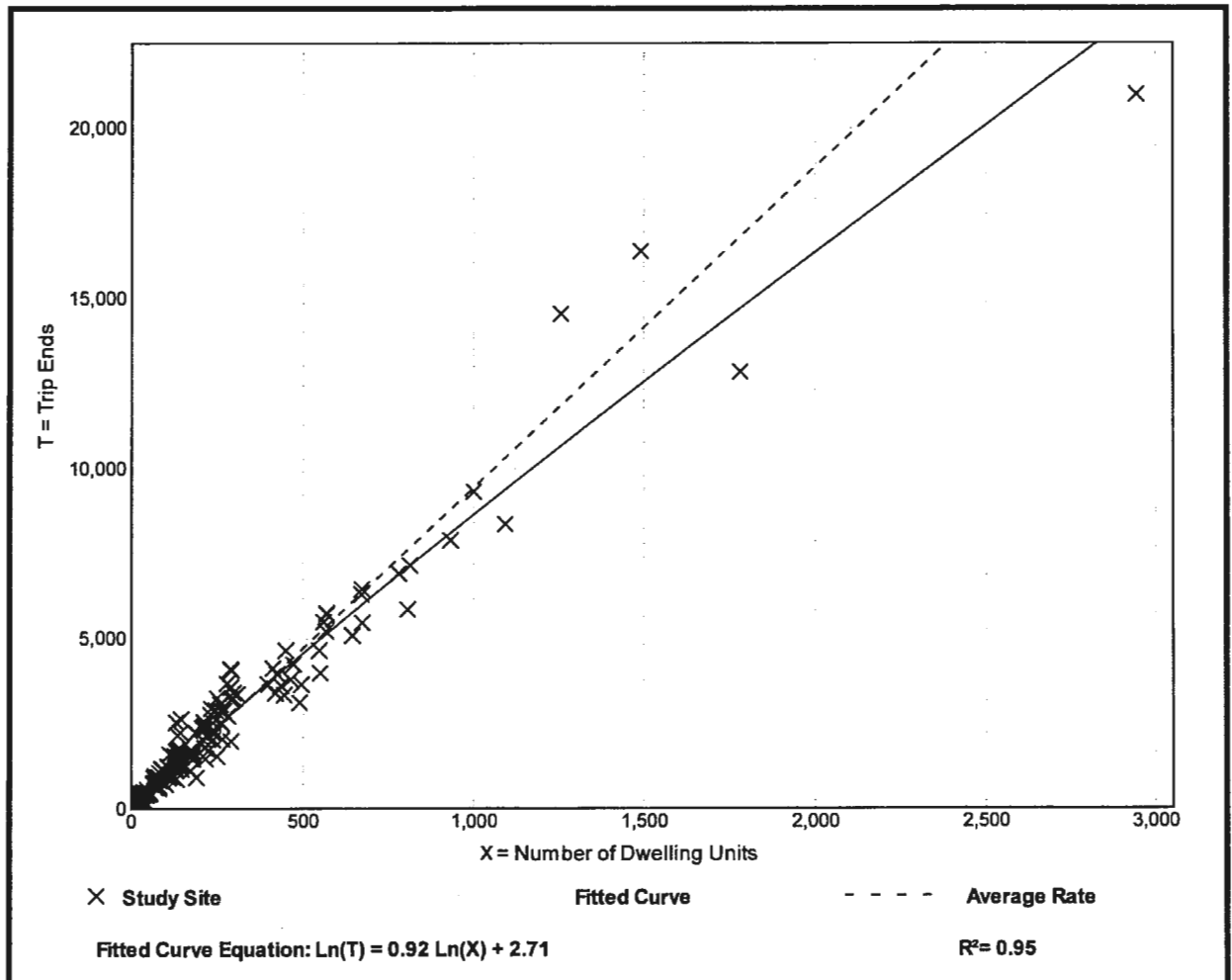
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

