

MISSION RISE
Project № 23017.1, v1.1
August 2023

**TRAFFIC IMPACT ANALYSIS
TOWN OF HOWEY-IN-THE HILLS
FLORIDA**

Prepared by:



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EXECUTIVE SUMMARY

Project Information

Name: Mission Rise

Location: West of SR 19 (South Palm Avenue), east of Silverwood Lane, and south of Number 2 Road in the Town of Howey-in-the-Hills, Lake County, Florida

Description: 592 Single Family Residential Units

Access Plan: One (1) full access at the intersection of Number 2 Road and Spine Road
One (1) full access at the intersection of SR 19 and Revels Road
One (1) full access at the intersection of Revels Road and Orange Blossom Road (expected to carry limited traffic)

Findings

Trip Generation: 5,181 Daily Trips / 376 AM Peak Hour Trips / 529 PM Peak Hour Trips

Roadway Capacity: The segments of SR 19, from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities at the project buildout.

Intersection Capacity: The intersections of SR 19 and CR 48, SR 19 and Central Avenue, SR 19 and Revels Road, and SR 19 and CR 455 are projected to experience delays in the buildout condition. The project does not have a significant impact on the intersections.

Recommendations

Intersection Improvements: Retime the signal at the intersections of SR 19 and CR 48 to maintain LOS standards.

Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.

Construct a 425-foot westbound left turn lane and a 250-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

PROFESSIONAL ENGINEERING CERTIFICATION

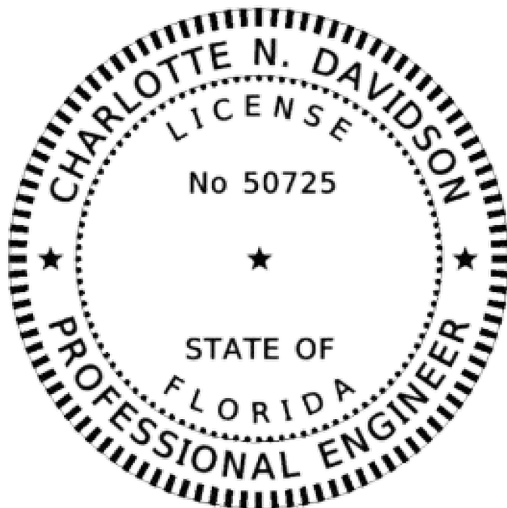
I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic & Mobility Consultants LLC, a corporation authorized to operate as an engineering business, CA-30024, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Mission Rise

LOCATION: Town of Howey-in-the-Hills, Florida

CLIENT: ASF TAP Florida, LLC

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

**Charlotte N
Davidson**

Digitally signed by
Charlotte N Davidson
Date: 2023.08.29 13:19:00
-04'00'

ON THE DATE ADJACENT TO THE SEAL

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TRAFFIC & MOBILITY CONSULTANTS LLC
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CERTIFICATE OF AUTHORIZATION CA-30024
CHARLOTTE N. DAVIDSON, P.E. NO 50725

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1.0 INTRODUCTION

This Traffic Impact Analysis (TIA) was conducted to assess the impact of the proposed Mission Rise development in the town of Howey-in-the-Hills, Florida. The proposed development consists of 592 single-family units with an anticipated buildout year of 2033. This study conforms to the Tier 2 TIA requirements of the Town of Howey-in-the-Hills and Lake County. The analysis was prepared in accordance with the approved methodology. The TIA has been revised to include updated information based on a meeting with Lake County held on August 21, 2023. The methodology and meeting notes are included in **Appendix A**.

