Kimley » Horn

July 24, 2025

Mr. Christopher Zeigler Engineering Project Manager Marion County Office of the County Engineer 412 SE 25th Avenue Ocala, FL. 34471

RE: Martingale PUD Revision – Traffic Study Methodology; Marion County, Florida Kimley-Horn Project No. 042934007

Dear Mr. Zeigler:

A traffic study was previously approved for the Martingale PUD (November 13, 2024 AR #32019). The project site is located on the southeast corner of US 27 at CR 225A (NW 70th Avenue) in Marion County. A PUD update is being submitted to Marion County to modify the development program within the site. The conceptual PUD plan is provided as an attachment.

The updated development program does not result in an expansion of the study area included within the approved traffic study. This methodology is being submitted to document the assumptions that will be utilized for the updated traffic study to support the revised PUD master plan review through Marion County. The prior approved methodology will be utilized, with an updated development program and buildout year. All other assumptions within the approved traffic study will be utilized for the traffic study update.

The development is projected to generate more than 100 peak hour trips, therefore a "Traffic Study" is required per the Marion County Traffic Impact Analysis (TIA) Guidelines. A 5-year buildout (year 2030) will be used for the study.

TRIP GENERATION

Trip generation for the proposed development was determined using the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (11th Edition). The following development program and ITE land use codes were used for the trip generation calculations:

- ITE LUC 210 Single Family Detached Housing up to 50 dwelling units
- ITE LUC 215 Single Family Attached Housing up to 140 dwelling units
- ITE LUC 820 Shopping Center (>150k SF) up to 225,000 square feet

Internal capture and pass-by reductions were applied. Internal capture was applied based on the methodologies of the ITE *Trip Generation Handbook* (3rd Edition).

A pass-by rate of 29% is recommended for ITE LUC 820 based on the ITE *Trip Generation Manual*, 11th Edition. Pass-by traffic was reviewed and capped at 10% of adjacent street traffic according to FDOT Multimodal Transportation Impact Handbook (2023) guidance. **Table 1** summarizes the trip generation potential at project buildout. ITE *Trip Generation Manual* excerpts are provided as an attachment.



Page 2

Table 1 - Buildout Trip Generation

Land Use	Inten	sity		Daily Trips	AM Peak	Hour of Street	Adjacent	PM Peak	Hour of Street	Adjacent
				Tips	Total	In	Out	Total	In	Out
Total Trips				A 100						
Single Family, Detached	50	DU (533	40	10	30	52	33	19
Single Family, Attached	140	DU (1,016	67	21	46	80	46	34
Shopping Center (> 150k SF)	225,000)		11,740	266	165	101	1,012	486	526
		Subtota	I	13,289	373	196	177	1,144	565	579
								2 -		
Internal Capture	Daily	AM	PM							
Retail	3.0%	0.8%	5.7%	352	2	1	1	58	22	36
Residential	22.7%	22.7% 1.9% 43.9%		352	2	1	1	58	36	22
Overall Development	5.3%	1.1%	10.1%	704	4	2	2	116	58	58
Pass-By Traffic	Daily	AM	PM	>						
Shopping Center (>150k SF)	29.0%	29.0%	29.0%	3,303	76	38	38	277	138	139
10% of Adjacent Street	-			2,956	228	114	114	266	133	133
	Pa	ss-by utili	zed	2,956	76	38	38	266	133	133
Total Net New Trips				9,629	293	156	137	762	374	388

Note 1: Trip Generation and internal capture were derived using the ITE Trip Generation Manual (11th Ed) and ITE Trip Generation Handbook (3rd Ed).

Note 2: Pass-by was calculated using the ITE Trip Generation Manual (11th Ed) and capped at 10% of adjacent street background traffic on CR 225A and US 27 using turning movement count data collected at the intersection on 08/29/2024 during the AM and PM peak hours. This guidance is per the FDOT Multimodal Transportation Site Impact Handbook (2023, Chapter 4.6.6.6).

Single-Family Detached Housing [ITE 210]

Daily Ln(T) = 0.92*Ln(X) + 2.68 (X is Number of Dwelling Units)

AM Peak Hour of Adjacent Street Ln(T) = 0.91*Ln(X) + 0.12 (X is Number of Dwelling Units; 26% in, 74% out)

PM Peak Hour of Adjacent Street Ln(T) = 0.94*Ln(X) + 0.27 (X is Number of Dwelling Units; 63% in, 37% out)

Single-Family Attached Housing [ITE 215]

Daily T = 7.62*(X) - 50.48 (X is Number of Dwelling Units)

AM Peak Hour of Adjacent Street T = 0.52*(X) - 5.70 (X is Number of Dwelling Units; 31% in, 69% out)

PM Peak Hour of Adjacent Street T = 0.60*(X) - 3.93 (X is Number of Dwelling Units; 57% in, 43% out)

Shopping Center (>150k SF) [ITE 820]

Daily T = 26.11*(X) + 5863.73 (X is 1000 Sq. Ft. GLA)

AM Peak Hour of Adjacent Street T = 0.59*(X) + 133.55 (X is 1000 Sq. Ft. GLA; 62% in, 38% out)

PM Peak Hour of Adjacent Street Ln(T) = 0.72*Ln(X) + 3.02 (X is 1000 Sq. Ft. GLA; 48% in, 52% out)

7/18/25

PROJECT TRIP DISTRIBUTION

The project's trip distribution was derived using the Central Florida Regional Planning Model (CFRPM v7), which is based on the Florida Standard Urban Transportation Planning Model. The FDOT provided model was reviewed against the committed improvements in the surrounding area, the following roadways were verified or updated to generate this development's trip distribution:

 NW 49th Street – extended the 2-lane roadway from CR 225A to NW 44th Avenue (Marion County TIP Project Number/FM 4352092 – construction phase)

kimley-horn.com

1700 SE 17th Street, Suite 200, Ocala, Florida 34471

352 438 3000

Kimley » Horn

Page 3

- CR 225A/NW 70th Avenue/SW 80th Avenue updated NW 49th Street to SR 40 (Marion County TIP Project C22, 2024/25 and SW 38th Street to SW 90th Street (Marion County TIP Project C20, 2025/26) to 4-lane roadways.
- SW 49th Avenue 4 lane divided roadway from SW 66th Street to SW 42nd Street Flyover (Marion County TIP Project C17, 2024/25), Marion Oaks Trail to SW 95th Street (Marion County TIP Project C18, 2024/25), and Marion Oaks Manor to 0.7 miles south of CR 484 (Marion County TIP Project C19, 2024/25)
- NW/SW 44th Avenue 4 lane divided roadway from SR 200 to US 27 (TIP R17/R18, 2026-2030).
 Portions of this roadway are under construction, already completed, or have existing 2-lane sections

The study will evaluate two access scenarios. Scenario 1 includes a right-in/right-out connection to US 27 at the existing full median opening serving the site and a directional median opening connection to US 27 at the east end of the project, and Scenario 2 includes a right-in/right-out connection to US 27 at the existing full median opening serving the site and a full median opening connection to US 27 at the east end of the project.

The attached **Figures 2 and 3** illustrate the project location, trip distribution and volumes at the project driveways. The CFRPM model outputs are also provided as an attachment.

STUDY AREA

The study area, which is illustrated in the attached **Figure 1**, was determined based on the Marion County TIA Guidelines, which states that roadway segments with a 3% or greater project impact to the peak hour directional service volume are considered significantly impacted. Significantly impacted roadway segments, plus one segment beyond, were included in the study area per the Marion County TIA Guidelines.