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



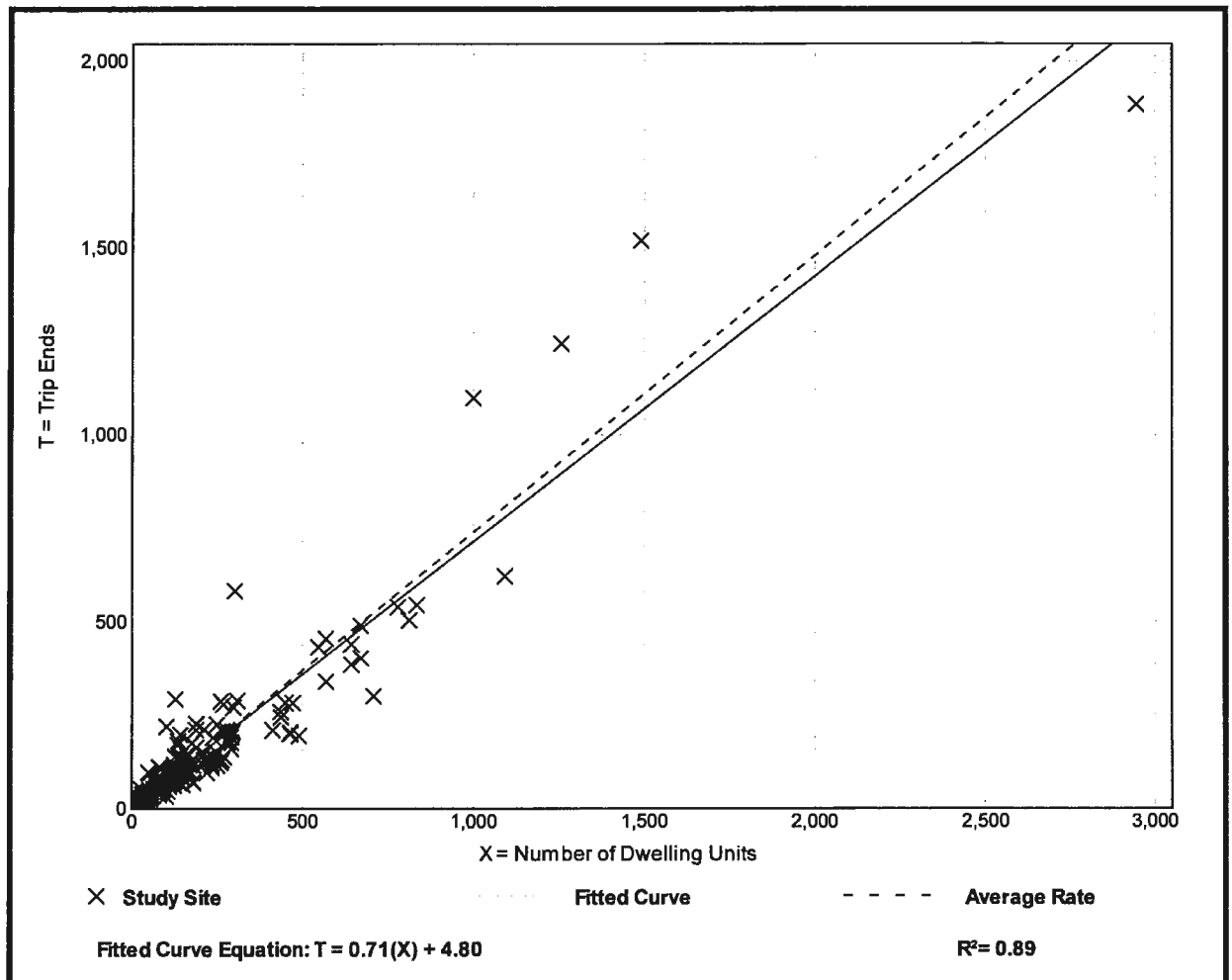
Single-Family Detached Housing (210)

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



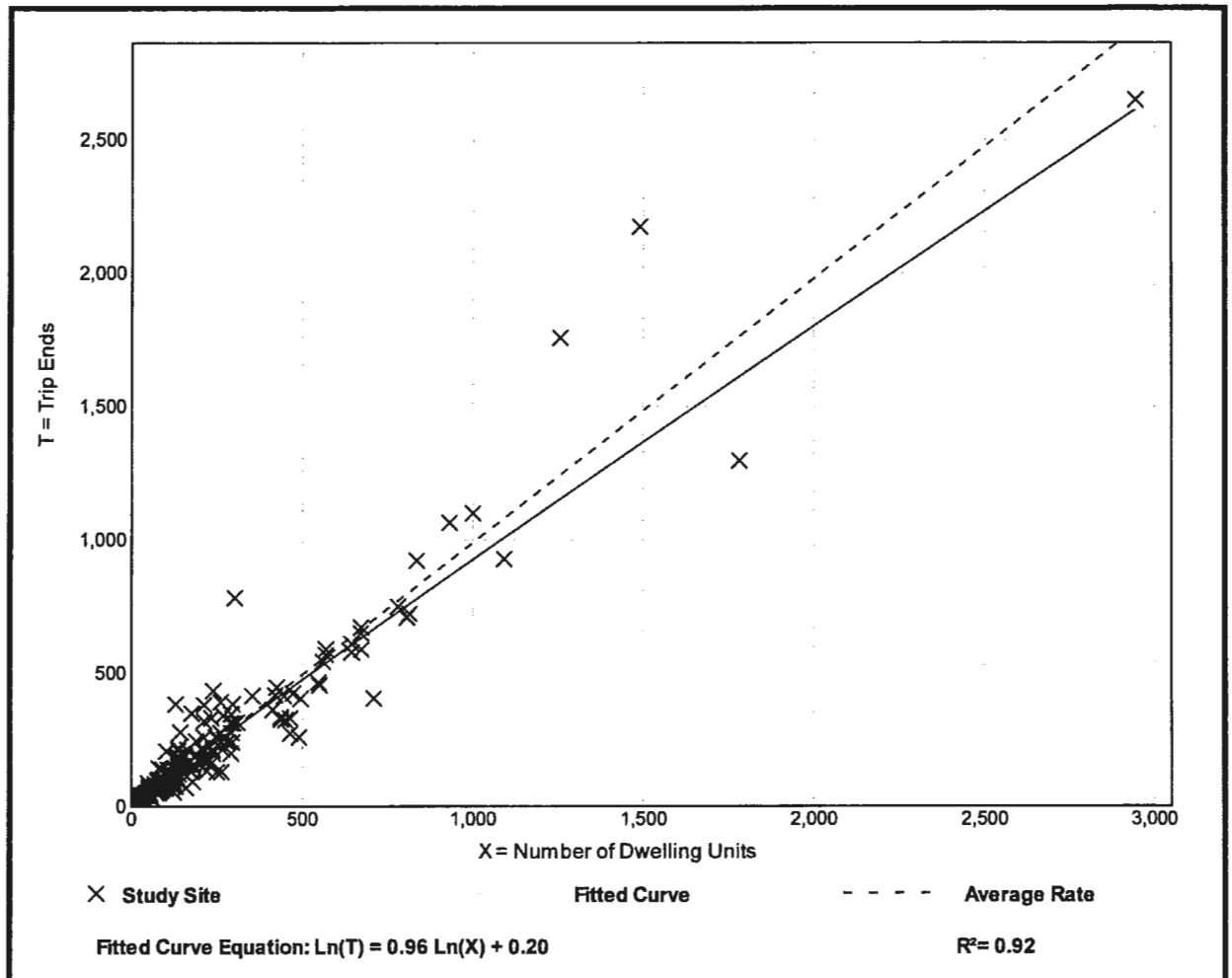
Single-Family Detached Housing (210)