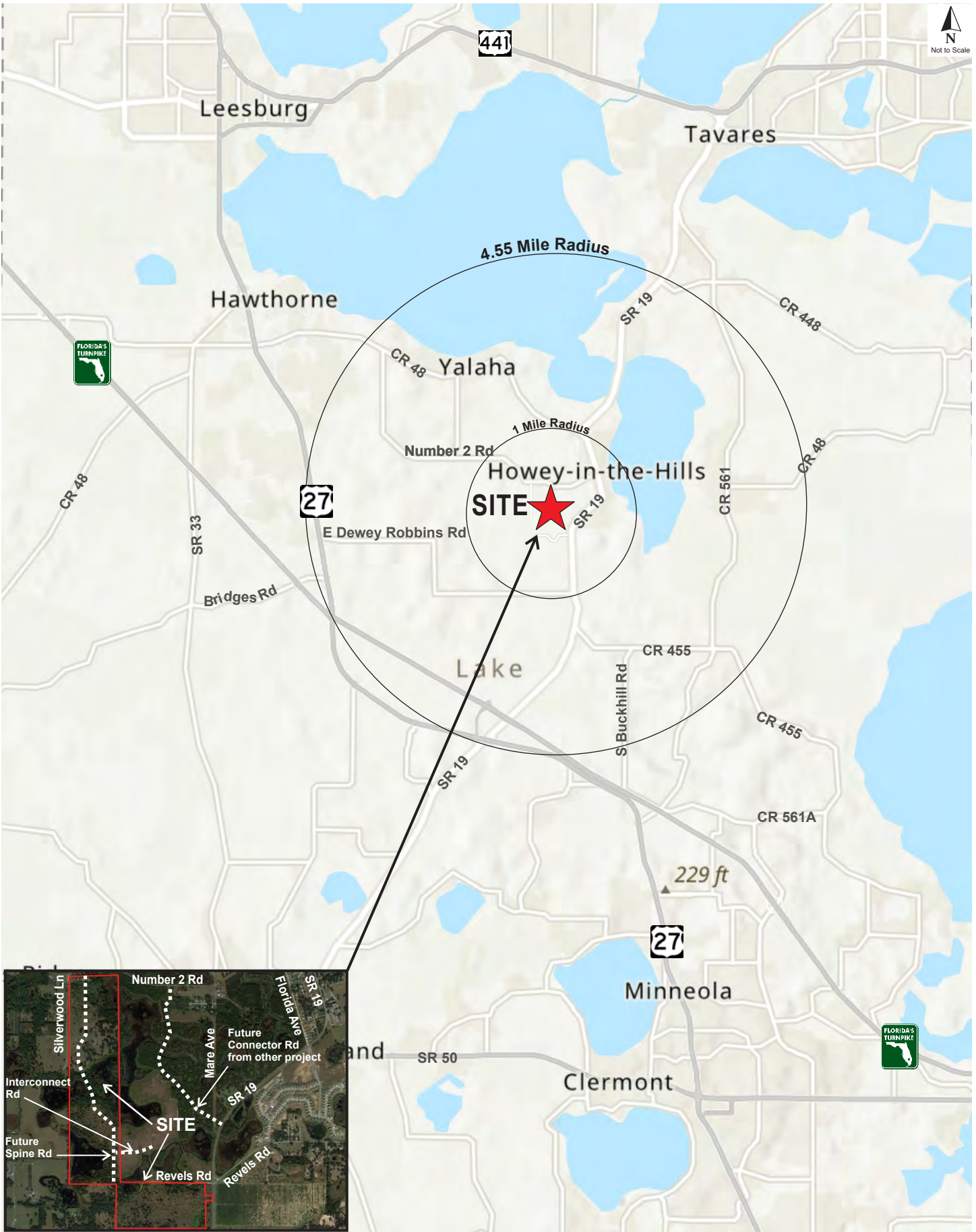
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road. **Figure 1** depicts the site location and the surrounding transportation network.

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. The preliminary development site plan is provided in **Appendix B**.

Data used in the analysis consisted of site plan/development information provided by the project engineers, AM and PM peak hour intersection traffic counts obtained by Traffic & Mobility Consultants LLC, FDOT's *2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook* and roadway capacities obtained from the *2022 Lake County Congestion Management Process (CMP) Database*.

1.1 Study Area

The project study area was established based on the standard requirements of the Lake Sumter Metropolitan Planning Organization (LSMPO) methodology and the Town of Howey-in-the-Hills *Land Development Code (LDC)*. In accordance with the requirements of Tier 2 TIA methodology, the impact area includes roadway segments and intersections within a 4.55-mile radius of the site in addition to roadways where the development traffic is expected to consume 5% or more of their adopted Level of Service (LOS) capacities. The roadway segments characteristics were obtained from the *2022 Lake County Congestion Management Process (CMP) Database* and *2023 FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B*, included in **Appendix C**. The project study area determination is provided in **Table 1** as determined in the approved methodology.



**Table 1
Study Area**

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project		Within 1-Mile? **	% Cap	In Study?
									Dist	Trips			
CR 455													
SR 19 to CR 561	950	2	R	Undivided	45	C	740	EB WB	10%	20 33	NO	2.7% 4.5%	NO
CR 561 to CR 561A	960	2	R	Undivided	25	C	410	EB WB	5%	10 17	NO	2.4% 4.1%	NO
CR 48													
US 27 to Lime Ave	1240	2	U	Undivided	40	D	1,080	EB WB	15%	50 29	NO	4.6% 2.7%	NO
Lime Ave to SR 19	1250	2	U	Undivided	40	D	1,080	EB WB	2%	7 4	NO	0.6% 0.4%	NO
CR 561 to Ranch Rd	1260	2	U	Undivided	40	D	840	EB WB	3%	6 10	NO	0.7% 1.2%	NO
Ranch Rd to CR 448A	1270	2	R	Undivided	40	C	410	EB WB	3%	6 10	NO	1.5% 2.4%	NO
CR 561													
CR 448 to CR 48	1410	2	U	Undivided	50	D	1,080	NB SB	0%	0 0	NO	0.0% 0.0%	NO
CR 48 to South Astatula City Limit	1420	2	U	Undivided	40	D	620	NB SB	3%	10 6	NO	1.6% 1.0%	NO
South Astatula City Limit to CR 455	1430	2	U	Undivided	40	D	1,080	NB SB	3%	10 6	NO	0.9% 0.6%	NO
CR 455 to Howey Cross Rd	1440	2	R	Undivided	35	C	470	NB SB	2%	7 4	NO	1.5% 0.9%	NO
Howey Cross Rd to Turnpike Rd / CR 561A	1450	2	R	Undivided	40	C	640	NB SB	2%	7 4	NO	1.1% 0.6%	NO
SR 19													
Lane Park Rd to CR 48	3040	2	U	Undivided	55	D	920	NB SB	23%	45 77	NO	4.9% 8.4%	YES
CR 48 to Central Ave	3050	2	U	Undivided	40	D	700	NB SB	25%	49 83	NO	7.0% 11.9%	YES
Central Ave to CR 455	3060	2	U	Undivided	35	D	1,200	NB SB	50%	167 98	YES	13.9% 8.2%	YES
CR 455 to US 27 / SR 25	3070	2	R	Undivided	55	C	450	NB SB	35%	117 69	NO	26.0% 15.3%	YES
US 27 / SR 25 to CR 478	3080	2	R	Undivided	55	C	450	NB SB	20%	67 39	NO	14.9% 8.7%	YES
SR 91 (Florida Turnpike)													
US 27/SR 25 to US 27/SR 25/SR 19 Interchange	3566	4	U	Freeway	70	B	2,230	EB WB	10%	20 33	NO	0.9% 1.5%	NO
US 27/SR 25													
SR 19 to CR 561	3830	4	U	Divided	55	D	3,280	EB WB	15%	29 50	NO	0.9% 1.5%	NO
Central Ave													
SR 19 to Mare Ave	N/A	2	U	Undivided	30	D	770 *	EB WB	10%	20 33	YES	2.6% 4.3%	YES
Number 2 Rd													
Mare Ave to Silverwood Ln	N/A	2	U	Undivided	30	D	730 *	EB WB	35%	69 117	YES	9.5% 16.0%	YES
Silverwood Ln to CR 48	N/A	2	U	Undivided	45	D	730 *	EB WB	15%	29 50	YES	4.0% 6.8%	YES

