

# WEC SPORTS COMPLEX TRAFFIC IMPACT ANALYSIS

MARION COUNTY, FLORIDA

October 2025, Updated January 2026



# PROFESSIONAL ENGINEER CERTIFICATE

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I hereby certify that I am a registered professional engineer in the State of Florida, practicing with Kittelson & Associates, a corporation authorized to operate as a Professional Engineering business by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have approved the World Equestrian Center Sports Complex Traffic Impact Study located in Marion County, Florida dated January 2026.

PROJECT: World Equestrian Center Sports Complex Traffic Impact Study  
LOCATION: Marion County, Florida  
CLIENT: Equestrian Operations, LLC

I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

NAME: Kok Wan Mah  
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DATE: January 13, 2026



Kok Wan Mah

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# WEC Sports Complex Traffic Impact Analysis Marion County, Florida

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Project Number 31336

October 2025, Updated January 2026



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# Section 1

## Introduction

# INTRODUCTION

Kittelson & Associates, Inc. has been retained by Equestrian Operations, LLC to conduct a Traffic Impact Analysis (TIA) for the proposed WEC Sports complex development. The project site consists of an area of approximately 155-acres, located north side of SR 40 and west of NW 87 Court Road in Marion County, Florida.

**Figure 1** illustrates the project location.

The proposed development is planned to include the following facilities:

- Athletic Fields: up to 36 Fields/Courts
  - Twelve (12) Soccer Fields (One of the soccer fields is planned to be a championship stadium that will include up to 5,000 seats)
  - An indoor facility with approximately 18 basketball/volleyball/pickleball courts, and
  - Six (6) baseball fields.
- Hotel: 300 Rooms
- Miniature Golf Course: 18 Holes
- Retail: 17,500 Square Foot
- High Turnover (Sit-Down) Restaurant: 13,500 Square Foot
- Other facilities:
  - One concession and restroom building

Based upon the generated project trips, a Transportation Impact Study (TIS) is conducted for 2030 (the project buildout year) per the MARION COUNTY TRAFFIC IMPACT ANALYSIS GUIDELINES (September 2022).

At the request of Marion County, supplemental analyses for the years 2027 and 2045 were conducted based on the findings of the approved West Marion Transportation Planning Study (Attached in **Appendix E**), completed by Kimley-Horn in September 2023. These analyses assess project-related traffic impacts under projected future conditions and incorporate intersection geometry improvements identified in the 2023 study. Additionally, the 2045 analysis evaluates traffic scenarios both with and without the proposed extension of NW 60th Avenue north of US 27.

## PROJECT DESCRIPTION

The development will be constructed in multiple phases with an anticipated buildout year of 2030. Access to the development will be provided at four locations on SR 40 via:

- a) Directional access (Left-In/Right-In/Right-Out) at approximately 0.5 miles east of SR 40 and NW 100<sup>th</sup> Avenue.
- b) Directional access (Left-In/Right-In/Right-Out) at the intersection of SR 40 and NW 92<sup>nd</sup> Avenue
- c) Full access at the intersection of SR 40 and NW 87<sup>th</sup> Court Road (The intersection will be signalized in the buildout year pending review and approval by FDOT)
- d) Right-In/Right-Out at the intersection of SR 40 and NW 1<sup>st</sup> Street/ SW 85<sup>th</sup> Avenue (maintaining full access for south leg)

These access points with the development location are depicted in the site plan available in **Appendix A**.

## STUDY AREA

The study area was determined using a test for significance documented in the methodology provided as **Appendix B**. The following roadway segments and intersections are included in the analysis:

**Roadway Segment:**

- SR 40
  - US 41 to Urban Area Boundary
  - Urban Area Boundary to SW 140 Avenue
  - SW 140 Avenue to CR 328
  - CR 328 to SW 110 Avenue
  - SW 110 Avenue to SW 85 Avenue
  - SW 85 Avenue to SW 80 Avenue
  - SW 80 Avenue to SW 60 Avenue
  - SW 60 Avenue to SW 52 Avenue
  - SW 52 Avenue to I-75 Ramp (West)
  - I-75 Ramp (West) to I-75 Ramp (East)
  - I-75 Ramp (East) to SW 33 Avenue
  - SW 33 Avenue to SW 27 Avenue
  - SW 27 Avenue to SW Martin L. King Avenue
  - SW Martin L. King Avenue to US 441
- CR 225A
  - SR 40 to US 27
  - US 27 to CR 326
- NW 110 Avenue
  - SR 40 to US 27

**Intersections:**

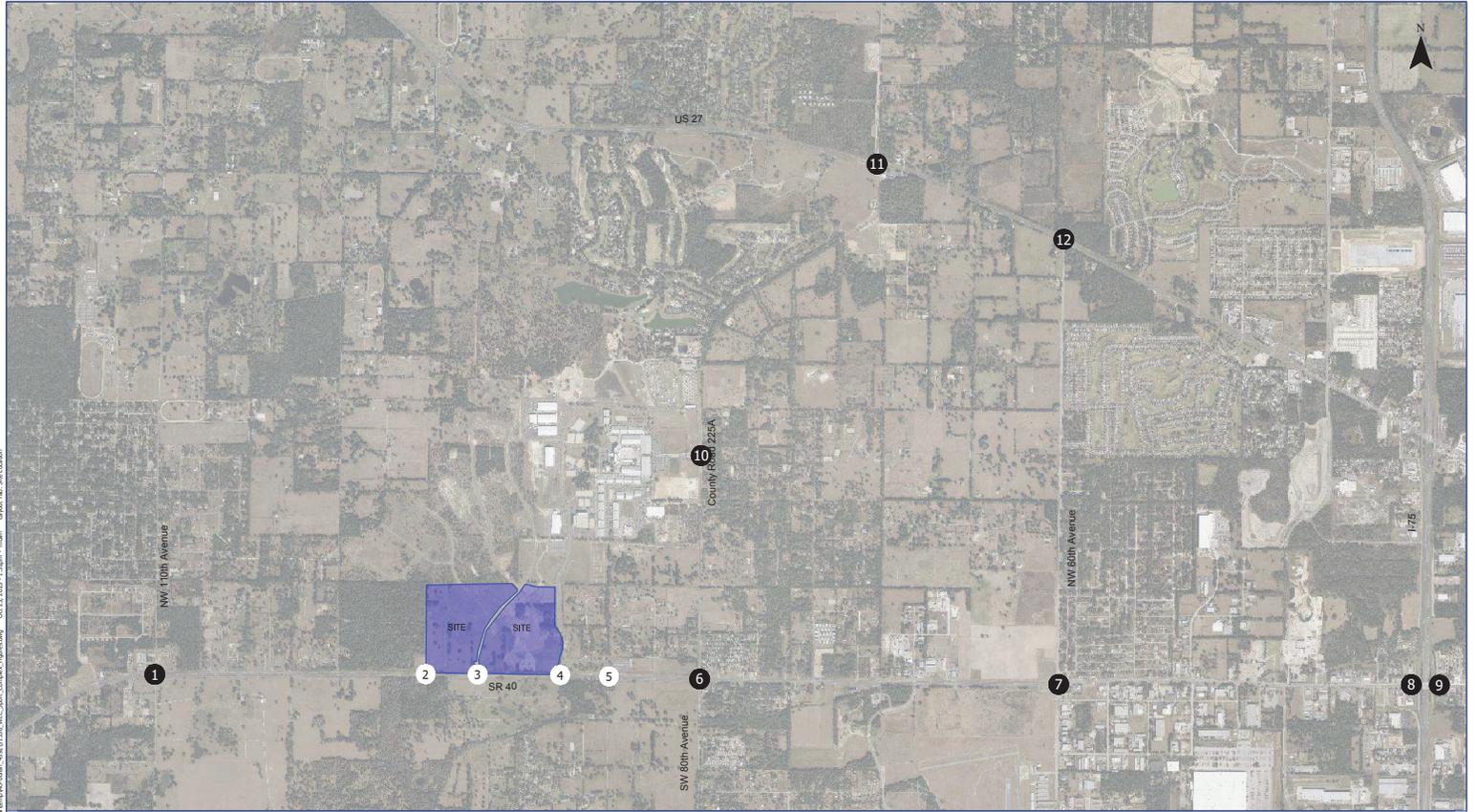
- SR 40 at NW 110th Avenue (Signalized)
- SR 40 at NW 92nd Avenue (Access)
- SR 40 at Western Access
- SR 40 at NW 87th Court Road\* (Access)
- SR 40 at SW 85th Avenue (Access)
- SR 40 at 80th Avenue (Signalized)
- SR 40 at 60th Avenue (Signalized)
- SR 40 at I-75 SB ramp (Signalized)
- SR 40 at I-75 NB ramp (Signalized)
- CR 225A at US 27 (Signalized)
- US 27 at NW 60 Avenue (Signalized)
- NW 80th Avenue at NW 17th Place

(\*) denotes a stop-controlled intersection that is planned to be signalized in the buildout year 2030.

## PLANNED AND PROGRAMMED IMPROVEMENTS

NW 80<sup>th</sup>/70<sup>th</sup> Avenue is programmed to be widened from two to four lanes for the segments from SR 40 to north of US 27. This capacity improvement is forecasted to begin construction in 2026 and last 1.5 years.

Future vested trips will be incorporated into the development of build traffic volumes. The Golden Ocala PUD and the Martingale PUD provided in **Appendix E** will be considered as vested development in this analysis.



- ① - Site Accesses
- - Study Intersections

Site Location  
Ocala, Florida

Figure  
1



## Section 2

### Existing Conditions

# EXISTING CONDITIONS

This section provides a summary of existing transportation conditions within the study area, including roadway geometry, current traffic flow patterns, traffic control systems, and an evaluation of key roadways and intersections.

## DATA COLLECTION

Weekday turning movement counts (TMCs) were collected on Wednesday, August 27, 2025, from 4:00 PM to 6:00 PM, and weekend counts were collected on Saturday, August 30, 2025, from 12:00 PM to 2:00 PM at the following locations:

- SR 40 at NW 110th Avenue
- SR 40 at NW 92nd Avenue
- SR 40 at Western Access
- SR 40 at NW 87th Court Road
- SR 40 at SW 85th Avenue
- SR 40 at 80th Avenue
- SR 40 at 60th Avenue
- SR 40 at I-75 SB ramp
- SR 40 at I-75 NB ramp
- CR 225A at US 27
- US 27 at NW 60 Avenue
- NW 80th Avenue at NW 17th Place

The TMCs were adjusted to account for seasonal variation, using a seasonal factor of 1.06 derived from the FDOT's Florida Traffic Online (FTO) website. The raw TMCs and FDOT Peak Season Category Report are included in **Appendix C**. **Figure 2** and **Figure 3** presents respectively the existing weekday PM and the weekend midday peak hour traffic volumes. Heavy truck percentages were derived from the TMCs and applied to each study intersection for all study periods.

The signal timing data was obtained from Marion County and the City of Ocala (included in **Appendix D**) for the following locations:

- SR 40 at NW 110th Avenue
- SR 40 at 80th Avenue
- SR 40 at 60th Avenue
- SR 40 at I-75 SB ramp
- SR 40 at I-75 NB ramp
- CR 225A at US 27
- US 27 at NW 60 Avenue

## EXISTING ROADWAY CAPACITY ANALYSIS

Kittelson conducted a capacity analysis of the study roadways to quantify the existing level of service (LOS) during the PM peak hour. The capacity analysis shows the operational conditions along the project site adjacent corridors.

The level of service and remaining capacity for each of the study roadways were determined based on the Ocala Marion Transportation Planning Organization (TPO) 2023 Congestion Management Process (CMP) Database is shown in **Appendix C** and was used for existing volumes. A comparison of the peak hour peak

direction (PHPD) roadway traffic volumes was made against the roadway capacities to determine the existing level of service. The existing roadway capacity analysis was performed for the roadway shown in **Table 1**.

In summary, all roadway segments operate at an acceptable Level of Service (LOS) and demonstrate sufficient capacity except the three segments listed below:

- From Urban Area Boundary to SW 140 Avenue with a v/c ratio of 1.10
- From SW 140 Avenue to CR 328 with a v/c ratio of 1.10
- From CR 328 to SW 110 Avenue with a v/c ratio of 1.02





Table 1: Existing Roadway Capacity Analysis

Roadway	Limits	No. of Lanes	Func. Class	LOS Std.	Daily Capacity	Pk Hr Pk Dir Capacity	2024 AADT*	PM PH NB/EB Vol	PM PH SB/WB Vol	v/c
SR 40	US 41 to Urban Area Boundary	2	ARTERIAL	D	14,000	730	8,900	474	371	0.65
	Urban Area Boundary to SW 140 Avenue	2	ARTERIAL	C	8,200	430	8,900	474	371	1.10
	SW 140 Avenue to CR 328	2	ARTERIAL	C	8,200	430	8,900	474	371	1.10
	CR 328 to SW 110 Avenue	4	ARTERIAL	C	19,600	970	18,500	986	772	1.02
	SW 110 Avenue to SW 85 Avenue	4	ARTERIAL	C	36,015	1,785	21,000	1,119	876	0.63
	SW 85 Avenue to SW 80 Avenue	4	ARTERIAL	C	36,015	1,785	21,000	1,119	876	0.63
	SW 80 Avenue to SW 60 Avenue	4	ARTERIAL	D	39,165	1,943	24,500	1,306	1,022	0.67
	SW 60 Avenue to SW 52 Avenue	4	ARTERIAL	D	38,430	1,901	29,500	1,572	1,230	0.83
	SW 52 Avenue to I-75 Ramp (West)	4	ARTERIAL	D	38,430	1,901	29,500	1,572	1,230	0.83
	I-75 Ramp (West) to I-75 Ramp (East)	4	ARTERIAL	D	40,352	1,996	29,500	1,572	1,230	0.79

Roadway	Limits	No. of Lanes	Func. Class	LOS Std.	Daily Capacity	Pk Hr Pk Dir Capacity	2024 AADT*	PM PH NB/EB Vol	PM PH SB/WB Vol	v/c
	I-75 Ramp (East) to SW 33 Avenue	4	ARTERIAL	D	38,430	1,901	31,000	1,652	1,293	0.87
	SW 33 Avenue to SW 27 Avenue	4	ARTERIAL	D	38,430	1,901	31,000	1,652	1,293	0.87
	SW 27 Avenue to SW Martin L. King Avenue	4	ARTERIAL	D	37,905	1,880	22,500	1,199	938	0.64
	SW Martin L. King Avenue to US 441	4	ARTERIAL	D	37,905	1,880	22,000	1,172	918	0.62
CR 225A	SR 40 to US 27	2	COLLECTOR	E	29,340	1,449	7,200	364	284	0.25
	US 27 to CR 326	2	COLLECTOR	D	10,224	533	7,600	384	300	0.72
NW 110 Avenue	SR 40 to US 27	2	COLLECTOR	B	9,270	486	5,800	309	242	0.64

\*Ocala Marion 2025 Traffic Counts Report

Source: Ocala Marion TPO CMP Database (2023); FDOT Traffic Online

## EXISTING INTERSECTION CAPACITY ANALYSIS

The existing conditions of the study intersections were evaluated using the Synchro 12 Software, following the methods outlined in the Highway Capacity Manual. **Figure 4** illustrates the existing lane configurations of the intersections.

In coordination with the Marion County, all the twelve (12) study intersections were evaluated for weekday PM peak hour and weekend midday peak hour. The results of the intersection capacity analysis for existing conditions during the weekday PM peak hour and weekend midday peak hour are summarized in **Table 2**. The detailed Synchro analysis report printouts is included in **Appendix H**.