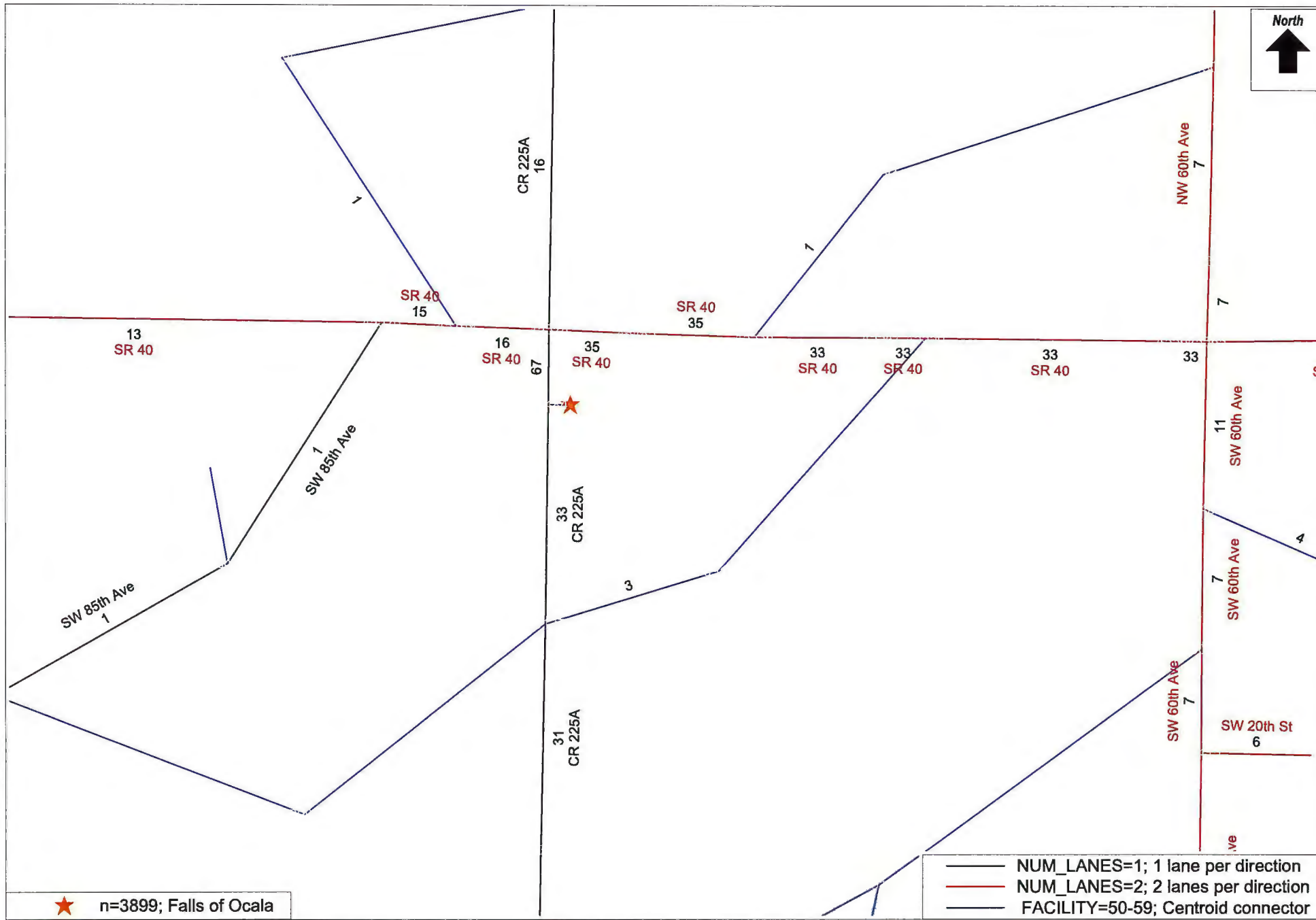
Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 190
 Avg. Num. of Dwelling Units: 242
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