The project impact was calculated as the PM peak hour net new traffic from the development multiplied by the maximum trip distribution on the segment, divided by the peak hour peak direction service volume. The peak hour peak direction service volumes were obtained from the Ocala Marion Transportation Planning Organization (TPO) Congestion Management Process (CMP) and FDOT Quality/Level of Service Tables (2020 for non-state roads, 2023 for state roads). The project impact calculations are provided in the attached **Table 2**. Excerpts from the Ocala Marion TPO CMP are provided in the attachments.

The following study area roadway segments will be evaluated during the PM peak hour:

- US 27 NW 80th Avenue to CR 225A (< 3% impact, one segment beyond)
- US 27 CR 225A to NW 60th Avenue
- US 27 NW 60th Avenue to NW 49th Avenue
- US 27 NW 49th Avenue to NW 44th Avenue
- US 27 NW 44th Avenue to I-75
- US 27 I-75 to NW 27th Avenue
- US 27 NW 27th Avenue to NW MLK Jr Avenue (< 3% impact, one segment beyond)
- CR 225A US 27 to SR 40 (< 3% impact, adjacent segment)

Kimley»Horn

Page 4

The following major intersections on significantly impacted roadway segments will be included in the study area and evaluated during the AM peak hour and PM peak hour in the forthcoming traffic study:

- CR 225A/NW 70th Avenue at US 27 (signalized)
- NW 60th Avenue at US 27 (signalized)
- NW 49th Avenue at US 27 (signalized)
- NW 44th Avenue at US 27 (signalized)
- US 27 at I-75 SB Ramp (signalized)
- US 27 at I-75 NB Ramp (signalized)

In addition, the site access locations on CR 225A/NW 70th Avenue and US 27 will be evaluated for two access scenarios, as described in more detail below.

The project impact and study area are consistent with the November 2024 approved traffic study.

EXISTING CONDITIONS INVENTORY

An existing conditions inventory for the adjacent roadway network is included in the attached **Table 2**. The existing conditions inventory includes the daily service volume, existing Annual Average Daily Traffic (AADT), Volume to Maximum Service Volume (V/MSV), and Level of Service (LOS). The daily service volume and AADT were obtained from the Ocala Marion TPO CMP Database (2023).

SITE ACCESS

Site access to the development is proposed via the following access connections:

- Conversion of the existing full access median opening on US 27 to a right-in/right-out driveway opening +/- 750 feet east of CR 225A/NW 70th Avenue. (Scenarios 1 and 2)
- A new directional median opening on US 27 east of the existing full median opening for the site, generally in the location of an existing full median opening. (Scenario 1)
- A new full access connection to US 27 east of the existing full median opening for the site, generally in the location of an existing full median opening. (Scenario 2)
- A proposed right-in/right-out driveway on CR 225A/NW 70th Avenue located +/- 675 feet south of US 27. (Scenarios 1 and 2)
- A full access driveway on CR 225A/NW 70th Avenue aligned with the northern Marion County Fire Rescue Station 20 driveway +/- 1,100 ft south of US 27. (Scenarios 1 and 2)
- The existing right-in/right-out connection to CR 225A/NW 70th Avenue just south of US 27 will be removed once the existing uses are redeveloped or has interconnection with new access points to NW 70th Avenue consistent with the approved PUD conditions.

The need for new ingress turn lanes or lengthening of existing turn lanes at the proposed access connections will be evaluated using National Cooperative Highway Research Program (NCHRP) 457 criteria, Florida Department of Transportation (FDOT) criteria, and/or the Marion County Land Development Code. The project driveways will also be evaluated using the Synchro 12 software package.

The proposed trip distribution and project traffic volumes at the site access locations are illustrated in the attached **Figures 2** and **3**.

Kimley » Horn

Page 5

MULTIMODAL CONNECTIVITY

The traffic study will include a discussion of available pedestrian and bicycle facilities adjacent to the site, and proposed connectivity from the development to the surrounding pedestrian and bicycle network. A listing of transit routes adjacent to the site, if any, will be provided.

PLANNED IMPROVEMENTS

The Ocala Marion TPO 2045 Long Range Transportation Plan (LRTP), the Ocala Marion TPO Transportation Improvement Program (TIP), the Marion County TIP, and the FDOT Five-Year Work Program were reviewed to identify planned or programmed capacity improvements within the project study area. The following projects were identified within the study area:

 CR 225A / NW 70th Avenue / NW/SW 80th Avenue – NW 49th Street to SR 40 (Marion County TIP Project C22, 2024/25)

The service volumes used for the study area determination shown in **Table 2** consider the above planned and programmed improvements.

VOLUME DEVELOPMENT

AM peak period (7 AM - 9 AM) and PM peak period (4 PM - 6 PM) turning movement count data collected on August 29th, 2024 (within one year and while schools are in session) from the previous study will be utilized for this study. Turning movement counts were collected at the following locations:

- CR 225A/NW 70th Avenue at US 27
- NW 60th Avenue at US 27
- NW 49th Avenue at US 27
- NW 44th Avenue at US 27
- US 27 at I-75 SB Ramp
- US 27 at I-75 NB Ramp
- Existing median opening on US 27 east of CR 225A
- Existing driveway on CR 225/NW 70th Avenue at the Marion County Fire Station / future access connection

The observed turning movement counts will be adjusted to peak season using the 2024 peak season conversion factors (minimum 1.0) published by FDOT. The existing peak season volumes will be adjusted to background traffic by applying a background growth rate, with vested traffic added. Vested traffic, if any, provided by Marion County will be added to the background traffic growth. Project traffic will be added to background traffic to generate future buildout traffic volumes.

An annual area wide growth rate of 1.36% was calculated by averaging the most recent growth rates from the 2025 TPO growth rates, 2023 CMP growth rates, and 5-year growth rates using FDOT Historical Traffic Count data. Due to the calculated rate being lower than the growth rate from the previous study, the 2.56% rate from the previous approved study will be utilized to adjust the existing intersection volumes to future background traffic volumes. The calculated area wide growth rate is provided in the attached **Table 3**.



Page 6

The PM peak hour approach and departure volumes observed from the intersection turning movement counts will be utilized for existing roadway segment volumes. The segment specific averaged TPO growth rates and CMP growth rates are proposed for adjusting the existing roadway segment volumes to background traffic volumes. A minimum 1% annual background growth rate will be applied. Vested development, if provided by Marion County, will be included in the background traffic calculations. Project traffic will be added to the background traffic to obtain buildout traffic volumes.

Excerpts from Ocala Marion CMP and Ocala Marion Traffic Counts Report are provided in the attachments.

OPERATIONAL ANALYSIS

The study area intersections will be evaluated using the *Synchro* software package, which is based on Highway Capacity Manual methodologies. The study area intersections will be evaluated during the AM peak hour and PM peak hour traffic conditions for existing, future background, and future buildout conditions.

The existing traffic conditions analysis and the future background (without project) traffic conditions analysis will be evaluated assuming the existing intersection geometries and traffic controls. Improvements necessary to accommodate future background (without project) or buildout traffic conditions will be identified within the report.

Study area roadway segments will be evaluated for PM peak hour, peak direction traffic conditions. The existing, future background (without project), and future buildout (with project) peak hour, peak direction volumes will be compared against the allowable service volumes in **Table 2**.