As shown in **Table 2**, all study intersections operate at an overall Level of Service (LOS) D or better, and all movements have a v/c below 1, except the westbound movement at the intersection of SR 40 and SW 60<sup>th</sup> Avenue.

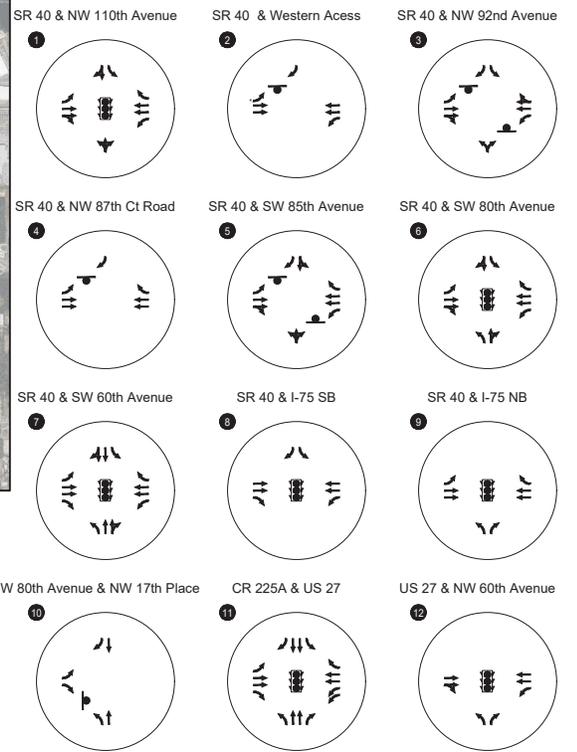
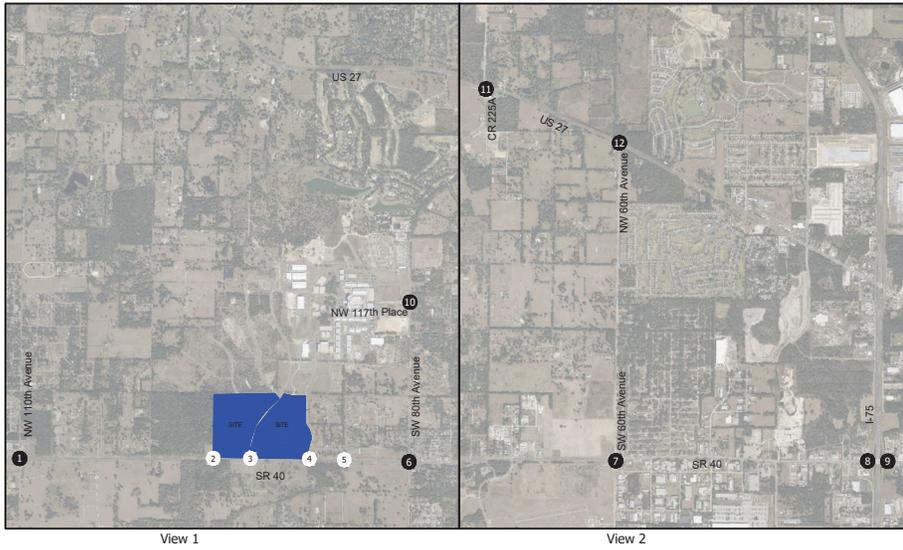
**Table 2: Existing Conditions Intersection Capacity Analysis**

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 – SR 40 at NW 110 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	16.2	14.2	16	22.3	23.8	15.5	14.3	15.3	18.5	19.5
		LOS	B	B	B	C	C	B	B	B	B	B
		v/c ratio*	-	0.58	0.73	0.15	0.42	-	0.52	0.52	0.14	0.32
2 – SR 40 at Western Driveway <sup>a</sup>	Stop Controlled	Delay (s/veh)	-	21.9	15.2	-	-	-	13.5	12.8	-	0
		LOS	-	C	C	-	-	-	B	B	-	A
		v/c ratio*	-	0.02	0.01	-	-	-	0.01	0.00	-	-
3 – SR 40 at NW 92 <sup>nd</sup> Avenue	Stop Controlled	Delay (s/veh)	-	0	9.9	0	0	-	9.4	9.2	0	0
		LOS	-	A	A	A	A	-	A	A	A	A
		v/c ratio*	-	-	0.003	-	-	-	0.001	0.005	-	-
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Stop Controlled	Delay (s/veh)	-	11.7	-	-	14.2	-	9.8	-	-	11.3
		LOS	-	B	-	-	B	-	A	-	-	B
		v/c ratio*	-	0.03	-	-	0.093	-	0.02	-	-	0.04
5 – SR 40 at SW 85 <sup>th</sup> Avenue	Two-way Stop Controlled (TWSC)	Delay (s/veh)	-	11.6	10.2	14.7	50.4	-	9.5	0	15.8	22.3
		LOS	-	B	B	B	F	-	A	A	C	C
		v/c ratio*	-	0.01	0.08	0.15	0.3	-	0.005	-	0.16	0.12
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	44.6	45.9	45.9	38.2	46.1	30.4	28.1	26.2	33.8	43
		LOS	D	D	D	D	D	C	C	C	C	D
		v/c ratio*	-	0.81	0.9	0.83	0.62	-	0.61	0.77	0.77	0.82
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	52.3	45.8	61.4	45.3	56.9	33.2	33.5	31.3	31.4	39.5
		LOS	D	D	E	D	E	C	C	C	C	D
		v/c ratio*	-	0.87	<b>1.16</b>	0.82	0.83	-	0.78	0.86	0.64	0.73
8 - SR 40 at I-75 SB ramp	Signalized	Delay (s/veh)	12.2	15.9	2.9	-	90.2	11.1	14.6	2.2	-	76.4
		LOS	B	B	A	-	F	B	B	A	-	E
		v/c ratio*	-	0.5	0.69	-	0.86	-	0.35	0.42	-	0.82
9 - SR 40 at I-75 NB ramp	Signalized	Delay (s/veh)	19.2	15.6	11.9	91.9	-	10.2	1.1	7.7	80.6	-
		LOS	B	B	B	F	-	B	A	A	F	-
		v/c ratio*	-	0.45	0.51	0.88	-	-	0.29	0.35	0.82	-
10 - NW 80 <sup>th</sup> Avenue at NW 17 <sup>th</sup> Place	Stop Controlled	Delay (s/veh)	-	15	-	8.2	-	-	15.9	-	8.3	-
		LOS	-	B	-	A	-	-	C	-	A	-
		v/c ratio*	-	0.09	-	0.02	-	-	0.08	-	0.09	-

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
11 - CR 225A at US 27	Signalized	Delay (s/veh)	30.2	28.6	32.4	26.2	27.7	29.3	27.4	32.5	26	26.7
		LOS	C	C	C	C	C	C	C	C	C	C
		v/c ratio*	-	0.39	0.57	0.15	0.30	-	0.34	0.57	0.13	0.24
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	38.6	22.8	44.5	65.8	-	22.4	17.8	21.4	50.2	-
		LOS	D	C	D	E	-	C	B	C	D	-
		v/c ratio*	-	0.51	1.18	0.89	-	-	0.39	0.88	0.64	-

\*v/c ratio reported for the highest movement

<sup>a</sup> the driveway is not built yet, and delays reflect U-turns



- \* - U-Turns
- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections

Existing Lane Configurations  
Ocala, Florida | Figure 4



## Section 3

### Future Volume Development

# FUTURE VOLUME DEVELOPMENT

The proposed development is anticipated to be built out by year 2030. Future traffic volumes for the weekday PM peak period and weekend midday peak period for the buildout year were estimated by combining background growth with vested trips and distributed project trips.

In response to Marion County's request, future traffic conditions were estimated for the weekday PM peak period for the years 2027 (at four study intersections) and 2045 (at all study intersections), consistent with the approved West Marion Transportation Planning Study. Weekend conditions were not analyzed because the West Marion study did not include weekend traffic projections, and the supplemental analyses followed the same approach for both 2027 and 2045.

For the 2027 weekday PM analysis, the four intersections included in the West Marion study used its 2027 build volumes as the no-build condition, with project trips from the proposed WEC Sports Complex added to determine build volumes. For the 2045 weekday PM analysis, the same four intersections used the study's 2045 build volumes as the no-build condition, while the remaining eight intersections were projected by applying a 2% annual linear growth to existing traffic counts and then adding project trips. Additionally, the 2045 analysis evaluates traffic scenarios both with and without the proposed extension of NW 60th Avenue north of US 27.

The following sections describe the methodology used to develop the future traffic volumes. The spreadsheet used to generate the no-build and build volumes is provided in **Appendix F**.

## BACKGROUND GROWTH

The Ocala Marion TPO 2023 Online Traffic Counts Map provides preferred growth rates for the study roadways as documented in the traffic methodology in **Appendix B**. Based on the Online Traffic Counts Map, the estimated composite annual average growth rate for the study area is 1.05%. The growth rate is shown in **Table 3**. For conservative growth, the background growth of 2.00% per year plus vested trips have been used for future background conditions.

**Table 3: Growth Rate**

Segment	Limits	2023 AADT	Annual Growth Rate	Weighted Growth
SR 40	US 41 to Urban Area Boundary	8,500	-0.50%	-43
	Urban Area Boundary to SW 140 Avenue	8,500	-0.50%	-43
	SW 140 Avenue to CR 328	17,500	2.20%	385
	CR 328 to SW 110 Avenue	17,500	2.20%	385
	SW 110 Avenue to SW 85 Avenue	19,300	-0.22%	-42
	SW 85 Avenue to SW 80 Avenue	19,300	-0.22%	-42
	SW 80 Avenue to SW 60 Avenue	22,800	2.80%	638
	SW 60 Avenue to SW 52 Avenue	27,100	-2.00%	-542
CR 225A	SW 52 Avenue to I-75 Ramp (West)	31,500	-2.00%	-630
	SR 40 to US 27	7,400	10.80%	799
NW 110 Avenue	US 27 to CR 326	7,100	-0.80%	-57
	SR 40 to US 27	5,700	21.20%	1208
<b>Total</b>		192,200	-	2016
<b>Composite Annual Average Growth Rate</b>				<b>1.05%</b>

## FUTURE YEAR 2030 NO-BUILD VOLUMES

The selected 2.00% annual growth rate was applied to the existing 2024 roadway segment volumes and 2025 turning movement counts (shown in Figure 2, Figure 3, and Figure 4), to develop the future traffic volumes for 2030. To account for the anticipated future developments near the proposed site, vested trips from the Martingale development and the Original WEC Study were added to estimate the 2030 no-built volumes. Figure 5 and Figure 6 shows respectively the estimated 2030 traffic volumes under no-build conditions for both weekday PM and weekend Midday peak hour.

## TRIP GENERATION

The Daily, weekday PM, and weekend midday peak hour trip generation for the proposed development is summarized in Table 4. The projected trips were estimated based on the equations outlined in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. The proposed development includes a soccer complex with 36 fields, a 300-room hotel, an 18-hole mini golf course, 17,500 square feet of retail space, and a sit-down restaurant with an area of 13,500 square feet. The ITE Trip Generation summary sheets are available in Appendix G.

**Table 4: Project Trip Generation**

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

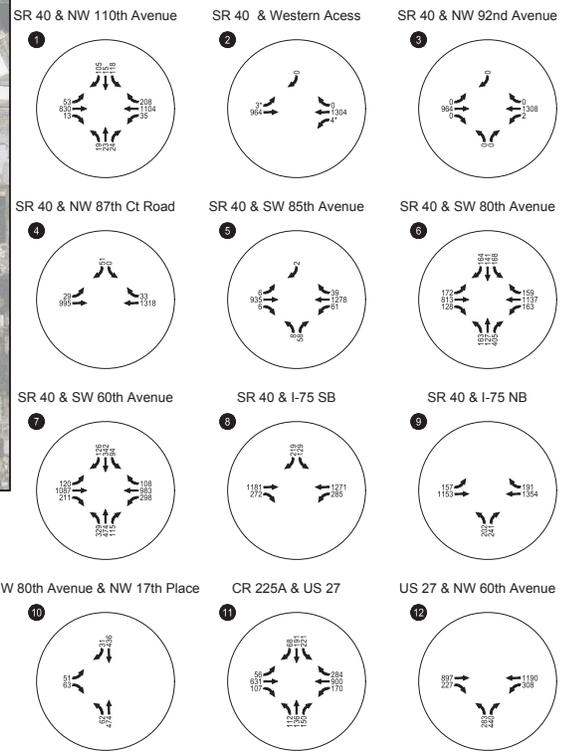
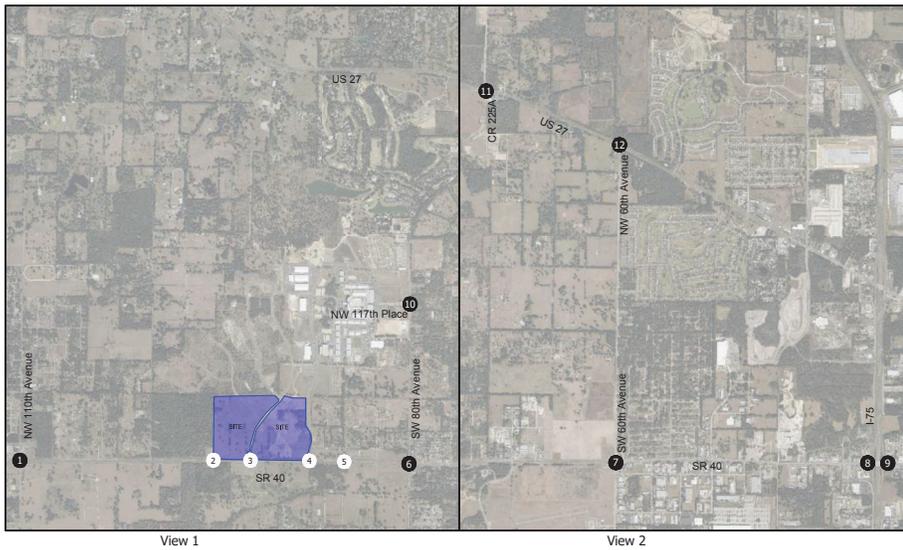
<sup>1</sup> A 25% reduction was applied because not all fields are expected to be in use concurrently

The proposed development is projected to generate a net total of 7,169 new weekday daily trips, including 864 new PM peak hour trips on weekdays and 1,491 new midday peak hour trips on weekends.

## TRIP DISTRIBUTION AND ASSIGNMENT

Based on general knowledge of local traffic patterns, accessibility to the site, and the socioeconomic land use patterns in the region, primary project traffic was estimated and assigned to adjacent roadways and intersections, as presented in **Figure 7**. The proposed development is expected to have about 85% of the project traffic on SR 40 from SW 80<sup>th</sup> Avenue to project eastern access point (SR40 and 85<sup>th</sup> Avenue) and remaining 15% on SR 40 from NW 110<sup>th</sup> Avenue to project western driveway.