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

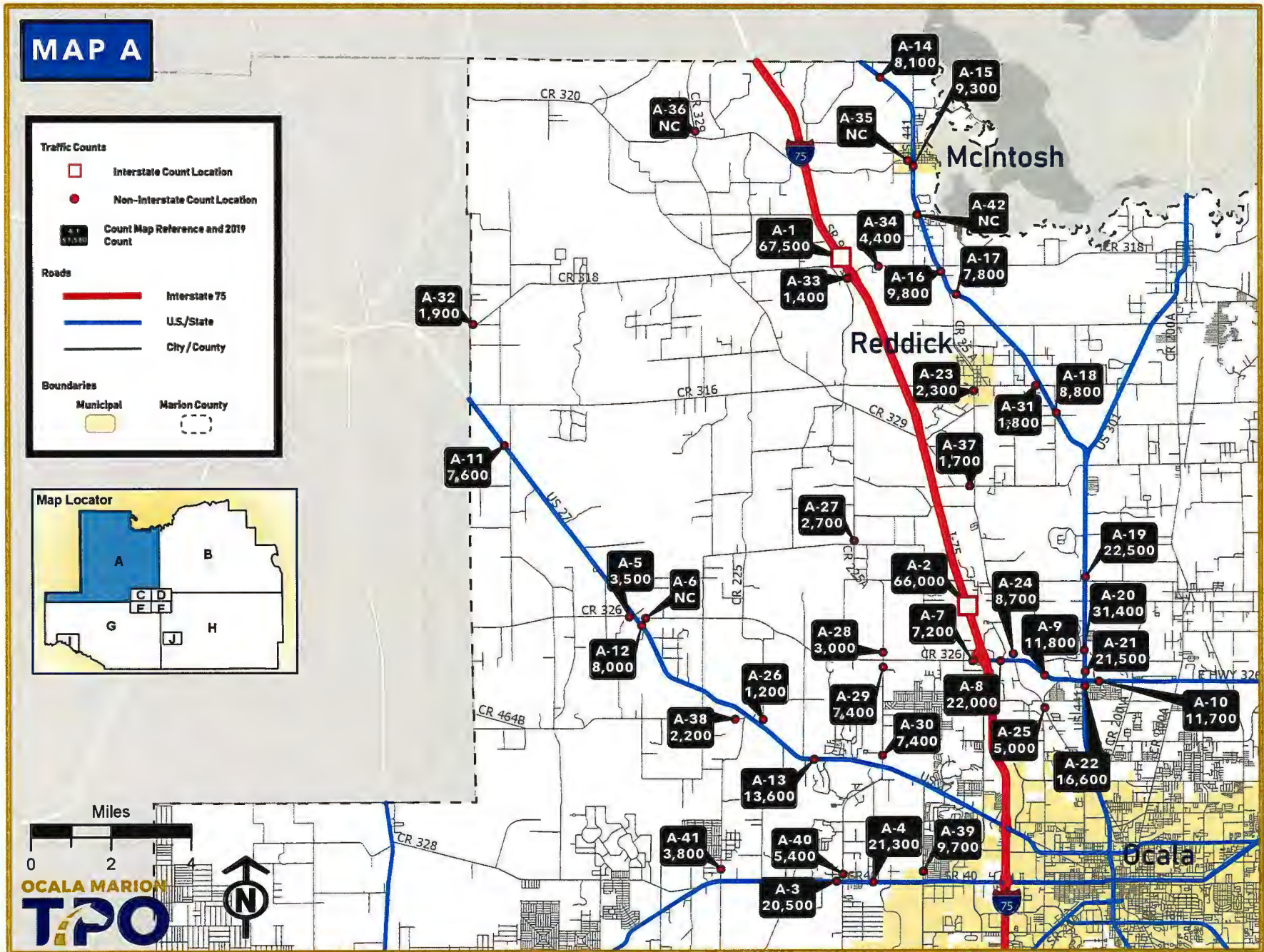
Data Plot and Equation





21051 - Falls of Ocala - Marion County
CFRPM 6.1 CF2025 - Project Distribution

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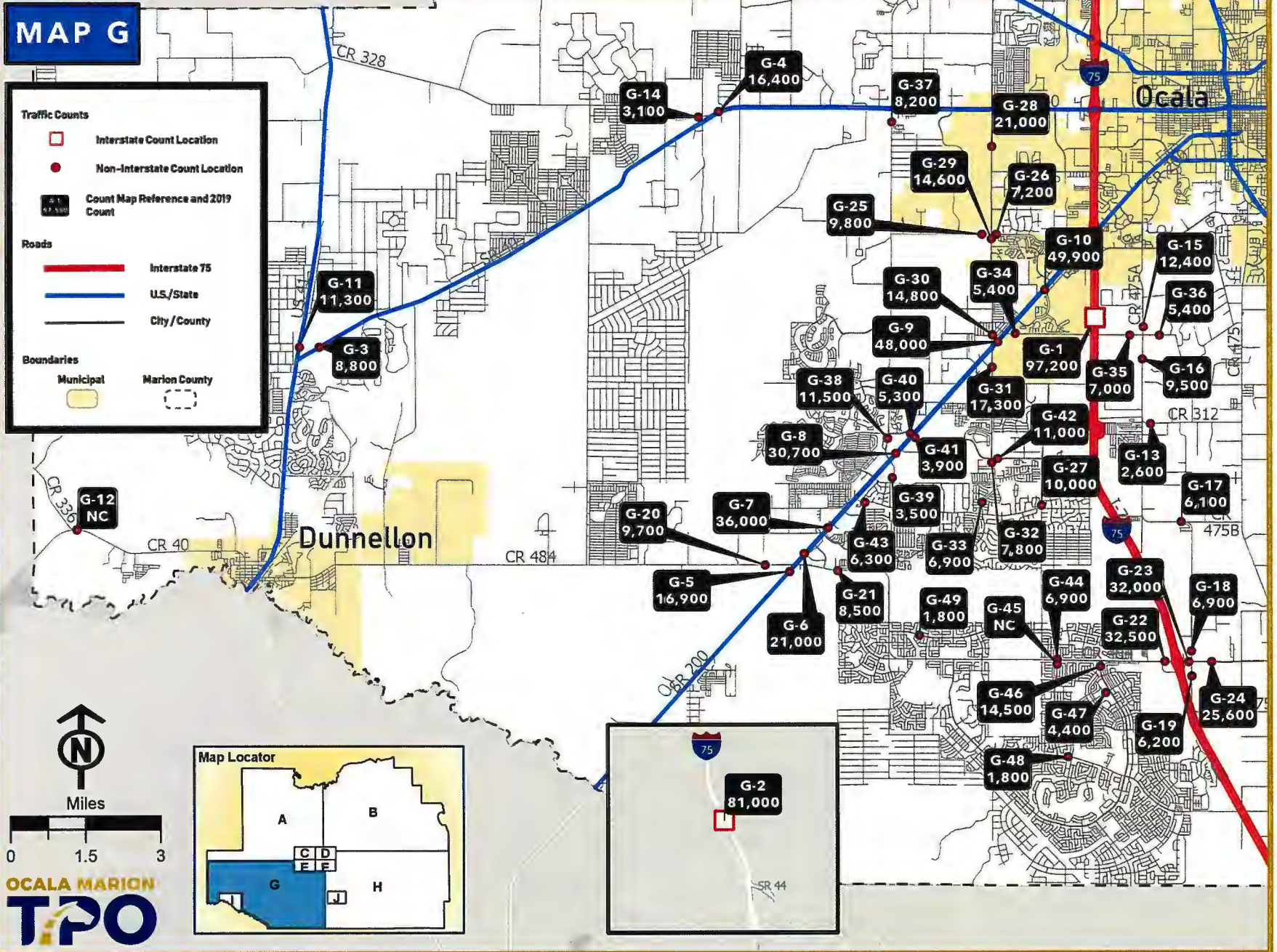