Source: 2022 Lake County CMP Database

* 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables

Bold numbers represent capacity equal or higher than 5%.

Based on the study area analysis presented in **Table 1**, the following roadway segments were analyzed for the PM peak hour:

- SR 19
 - Lane Park Road to CR 48
 - CR 48 to Central Avenue
 - Central Avenue to CR 455
 - CR 455 to US 27 / SR 25
 - US 27 / SR 25 to CR 478

- Central Avenue
 - SR 19 to Mare Avenue

- Number 2 Road
 - Mare Avenue to Silverwood Lane
 - Silverwood Lane to CR 48

The following intersections were analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- Central Avenue and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized) (East Project Access)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (Proposed)
- Revels Road and Orange Blossom Road (South Project Access)

2.0 EXISTING CONDITIONS ANALYSIS

Existing conditions in the vicinity of the site were analyzed to establish a baseline for the traffic conditions prevailing in the vicinity of the proposed development. The analysis included a review of existing roadway segment capacity and analysis of the intersection operations at the study intersections.

2.1 Roadway Segment Capacity

Existing roadway conditions were analyzed by comparing the existing traffic volumes within the study area and the adopted level of service (LOS) standards for the roadway segments. **Table 2** summarizes the roadway segment capacity analysis.

**Table 2
Existing Roadway Segment Capacity Analysis**

Roadway Segment	Seg ID	No Lns	LOS Std	Pk Dir Cap	Dir	Existing Vol	LOS	V/C	Deficient?
*Central Ave									
SR 19 to Mare Ave	N/A	2	D	530	EB	57	C	0.11	NO
					WB	59	C	0.11	NO
SR 19									
Lane Park Rd to CR 48	3040	2	D	920	NB	610	C	0.66	NO
					SB	656	C	0.71	NO
CR 48 to Central Ave	3050	2	D	700	NB	433	C	0.62	NO
					SB	372	C	0.53	NO
Central Ave to CR 455	3060	2	D	1,200	NB	433	B	0.36	NO
					SB	372	B	0.31	NO
CR 455 to US 27 / SR 25	3070	2	C	450	NB	507	D	1.13	YES
					SB	435	C	0.97	NO
US 27 / SR 25 to CR 478	3080	2	C	450	NB	466	D	1.04	YES
					SB	519	D	1.15	YES
Number 2 Rd									
Mare Avenue to Silverwood Ln	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO
Silverwood Ln to CR 48	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO

Source: 2022 Lake County CMP Database

* Counts were obtained from PM Peak Turning Movement Counts

**A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road

The analysis indicates that all study roadway segments currently operate adequately within their capacities except the segments of SR 19 from CR 455 to CR 478 which currently operate over capacity.