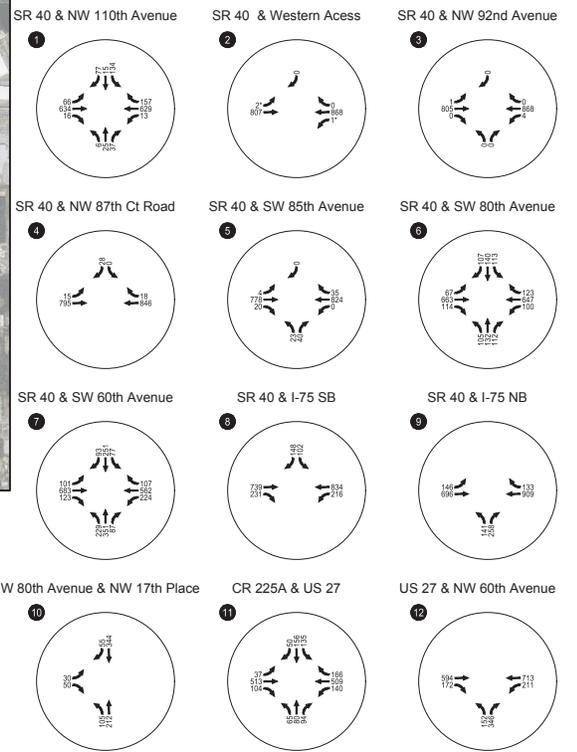
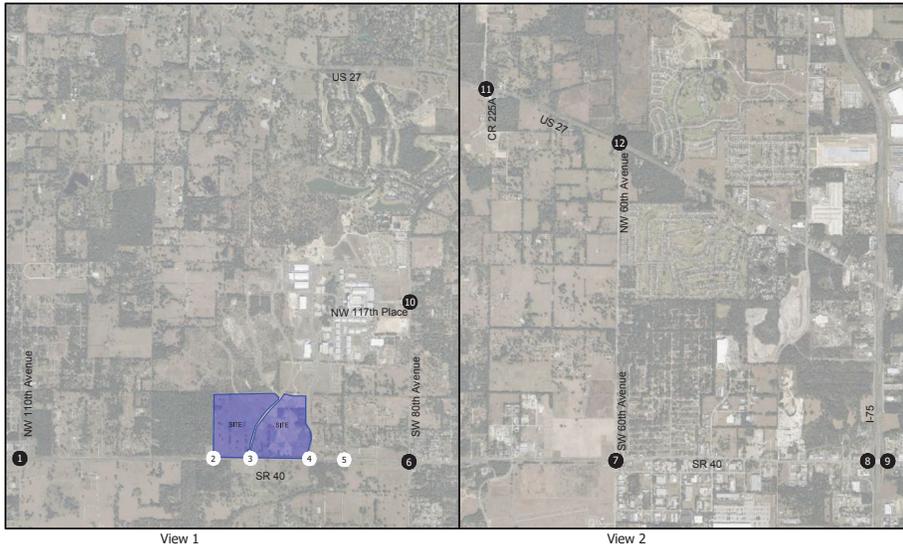
For 2045 analysis with and without NW 60<sup>th</sup> Avenue Extension north of US 27 has been evaluated for trip distribution. Based on roadway connectivity and shortest-path analysis, it has been determined that project traffic is highly unlikely to utilize the NW 60<sup>th</sup> Avenue extension north of US 27. SR 40, which is adjacent to the project site, provides direct access to I-75, making it a more efficient route. Additionally, access to the NW 49<sup>th</sup> Street extension can be achieved via CR 225A/NW 80<sup>th</sup> Avenue/NW 70<sup>th</sup> Avenue. Given that accessing NW 49<sup>th</sup> Street Extension via NW 60<sup>th</sup> Avenue/NW 60<sup>th</sup> Avenue extension would require an additional travel distance of approximately two miles along SR 40, this route is considered an unlikely choice for project traffic. Therefore, the NW 60<sup>th</sup> Avenue extension is expected to have minimal or no impact on trip distribution patterns.



- \* - U-Turns
- ⊗ - Site Accesses
- ⊕ - Study Intersections

Background 2030 PM Weekday Traffic Volumes  
Ocala, Florida

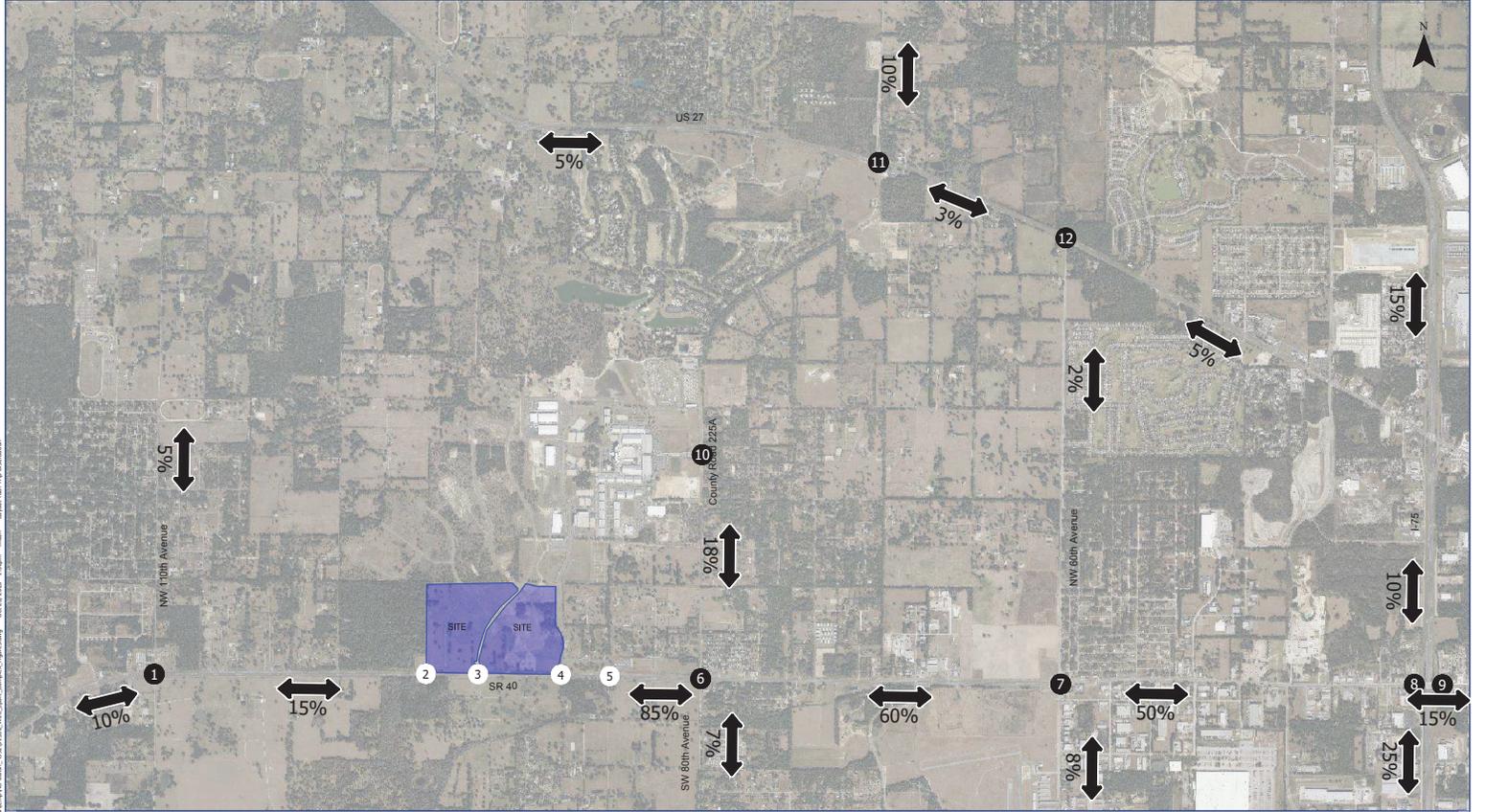
Figure  
5



- \* - U-Turns
- ⊗ - Site Accesses
- ⦿ - Study Intersections

Background 2030 MIDDAY WEEKEND TRAFFIC VOLUMES  
Ocala, Florida

Figure  
6



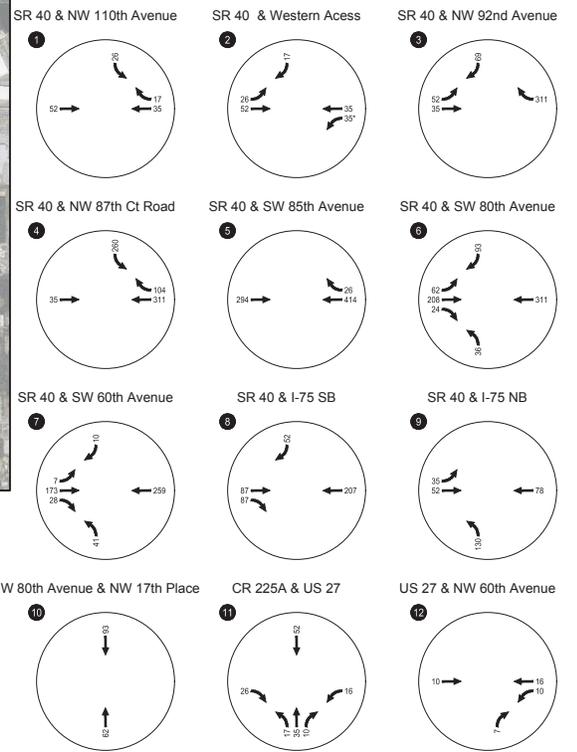
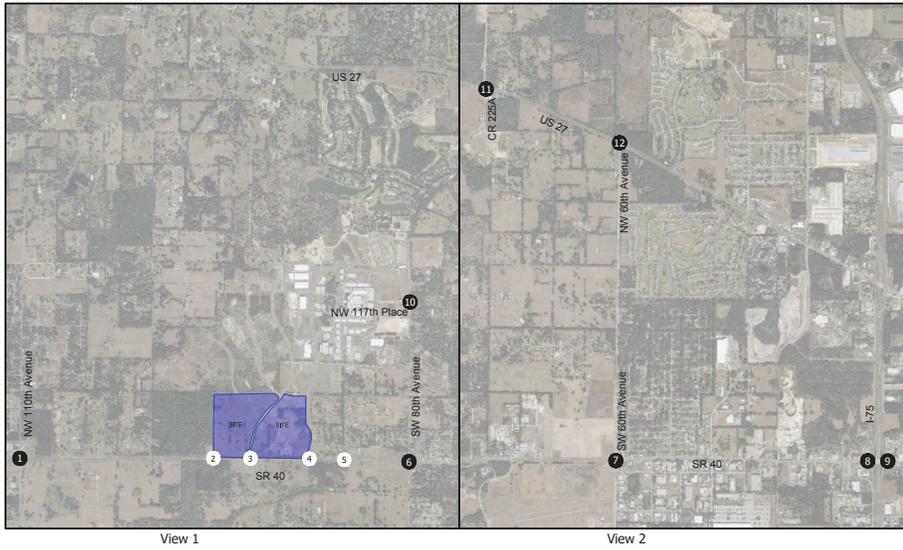
- ① Site Accesses
- Study Intersections

Trip Distribution  
Ocala, Florida

Figure  
7

## FUTURE YEAR 2030 BUILD VOLUMES

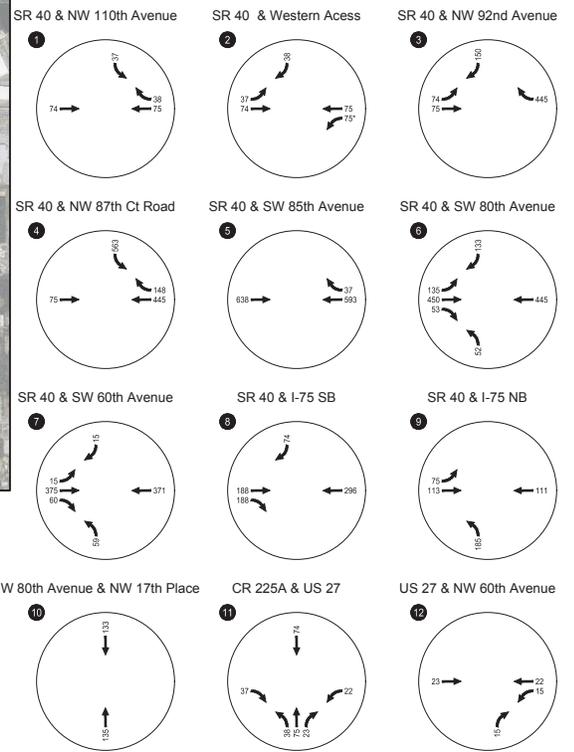
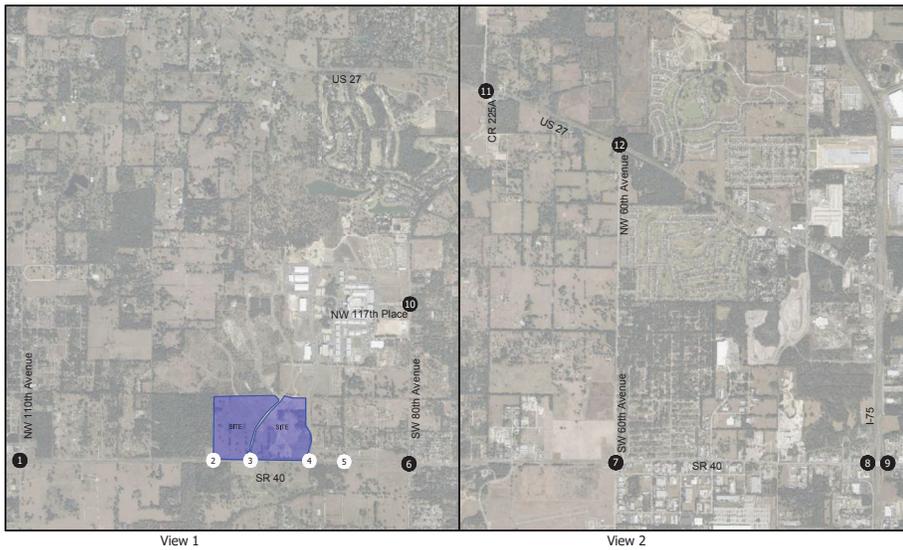
Based on the distribution illustrated in the **Figure 7**, project trips were estimated and added to the 2030 no-build volumes to develop the 2030 build volumes. **Figure 8** and **Figure 9** shows the project trips during the weekday PM and weekend Midday peak hours, respectively. The 2030 weekday PM and weekend Midday build volumes are shown respectively in **Figure 10** and **Figure 11**.