Marion County continues on p.29 (Map G)

City of Ocala continues on p.22 (Map E) Page 9

City of Ocala continues on p.18 (Map D)

Marion County continues on p.12 (Map B)



TRAFFIC COUNTS 2015-2019; FILENAME: \\nrcboc1\org\Shared\Depc_TPO\Traffic Studies\Count Manuals\2019 Traffic Count Book; 1:208,000; PLOT DATE 07.15.2020



Map #	Location	Source	Count Type	2015	2016	2017	2018	2019	Annual Growth Rate (%)
I-75									
A-01	.527 mi N of CR 318	FDOT	3	51,500	54,500	57,000	64,500	67,500	7.8
A-02	1.469 mi N of SR 326	FDOT	3	47,500	50,500	56,500	64,000	66,000	9.7
SR 40									
A-03	.15 mi W of CR 225A	FDOT	3	17,500	18,100	19,200	20,400	20,500	4.3
A-04	W of SW 60th Ave	MC	3	18,200	21,000	21,000	21,300	21,300	4.3
CR/SR 326									
A-05	W of US 27	MC	2	2,900	3,000	2,900	3,300	3,500	5.2
A-06	E of US 27	MC	2	1,500	NC	NC	NC	NC	N/A
A-07	W of I-75	MC	2	6,800	6,600	6,900	7,100	7,200	1.5
A-08	.245 mi E of I-75	FDOT	3	19,500	22,200	22,500	22,000	22,000	3.2
A-09	1.019 mi W OF SR 25/ US 441	FDOT	3	10,800	11,500	10,800	12,300	11,800	2.3
A-10	E of US 441	MC	2	11,700	10,200	11,700	12,000	11,700	0.0
US 27									
A-11	W of NW 160th Ave	MC	3	7,000	7,400	7,100	7,500	7,600	2.1
A-12	.253 mi SE of CR 326	FDOT	3	7,900	7,800	8,500	7,800	8,000	0.3
A-13	E of CR 225	MC	3	11,600	11,800	13,000	13,000	13,600	4.3
US 441									
A-14	.579 mi S of Alachua CL	FDOT	3	7,500	8,000	8,200	8,000	8,100	2.0
A-15	.15 mi S of CR 320	FDOT	3	8,100	8,400	8,900	9,100	9,300	3.7
A-16	.153 mi S of CR 318	FDOT	3	8,900	9,600	9,500	9,700	9,800	2.5
A-17	.12 mi SE of CR 25A	FDOT	3	7,000	7,600	7,700	7,600	7,800	2.9
A-18	S of CR 316	MC	3	7,800	8,200	8,400	8,700	8,800	3.2
A-19	.09 mi N of NW 100th St	FDOT	3	24,500	27,400	27,500	29,000	22,500	-2.0
A-20	.3 mi N of SR 326	FDOT	1	27,500	28,700	30,100	30,600	31,400	3.5
A-21	.239 mi N of SR 326	FDOT	3	18,600	19,600	19,400	20,100	21,500	3.9
A-22	.128 mi S of SR 326	FDOT	3	17,000	17,500	18,300	18,600	16,600	-0.6
CR 25A									
A-23	S of CR 316	MC	2	2,500	2,500	2,000	2,300	2,300	-2.0
A-24	N of SR 326	MC	2	7,700	7,800	8,600	8,800	8,700	3.2
A-25	S of NW 63rd St	MC	2	4,300	4,500	4,900	4,700	5,000	4.1