2.2 Intersection Capacity

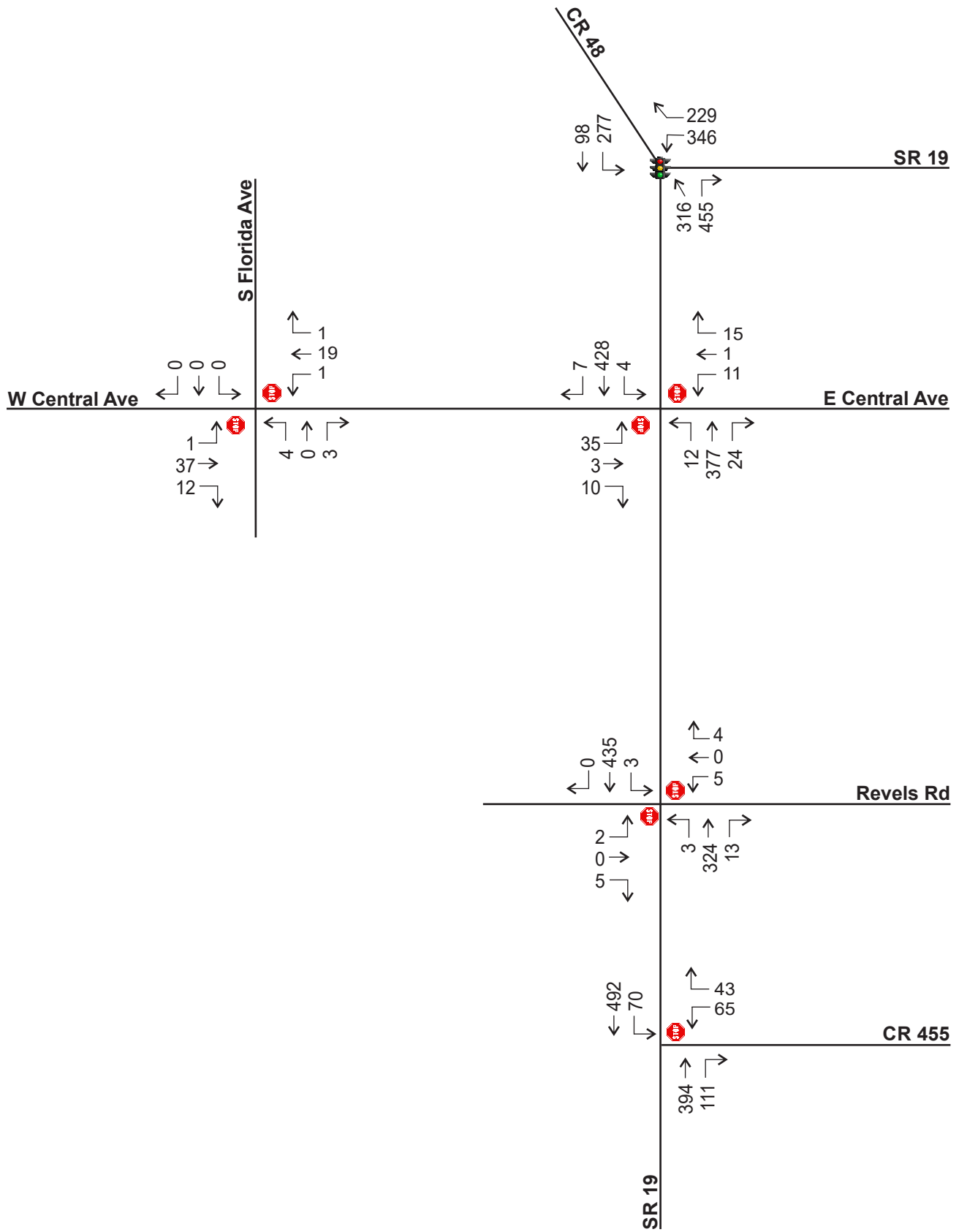
The intersection capacity analysis was performed for the AM and PM peak hour periods. The capacity analysis was performed using *Synchro* and the methods of the *Highway Capacity Manual (HCM)*. Turning movement volumes obtained during the AM and PM peak hour are displayed in **Figure 2** and **Figure 3**, respectively. The counts at SR 19 and CR 455 were collected on January 24, 2023, which coincides with a seasonal factor of 1.0. The remaining intersection turning movement counts were collected on July 19, 2023, during the off-peak season; therefore, a seasonal factor of 1.06 was applied to these counts. The turning movement counts and the seasonal factor report are included in **Appendix D**.

The results of the intersection capacity analysis, summarized in **Table 3**, reveal that all study intersections are currently operating at adequate LOS. Detailed *HCM* analysis worksheets are included in **Appendix E**.

Table 3
Existing Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	50.7	D	20.3	C	11.2	B	29.5	C
		PM	--	--	87.5	F	17.1	B	10.7	B	55.7	E
SR 19 & Central Ave	TWSC	AM	20.7	C	15.1	C	8.9	A	8.8	A	--	--
		PM	22.6	C	17.9	C	9.0	A	8.8	A	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.3	A	8.8	A	0.0	A	--	--
		PM	0.0	A	7.3	A	8.8	A	9.4	A	--	--
SR 19 & Revels Rd	TWSC	AM	13.3	B	15.0	C	8.3	A	8.0	A	--	--
		PM	14.0	B	16.1	C	8.1	A	8.2	A	--	--
SR 19 & CR 455	TWSC	AM	--	--	25.1	D	--	--	8.9	A	--	--
		PM	--	--	26.7	D	--	--	9.0	A	--	--

Average delay is in seconds



3.0 PROJECT TRAFFIC

3.1 Trip Generation

The Trip Generation Analysis was conducted using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The ITE Information sheets are included in **Appendix F**. **Table 4** summarizes the resulting trip generation analysis.