The proposed methodology is consistent with the prior approved traffic methodology and traffic study for the site. The changes to the prior approved methodology include an updated development program and trip generation, application of new published peak season conversion factors, and updated buildout year. Two site access scenarios will be evaluated; Scenario 1 is consistent with Scenario 2 of the approved traffic study.

Please do not hesitate to call to discuss any questions or comments during your review.

Sincerely,

KIMLEY-HORN

Amber L. Gartner, P.E.

Attachments: Conceptual PUD Plan

ITE Trip Generation Excerpts

CFRPM Model Output

Figures Tables

Ocala Marion TPO CMP and Traffic Count Excerpts

CC: File

K:\OCA_Civil\042934006-Golden Hills PUD\TPTO\2025 update\Methodology\S1\doc\Lcz250723alg - Martingale PUD Traffic Study Methodology.docx

kimley-horn.com

1700 SE 17th Street, Suite 200, Ocala, Florida 34471



Martingale PUD Revision – Traffic Study Methodology 042934007

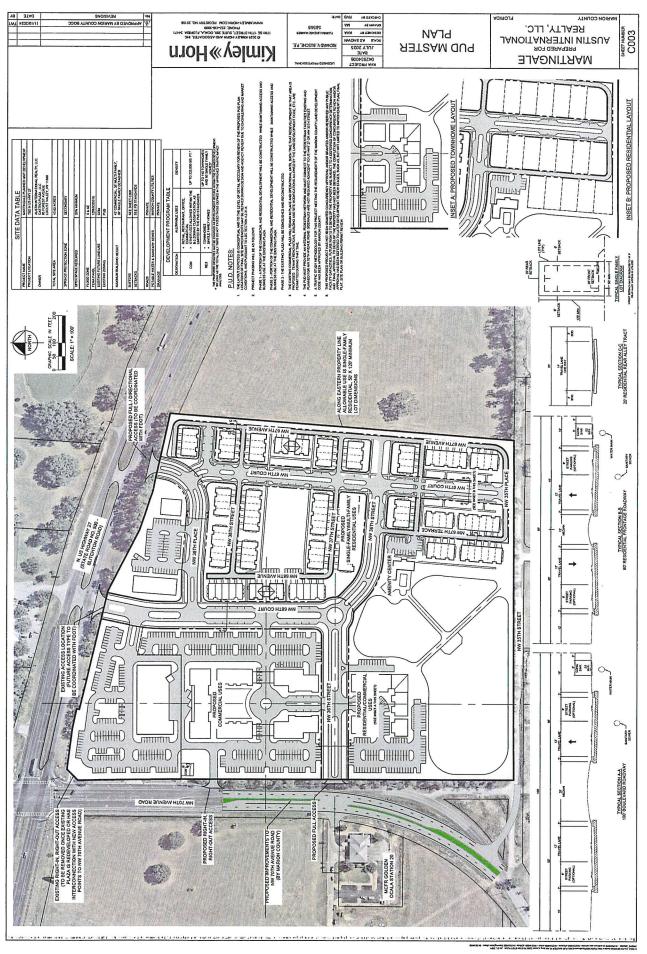
ATTACHMENTS





Martingale PUD Revision – Traffic Study Methodology 042934007

CONCEPTUAL PUD PLAN





Martingale PUD Revision – Traffic Study Methodology 042934007

ITE TRIP GENERATION EXCERPTS

Land Use: 210 **Single-Family Detached Housing**

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates based on a small sample of sites are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 251), and higher than those for senior adult housing -- single-family (Land Use 251). Further analysis of this housing type will be conducted in a future edition of Trip Generation Manual.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/tripand-parking-generation/).

For 30 of the study sites, data on the number of residents and number of household vehicles are available. The overall averages for the 30 sites are 3.6 residents per dwelling unit and 1.5 vehicles per dwelling unit.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Arizona, California, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Jersey, North Carolina, Ohio, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, and West 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, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079

Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units On a: Weekday

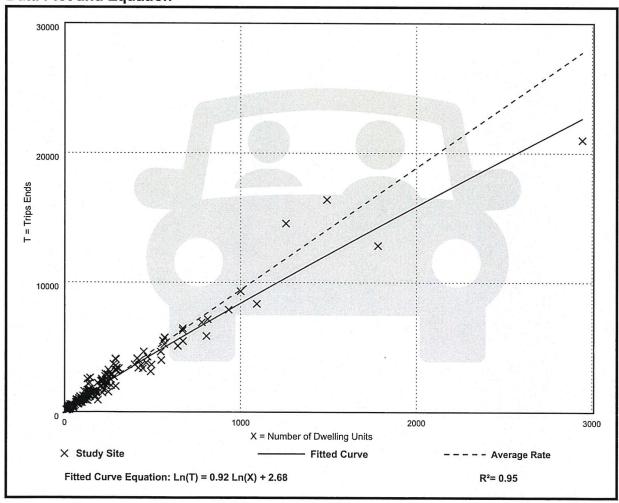
Setting/Location: General Urban/Suburban

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





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.

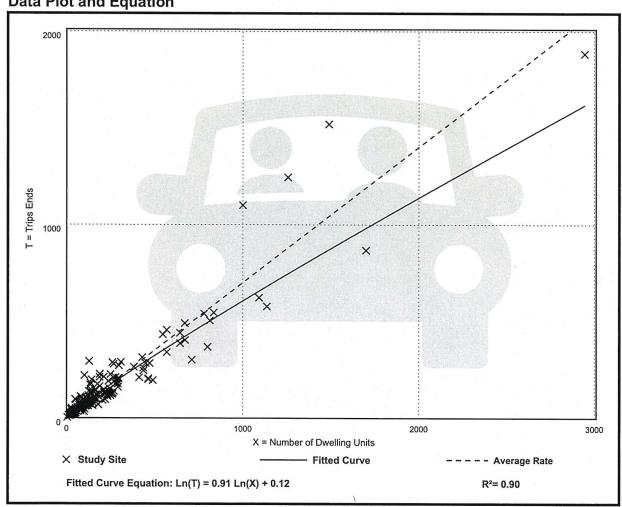
Setting/Location: General Urban/Suburban

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



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.

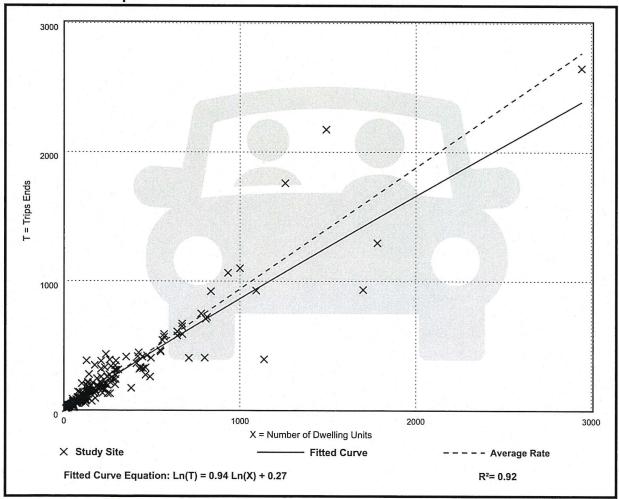
Setting/Location: General Urban/Suburban

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





Land Use: 215 Single-Family Attached Housing

Description

Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.

Additional Data

The database for this land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/tripand-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Utah, Virginia, and Wisconsin.