Map #	Location	Source	Count Type	2015	2016	2017	2018	2019	Annual Growth Rate (%)
CR 225									
A-26	N of US 27	MC	2	900	900	900	1,200	1,200	8.3
CR 225A									
A-27	N of NW 110th St	MC	2	1,900	1,900	2,100	2,400	2,700	10.5
A-28	N of CR 326	MC	2	2,700	2,800	3,000	2,800	3,000	2.8
A-29	S of CR 326	MC	2	4,500	5,200	7,100	7,300	7,400	16.1
A-30	N of US 27	MC	2	6,200	6,800	7,100	7,100	7,400	4.8
CR 316									
A-31	W of US 441	MC	3	1,100	1,600	1,800	1,800	1,800	15.9
CR 318									
A-32	E of CR 335	MC	2	1,700	1,800	1,800	2,000	1,900	2.9
A-33	W of I-75	MC	2	2,700	2,900	1,500	1,500	1,400	-12.0
A-34	E of I-75	MC	2	3,700	4,000	4,100	4,500	4,400	4.7
CR 320									
A-35	W of US 441	MC	3	400	NC	NC	NC	NC	N/A
CR 329									
A-36	N of CR 320	MC	3	1,200	NC	NC	NC	NC	N/A
A-37	W of CR 25A	MC	2	1,500	1,400	1,600	1,700	1,700	3.3
CR 464B									
A-38	W of NW 110th Ave	MC	3	2,400	2,300	2,100	2,200	2,200	-2.1
NW 60th Ave									
A-39	N of SR 40	MC	2	7,900	8,200	9,600	9,700	9,700	5.7
NW 80th Ave									
A-40	N of SR 40	MC	3	4,200	4,500	5,300	5,400	5,400	7.1
NW 110th Ave									
A-41	N of SR 40	MC	2	3,700	3,900	4,000	4,000	3,800	0.7
NW 193rd St									
A-42	W of US 441	MC	4	400	NC	NC	NC	NC	N/A

Map #	Location	Source	Count Type	2015	2016	2017	2018	2019	Annual Growth Rate (%)
SW 38th St									
G-25	W of SW 60th Ave	MC	2	8,300	8,000	9,700	9,800	9,800	4.5
G-26	E of SW 60th Ave	MC	2	5,800	5,900	7,200	7,400	7,200	6.0
SW 49th Ave									
G-27	N of SW 103rd St Rd	MC	2	8,100	8,100	7,500	7,800	10,000	5.9
SW 60th Ave									
G-28	SR 40 to SW 20th St	OCA	2	NC	NC	16,100	20,600	21,000	15.2
G-29	S of SW 38th St	MC	2	NC	15,100	14,500	14,600	14,600	-1.1
G-30	N of SR 200	MC	3	14,400	14,800	14,400	14,800	14,800	0.7
G-31	S of SR 200	MC	2	17,400	17,200	17,000	17,000	17,300	-0.1
SW 62nd Ave Rd									
G-32	S of SW 95th St	MC	2	6,600	7,100	6,800	7,400	7,800	4.5
G-33	N of SW 103rd St Rd	MC	2	6,200	6,100	5,900	6,400	6,900	2.8
SW 66th St									
G-34	E of SR 200	MC	2	5,000	4,900	5,200	5,300	5,400	2.0
G-35	W of CR 475A	MC	2	7,300	7,300	7,100	7,200	7,000	-1.0
G-36	E of CR 475A	MC	2	4,000	4,100	5,200	5,300	5,400	8.8
SW 80th Ave									
G-37	S of SR 40	MC	2	6,300	6,700	8,100	8,400	8,200	7.5
G-38	N of SR 200	MC	2	8,800	8,300	11,300	11,700	11,500	7.7
G-39	S of SR 200	MC	3	2,700	2,800	3,300	3,500	3,500	7.4
SW 90th St									
G-40	W of SR 200	MC	2	4,100	4,600	4,500	5,100	5,300	7.3
SW 95th St Rd/SW 95th St									
G-41	E of SR 200	MC	2	2,400	2,800	3,200	3,500	3,900	15.6
G-42	E of SW 62nd Ave Rd	MC	2	9,200	9,000	9,600	10,700	11,000	4.9
SW 103rd St Rd									
G-43	E of SR 200	MC	2	5,600	5,600	5,700	6,100	6,300	3.1
Marion Oaks Course									
G-44	N of CR 484	MC	3	8,700	9,100	9,300	9,900	6,900	-5.2
G-45	S of CR 484	FDOT	3	NC	NC	NC	6,900	NC	N/A
Marion Oaks Boulevard									
G-46	S of CR 484	FDOT	3	12,500	12,900	13,300	14,300	14,500	4.0

System, as amended.

- (2) State Roadways Exceeding Capacity: LOSS shall comply with FDOT Procedure No. 525-000-006 and the LOSS provided in Table 1.8-1: State Roads Exceeding Capacity, until such time FDOT and/or Marion County can secure committed funding for the creation of additional roadway capacity.
- (3) Marion County Specific Roadways: LOSS shall comply with Table 1.8-2 Minimum Peak Hour LOSS for Specific Functionally Classified County Roads.
- (4) Marion County Non-specified Roadways: LOSS shall comply with Table 1.8-3 Minimum Peak Hour LOSS for Non-Specified Functionally Classified County Roads NOT specified in Table 1.8-2.