Table 4
Trip Generation Analysis

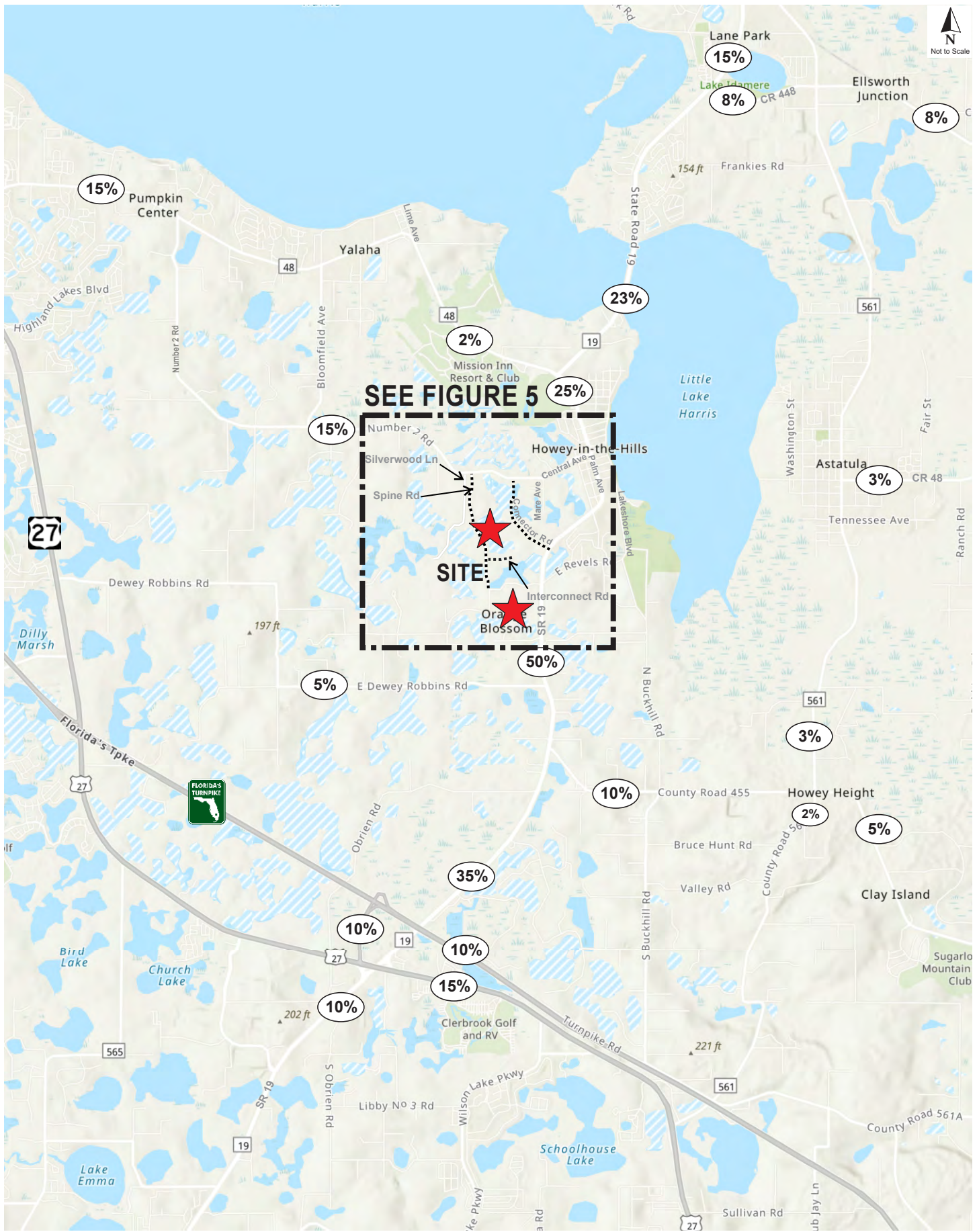
ITE Code	Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	592 DU	8.75	5,181	0.63	376	94	282	0.89	529	333	196

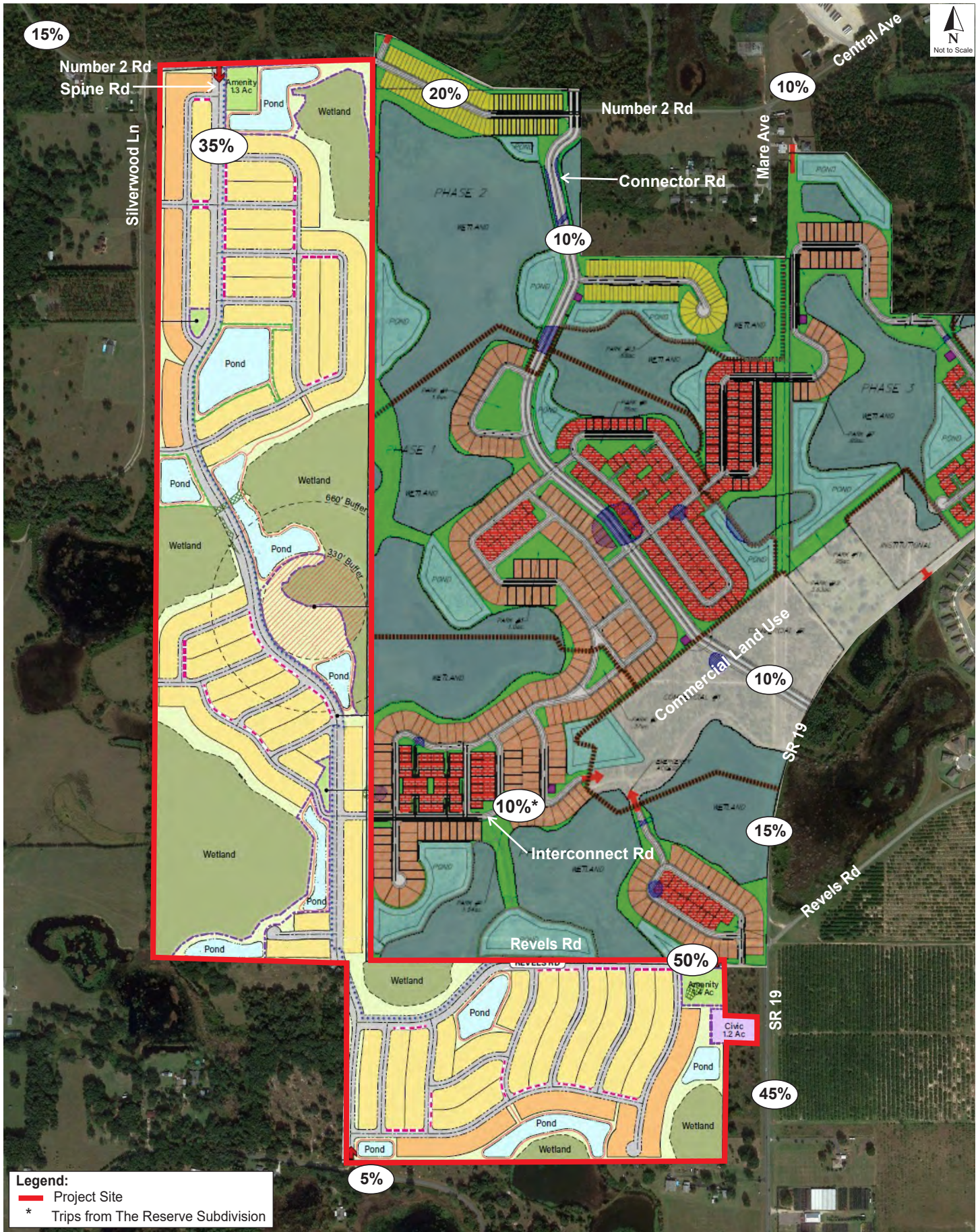
Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development is projected to generate 5,181 new daily trips, of which 376 trips occur during the AM peak hour and 529 trips occur during the PM peak hour.