Source Numbers

168, 204, 211, 237, 305, 306, 319, 321, 357, 390, 418, 525, 571, 583, 638, 735, 868, 869, 870, 896, 912, 959, 1009, 1046, 1056, 1058, 1077



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

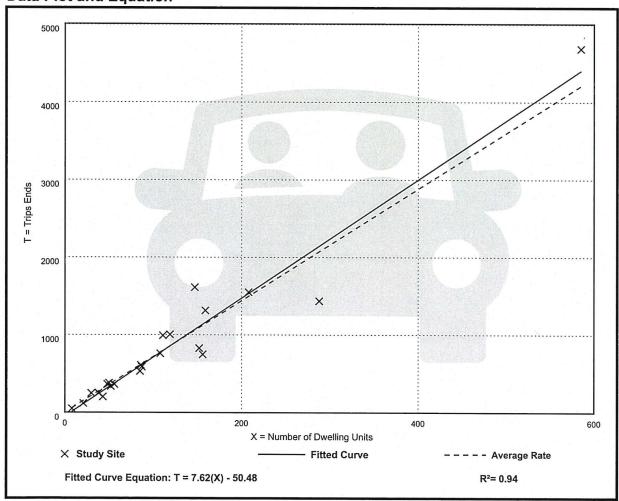
Setting/Location: General Urban/Suburban

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



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

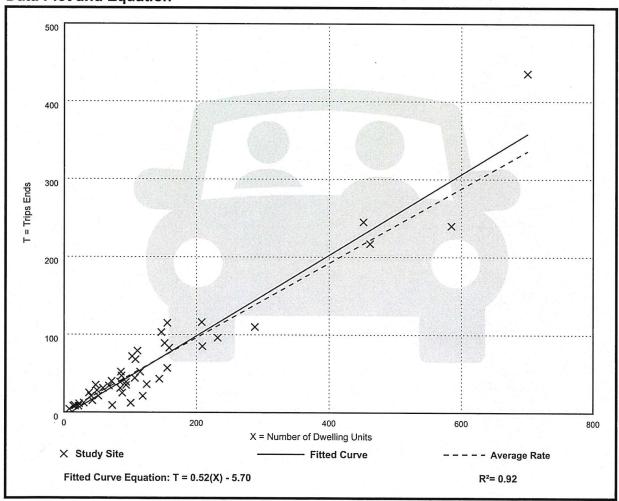
Number of Studies: 46

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





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.

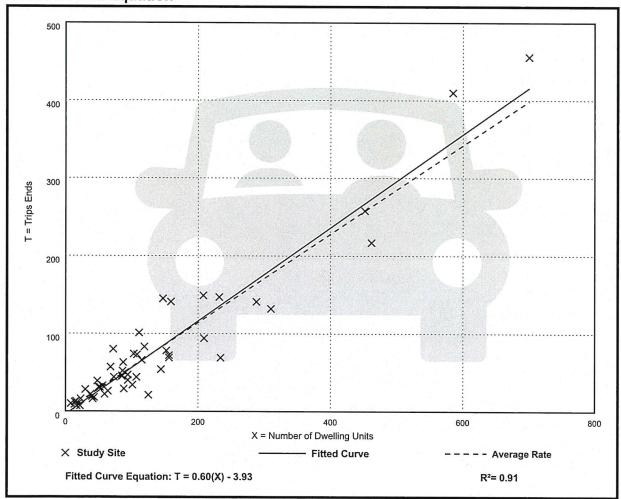
Setting/Location: General Urban/Suburban

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



Land Use: 820 Shopping Center (>150k)

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has at least 150,000 square feet of gross leasable area (GLA). It often has more than one anchor store. Various names can be assigned to a shopping center within this size range, depending on its specific size and tenants, such as community center, regional center, superregional center, fashion center, and power center.

A shopping center of this size typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants.

A shopping center of this size can be enclosed or open-air. The vehicle trips generated at a shopping center are based upon the total GLA of the center. In the case of a smaller center without an enclosed mall or peripheral buildings, the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between community/regional shopping center and shopping plaza (Land Use 821) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

Shopping plaza (40-150k) (Land Use 821), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Additional Data

Many shopping centers—in addition to the integrated unit of shops in one building or enclosed around a mall—include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied include peripheral buildings, it can be assumed that some of the data show their effect.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky,



Shopping Center (>150k) (820)

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

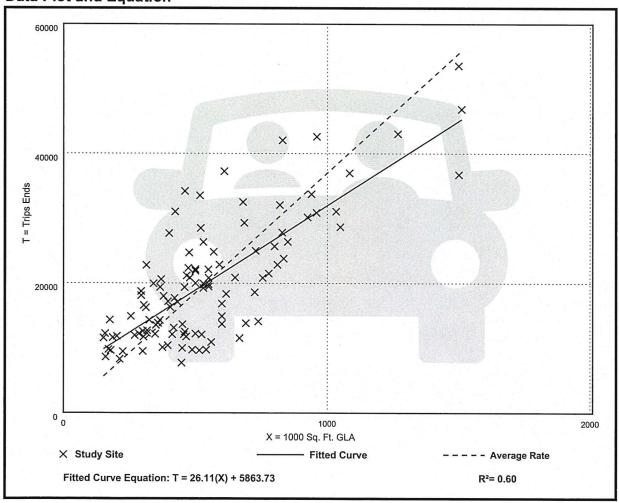
Setting/Location: General Urban/Suburban

Number of Studies: 108 Avg. 1000 Sq. Ft. GLA: 538

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.01	17.27 - 81.53	12.79





Shopping Center (>150k) (820)

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.

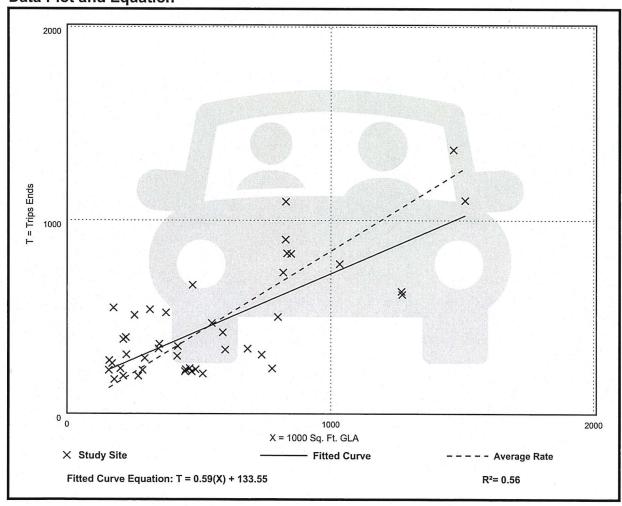
Setting/Location: General Urban/Suburban

Number of Studies: 44 Avg. 1000 Sq. Ft. GLA: 546

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.84	0.30 - 3.11	0.42



Shopping Center (>150k) (820)

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.