Table 1.8-1 State Roads Exceeding Capacity

Road	From	To	Roadway Class	LOSS
SR 40	NE 64th Avenue	SR 326	Rural Principal Arterial	D
SR 40	SR 326	CR 314	Rural Principal Arterial	D

Table 1.8-2 Minimum Peak Hour LOSS for Specific Functionally Classified County Roads

Road Segment	From	To	LOSS
CR 320	Levy C.L.	I-75	B
CR 320	I-75	US 441	B
CR 318	Levy C.L.	CR 225	B
CR 318	CR 225	US 441	D
CR 318	US 441	US 301	C
CR 316	Levy C.L.	I-75	B

SE 80th St	US 441	SE 41st Ct	C
CR 475 A	CR 475 B	CR 484	C
CR 475 A	CR 484	CR 475	C
CR 475 A	CR 475	US 301	C
CR 475	SE 52nd St	SE 80th St	C
CR 475	SE 80th St	CR 484	C
W Anthony Rd	SR 326	North Terminus	C
NE 58th Ave	SR 326	NE 97th St Rd	C
NE 97th St Rd	NE 36th Ave	NE 90th St Rd	C
NE 90th St Rd	NE 97th St Rd	CR 315	C

Table 1.8-3 Minimum Peak Hour LOSS for all Non-specific Functionally Classified County Roads NOT Specified in Table 1.8-2

Roadway Type	Urban	Rural
Freeways	D	C
Principle Arterial	D	C
Minor Arterial	E	D
Major Collector	E	D
Minor Collector	E	D

TABLE 1

Generalized **Annual Average Daily** Volumes for Florida's
Urbanized Areas

January 2020

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	16,800	17,700	**	4	47,600	66,400	83,200	87,300	
4	Divided	*	37,900	39,800	**	6	70,100	97,800	123,600	131,200	
6	Divided	*	58,400	59,900	**	8	92,200	128,900	164,200	174,700	
8	Divided	*	78,800	80,100	**	10	115,300	158,900	203,600	218,600	
						12	136,500	192,400	246,200	272,900	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	7,300	14,800	15,600	4	45,900	62,700	75,600	85,400	
4	Divided	*	14,500	32,400	33,800	6	68,900	93,900	113,600	128,100	
6	Divided	*	23,300	50,000	50,900	8	91,900	125,200	151,300	170,900	
8	Divided	*	32,000	67,300	68,100	10	115,000	156,800	189,300	213,600	
Non-State Signalized Roadway Adjustments						Freeway Adjustments					
(Alter corresponding state volumes by the indicated percent.)						Auxiliary Lanes					
Non-State Signalized Roadways						Present in Both Directions					
						+ 20,000					
Median & Turn Lane Adjustments						Ramp Metering					
						+ 5%					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		UNINTERRUPTED FLOW HIGHWAYS					
2	Divided	Yes	No	+5%		Lanes	Median	B	C	D	E
2	Undivided	No	No	-20%		2	Undivided	11,700	18,000	24,200	32,600
Multi	Undivided	Yes	No	-5%		4	Divided	36,300	52,600	66,200	75,300
Multi	Undivided	No	No	-25%		6	Divided	54,600	78,800	99,400	113,100
-	-	-	Yes	+ 5%		Uninterrupted Flow Highway Adjustments					
One-Way Facility Adjustment						Lanes	Median	Exclusive left lanes	Adjustment factors		
Multiply the corresponding two-directional volumes in this table by 0.6						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE²						¹ Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.					
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						² Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.					
Paved Shoulder/Bicycle Lane Coverage						³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.					
0-49%		*	2,900	7,600	19,700	* Cannot be achieved using table input value defaults.					
50-84%		2,100	6,700	19,700	>19,700	^{**} Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
85-100%		9,300	19,700	>19,700	**	Source:					
PEDESTRIAN MODE²						Florida Department of Transportation					
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						Systems Implementation Office					
Sidewalk Coverage	B	C	D	E		https://www.fdot.gov/planning/systems/					
0-49%	*	*	2,800	9,500							
50-84%	*	1,600	8,700	15,800							
85-100%	3,800	10,700	17,400	>19,700							
BUS MODE (Scheduled Fixed Route)³											
(Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's
Urbanized Areas¹

January 2020

January 2022

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	1,510	1,600	**	4	4,050	5,640	6,800	7,420	
4	Divided	*	3,420	3,580	**	6	5,960	8,310	10,220	11,150	
6	Divided	*	5,250	5,390	**	8	7,840	10,960	13,620	14,850	
8	Divided	*	7,090	7,210	**	10	9,800	13,510	17,040	18,580	
						12	11,600	16,350	20,930	23,200	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	660	1,330	1,410	4	4,130	5,640	7,070	7,690	
4	Divided	*	1,310	2,920	3,040	6	6,200	8,450	10,510	11,530	
6	Divided	*	2,090	4,500	4,590	8	8,270	11,270	13,960	15,380	
8	Divided	*	2,880	6,060	6,130	10	10,350	14,110	17,310	19,220	
Non-State Signalized Roadway Adjustments						Freeway Adjustments					
(Alter corresponding state volumes by the indicated percent.)						Auxiliary Lanes		Ramp			
Non-State Signalized Roadways - 10%						Present in Both Directions		Metering			
						+ 1,800		+ 5%			
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors	Lanes	Median	B	C	D	E	
2	Divided	Yes	No	+5%	2	Undivided	1,050	1,620	2,180	2,930	
2	Undivided	No	No	-20%	4	Divided	3,270	4,730	5,960	6,780	
Multi	Undivided	Yes	No	-5%	6	Divided	4,910	7,090	8,950	10,180	
Multi	Undivided	No	No	-25%							
-	-	-	Yes	+ 5%							
One-Way Facility Adjustment						Uninterrupted Flow Highway Adjustments					
Multiply the corresponding two-directional volumes in this table by 0.6						Lanes	Median	Exclusive left lanes	Adjustment factors		
						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE ²						¹Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual. ² Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility. ³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow. * Cannot be achieved using table input value defaults. ** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults. Source: Florida Department of Transportation Systems Implementation Office https://www.fdot.gov/planning/systems/					
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Paved Shoulder/Bicycle Lane Coverage											
	B	C	D	E							
0-49%	*	260	680	1,770							
50-84%	190	600	1,770	>1,770							
85-100%	830	1,700	>1,770	**							
PEDESTRIAN MODE ²											
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	250	850							
50-84%	*	150	780	1,420							
85-100%	340	960	1,560	>1,770							
BUS MODE (Scheduled Fixed Route) ³											
(Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							