3.2 Trip Distribution

A trip distribution pattern was developed using the *Central Florida Regional Planning Model (CFRPMv7)*. The model distribution was slightly adjusted based on local knowledge, professional engineering judgement, and the location of the development with respect to the study area attractions and activity centers to reflect the prevailing travel patterns in the study area and the surrounding transportation network. The raw model plots are provided in **Appendix G**, and the project trip distribution pattern is shown in **Figure 4**. Detailed trip distribution near the project site is shown in **Figure 5**.





4.0 PROJECTED CONDITIONS ANALYSIS

An analysis of projected conditions was conducted to determine the impact of the proposed development on the roadway segments capacity, as well as the proposed access connections and intersections to the site. The project buildout year for the analysis is 2033.

4.1 Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP)*, as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. The improvements are listed in **Table 5**. Construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in **Appendix H**.

**Table 5
Planned and Programmed Improvements**

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

* LSMPO TIP Fiscal Year 2023-2027

** LSMPO 2022 LOPP Tier 2 project

4.2 Background Traffic Projection

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic for the buildout year of 2033 was estimated by applying the growth rates obtained from *2022 Lake County CMP Database* to the existing traffic volumes. A minimum of 2% annual growth rate was applied to existing traffic volumes for which published annual growth rates are below 2%. The committed trips for the following approved developments within the study area are included in **Appendix I**:

- Whispering Hills
- Talichet Phase 1 and Phase 2
- The Reserve at Howey in the Hills

4.3 Roadway Segment Capacity

Projected roadway conditions were analyzed by comparing the projected traffic volumes on the study segments to their service volumes and adopted LOS standards. The total projected traffic volume is composed of background traffic, vested trips and project trips. **Table 6** summarizes the roadway segment capacity analysis, which reveals the following:

- SR 19 from Lane Park Road to CR 48 is projected to operate over its capacity.
- SR 19 from CR 48 to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic.
- All remaining roadway segments will continue to operate adequately at project buildout.

SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to four (4) lanes. Number 2 Road is a substandard road with reduced capacity. It is projected to operate at an acceptable LOS, as well.

**Table 6
Projected Roadway Segment Capacity Analysis**

Roadway Segment	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2033 Backg'd	Vested Trips	Total Backg'd Volume	Backg'd LOS	Backg'd V/C	Trip Distr	Proj Dir	Project Volume	Total Volume	Final LOS	Final V/C
*Central Ave																	
SR 19 to Mare Ave	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 85	123 157	C C	0.23 0.30	10%	OUT IN	20 33	143 190	C C	0.27 0.36
SR 19																	
Lane Park Rd to CR 48	2	D	920	NB/EB SB/WB	610 656	2.00%	744 800	72 115	816 915	C D	0.89 0.99	23%	OUT IN	45 77	861 992	C F	0.94 1.08
CR 48 to Central Ave	2	D	700	NB/EB SB/WB	433 372	2.00%	528 454	167 268	695 722	D F	0.99 1.03	25%	OUT IN	49 83	744 805	F F	1.06 1.15
Central Ave to CR 455	2	D	1,200	NB/EB SB/WB	433 372	2.00%	528 454	266 167	794 621	C C	0.66 0.52	50%	IN OUT	167 98	961 719	D C	0.80 0.60
CR 455 to US 27/ SR 25	2	C	450	NB/EB SB/WB	507 435	2.00%	619 531	102 161	721 692	D D	1.60 1.54	35%	IN OUT	117 69	838 761	E E	1.86 1.69
US 27/ SR 25 to CR 478	2	C	450	NB/EB SB/WB	466 519	2.00%	569 633	102 161	671 794	D E	1.49 1.76	10%	IN OUT	33 20	704 814	D E	1.56 1.81
**Number 2 Rd																	
Mare Ave to Silverwood Ln	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	35%	OUT IN	69 117	192 242	C D	0.48 0.61
Silverwood Ln to CR 48	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	15%	IN OUT	50 29	173 154	C C	0.43 0.39