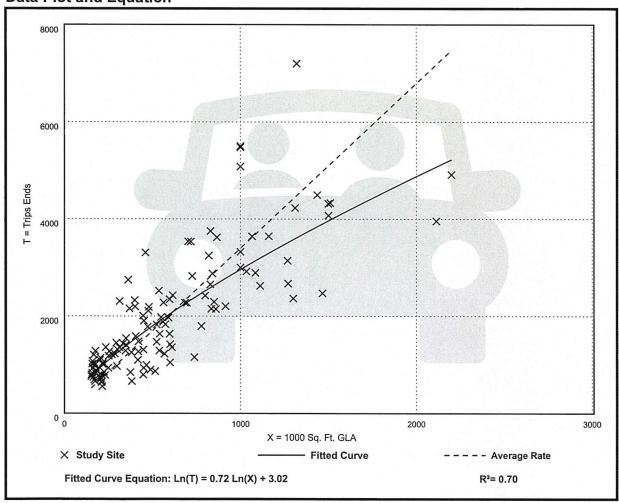
Setting/Location: General Urban/Suburban

Number of Studies: 126 Avg. 1000 Sq. Ft. GLA: 581

Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.40	1.57 - 7.58	1.26

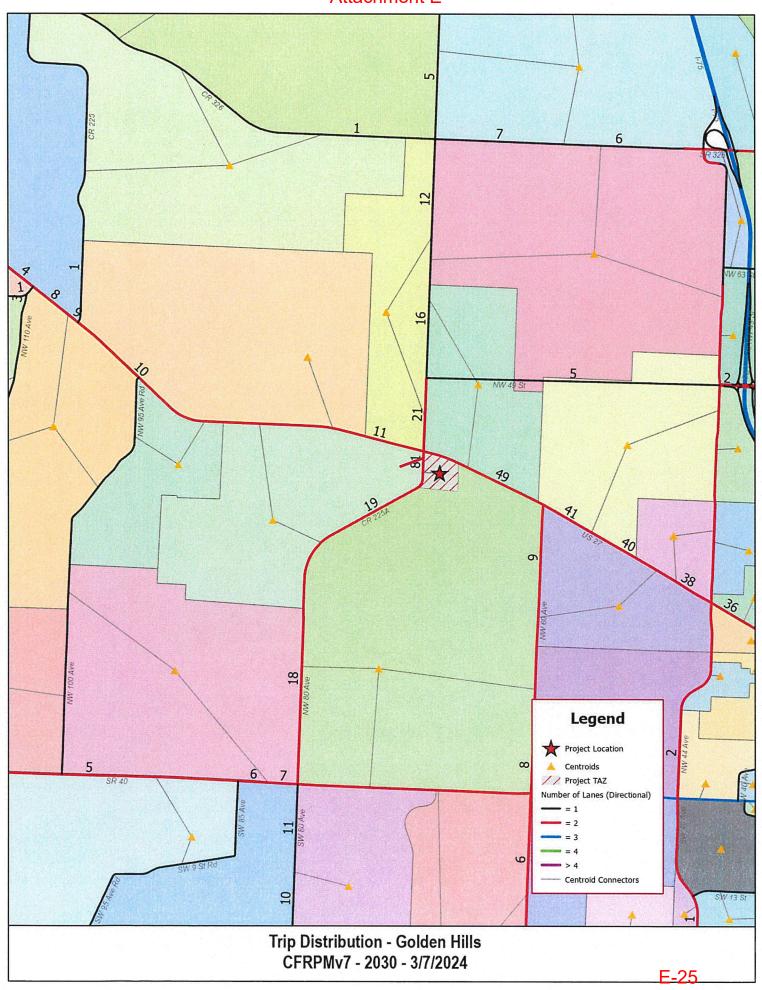


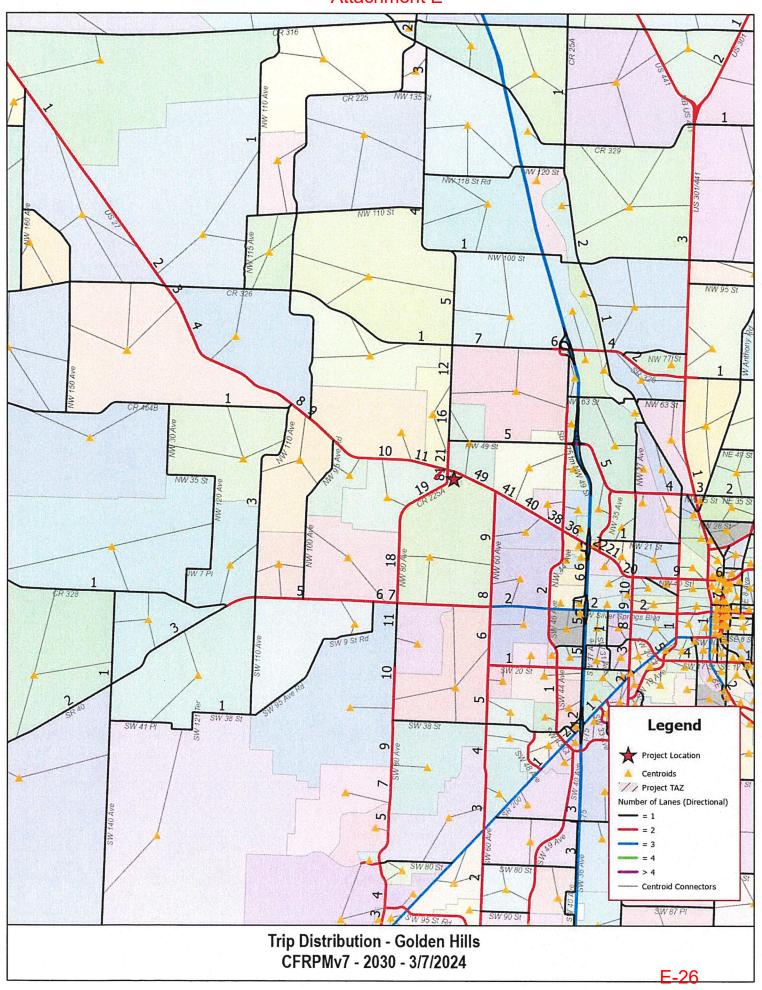




Martingale PUD Revision – Traffic Study Methodology 042934007

CFRPM MODEL OUTPUT

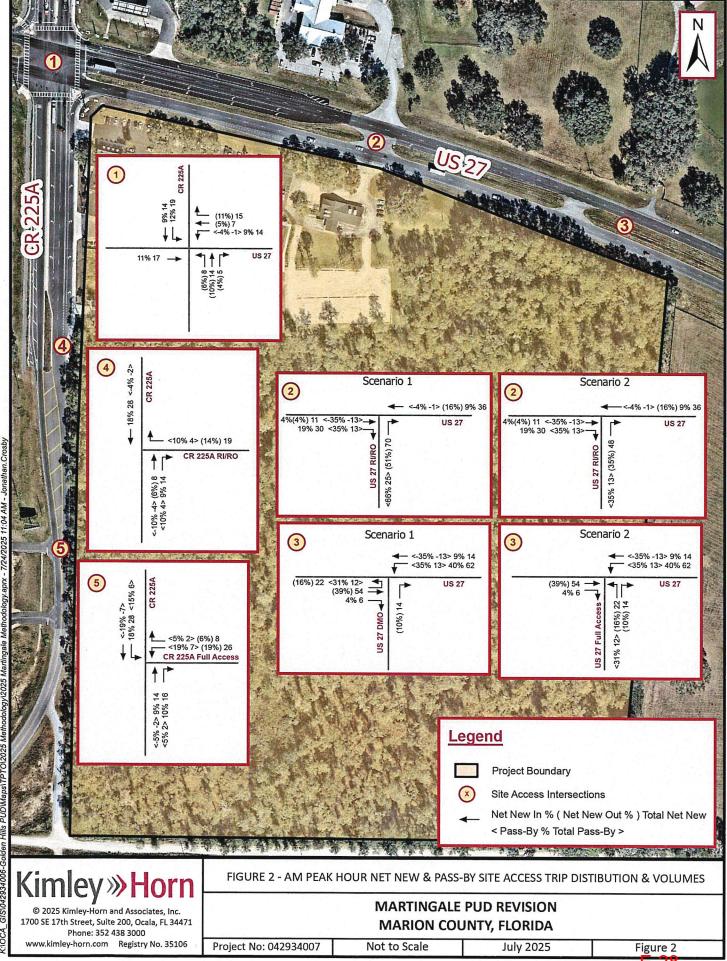




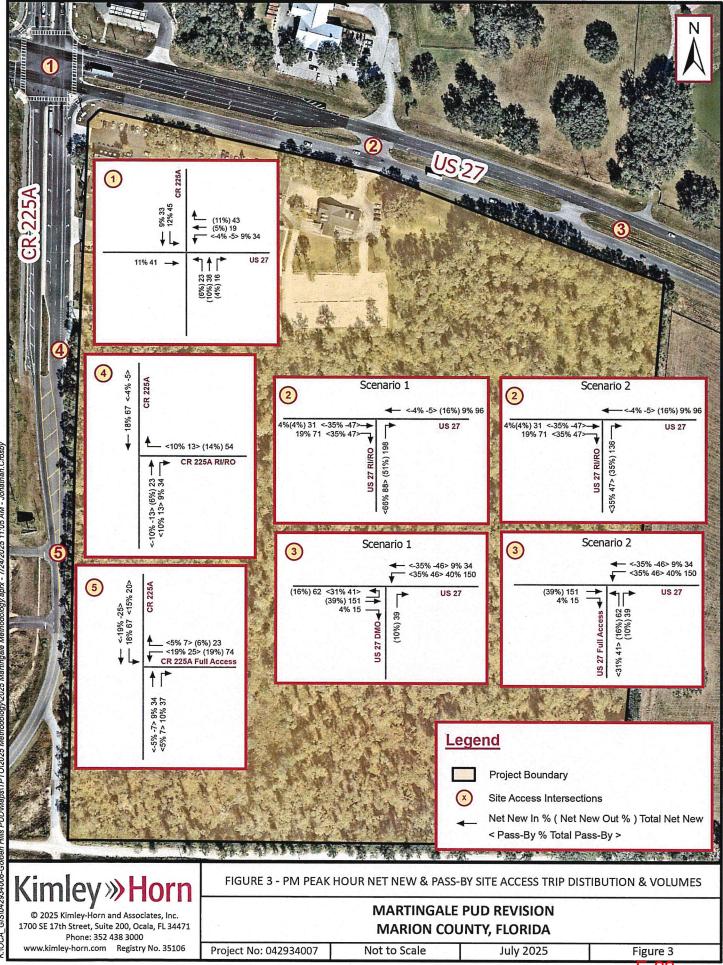


Martingale PUD Revision – Traffic Study Methodology 042934007

FIGURES



--28



E-29



Martingale PUD Revision – Traffic Study Methodology 042934007

TABLE 2 – STUDY AREA DETERMINATION

Kimley»Horn

							2000	NOADWAL ALIMBORES	Contract College					-			THE RESIDENCE OF THE PARTY OF T					
Roadway						Number	Number	2023 Delly :	2023 Pk. Hr.	2028 Delly	2028 Pk. Hr.						Percent Project	Project Traffic	reffic			
From	70	TPO CMP Station	FDOT Classification ² Area Type	Area Type	Adopted LOS	of Lanes (2023)	of Lanes (2028)	Service	Dir. Service Volume	Service	Dir. Service Volume	TPO CMP TPO Counts Growth Rate Growth Rate	TPO Counts Growth Rate	AADT 1	V/MSV	1001	Traffic Assignment 3	NB / EB	SB / WB	Project % Impact	Significant Impact? 4	Include in Study Area? 5
US 27																						
NW 80 AV	CR 225A	6420	2	Rural	U	4		45,800	2,390	1	ı	1.00%	1.40%	13,300	0.29	8	11.0%	42	43	1.80%	1	YES
CR 225A	NW 60 AV	6430	8	Urban	0	4		55,700	2,910	ı	1	1.00%	1.40%	18,100	0.32	8	49.0%	192	185	6.60%	YES	YES
NW 60 AV	NW 49 AV	6440	0	Urban	0	4		55,700	2,910	Ų.	,	1.00%	0.10%	18,100	0.32	8	41.0%	191	155	5.53%	YES	YES
NW 49 AV	NW 44 AV	6450	۵	Urban	٥	4	1	55,700	2,910	1	1	1.00%	0.10%	21,700	0.39	8	40.0%	157	151	5.40%	YES	YES
NW 44 AV	1-75	6460	2	Urban	O	4		55,700	2,910	1	1	1.00%	0.10%	21,700	0.39	8	36.0%	141	136	4.85%	YES	YES
1-75	NW 27 AV	6490	g	Urban	0	4	,	38,430	1,901	1		1.00%	1.20%	21,200	0.55	U	23.0%	06	87	4.73%	YES	YES
NW 27 AV	NW MARTIN L KING AV	6500.0	GG	Urban	0	4	1	38,430	1,901	1	1	1.00%	0.70%	23,700	0.62	U	10.0%	39	38	2.05%	ı	YES
ave from Well with ave / NW/sw and ave	NW/SW 80th Ave																					