TABLE 3

**Generalized Annual Average Daily Volumes for Florida's
Rural Undeveloped Areas and
Developed Areas Less Than 5,000 Population¹**

January 2020

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	12,900	14,200	**	4	34,800	48,000	56,700	63,200	
4	Divided	*	29,300	30,400	**	6	48,900	69,000	82,600	94,800	
6	Divided	*	45,200	45,800	**	8	62,900	90,400	108,400	126,400	
Non-State Signalized Roadway Adjustments						Freeway Adjustments					
(Alter corresponding state volumes by the indicated percent.)						Auxiliary Lanes					
Non-State Signalized Roadways - 10%						Present in Both Directions					
						+ 20,000					
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Rural Undeveloped					
2	Divided	Yes	No	+5%		Lanes	Median	B	C	D	E
2	Undivided	No	No	-20%		2	Undivided	4,600	8,600	14,000	28,500
Multi	Undivided	Yes	No	-5%		4	Divided	31,200	44,900	55,700	62,700
Multi	Undivided	No	No	-25%		6	Divided	46,800	67,600	83,500	94,200
-	-	-	Yes	+ 5%		Developed Areas					
One-Way Facility Adjustment						Lanes	Median	B	C	D	E
Multiply the corresponding two-directional volumes in this table by 0.6						2	Undivided	10,300	15,700	21,300	28,500
						4	Divided	29,300	42,300	54,000	61,600
						6	Divided	44,000	63,600	81,200	92,400
BICYCLE MODE²						Passing Lane Adjustments					
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length					
Rural Undeveloped						Uninterrupted Flow Highway Adjustments					
Paved Shoulder/Bicycle Lane Coverage	B	C	D	E		Lanes	Median	Exclusive left lanes	Adjustment factors		
0-49%	*	1,300	2,000	3,200		2	Divided	Yes	+5%		
50-84%	1,000	2,100	3,200	10,600		Multi	Undivided	Yes	-5%		
85-100%	2,600	3,900	18,500	>18,500		Multi	Undivided	No	-25%		
Developed Areas						¹ Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.					
Paved Shoulder/Bicycle Lane Coverage	B	C	D	E		² Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.					
0-49%	*	2,300	4,900	15,600		* Cannot be achieved using table input value defaults.					
50-84%	1,700	4,500	13,300	18,500		** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
85-100%	5,900	18,500	>18,500	**		Source: Florida Department of Transportation Systems Implementation Office https://www.flot.gov/planning/systems/					
PEDESTRIAN MODE²											
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	2,700	9,200							
50-84%	*	1,500	8,400	14,900							
85-100%	3,600	10,200	16,700	>19,200							

TABLE 6

**Generalized Peak Hour Two-Way Volumes for Florida's
Rural Undeveloped Areas and
Developed Areas Less Than 5,000 Population¹**

January 2020

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	1,220	1,350	**	4	3,650	5,040	5,950	6,640	
4	Divided	*	2,790	2,890	**	6	5,130	7,250	8,670	9,950	
6	Divided	*	4,300	4,350	**	8	6,600	9,490	11,380	13,270	
Non-State Signalized Roadway Adjustments						Freeway Adjustments					
(Alter corresponding state volumes by the indicated percent.)						Auxiliary Lanes					
Non-State Signalized Roadways - 10%						Present in Both Directions					
						+ 1,800					
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
						Rural Undeveloped					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	440	820	1,330	2,710
2	Undivided	No	No	-20%		4	Divided	2,960	4,270	5,290	5,960
Multi	Undivided	Yes	No	-5%		6	Divided	4,450	6,420	7,930	8,950
Multi	Undivided	No	No	-25%		Developed Areas					
-	-	-	Yes	+ 5%		Lanes	Median	B	C	D	E
One-Way Facility Adjustment						2	Undivided	980	1,490	2,020	2,710
Multiply the corresponding two-directional volumes in this table by 0.6						4	Divided	2,780	4,020	5,130	5,850
						6	Divided	4,180	6,040	7,710	8,780
BICYCLE MODE²						Passing Lane Adjustments					
(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length					
Rural Undeveloped						Uninterrupted Flow Highway Adjustments					
Paved Shoulder/Bicycle Lane Coverage	B	C	D	E		Lanes	Median	Exclusive left lanes	Adjustment factors		
0-49%	*	120	190	300		2	Divided	Yes	+5%		
50-84%	100	200	310	1,010		Multi	Undivided	Yes	-5%		
85-100%	250	370	1,760	>1,760		Multi	Undivided	No	-25%		
Developed Areas						PEDESTRIAN MODE²					
Paved Shoulder/Bicycle Lane Coverage	B	C	D	E		(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)					
0-49%	*	220	460	1,480		Sidewalk Coverage	B	C	D	E	
50-84%	170	430	1,270	>1,760		0-49%	*	*	220	840	
85-100%	560	1,760	>1,760	**		50-84%	*	120	780	1,390	
						85-100%	320	940	1,560	>1,820	

¹Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

²Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
<https://www.fdot.gov/planning/systems/>