Source: 2022 Lake County Annual Traffic Counts

*Exiting Counts were obtained from PM Peak Turning Movement Counts

**A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road

4.4 Intersection Capacity Analysis

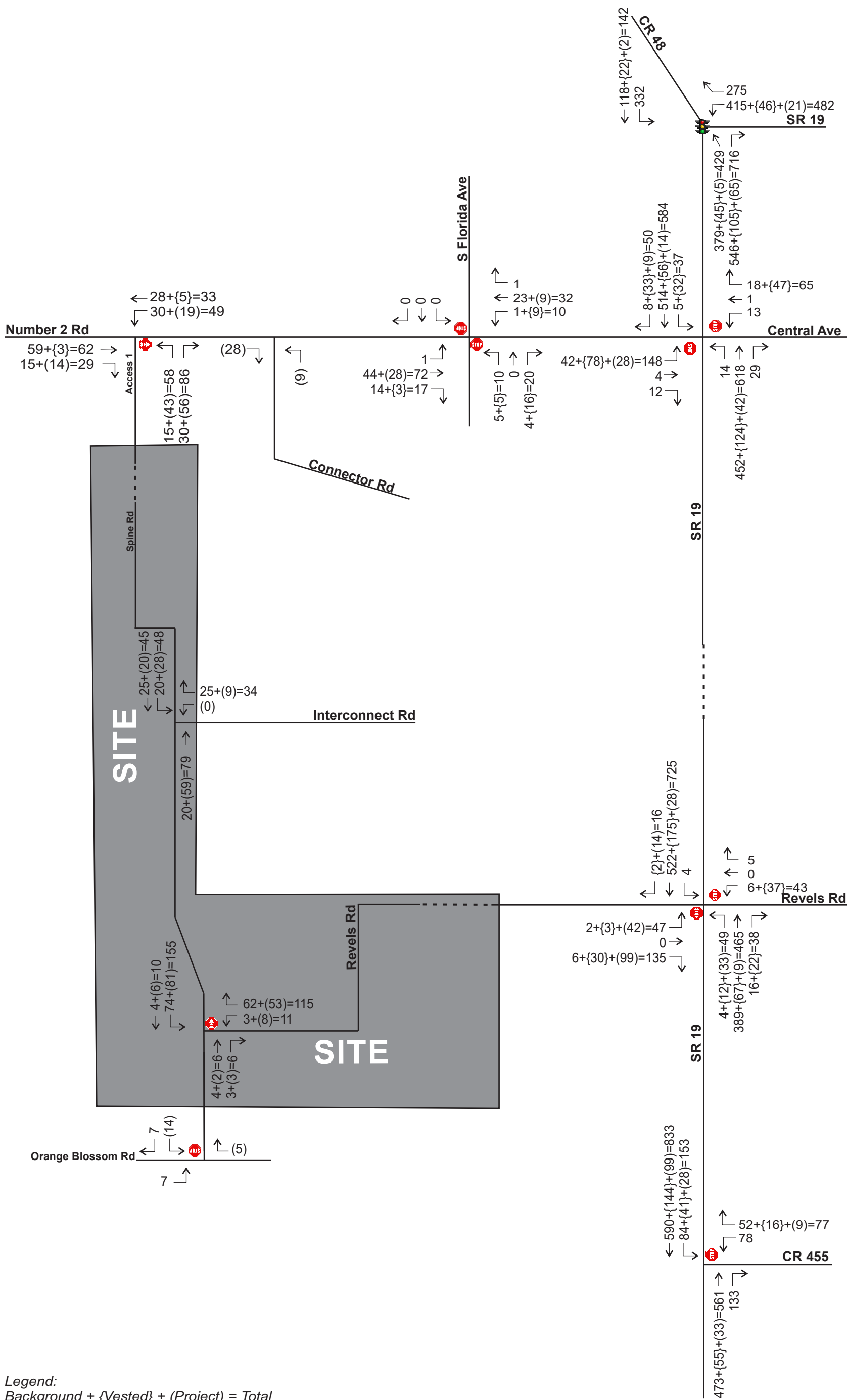
The projected volumes for the intersection capacity and operations analysis were calculated by assigning the project trips to the project driveways and adding those volumes to the background volumes and vested trips at the study intersections. Projected background traffic was estimated as discussed in the previous section. Projected background traffic on the proposed Spine Road and Revels Road were estimated based on the *CFRPMv7* model daily volumes. The AADT model plots are included in **Appendix J**.

The projected AM and PM peak hour volumes are illustrated in **Figures 6** and **Figure 7**, respectively. The results of the analysis are summarized in **Table 7**, and the analysis worksheets are included in **Appendix K**. The intersection volume projection sheets are included in **Appendix L**.