- \* - U-Turns
- ⊗ - Site Accesses
- ⊕ - Study Intersections

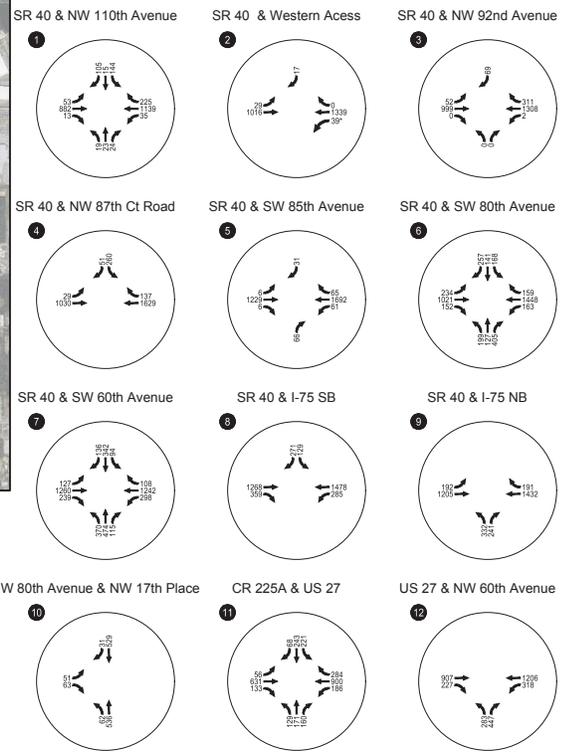
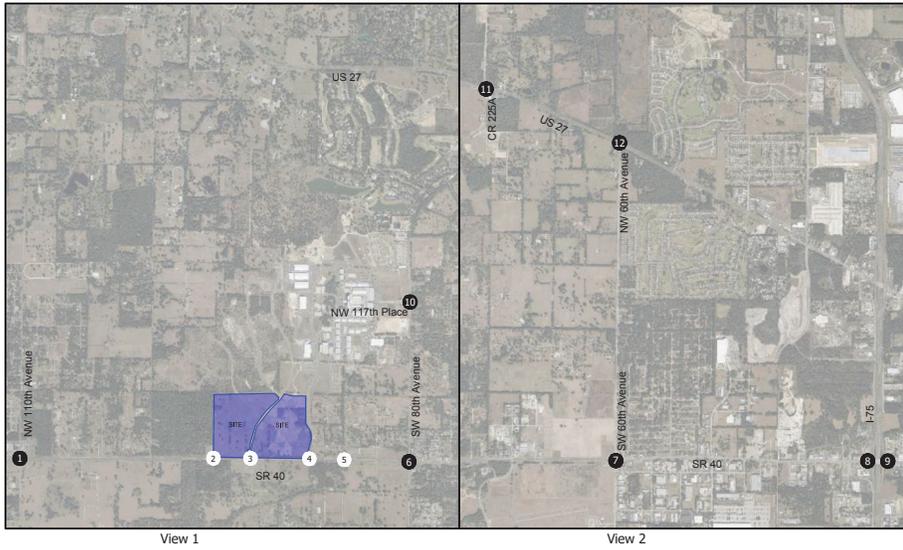
PM Weekday Project Trips  
Ocala, Florida

Figure  
8



- \* - U-Turns
- ⊗ - Site Accesses
- - Study Intersections

Midday Weekend Project Trips  
Ocala, Florida  
Figure 9



- \* - U-Turns
- ⊗ - Site Accesses
- - Study Intersections

Build 2030 PM Weekday Traffic Volumes  
Ocala, Florida  
Figure 10

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## FUTURE YEAR 2027 VOLUMES

In coordination with Marion County, the following four study intersections were analyzed for the PM peak period for 2027.

- SR 40 at 80th Avenue
- SR 40 at 60th Avenue
- CR 225A at US 27
- US 27 at NW 60 Avenue

The 2027 PM traffic volumes for these intersections were obtained using the West Marion Transportation Planning Study (included in **Appendix E**) build traffic as our no-build traffic. **Figure 12** shows the 2027 no-build volumes. To get the 2027 build volumes, the project trips, distributed as shown in **Figure 7**, were added to the 2027 no-build volumes. **Figure 13** shows the 2027 volume under build condition.

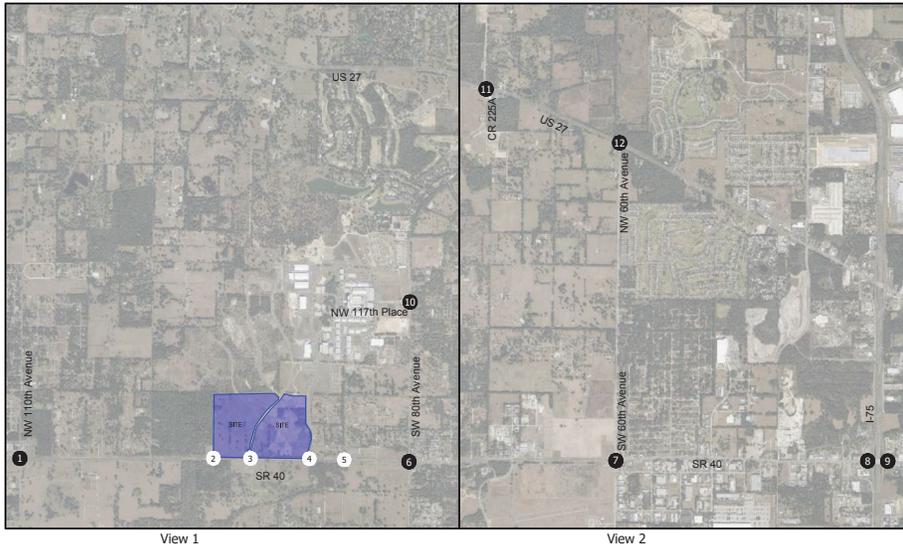
## FUTURE YEAR 2045 VOLUMES

For 2045 PM peak period, all twelve study intersections were analyzed. The weekday PM background traffic volumes for 2045 were obtained using the West Marion Transportation Planning Study (included in **Appendix E**) 2045 build volumes as background traffic volumes for the following four intersections for the no-build conditions:

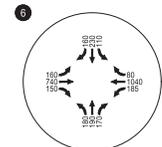
- SR 40 at 80th Avenue
- SR 40 at 60th Avenue
- CR 225A at US 27
- US 27 at NW 60 Avenue

For the remaining eight intersections, the 2045 PM peak no-build volumes were developed using the 2.00% annual growth rate applied to the 2025 PM turning movement counts and adding the vested trips. **Figure 14** shows the 2045 no-build volumes.

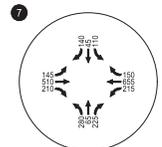
The distributed project trips shown in **Figure 7** were added to the 2045 no-build volumes to get the 2045 build volumes. **Figure 15** shows the 2045 build condition traffic volumes.



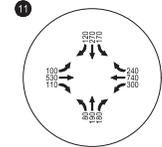
SR 40 & SW 80th Avenue



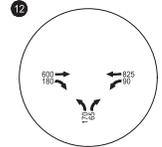
SR 40 & SW 60th Avenue



CR 225A & US 27



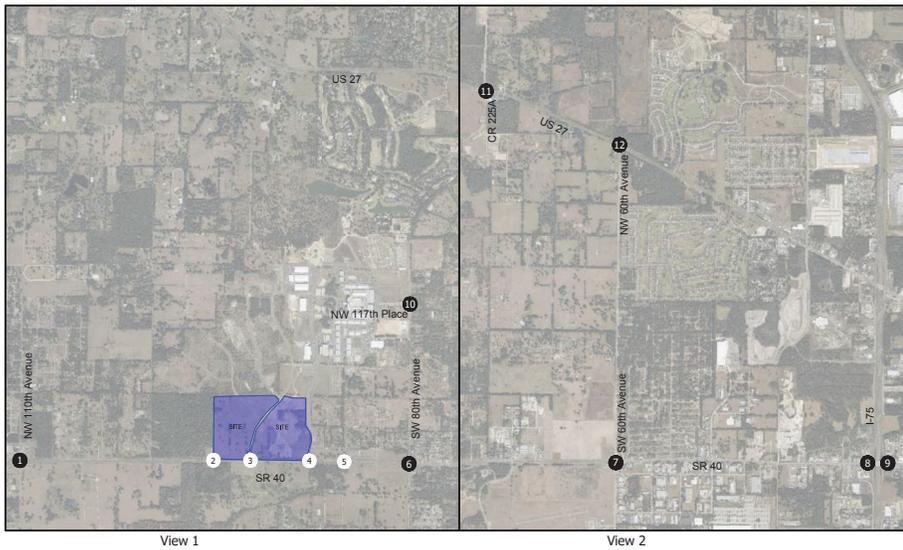
US 27 & NW 60th Avenue



- ⓧ - Site Accesses
- - Study Intersections

No Build 2027 Weekday PM Traffic Volumes  
Ocala, Florida

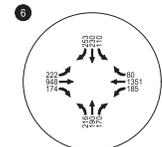
Figure  
12



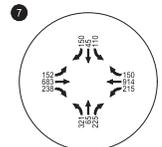
View 1

View 2

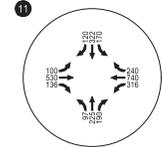
SR 40 & SW 80th Avenue



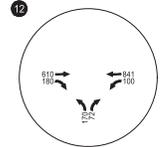
SR 40 & SW 60th Avenue



CR 225A & US 27



US 27 & NW 60th Avenue

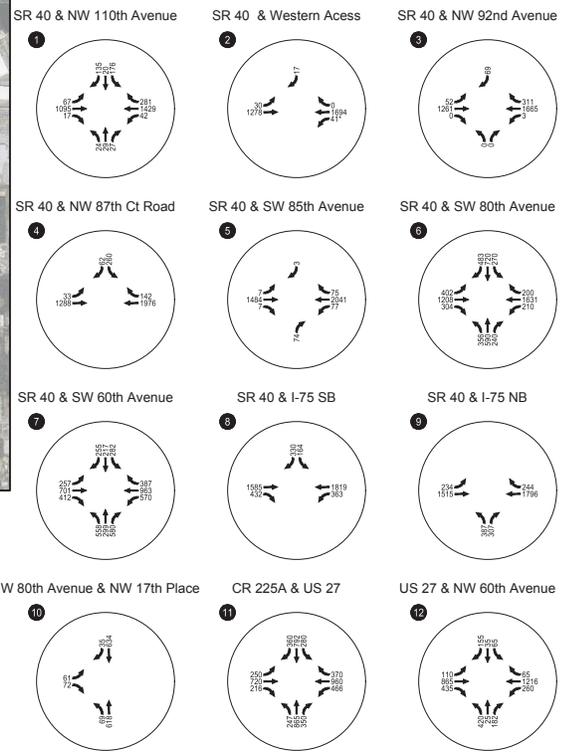
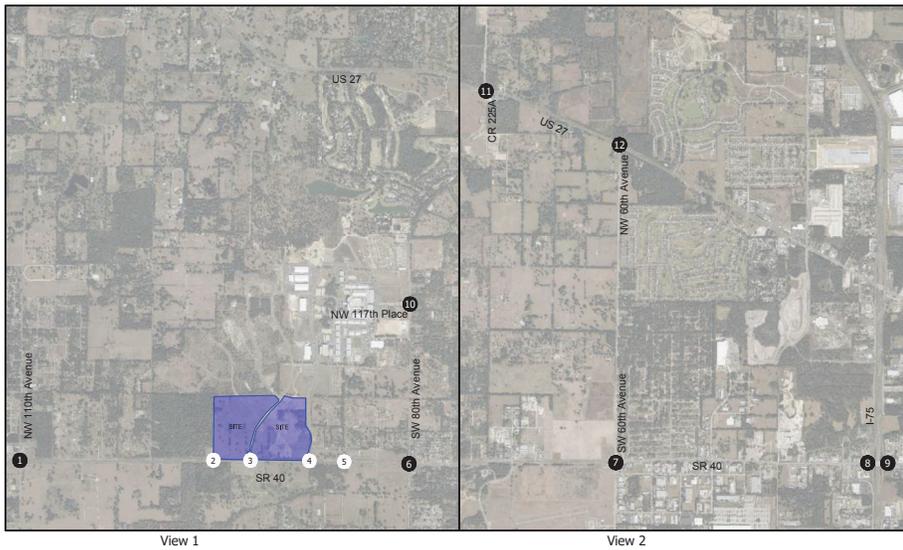


- ⓧ - Site Accesses
- Ⓣ - Study Intersections

Build 2027 Weekday PM Traffic Volumes  
Ocala, Florida

Figure  
13

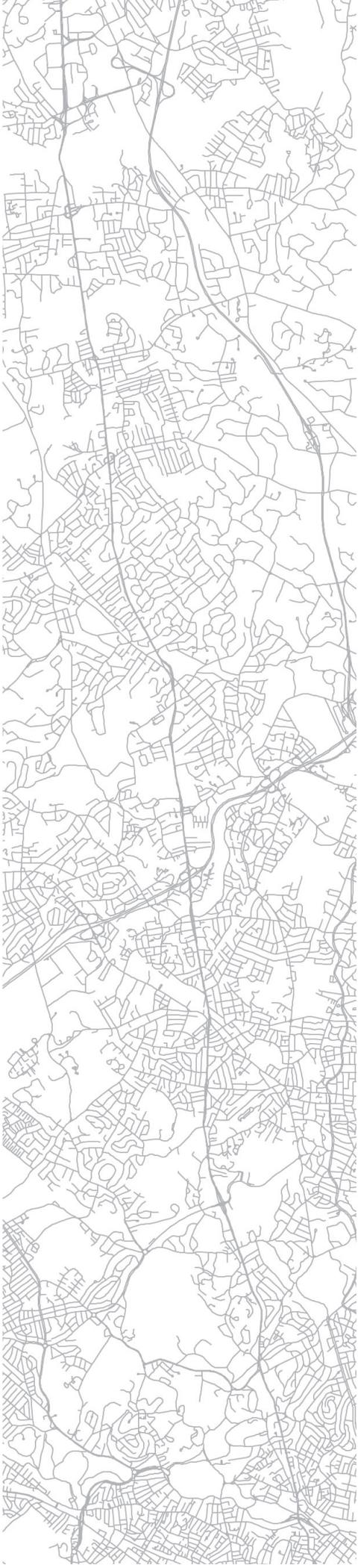




- \* - U-Turns
- ⊗ - Site Accesses
- ⊕ - Study Intersections

Build 2045 Weekday PM Traffic Volumes  
Ocala, Florida  
Figure 15

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## Section 4 Future Conditions

## FUTURE CONDITIONS

This section summarizes the analysis of the future traffic conditions for before and after project buildout. The objective of this analysis was to determine the impacts of the site-generated traffic volumes on the surrounding roadways and study intersections.

### 2030 NO-BUILD ROADWAY CAPACITY ANALYSIS

The PM peak hour 2030 future background capacity analysis for the study area roadways is shown in **Table 5**. This scenario includes a background growth of 2.00% per year.

As summarized in **Table 5**, the analysis shows that the segments of CR 225 A and NW 100<sup>th</sup> Avenue operate at an acceptable level of service (LOS) and volume to capacity (v/c) ratio less than 1.00 under the no-build traffic conditions. Most segments of SR 40 also perform adequately, with v/c ratios under 1.00 and LOS D or better. However, the segments of SR 40 between the Urban Area Boundary and SW 110<sup>th</sup> Avenue exceeds capacity (v/c > 1.00) and operates at LOS E or better. SR 40 also operates near capacity between SW 60<sup>th</sup> Avenue and the I-75 west ramp, as well as between the I-75 east ramp and SW 27<sup>th</sup> Avenue, with volume-to-capacity (v/c) ratios exceeding 0.90.

Table 5: 2030 Future No-Build Roadway Capacity Analysis

Roadway	Limits	No. of Lanes	Func. Class	2028 Daily LOS	Daily Capacity	Pk Hr Pk Dir Capacity	Historical Growth	PM PH NB/EB Vol	PM PH SB/WB Vol	v/c
SR 40	US 41 to Urban Area Boundary	2	Arterial	D	14,000	730	2.00%	531	416	0.73
	Urban Area Boundary to SW 140 Ave	2	Arterial	D	8,200	430	2.00%	531	416	1.23
	SW 140 Avenue to CR 328	2	Arterial	E	8,200	430	2.00%	531	416	1.23
	CR 328 to SW 110 Ave	4	Arterial	C	19,600	970	2.00%	1,104	865	1.14
	SW 110 Ave to SW 85 Ave	4	Arterial	C	36,015	1,785	2.00%	1,253	981	0.70
	SW 85 Ave to SW 80 Ave	4	Arterial	C	36,015	1,785	2.00%	1,253	981	0.70
	SW 80 Ave to SW 60 Ave	4	Arterial	C	39,165	1,943	2.00%	1,463	1,145	0.75
	SW 60 Ave to SW 52 Ave	4	Arterial	C	38,430	1,901	2.00%	1,761	1,378	0.93
	SW 52 Ave to I-75 Ramp (West)	4	Arterial	D	38,430	1,901	2.00%	1,761	1,378	0.93
	I-75 Ramp (West) to I-75 Ramp (East)	4	Arterial	D	40,352	1,996	2.00%	1,761	1,378	0.88
	I-75 Ramp (East) to SW 33 Avenue	4	Arterial	D	38,430	1,901	2.00%	1,850	1,448	0.97
	SW 33 Ave to SW 27 Ave	4	Arterial	D	38,430	1,901	2.00%	1,850	1,448	0.97
	SW 27 Ave to SW Martin L. King Ave	4	Arterial	C	37,905	1,880	2.00%	1,343	1,051	0.71
SW Martin L. King Ave to US 441	4	Arterial	C	37,905	1,880	2.00%	1,313	1,028	0.70	
CR 225A	SR 40 to US 27	2	Collector	B	29,340	1,449	2.00%	408	318	0.28
	US 27 to CR 326	2	Collector	C	10,224	533	2.00%	430	336	0.81
NW 110 Avenue	SR 40 to US 27	2	Collector	B	9,270	486	2.00%	346	271	0.71

# 2030 NO-BUILD INTERSECTION CAPACITY ANALYSIS

The no-build intersection lane configurations remain unchanged from existing conditions, except for improvements at three intersections: two along SR 40 (SR 40 and SW 80th Avenue, and SR 40 and SW 60th Avenue) and one along US 27 (US 27 at NW 60th Avenue).