US 27	NW 49 ST	1050	NS-SC-C2	Rural	O	7	4	10,224	533	077,79	3,360	1.00%	3.30%	7,100	69.0	U	21.0%	82	6/	2.44%	ı	1
SR 40	US 27	3510	NS-UC-C2	Urban	ш	2	4	29,340	1,449	35,820	2,518	1.00%	12.20%	7,400	0.25	8	19.0%	77	74	2.94%	1	YES
SW 38 ST	SR 40	6260.4	NS-UC-C2	Urban	ш	2	,	29,340	1,449		,	1.67%	3.20%	8,900	0.30	8	11.0%	45	43	2.97%	,	:
NW / SW 60th Ave										w Ç								5				
SR 40	US 27	3480	NS-SA-C1	Urban	ш	4	,	35,820	1,800	1	1	2.38%	4.80%	11,100	0.31	U	%0.6	34	32	1.94%	1	1
SW 20 ST	SR 40	6190	NS-SA-C1	Urban	w	4	1	35,820	1,800	1	1	4.10%	1	16,000	0.45	U	9,0.9	23	53	1.28%	,	1
NW 49th St																						
CR 225A	NW 60 AV	8060	NS-SA-C1	Urban	٥	7	;	1		16,700	800	1.00%			1		2.0%	20	19	2.50%	1	1
NW 60 AV	NW 44 AV	8065	NS-SA-C1	Urban	٥	7	1	1	ı	16,700	800	1.00%			1	1	2.0%	70	19	2.50%	ť	1
NW 44 AV	NW 35 AV	7737.1	NS-SA-C1	Urban	ш	4	4		1	37,600	1,900	1.00%	1	.1	1	1	5.0%	20	19	1.05%	1	

Lin the 2023 CMP service volumes for state and non-state maintained roads were derived using the 2023 and 2020 FDOT Quality/Level of Service Handbook. For the purpose of determining the roadway segment service volumes in the Ocala Maxion TPO Database, roadway segments were assigned a content dearstification (state roads) or categorized and roads as 200 FDOT Quality/Level of Service Handbook. For the purpose of determining the roadway segment service volumes in the Ocala Maxion TPO Batabase, roadway segments were assigned a content dearstification (state roads) or categorized and roads as 200 FDOT Quality/Level of Service Handbook. For the purpose of determining the roadway segment service volumes for service and roads as 200 FDOT Quality/Level of Service Handbook. For the purpose of determining the roadway segment service volumes for service and roads as 200 FDOT Quality/Level of Service Handbook. For the purpose of determining the roadway segment service volumes for service and roads as 200 FDOT Quality/Level of Service Handbook. For the purpose of the service volumes for service volumes

The roadway attributes and daily volumes were obtained from the 2023 Ocala Marion TPO CMP Database, 2023 Ocala Marion Traffic Counts Report, and 2020 FDOT Quality/Level of Service Tables.