As part of the planned intersection improvements at SR 40 and SW 80th Avenue, SW 80th Avenue has been widened by two additional lanes. This expansion results in a new five-lane configuration for the northbound and southbound approaches at the intersection. The revised layout consists of one exclusive left-turn lane, one through lane, one shared through/right-turn lane, and two receiving lanes on each approach. The lane configurations for the no-build scenario are illustrated in **Figure 16**.

The results of the intersection capacity analysis for the weekday PM peak and weekend midday peak hours are summarized in **Table 6**. The analysis includes v/c ratios, delay per turning movement (in seconds), and the corresponding LOS, along with overall intersection delay (in seconds) and LOS for signalized intersections.

As shown in **Table 6**, under future no-build conditions (excluding project traffic), the study intersections are projected to operate at an overall LOS of E or better. However, the following movements are projected to have v/c ratio greater than 1:

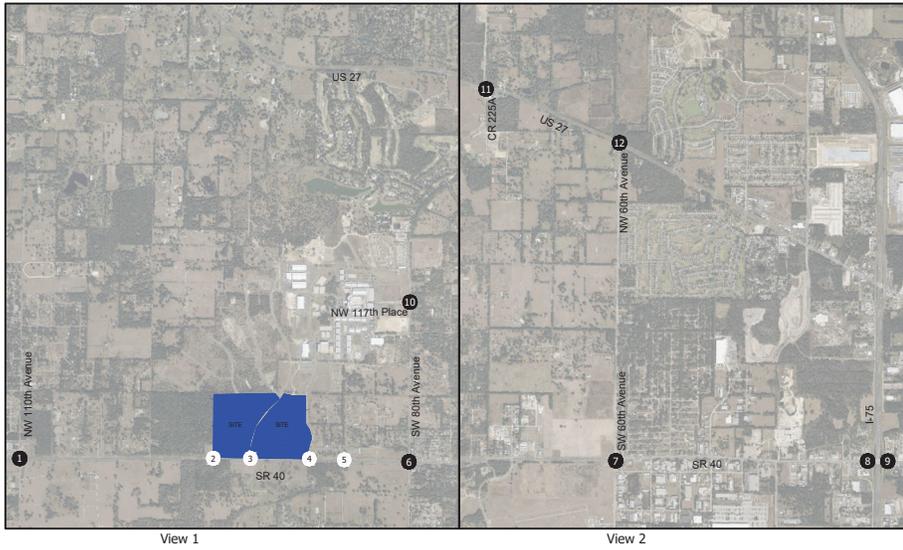
- SR 40 and SW 80th Avenue:
  - Westbound thru (v/c: 1.14)
- SR 40 and SW 60th Avenue:
  - Westbound left (v/c: 1.41)
- US 27 and SW 60th Avenue:
  - Westbound left (v/c: 1.36)

To address these deficiencies, the following intersection improvements have been proposed and evaluated based on the future no-build traffic volumes:

- SR 40 and SW 80th Avenue:
  1. Add a right turn lane with permitted overlap signal phase at both northbound and southbound approaches.
  2. Increase the signal timing cycle length from 125 seconds to 150 seconds.
- SR 40 and SW 60th Avenue:
  1. Add a second northbound left turn lane and change the existing permitted phase to protected phase.
  2. Add a permitted southbound right turn lane and change the share thru/right turn lane into thru only lane.
  3. Change the cycle length from 145 seconds to 160 seconds.
- US 27 and SW 60th Avenue:
  1. Increase the split for westbound left phase.

With the proposed improvements in place, the previously overcapacity movements are expected to operate at acceptable levels, as the volume-to-capacity (v/c) ratios are expected to drop below 1.0. These improvements are reflected in **Table 6**, specifically in rows 7, 9, and 15.

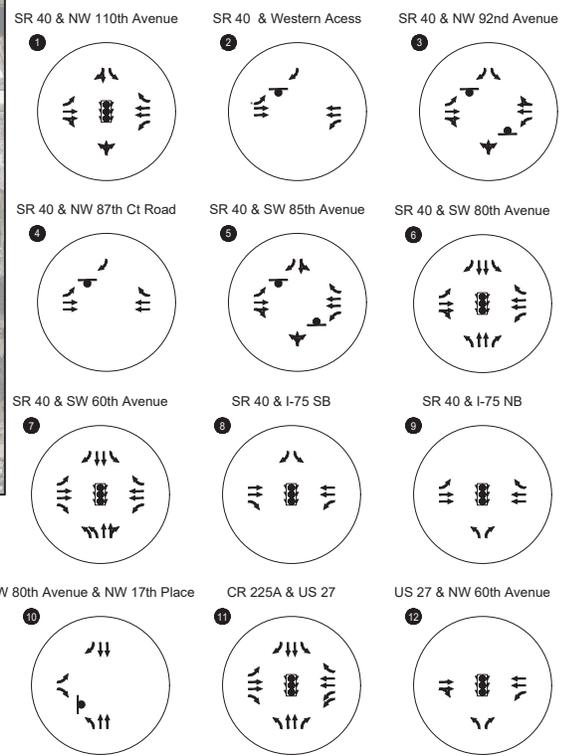
The 2030 no-build Synchro intersection report printouts are provided in **Appendix I**.



View 1

View 2

- \* - U-Turns
- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections



Background 2030 Lane Configurations  
 Ocala, Florida

Figure  
 16

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**Table 6: 2030 No-Build Intersection Capacity Analysis**

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 – SR 40 at NW 110 Avenue	Signalized	Delay (s/veh)	16.9	14.7	16.4	25.1	26.9	15.9	14.7	15.8	18.7	19.8
		LOS	B	B	B	C	C	B	B	B	B	B
		v/c ratio*	-	0.62	0.76	0.22	0.47	-	0.54	0.58	0.15	0.35
2 – SR 40 at Western Driveway <sup>a</sup>	Stop Controlled	Delay (s/veh)	-	25.5	16.8	-	0	-	14.6	13.7	-	0
		LOS	-	D	C	-	A	-	B	B	-	A
		v/c ratio*	-	0.02	0.01	-	-	-	0.01	0.003	-	-
3 – SR 40 at NW 92 <sup>nd</sup> Avenue	Stop Controlled	Delay (s/veh)	-	0	10.4	0	0	-	9.7	9.5	0	0
		LOS	-	A	B	A	A	-	A	A	A	A
		v/c ratio*	-	-	0.003	-	-	-	0.001	0.005	-	-
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Stop Controlled	Delay (s/veh)	-	13.3	-	-	16.2	-	10.2	-	-	11.8
		LOS	-	B	-	-	C	-	B	-	-	B
		v/c ratio*	-	0.07	-	-	0.15	-	0.02	-	-	0.05
5 – SR 40 at SW 85 <sup>th</sup> Avenue	Two-way Stop Controlled (TWSC)	Delay (s/veh)	-	12.4	10.7	16.1	69.4	-	9.8	0	17.3	25.4
		LOS	-	B	B	C	F	-	A	A	C	D
		v/c ratio*	-	0.01	0.09	0.18	0.4	-	0.006	-	0.19	0.15
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	71.0	59.3	101.4	37.7	48.1	29.7	28.7	25.8	32.7	39
		LOS	E	E	F	D	D	C	C	C	C	D
		v/c ratio*	-	0.89	<b>1.14</b>	0.85	0.74	-	0.64	0.78	0.78	0.53
6i – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized (Improved)	Delay (s/veh)	45.2	37.9	37.1	63.8	63.7	33.3	31.4	28.4	39.4	38.8
		LOS	D	D	D	E	E	C	C	C	D	D
		v/c ratio*	-	0.89	0.88	0.87	0.78	-	0.80	0.86	0.75	0.73
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	69	57.9	89.9	54.5	67.6	37.3	37.1	36.2	35	44.2
		LOS	E	E	F	D	E	D	D	D	D	D
		v/c ratio*	-	0.95	<b>1.41</b>	0.92	0.86	-	0.8	0.89	0.71	0.76
7i – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized (Improved)	Delay (s/veh)	51.6	46.1	40.1	62.7	76.9	33.3	31.4	28.4	39.4	38.8
		LOS	D	D	D	E	E	C	C	C	D	D
		v/c ratio*	-	0.88	0.93	0.84	0.9	-	0.8	0.86	0.75	0.73
8 – SR 40 at I-75 SB ramp	Signalized	Delay (s/veh)	13.7	17.8	4.1	-	91.1	11.5	15.6	2.4	-	75.6
		LOS	B	B	A	-	F	B	B	A	-	E
		v/c ratio*	-	0.56	0.83	-	0.87	-	0.38	0.49	-	0.83

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
9 - SR 40 at I-75 NB ramp	Signalized	Delay (s/veh)	17	8	14.5	92	-	10.7	1.2	8.7	79.7	-
		LOS	B	A	B	F	-	B	A	A	E	-
		v/c ratio*	-	0.58	0.58	0.89	-	-	0.35	0.4	0.83	-
10 - NW 80 <sup>th</sup> Avenue at NW 17 <sup>th</sup> Place	Stop Controlled	Delay (s/veh)	-	20.4	-	8.8	-	-	16.5	-	8.5	-
		LOS	-	C	-	A	-	-	C	-	A	-
		v/c ratio*	-	0.18	-	0.06	-	-	0.09	-	0.1	-
11 - CR 225A at US 27	Signalized	Delay (s/veh)	32.8	30	36.2	27.7	30.3	29.9	27.9	33.4	26.3	27.1
		LOS	C	C	C	C	C	C	C	C	C	C
		v/c ratio*	-	0.46	0.73	0.25	0.45	-	0.38	0.63	0.15	0.27
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	49.4	30.3	58.4	75.6	-	23.5	19.3	22.3	51.5	-
		LOS	D	C	E	E	-	C	B	C	D	-
		v/c ratio*	-	0.69	<b>1.36</b>	0.92	-	-	0.43	0.89	0.7	-
12i - US 27 at NW 60 <sup>th</sup> Avenue	Signalized (Improved)	Delay (s/veh)	36	42.2	24	75.6	-	21.5	19.6	18	51.5	-
		LOS	D	D	C	E	-	C	B	B	D	-
		v/c ratio*	-	0.81	0.92	0.92	-	-	0.43	0.87	0.7	-

\*v/c ratio reported for the highest movement  
 a the driveway is not built yet, and delays reflect U-turns

## 2030 BUILD ROADWAY CAPACITY ANALYSIS

**Table 7** presents the PM peak hour capacity analysis for the study area under the 2030 build scenario. The roadway capacity deficiencies identified under the 2030 no-build conditions, as shown in **Table 5**, have been carried forward into the capacity analysis for the 2030 build scenario. As such, the client should not be responsible for any capacity improvements on these roadway segments.

SR 40 operating near capacity under no-build conditions such as between SW 60<sup>th</sup> Avenue and the I-75 west ramp, and between the I-75 east ramp and SW 27<sup>th</sup> Avenue (with v/c ratios greater than 0.9), are projected to reach or exceed capacity under build condition. These segments are anticipated to have v/c ratios between 1 and 1.02. Accordingly, the client would be responsible for contributing a proportionate fair share toward the widening of these roadway segments.

## 2030 BUILD INTERSECTION CAPACITY ANALYSIS

The proposed development is planned to have four access points on SR 40. The access point locations and planned types are as follows:

- SR 40 and Western Driveway: Directional access (Left-In/Right-In/Right-Out)
- SR 40 and NW 92<sup>nd</sup> Avenue: Directional access (Left-In/Right-In/Right-Out)
- SR 40 and NW 87<sup>th</sup> Court Road: Full access and signalized
- SR 40 and SW 85<sup>th</sup> Avenue: Directional access (Right-In/Right-Out)

These intersections have been evaluated as the planned type under buildout conditions. The lane configurations for the buildout are shown in **Figure 17**. The results of the intersection capacity analysis for the weekday PM peak and weekend midday peaks hour under build out future conditions are shown in **Table 8**. The analysis reflects the v/c ratios, delays per turning movement (in seconds), and the operating LOS.

Note that the same improvement identified under the future no-build scenario was carried over to the future build scenario for the following intersections:

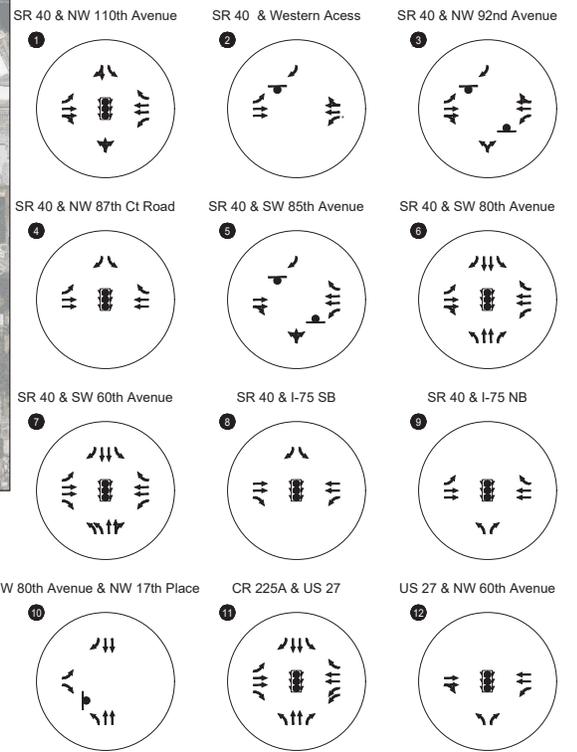
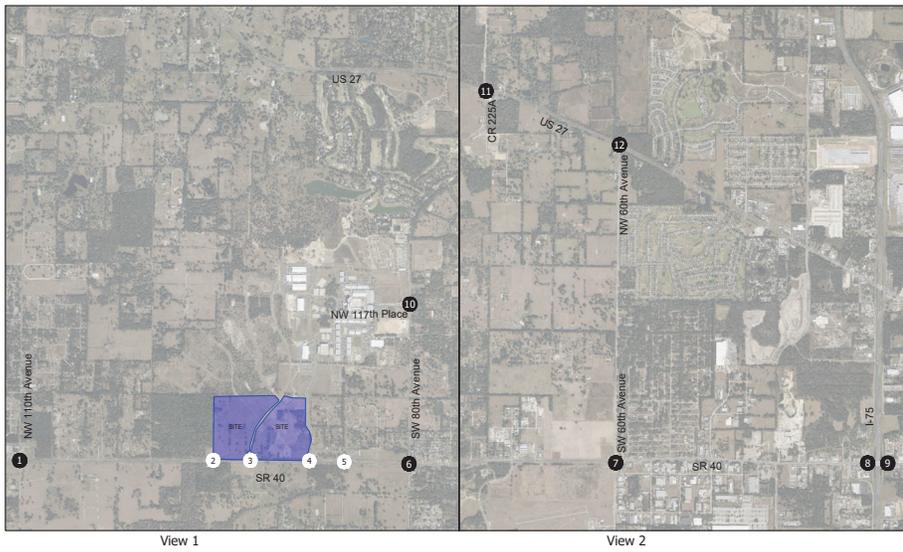
- SR 40 and SW 80<sup>th</sup> Avenue
- SR 40 and SW 60<sup>th</sup> Avenue
- US 27 and SW 60<sup>th</sup> Avenue

As shown in **Table 8**, turning movements at the four access points, SR 40 and Western Driveway, SR 40 and NW 92<sup>nd</sup> Avenue, SR 40 and NW 87<sup>th</sup> Court Road, and SR 40 and SW 85<sup>th</sup> Avenue, are projected to operate at Level of Service (LOS) D or better and at an acceptable v/c ratio (less than 1). The overall intersection at SR 40 and NW 87<sup>th</sup> Court Road is expected to operate at LOS A. The remaining intersections are projected to operate at LOS E or better, maintaining v/c ratio below 1.

The 2030 buildout conditions Synchro intersection report printouts are provided in **Appendix K**.

Table 7: 2030 Future Build Roadway Capacity Analysis

Roadway	Limits	No. of Lanes	Fun Class	LOS Std.	Daily Capacity	Pk Hour Pk Dir Capacity	Total No-Build Volumes		Max Model Distribution	Project Trips		Total Build Volumes		2030 Build v/c
							PM FH NB/EB Volume	PM FH SB/WB Volume		PM FH NB/EB Volume	PM FH SB/WB Volume	PM FH NB/EB Volume	PM FH SB/WB Volume	
SR 40	US 41 to Urban Area Boundary	2	Arterial	D	14,000	730	531	416	10%	52	35	583	451	0.80
	Urban Area Boundary to SW 140 Avenue	2	Arterial	D	8,200	430	531	416	10%	52	35	583	451	1.36
	SW 140 Avenue to CR 328	2	Arterial	E	8,200	430	531	416	10%	52	35	583	451	1.36
	CR 328 to SW 110 Avenue	4	Arterial	C	19,600	970	1,104	865	10%	52	35	1,156	900	1.19
	SW 110 Avenue to SW 85 Avenue	4	Arterial	C	36,015	1,785	1,253	981	15%	78	52	1,331	1,033	0.75
	SW 85 Avenue to SW 80 Avenue	4	Arterial	C	36,015	1,785	1,253	981	85%	294	440	1,547	1,421	0.87
	SW 80 Avenue to SW 60 Avenue	4	Arterial	C	39,165	1,943	1,463	1,145	60%	208	311	1,671	1,456	0.86
	SW 60 Avenue to SW 52 Avenue	4	Arterial	C	38,430	1,901	1,761	1,378	50%	173	259	1,934	1,637	1.02
	SW 52 Avenue to I-75 Ramp (West)	4	Arterial	D	38,430	1,901	1,761	1,378	50%	173	259	1,934	1,637	1.02
	I-75 Ramp (West) to I-75 Ramp (East)	4	Arterial	D	40,352	1,996	1,761	1,378	50%	173	259	1,934	1,637	0.97
	I-75 Ramp (East) to SW 33 Avenue	4	Arterial	D	38,430	1,901	1,850	1,448	15%	52	78	1,902	1,526	1.00
SW 33 Avenue to SW 27 Avenue	4	Arterial	D	38,430	1,901	1,850	1,448	15%	52	78	1,902	1,526	1.00	
SW 27 Avenue to SW Martin L. King Avenue	4	Arterial	C	37,905	1,880	1,343	1,051	15%	52	78	1,395	1,129	0.74	
SW Martin L. King Avenue to US 441	4	Arterial	C	37,905	1,880	1,313	1,028	15%	52	78	1,365	1,106	0.73	
CR 225A	SR 40 to US 27	2	Collector	B	29,340	1,449	408	318	18%	62	93	470	411	0.32
	US 27 to CR 326	2	Collector	C	10,224	533	430	336	10%	35	52	465	388	0.87
NW 110 Avenue	SR 40 to US 27	2	Collector	B	9,270	486	346	271	5%	17	26	363	297	0.75



- \* - U-Turns
- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections

Build 2030 Lane Configurations  
Ocala, Florida | Figure 17

**Table 8: Year 2030 Build Intersection Capacity Analysis**

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 – SR 40 at NW 110 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	17.2	14.8	16.5	25.7	28.1	16.4	15.1	16.3	18.7	20.4
		LOS	B	B	B	C	C	B	B	B	B	C
		v/c ratio*	-	0.63	0.77	0.22	0.48	-	0.55	0.65	0.15	0.45
2 – SR 40 at Western Driveway	Stop Controlled	Delay (s/veh)	-	17	19.9	-	15.2	-	10.4	17.5	-	12.4
		LOS	-	C	C	-	C	-	B	C	-	B
		v/c ratio*	-	0.10	0.15	-	0.05	-	0.06	0.22	-	0.08
3 – SR 40 at NW 92 <sup>nd</sup> Avenue	Stop Controlled	Delay (s/veh)	-	16.9	10.6	0	21.4	-	13.4	9.8	0	19.9
		LOS	-	C	B	A	C	-	B	A	A	C
		v/c ratio*	-	0.16	0.00	-	0.26	-	0.15	0.006	-	0.40
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Stop Controlled	Delay (s/veh)	-	18.1	-	-	4978	-	14.3	-	-	3713
		LOS	-	C	-	-	F	-	B	-	-	F
		v/c ratio*	-	0.12	-	-	11.39	-	0.05	-	-	8.98
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Signalized***	Delay (s/veh)	8.8	5.8	7.4	-	27.1	17.7	10.3	11.9	-	43.2
		LOS	A	A	A	-	C	B	B	B	-	D
		v/c ratio*	-	0.48	0.75	-	0.81	-	0.49	0.73	-	0.95
5 – SR 40 at SW 85 <sup>th</sup> Avenue	Two-way Stop Controlled (TWSC)	Delay (s/veh)	-	-	12.7	21.8	19.9	-	-	0	42.9	17.1
		LOS	-	-	B	C	C	-	-	A	E	C
		v/c ratio*	-	-	0.12	0.25	0.14	-	-	-	0.43	0.1
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized**	Delay (s/veh)	54.7	44.1	52.8	73.5	65.9	42.1	38	35.9	56.1	60.2
		LOS	D	D	D	E	E	D	D	D	E	E
		v/c ratio*	-	0.93	0.94	0.89	0.81	-	0.9	0.82	0.63	0.70
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized**	Delay (s/veh)	60.5	57.1	45.9	68.8	99.7	41.8	38.4	33.4	54.4	56.5
		LOS	E	E	D	E	F	D	D	C	D	E
		v/c ratio*	-	0.96	0.97	0.86	0.98	-	0.86	0.89	0.81	0.8
8 - SR 40 at I-75 SB ramp	Signalized	Delay (s/veh)	13.6	18.8	4.3	-	91.1	10.5	14.1	1.9	-	91.4
		LOS	B	B	A	-	F	B	B	A	-	F
		v/c ratio*	-	0.6	0.89	-	0.87	-	0.43	0.55	-	0.85
9 - SR 40 at I-75 NB ramp	Signalized	Delay (s/veh)	29.3	16.1	26.6	96.9	-	31.5	21.1	22	94.8	-
		LOS	C	B	C	F	-	C	C	C	F	-
		v/c ratio*	-	0.85	0.72	0.95	-	-	0.73	0.53	0.94	-

Intersection	Control Type	Performance Measure	Weekday PM Peak Period					Weekend Midday Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
10 - NW 80 <sup>th</sup> Avenue at NW 17 <sup>th</sup> Place	Stop Controlled	Delay (s/veh)	-	24.8	-	9.1	-	-	21.5	-	9	-
		LOS	-	C	-	A	-	-	C	-	A	-
		v/c ratio*	-	0.22	-	0.07	-	-	0.13	-	0.11	-
11 - CR 225A at US 27	Signalized	Delay (s/veh)	33.4	29.9	37.6	28.6	30.7	31.3	29.5	35.6	27.9	27.9
		LOS	C	C	D	C	C	C	C	D	C	C
		v/c ratio*	-	0.46	0.8	0.3	0.47	-	0.6	0.72	0.25	0.29
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized**	Delay (s/veh)	36.9	44	24.5	75.6	-	22.1	20.6	18.8	51.5	-
		LOS	D	D	C	E	-	C	C	B	D	-
		v/c ratio*	-	0.83	0.93	0.92	-	-	0.46	0.88	0.7	-

\*v/c ratio reported for the highest movement

\*\* Intersections improved in the background

\*\*\* Intersection converted from two-way stop to signalized.

## 2030 TURN LANE AND QUEUE ANALYSIS

A queueing analysis was conducted for the study intersections to determine the impacts of the project development on intersection queueing in the study area for the existing, background, and build scenarios. The required deceleration length is determined from the FDOT Design Manual Exhibit 212-1 for state roads. Design speed (posted speed plus five) was used for FDOT intersections. Table 9 shows the queueing results for the existing, background, and buildout conditions at these intersections and the Turn Lane spreadsheet can be found in **Appendix L**. The tables indicates whether the lane length is exceeded in the existing, background, or buildout condition.

FDOT guidance outlines how to design turn lanes (deceleration, storage, taper) but does not prescribe a universal "fix-it" trigger for shortfalls. In practice, gaps under 100 feet rarely affect intersection operations or safety in a meaningful way, yet correcting them can require milling, restriping, drainage, and signal work that tears up the road without commensurate returns. Accordingly, improvements will not be recommended for any movement with a documented deficiency under 100 feet. For movements with deficiencies exceeding 100 feet, improvements should be considered to reduce the deficiency. Based on discussions with Marion County, if the queue length is over 500 feet and/or the volume on the turning movement is over 300 vehicles per hour, a dual left-turn lane should be considered in lieu of extending the left-turn lane.

Based on the queueing analysis and a turn lane deficiency exceeding 100 feet, the following left turn movements have been identified as turn lanes that need improvement due to the background condition. The left-turn lanes in bold indicate that the queue length or volume indicate that dual left-turn lanes should be considered in lieu of extending the left-turn lane (>500 feet queue length and/or more than 300 vehicles/hour).

- SR 40 at NW 110th Avenue
  - Southbound Left Turn: Deficiency - 173 feet
- SR 40 at SW 80th Avenue
  - **Northbound Left Turn: Deficiency - 310 feet (addressed in the West Marion Planning Study for 2045)**
  - Southbound Left Turn: Deficiency - 273 feet (addressed in the West Marion Planning Study for 2045)
  - **Eastbound Left Turn: Deficiency - 218 feet (addressed in the West Marion Planning Study for 2045)**
  - **Westbound Left Turn: Deficiency - 173 feet (addressed in the West Marion Planning Study for 2045)**
- SR 40 at SW 60th Avenue
  - **Northbound Left Turn: Deficiency - 550 feet (addressed in the West Marion Planning Study for 2045)**
  - **Westbound Left Turn: Deficiency - 503 feet (addressed in the West Marion Planning Study for 2045)**
- SR 40 at I-75 SB ramp
  - **Westbound Left Turn: Deficiency - 415 feet**
- SR 40 at I-75 NB ramp
  - Eastbound Left Turn: Deficiency - 290 feet
- US 27 at SW 60th Avenue
  - **Westbound Left Turn: Deficiency - 768 feet**
- CR 225A at US 27
  - Eastbound Left Turn: Deficiency - 185 feet (addressed in the West Marion Planning Study)
  - **Westbound Left Turn: Deficiency - 243 feet (addressed in the West Marion Planning Study for 2027 and 2045)**

The following intersections have a turning movement where a turn lane deficiency is caused by the project. However, any deficiencies under 100 feet are not recommended for improvements.

- SR 40 at NW 110<sup>th</sup> Avenue
  - Southbound Left Turn (22 feet)

- Westbound Right Turn (7 feet)
- SR 40 at NW 87<sup>th</sup> Court Road
  - Westbound Right Turn (15 feet)
- SR 40 at SW 80<sup>th</sup> Avenue
  - Westbound Left Turn (12 feet)
  - Eastbound Left Turn (130 feet)
  - Southbound Left Turn (27 feet)
- SR 40 at SW 60<sup>th</sup> Avenue
  - Southbound Left Turn (97 feet)
  - Eastbound Left Turn (50 feet)
- SR 40 at I-75 SB ramp
  - Westbound Left Turn (53 feet)
- SR 40 at I-75 NB ramp
  - Eastbound Left Turn (113 feet)
- CR 225A at US 27
  - Westbound Left Turn (20 Feet)
  - Northbound Left Turn (25 Feet)

Table 9: Intersection Queue Analysis

Intersection	Movement	Speed	Total Existing Lane Length (ft)	Required Deceleration (ft)	Existing Conditions Analysis			2030 Future Background Conditions Analysis			2030 Future Buildout Conditions Analysis			Cause for Deficiency (ft due to project)
					95 <sup>th</sup> % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Def (ft)	95 <sup>th</sup> % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	95 <sup>th</sup> % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	
SR 40 at NW 110 Avenue	SBL	45	195	290	63	353	158	78	368	173	100	390	195	22
	WBR	55	435	405	45	450	15	53	458	23	60	465	30	7
	WBL	55	475	405	18	423	0	28	433	0	30	435	0	N/A
	EBL	55	485	405	35	440	0	43	448	0	45	450	0	N/A
SR 40 at Western Driveway	EBL	55	420	405	0	405	0	0	405	0	8	413	0	N/A
	WBL	55	495	405	0	405	0	0	405	0	13	418	0	N/A
SR 40 at NW 92 <sup>nd</sup> Avenue	EBL	55	420	405	0	405	0	0	405	0	15	420	0	N/A
	WBL	55	485	405	0	405	0	0	405	0	0	405	0	N/A
SR 40 at NW 87 <sup>th</sup> Court Road	WBR	55	355	405	0	405	50	0	405	50	15	420	65	15
	EBL	55	440	405	3	408	0	5	410	0	13	418	0	N/A
SR 40 at SW 85 <sup>th</sup> Avenue	WBL	55	475	405	8	413	0	8	413	0	10	415	0	N/A
	WBR	55	355	405	0	405	50	0	405	50	0	405	50	N/A
	EBL	55	475	405	0	405	0	0	405	0	3	408	0	N/A
SR 40 at SW 80 Avenue	NBL	45	225	290	188	478	253	245	535	310	115	405	180	N/A
	SBL	45	180	290	170	460	280	163	453	273	190	480	300	27
	EBL	55	490	405	148	553	63	303	708	218	433	838	348	130
	WBL	55	515	405	203	608	93	283	688	173	295	700	185	12
SR 40 at SW 60 Avenue	WBR	55	635	405	70	475	0	115	520	0	5	410	0	N/A
	NBL	45	185	290	323	613	428	445	735	550	303	593	408	N/A
	SBL	45	370	290	103	393	23	128	418	48	225	515	145	97
	EBL	55	605	405	173	578	0	215	620	15	265	670	65	50
	EBR	55	860	405	150	555	0	198	603	0	138	543	0	N/A
SR 40 at I-75 SB ramp	WBL	45	100	290	130	420	320	225	515	415	278	568	468	53
	EBL	45	105	290	60	350	260	105	395	305	218	508	418	113
CR 225A at US 26	EBL	65	310	405	68	473	163	90	495	185	90	495	185	N/A
	WBL	65	300	405	83	488	188	138	543	243	158	563	263	20
	NBL	40	230	185	70	255	25	113	298	68	138	323	93	25
US 27 at SW 60 <sup>th</sup> Avenue	WBL	55	390	405	573	978	588	753	1158	768	460	865	475	N/A
NW 80 <sup>th</sup> Ave at NW 17 <sup>th</sup> Place	SBL	45	250	290	0	290	40	0	290	40	0	290	40	N/A
	NBL	45	365	290	3	293	0	5	295	0	5	295	0	N/A

# FUTURE YEAR 2027 AND 2045 EVALUATION

Future traffic conditions for year 2027 and 2045 for both build and no-build conditions have been analyzed to supplement the request from the Marion County. The traffic volumes for weekday PM peak period for year 2027 (at four study intersections) and 2045 (at all study intersections) were estimated. These estimates incorporate PM peak period traffic volume for the years 2027 and 2045, as developed in the West Marion Transportation Planning Study (conducted by Kimley-Horn in September 2023), and distributed project trips. The excerpt of the West Marion Transportation Planning Study is included in **Appendix E**. The spreadsheet used to generate the no-build and build volumes is provided in **Appendix F**.