Project raffic assignment was assigned as the max percentage across the segment based on the trip distribution and assignment.
 Per the Marion County TIA Guidelines roadway segments were considered significantly impacted if the project impact was 3% or greater.
 All significantly impacted roadway segments (project impact x= 3%), plus one segment beyond and adjacent segments, were included in the study area per the Marion County TIA Guidelines

E-31



Martingale PUD Revision – Traffic Study Methodology 042934007

TABLE 3 – GROWTH RATE CALCULATIONS

Table 3: Study Area Growth Rate Calculations

		FDOT Count Station	2024 AADT ¹	2019 AADT ¹	Five-Year FDOT Growth Rates	2023 CMP Growth Rates	2025 TPO Growth Rates
Roadway	From/To						
US 27				-		H 2.	
	NW 80 AV to CR 225A	360485	18,500	16,900	1.83%	1.00%	1.40%
	CR 225A to NW 49 AV	360485	18,500	16,900	1.83%	1.00%	1.40%
	NW 49 AV to I-75	360459	21,000	21,000	0.00%	1.00%	0.10%
	I-75 to NW 27 AV	360033	22,000	22,500	-0.45%	1.00%	1.20%
	NW 27 AV to NW MARTIN L KING AV	360384	23,000	22,500	0.44%	1.00%	0.70%
CR 225A / S	SW 80th Ave	×1 1		WITT CONTRACTOR OF THE CONTRAC	x 1 1 1	u e	
	SR 40 to US 27	368000	7,500	6,800	1.98%	1.00%	12.20%
	Weighted Average Growth	Rates ²			1.37%	1.00%	1.70%
	Final Growth Rate ³					1.36%	
	Previous Study Growth Rate (To I	oe Utilized) 4				2.56%	

Notes:

- 1. The AADT's were derived from FDOT's Florida Traffic Online Database.
- 2. Weighted average is the summation of (AADT x Growth Rate) divided by the summation of AADT (for growth rates > 0%).
- 3. The final calculated growth rate is an average of the weighted growth rates from each of the 3 data sources (FDOT, CMP, TPO).
- 4. The final calculated growth rate is less than the growth rate utilized in the previous study; thereofore, the growth rate from the prior study will be utilized.

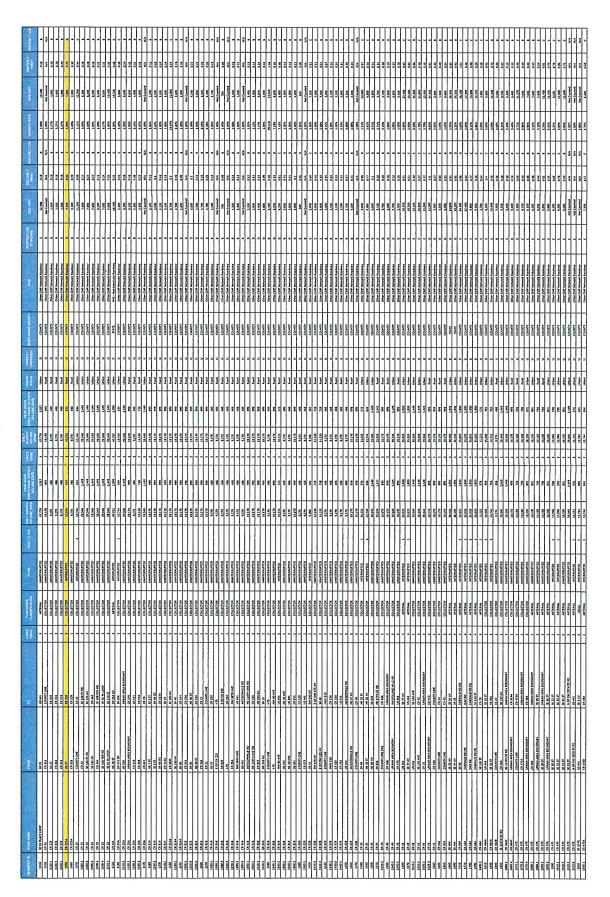
K:\OCA_Civil\042934006-Golden Hills PUD\TPTO\2025 update\Methodology\\$1\xls\[methodology\\$1_Martingale Update.xlsm]GR