## YEAR 2027 INTERSECTION CAPACITY ANALYSIS

The intersection lane configurations were aligned with the build conditions of the West Marion Transportation Planning Study and is shown in **Figure 18**, by incorporating the intersection geometry improvements as specified in the planning study (included in **Appendix E**) as the background condition the WEC 2027 analysis. The results of the intersection capacity analysis for the weekday PM peak hours under both no-build and build conditions are summarized in **Table 10**.

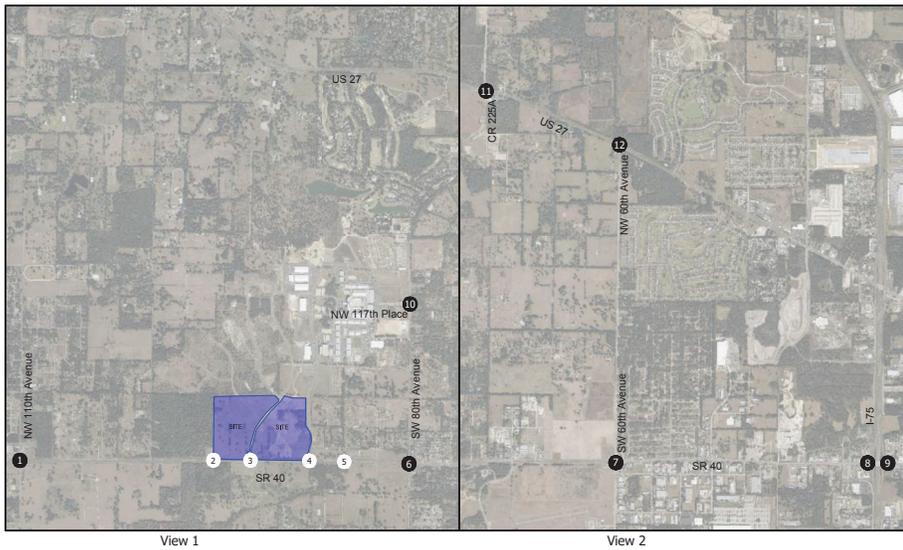
As shown in **Table 10**, all four study intersections operate at an overall Level of Service (LOS) D or better the no-build condition, with all v/c ratio below 1.00

Under the buildout condition, the eastbound, westbound and northbound movement at SR 40 and SW 80th Avenue are projected to experience insufficient capacity are also projected to operate over capacity under the build condition ( $v/c > 1$ ). All other intersections are anticipated to operate within acceptable v/c ratios under both no-build and build conditions. No improvements are proposed for the deficient intersection in 2027, as improvements have already been recommended in the 2030 No-Build Intersection Capacity Analysis.

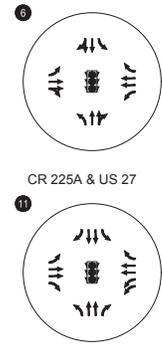
The 2027 no-build Synchro intersection report printouts are provided in **Appendix I** and the 2027 buildout conditions Synchro intersection report printouts are provided in **Appendix K**.

**Table 10. 2027 Intersection Capacity Analysis**

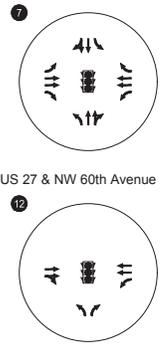
Intersection	Control Type	Performance Measure	PM Peak Period (No-Build Condition)					PM Peak Period (Build Condition)				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	38.4	37.6	39.2	32.8	43.6	73.5	62.8	92	63	55.6
		LOS	D	D	D	F	D	E	E	F	E	E
		v/c ratio*	-	0.85	0.87	0.73	0.75	-	<b>1.06</b>	<b>1.11</b>	<b>1.02</b>	0.85
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	32.8	32.9	32.9	30.1	36.9	40	37.7	40.8	39.2	46.5
		LOS	C	C	C	C	D	D	D	D	D	D
		v/c ratio*	-	0.81	0.85	0.69	0.72	-	0.84	0.88	0.79	0.78
11 - CR 225A at US 27	Signalized	Delay (s/veh)	33.5	24.6	31.1	45.3	48.2	34.6	25.7	32.6	45	47
		LOS	C	C	C	D	D	C	C	C	D	D
		v/c ratio*	-	0.5	0.83	0.37	0.37	-	0.5	0.84	0.46	0.66
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	17.3	22.9	11.1	25.8	-	17.4	23	11.3	26.3	-
		LOS	D	C	B	C	-	B	C	B	C	-
		v/c ratio*	-	0.72	0.45	0.51	-	-	0.72	0.48	0.52	-



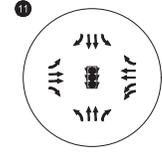
SR 40 & SW 80th Avenue



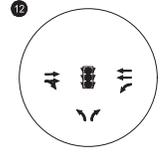
SR 40 & SW 60th Avenue



CR 225A & US 27



US 27 & NW 60th Avenue



- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections

No Build 2027 Lane Configurations  
Ocala, Florida

Figure  
18

# YEAR 2045 NO-BUILD INTERSECTION CAPACITY ANALYSIS

The 2045 intersection no build lane configurations as illustrated in **Figure 19**, incorporate the geometric improvements specified in the West Marion Transportation Planning Study. Further details are provided in **Appendix E**. The results of the intersection capacity analysis for the weekday PM peak hours under no-build conditions are summarized in **Table 11**.

All study intersections operate at an overall LOS of E or better in 2045 under no-build conditions, except the southbound left movement of CR 225A and US 27 has a v/c ratio greater than 1. However, optimizing the signal splits for CR 225A and US 27 reduced the v/c ratio below 1 for that movement as shown in row 12 of **Table 11**.

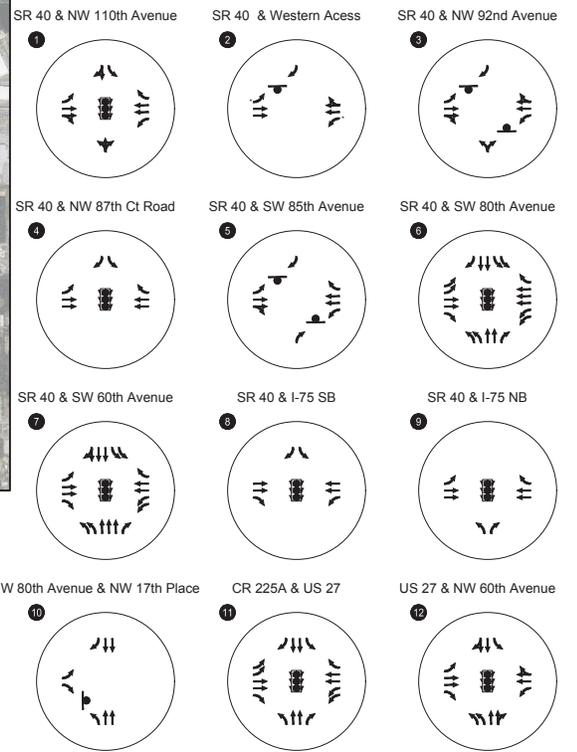
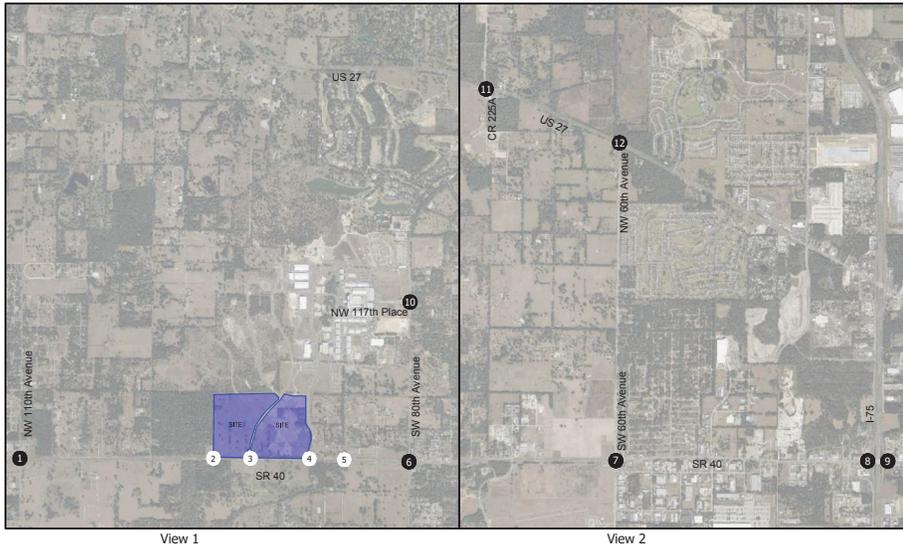
The 2045 no-build Synchro intersection report printouts are provided in **Appendix I**.

**Table 11. 2045 No-build Intersection Capacity Analysis**

Intersection	Control Type	Performance Measure	PM Peak Period (No-Build Condition)				
			Overall	EB	WB	NB	SB
1 – SR 40 at NW 110 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	21.6	17.4	21.7	30.1	35.2
		LOS	C	B	C	C	D
		v/c ratio*	-	0.77	0.87	0.41	0.60
2 – SR 40 at Western Driveway	Stop Controlled	Delay (s/veh)	-	20.9	23.4	-	0
		LOS	-	C	C	-	A
		v/c ratio*	-	0.02	0.03	-	-
3 – SR 40 at NW 92 <sup>nd</sup> Avenue	Stop Controlled	Delay (s/veh)	-	0	11.9	0	0
		LOS	-	A	B	A	A
		v/c ratio*	-	-	0.006	-	-
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Signalized	Delay (s/veh)	4.4	3.6	4.3	-	22.8
		LOS	A	A	A	-	C
		v/c ratio*	-	0.54	0.71	-	0.41
5 – SR 40 at SW 85 <sup>th</sup> Avenue	Two-way Stop Controlled (TWSC)	Delay (s/veh)	-	15.4	12.7	16	17.1
		LOS	-	C	B	C	C
		v/c ratio*	-	0.02	0.15	0.22	0.01
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	53.3	51.2	51.7	51.6	59.3
		LOS	D	D	D	D	E
		v/c ratio*	-	0.92	0.93	0.86	0.96
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	56.1	49.3	56.4	55.7	66.3
		LOS	E	D	E	E	E

Intersection	Control Type	Performance Measure	PM Peak Period (No-Build Condition)				
			Overall	EB	WB	NB	SB
		v/c ratio*	-	0.91	0.88	0.91	0.88
8 - SR 40 at I-75 SB ramp	Signalized	Delay (s/veh)	24.5	37.3	8.7	-	98.6
		LOS	C	D	A	-	F
		v/c ratio*		0.84	0.96		0.9
9 - SR 40 at I-75 NB ramp	Signalized	Delay (s/veh)	27.7	15.8	29.6	93.1	-
		LOS	C	B	C	F	-
		v/c ratio*	-	0.9	0	0.91	0
10 - NW 80 <sup>th</sup> Avenue at NW 17 <sup>th</sup> Place	Stop Controlled	Delay (s/veh)	-	27.9	-	9.2	-
		LOS	-	D	-	A	-
		v/c ratio*	-	0.29	-	0.08	-
11 - CR 225A at US 27	Signalized	Delay (s/veh)	65.8	61.6	67	66.1	68.2
		LOS	E	E	E	E	E
		v/c ratio*	-	0.93	0.98	0.97	1.08
11i - CR 225A at US 27	Signalized (Optimized signal split)	Delay (s/veh)	67.1	70.9	71.5	64.5	57.7
		LOS	E	E	E	E	E
		v/c ratio*	-	0.99	0.98	0.97	0.98
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	51.2	51.2	34.3	76.8	107.7
		LOS	D	D	C	E	F
		v/c ratio*	-	0.81	0.92	0.89	0.96

\*v/c ratio reported for the highest movement



- \* - U-Turns
- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections

Background 2045 Lane Configurations  
Ocala, Florida | Figure 19

# YEAR 2045 BUILD INTERSECTION CAPACITY ANALYSIS

The 2045 intersection build lane configurations is illustrated in **Figure 20**. **Table 12** summarizes the results of the intersection capacity analysis for 2045 buildout conditions. The study intersections are projected to operate at an overall LOS of E or better. However, the following movements are projected to have v/c ratio greater than or equal to 1:

- SR 40 and SW 80<sup>th</sup> Avenue:
  - Eastbound (v/c: 1.10) and westbound (v/c: 1.15)
- SR 40 and I-75 Southbound Ramp:
  - Westbound (v/c: 1.06) and northbound (v/c: 1.05)
- US 27 and CR 225A:
  - Westbound (v/c: 1.03), Northbound (v/c: 1.01), Southbound at capacity (v/c: 1.00)

To supplement the request from Marion County, the following intersection improvements have been proposed and evaluated based on 2045 buildout traffic conditions:

- SR 40 and SW 80<sup>th</sup> Avenue:
  1. Add an additional eastbound thru lane.
  2. Increase the signal timing cycle length from 120 seconds to 160 seconds.
- SR 40 and I-75 Northbound Ramp:
  1. Add an additional northbound left turn lane.
- US 27 and CR 225A:
  1. Increase the signal timing cycle length from 130 seconds to 155 seconds.

With the proposed improvements in place, the previously overcapacity movements are expected to operate at acceptable levels, as the volume-to-capacity (v/c) ratios are expected to drop below 1.0. These improvements are reflected in **Table 12**, specifically in rows 7, 11, and 14.

Please note that the West Marion Transportation Planning Study has accounted for the NW 49<sup>th</sup> Street extension from CR 225A to I-75 and the northern extension of 60<sup>th</sup> Avenue (refer to **Appendix E**, Figures 11 and 12 in the planning study report). The projected traffic volumes for the year 2045 at intersections including SR 40 at SW 80<sup>th</sup> Avenue, SR 40 at SW 60<sup>th</sup> Avenue, US 27 at SW 60<sup>th</sup> Avenue, and CR 225A at US 27, as derived from the West Marion Transportation Planning Study, should reflect expected conditions at these intersections after the proposed extensions. Based on roadway connectivity and shortest-path analysis, these extensions are expected to be rarely used by project traffic. Therefore, the distribution of project trips is expected not to change due to these extensions. Figure 14. 2045 No-Build Volumes

However, the additional network shows a reduction in the overall volume on parallel segments of US 27 and the interchange. Furthermore, as Golden Ocala continues to develop through its entitlements around US 27, the extension of NW 60<sup>th</sup> would provide further parallel relief and alternative pathing for traffic in the area heading to and from I-75.

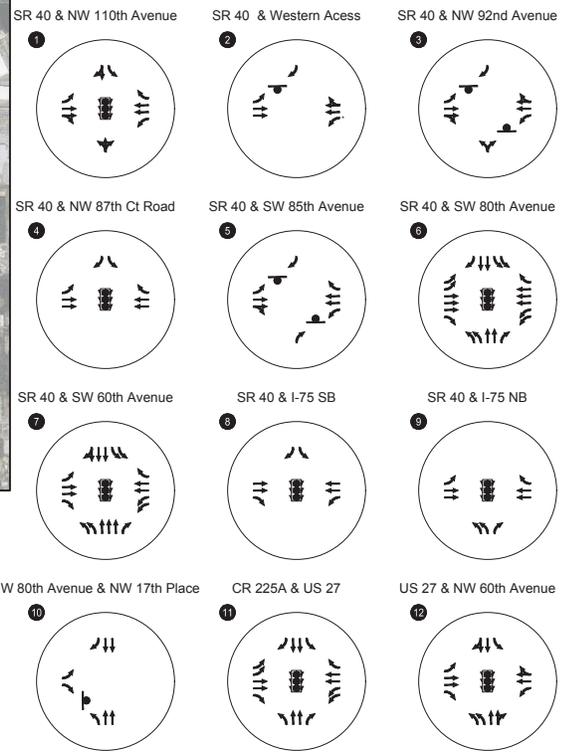
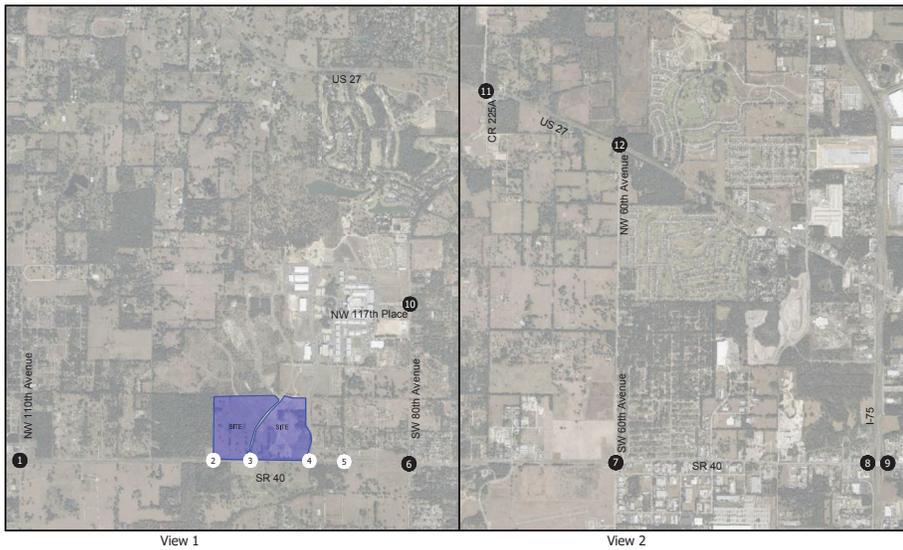
The 2045 buildout conditions Synchro intersection report printouts are provided in **Appendix K**.

**Table 12. 2045 Build Intersection Capacity Analysis**

Intersection	Control Type	Performance Measure	PM Peak Period (Build Condition)				
			Overall	EB	WB	NB	SB
1 – SR 40 at NW 110 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	22.6	18.0	22.7	30.5	38.3
		LOS	C	B	C	C	D
		v/c ratio*	-	0.78	0.88	0.32	0.68
2 – SR 40 at Western Driveway	Stop Controlled	Delay (s/veh)	-	24	30.3	-	18.9
		LOS	-	C	D	-	C
		v/c ratio*	-	0.15	0.24	-	0.07
3 – SR 40 at NW 92 <sup>nd</sup> Avenue	Stop Controlled	Delay (s/veh)	-	23.1	12.1	0	29.8
		LOS	-	C	B	A	D
		v/c ratio*	-	0.22	0.01	-	0.34
4 – SR 40 at NW 87 <sup>th</sup> Court Road	Signalized	Delay (s/veh)	12.4	7.0	11.4	-	41.2
		LOS	B	A	B	-	D
		v/c ratio*	-	0.56	0.85	-	0.86
5 – SR 40 at SW 85 <sup>th</sup> Avenue	Two-way Stop Controlled (TWSC)	Delay (s/veh)	-	-	15.6	32.7	26.6
		LOS	-	-	C	E	D
		v/c ratio*	-	-	0.2	0.41	0.23
6 – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	83.4	91.4	105.1	57.1	62.9
		LOS	E	F	F	E	E
		v/c ratio*	-	<b>1.1</b>	<b>1.15</b>	0.95	0.97
6i – SR 40 at SW 80 <sup>th</sup> Avenue	Signalized (Improved)	Delay (s/veh)	66	50.2	67.6	75.5	77.4
		LOS	E	D	E	F	F
		v/c ratio*	-	0.93	0.98	0.98	0.97
7 – SR 40 at SW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	67.8	56.7	71.6	68.7	76.3
		LOS	E	E	E	E	E
		v/c ratio*	-	0.92	0.97	0.99	0.91
8 - SR 40 at I-75 SB ramp	Signalized	Delay (s/veh)	26.3	44.7	7.5	-	98.6
		LOS	C	D	A	-	F
		v/c ratio*	-	0.91	0.96	-	0.9
9 - SR 40 at I-75 NB ramp	Signalized	Delay (s/veh)	58.7	23	79.7	122.7	-
		LOS	E	C	E	F	-
		v/c ratio*	-	0.92	<b>1.06</b>	<b>1.05</b>	-

Intersection	Control Type	Performance Measure	PM Peak Period (Build Condition)				
			Overall	EB	WB	NB	SB
9i - SR 40 at I-75 NB ramp	Signalized (improved)	Delay (s/veh)	29.5	15.7	32.5	78	-
		LOS	C	B	C	E	-
		v/c ratio*	-	0.92	0.87	0.83	-
10 - NW 80 <sup>th</sup> Avenue at NW 17 <sup>th</sup> Place	Stop Controlled	Delay (s/veh)	-	27.9	-	9.2	-
		LOS	-	D	-	A	-
		v/c ratio*	-	0.29	-	0.08	-
11 - CR 225A at US 27	Signalized	Delay (s/veh)	72.1	70.2	76.4	75.0	64.1
		LOS	E	E	E	E	E
		v/c ratio*	-	0.99	<b>1.03</b>	<b>1.01</b>	<b>1.00</b>
11i - CR 225A at US 27	Signalized (Improved)	Delay (s/veh)	71.3	74.3	73.7	72.0	63.4
		LOS	E	E	E	E	E
		v/c ratio*	-	0.94	0.96	0.97	0.96
12 - US 27 at NW 60 <sup>th</sup> Avenue	Signalized	Delay (s/veh)	52.3	52.6	35.1	77.9	110.7
		LOS	D	D	D	E	F
		v/c ratio*	-	0.82	0.92	0.89	0.97

\*v/c ratio reported for the highest movement



- \* - U-Turns
- Traffic Signal
- Stop Controlled
- Site Accesses
- Study Intersections

Build 2045 Lane Configurations  
Ocala, Florida | Figure 20

# MULTIMODAL ASSESSMENT

A multimodal assessment was conducted to determine existing and proposed alternate modes of transportation within the immediate project study area. The following is a summary of transit, pedestrian, and bicycle facilities:

## TRANSIT

Currently, there are no transit routes operating along SR 40, US 27, or CR 225A within the study area. The nearest transit service is the SunTran Purple Route, which runs along SR 40 between SW 33rd Avenue and NW 23rd Avenue. The closest bus stop to the project site is located just east of the intersection of SR 40 and NW 30th Avenue, approximately 5.3 miles east of the project's access point at SR 40 and SW 85th Avenue.

## PEDESTRIAN FACILITIES

SR 40 has no sidewalks between SW 110th Avenue and SW 60th Avenue. East of SW 60th Avenue, a 5- to 6-foot sidewalk is present on both the north and south sides of SR 40, extending to the I-75 northbound ramp.

## BICYCLE FACILITIES

A 5-foot-wide bicycle lane exists on SR 40 from SW 92<sup>nd</sup> Avenue to SW 82<sup>nd</sup> Court Road.

## GOLF CART

A 12-foot-wide golf cart path runs along NW 87th Court Road, connecting the parking lot north of WEC Exposition Center-1 to the WEC Sales Center.



## Section 5 Conclusions

# CONCLUSIONS

This traffic analysis was prepared to evaluate the traffic impacts associated with the proposed WEC Sports Complex development, located on the north side of SR 40 and west of NW 87 Court Road in Marion County, Florida, in support of obtaining concurrency approval through Marion County. The study analyzed future traffic conditions for year 2030 (which is the project build out year) following the approved TIA methodology. Supplemental analysis for year 2027 and 2045 was conducted on the request from the Marion County building upon the findings of the approved West Marion Transportation Planning Study completed by Kimley-Horn in September 2023.

Findings:

## Trip Generation

- The proposed development is projected to generate a net total of 7,169 new weekday daily trips, including 864 new PM peak-hour trips on weekdays and 1,491 new midday peak-hour trips on weekends.

## Proposed Access

- Access to the development will be provided at four (4) locations: a) Directional access (Left-In/Right-In/Right-Out) approximately 7,970 feet west of SR 40 and NW 110th Avenue.  
b) Directional access (Left-In/Right-In/Right-Out) at the stop-controlled intersection of SR 40 and NW 92nd Avenue.  
c) Full access at the intersection of SR 40 and NW 87th Court, which will be signalized in the buildout year.  
d) Directional access (Left-In/Right-In/Right-Out) at the existing stop-controlled intersection of SR 40 and NW 1st Street/SW 85th Avenue.

## Existing Conditions

- The study roadway segments generally operate acceptably and have sufficient capacity under existing conditions, except for the following SR 40 segments:
  - Urban Area Boundary to SW 140 Avenue
  - SW 140 Avenue to CR 328
  - CR 328 to SW 110 Avenue
- All study intersections operate at an overall Level of Service (LOS) D or better, and all movements have a v/c ratio below 1.00, except the westbound movement at SR 40 and SW 60th Avenue.

## Background Conditions

- Roadway segments along CR 225A and NW 100th Avenue are projected to operate at acceptable LOS with v/c ratios below 1.00. Most SR 40 segments also perform adequately (LOS D or better, v/c < 1.00), except the SR 40 corridor between the Urban Area Boundary and SW 110th Avenue, which exceeds capacity (v/c > 1.00).
- All intersections are expected to operate at LOS E or better, except the following movements projected to have v/c > 1.00:
  - SR 40 and SW 80th Avenue
  - SR 40 and SW 60th Avenue

- US 27 and SW 60th Avenue
- To address these deficiencies, the following intersection modifications have been proposed and evaluated based on future no-build volumes:
  - Add a right-turn lane with permitted overlap signal phase at both northbound and southbound approaches of SR 40 and SW 80th Avenue; increase cycle length from 125 to 150 seconds.
  - Add a second northbound left-turn lane, convert the permitted phase to protected, add a permitted southbound right-turn lane, and change the shared thru/right-turn lane to thru-only at SR 40 and SW 60th Avenue; increase cycle length from 145 to 160 seconds.
  - Increase the split for the westbound left-turn phase at US 27 and SW 60th Avenue.
- With these improvements, previously overcapacity movements are expected to operate acceptably, with v/c ratios dropping below 1.00 (see Table 6, rows 7, 9, and 15).

### **Buildout Conditions (2030)**

- In addition to the deficiencies identified under background conditions, the following SR 40 segments are projected to reach or exceed capacity under buildout conditions:
  - SW 60 Avenue to SW 52 Avenue
  - SW 52 Avenue to I-75 Ramp (West)
  - I-75 Ramp (East) to SW 33 Avenue
  - SW 33 Avenue to SW 27 Avenue
- The development will contribute a proportionate fair share, as estimated by Marion County, toward widening these segments.
- Under future buildout conditions, study intersections are expected to operate at LOS E or better, with v/c ratios below 1.00.

### **Turn Lane Analysis**

- The background turn lane analysis identified many left-turn lanes where the queue length is deficient. These turn lanes should be considered candidates for dual left-turn lanes.
- Based on turn lane analysis, the eastbound left-turn movement at SR 40/SW 80th Avenue and the eastbound left-turn movement at SR 40/I-75 northbound ramp have deficiencies exceeding 100 feet caused by project trips. The southbound left turn at SR 40 at SW 60th Avenue has nearly 100 feet deficiency feet caused by project.
- Turn lanes with a deficiency of less than 50 feet (2 car lengths) may be excluded from consideration for improvements, and the cost improving these turn lanes can be reallocated toward improving turn lanes with deficiencies (rounded to a car length) for the following turn lanes:
  - SR 40 at SW 80th Avenue: Eastbound Left Turn (150 feet)
  - SR 40 at SW 60th Avenue: Southbound Left Turn (100 feet) and Eastbound Left Turn (50 feet)
- The extension of the eastbound left turn lane storage length (deficiency rounded to a car length: 125 feet) at SR 40 at I-75 NB ramp and the westbound left turn lane storage length (deficiency rounded to a car length: 75 feet) at SR 40 at I-75 SB Ramp cannot be considered feasible. Because these two lanes are located in such a way increasing the storage length for one turn lane would

reduce the available space for the other. As a result, any improvements must consider this physical constraint.

Note that, under the 2030 no-build condition, the eastbound left turn lane storage length has a deficiency of 290 feet at SR 40 at I-75 NB ramp and the westbound left turn lane storage length has a deficiency of 415 feet at SR 40 at I-75 SB. For these movements, dual left turn lanes should be considered as an alternative.

- The development will provide a proportionate fair share, as estimated by Marion County, to mitigate these movements.

#### **Supplemental Analysis – Year 2027**

- The four intersections proposed by the county were analyzed. Under no-build conditions, all intersections operate at LOS D or better with v/c ratios below 1.00.
- Under buildout conditions, all intersections operate at an LOS E or better, and the eastbound, westbound, and northbound movements at SR 40/SW 80th Avenue are projected to operate over capacity (v/c > 1.00).
- All other intersections are anticipated to operate within acceptable v/c ratios under both scenarios. No additional improvements are proposed for 2027, as improvements have already been recommended in the 2030 No-Build Intersection Capacity Analysis.

#### **Supplemental Analysis – Year 2045**

- Under no-build conditions, all study intersections are projected to operate at LOS E or better, with all movements below v/c = 1.00.
- Under buildout conditions, the following movements are projected to exceed capacity:
  - Eastbound and westbound movements at SR 40/SW 80th Avenue (v/c = 1.10 and 1.15).
  - Westbound and northbound movements at SR 40/I-75 Southbound Ramp (v/c = 1.06 and 1.05).
  - Westbound, Northbound and southbound at US 27/ CR 225A (v/c: 1.03, 1.01 and 1.00 respectively)
- To address these, the following improvements have been proposed and evaluated based on 2045 buildout conditions:
  - Add an additional eastbound thru lane and increase cycle length from 120 to 160 seconds at SR 40/SW 80th Avenue.
  - Add an additional northbound left-turn lane at SR 40/I-75 Northbound Ramp.
  - Increase cycle length from 130 to 155 seconds at US 27/CR 225A.

The remainder of this document can be found as AR 33437 at [https://selfservice.marionfl.org/energov\\_prod/selfservice#/home](https://selfservice.marionfl.org/energov_prod/selfservice#/home)