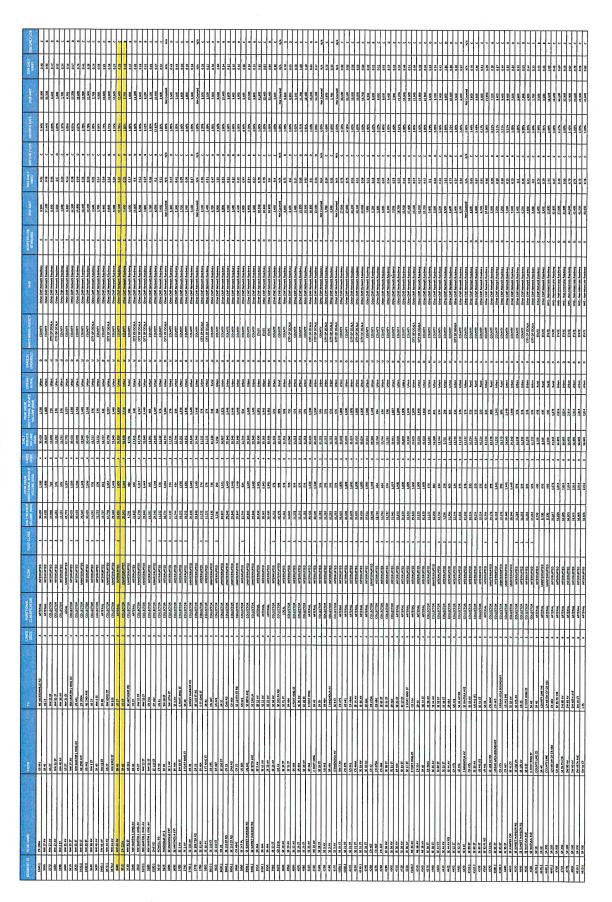
7/17/2025

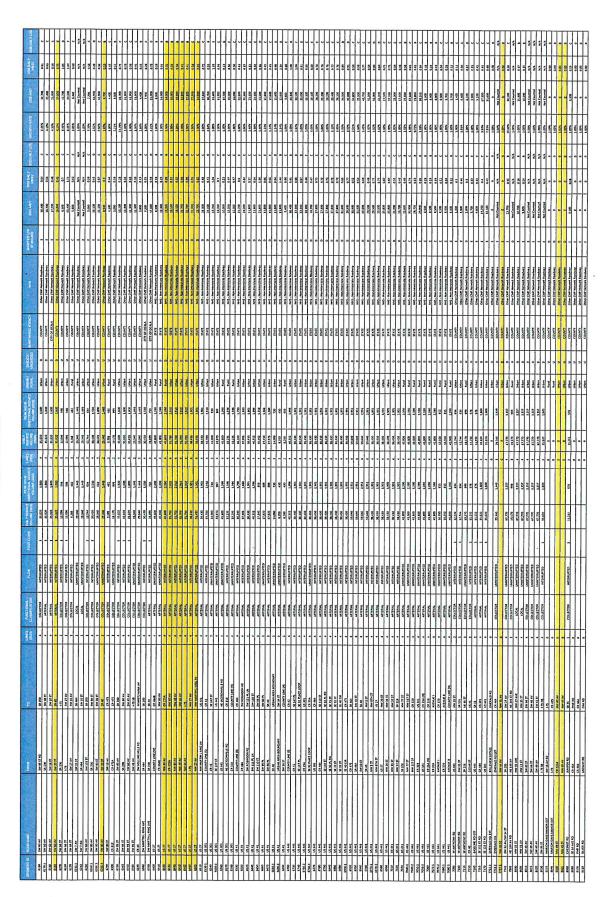


Martingale PUD Revision – Traffic Study Methodology 042934007

OCALA MARION TPO CMP AND TRAFFIC COUNTS REPORT EXCERPTS







						71500																		
Ave Annual Growth Rate (%)		N/A	0.2%	-8.6%	-2.4%		10.0%		-2.9%	-7.7%	3.3%	9.1%		10.9%		-0.3%	2.1%	-4.5%	12.6%	-0.4%		4.5%	13.9%	-0.7%
2024		10,400	10,700	5,300	6,200		1,400		2,900	5,300	009'2	2,500		3,300		5,400	6,600	3,600	3,600	2,300		2,900	5,400	2,100
2023		10,000	11,000	5,800	6,800		1,400		3,000	5,300	7,100	2,500		3,100		5,300	7,100	3,700	3,600	2,200		2,500	4,800	2,200
2022		NC	10,000	2,600	009'9		1,400		3,100	5,200	7,000	2,700		2,900		2,700	7,300	3,400	3,100	1,900		4,700	2,000	1,800
2021	はは、数異なり	NC	10,700	5,500	5,700		1,000		2,900	2,000	7,200	4,800		2,700		5,400	5,400	3,700	3,500	2,200		2,600	2,000	2,400
2020	CR 200A (cont.)	9,200	NC	8,000	7,100	CR 225	1,000	CR 225A	3,300	006'2	6,700	2,700	CR 312	2,200	CR 314	5,500	6,500	4,400	2,400	2,400	CR 314A	5,100	3,400	2,300
Count	CR 200	2	3	3	3	D	3	8	3	3	3	3	CF	3	C	3	3	3	3	3	CR	3	3	3
Source		MC	MC	MC	MC		MC		MC	MC	MC	MC		MC		MC	MC	MC	MC	MC		MC	MC	MC
Location		US 441 to Magnolia Avenue	N of SR 326	S of CR 316	S of CR 329		N of US 27		N of CR 326	S of CR 326	N of US 27	N of NW 110th Street		E of CR 475A		W of SR 35	E of SR 35	W of SR 19	N of SR 40	S of SR 40		S of SR 40	E of CR 464C	N of SR 40

e 2 2 2 7 8 1 7	W-t								No.								ti.	No.		2007			_
Ave Annual Growth Rate (%)		%6:0-	5.3%	4.5%		N/A		-0.4%		N/A	N/A		3.9%		4.8%		12.2%		-4.7%		N/A	N/A	N/A
2024		16,200	19,200	2,000		NC		1,800		8,100	10,200		9,400		11,700		7,200		5,800		NC	NC	3,500
2023		18,500	17,800	2,000		200		1,700		9,700	8,900		10,600		12,900		7,600		5,700		NC	NC	3,300
2022		15,400	18,200	1,900		NC		1,900		NC	NC		9,700		10,800		7,300		5,400		2,300	NC	NC
2021	nt.)	17,200	18,700	1,600		1,700		1,600	P	NC	NC		8,700		11,600		7,000		4,800		5,200	NC	NC
2020	venue (cor	NC	15,800	1,700	NW 3rd Street	1,500	NW 21st Street	1,900	NW 35th Avenue Road	NC	NC	NW 44th Avenue	8,200	NW 60th Avenue	10,000	NW 80th Avenue	4,800	NW 110th Avenue	7,800	NW/NE 28th Street	3,300	16,500	NC
Count	NE/SE 36th Avenue (cont.)	2	2	3	NW 3r	3	NW 21	3	NW 35th A	3	3	NW 44t	3	NW 60t	3	NW 80t	3	NW 110t	3	NW/NE 2	3	1	3
Source		OCA	OCA	MC		OCA		OCA		OCA	OCA		MC		MC		MC		MC		OCA	OCA	OCA
Location		SE 24th Street to SE 17th Street	SE 6th Street to Fort King Street	N of NE 97th Street Road		US 441 to Magnolia Avenue		MLK Jr. to NW 27th Avenue		NW 21st Street to NW 35th Street	US 27 to NW 21st Street		12 SU of US 27		N of SR 40		N of SR 40		N of SR 40		US 441 to NW 2nd Avenue	NW 1st Avenue to Jacksonville Road	US 441 to CR 200A

Source Count 2020 Type
MC
MC
MC
MC
MC
MC
MC
MC
MC
MC
MC
MC
SW 95th Street Road/SW 95th Street
MC
MC
MC

N of CR 484 MC	SW 180th / 2 U.S. 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SW 180th Avenue Road 2 3,300	P		THE RESERVE OF THE PERSON NAMED IN		The second secon
		3,300					
			3,000	5,200	3,600	4,000	11.1%
	4 4 4 4 4	US 27					
	4 4 4 4	21,000	21,500	21,500	20,200	21,000	0.1%
	4 4 4	22,500	23,500	23,500	22,000	23,000	0.7%
	4 4	21,000	21,000	21,000	21,400	22,000	1.2%
	4	25,000	26,000	26,000	20,500	21,500	-3.1%
	4	7,800	8,000	006'6	10,300	10,700	8.6%
		17,500	17,900	17,900	17,900	18,500	1.4%
是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	4	7,600	7,800	8,400	10,300	10,700	9.2%
	'n	US 41					
N of SR 40 FDOT	4	11,100	11,300	11,700	12,100	12,500	3.0%
N of Citrus County FDOT	4	21,500	21,500	21,500	20,800	21,500	%0.0
N of CR 484 FDOT	4	21,000	21,000	21,500	21,500	22,500	1.8%
N of CR 484 - Robinson	4	26,000	24,000	24,000	22,500	23,500	-2.4%
	SN	US 301					
N of CR 329 FDOT	4	14,700	15,000	006'6	10,300	10,600	-6.3%
N of SE 118th Place FDOT	4	13,300	13,500	13,100	13,700	14,100	1.5%
N of CR 318 FDOT	4	14,800	15,100	15,100	15,800	14,800	0.1%
N of CR 316 FDOT	4	17,000	19,000	19,000	16,800	17,400	0.9%
N of CR 42 FDOT	4	17,100	17,500	17,500	15,600	16,200	-1.2%
S of CR 42 FDOT	4	19,700	23,000	23,000	29,500	30,500	12.1%
	O.S.	US 441					
0.5 mi N of CR 42 FDOT	4	30,000	31,000	33,000	34,000	35,000	3.9%
S of SR 326 FDOT	4	16,300	16,700	16,500	20,200	21,000	6.9%
S of SR 40 FDOT	4	34,500	35,500	39,500	41,500	41,500	4.8%
S of SR 464 FDOT	4	25,500	26,500	30,000	31,000	32,000	5.9%
N of 92nd Place Road FDOT	4	28,500	29,500	29,500	28,500	29,500	0.9%