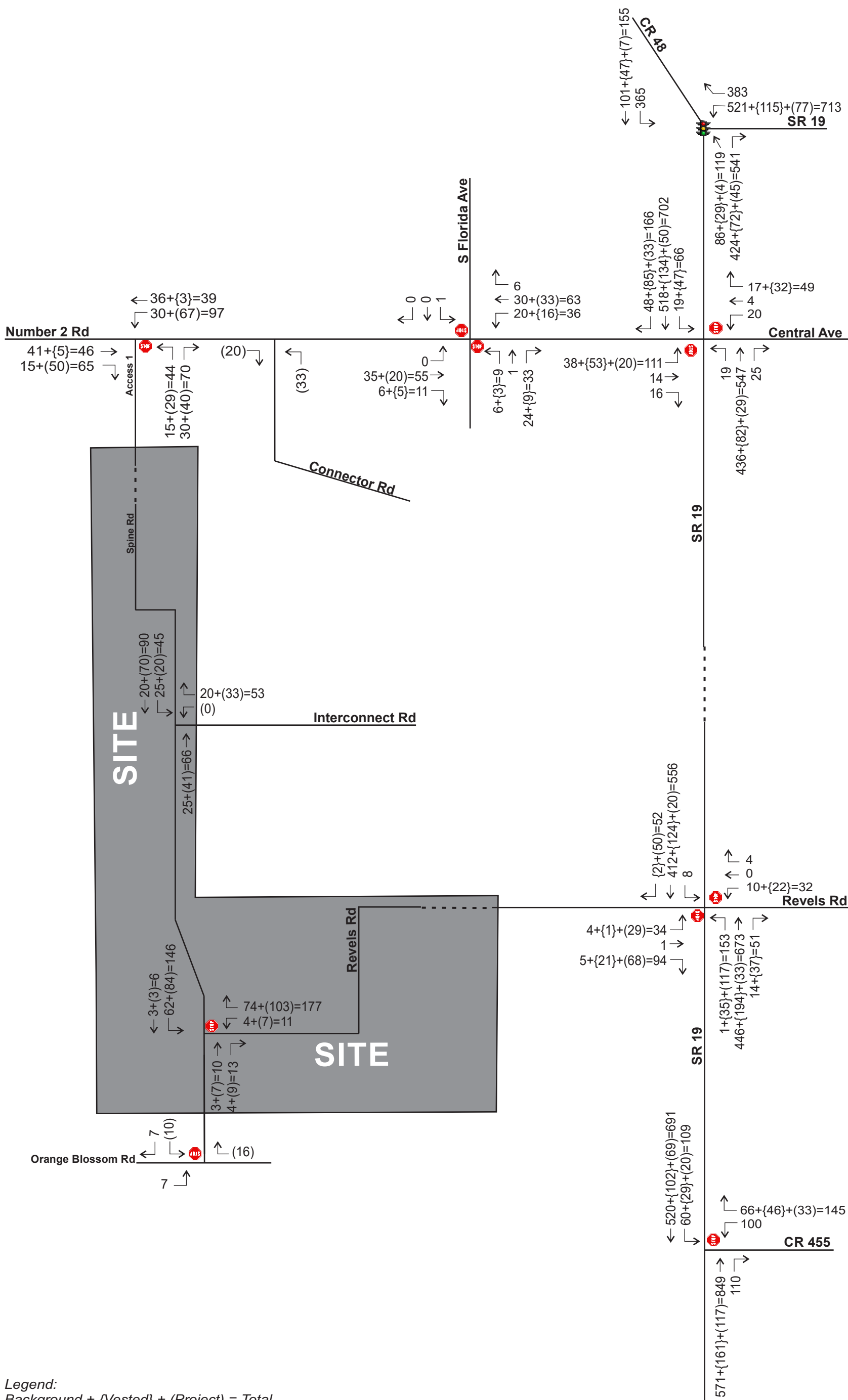
Table 7
Projected Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	134.8	F	26.1	C	14.8	B	67.0	E
		PM	--	--	>300	F	19.0	B	10.8	B	210.5	F
SR 19 & Central Ave	TWSC	AM	>300	F	22.2	C	9.7	A	10.0	A	--	--
		PM	>300	F	48.9	E	10.9	B	9.8	A	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.5	A	9.2	A	0.0	A	--	--
		PM	0.0	A	7.5	A	9.3	A	10.7	B	--	--
SR 19 & Revels Rd / Project Entrance	TWSC	AM	93.6	F	217.4	F	9.8	A	8.6	A	--	--
		PM	168.6	F	>300	F	9.8	A	9.4	A	--	--
SR 19 & CR 455	TWSC	AM	--	--	278.4	F	--	--	10.2	B	--	--
		PM	--	--	>300	F	--	--	11.5	B	--	--
Spine Rd & Interconnect Rd / Proposed	TWSC	AM	--	--	8.8	A	--	--	7.5	A	--	--
		PM	--	--	8.9	A	--	--	7.4	A	--	--
Number 2 Rd and Spine Rd / Project Entrance	TWSC	AM	--	--	7.5	A	10.1	B	--	--	--	--
		PM	--	--	7.6	A	10.4	B	--	--	--	--
Spine Rd & Revels Rd	TWSC	AM	--	--	9.2	A	--	--	7.5	A	--	--
		PM	--	--	9.5	A	--	--	7.5	A	--	--
Revels Rd & Orange Blossom Rd / Project Entrance	TWSC	AM	7.2	A	--	--	--	--	8.6	A	--	--
		PM	7.3	A	--	--	--	--	8.6	A	--	--

Average delay is in seconds



Legend:
 Background + {Vested} + (Project) = Total



Legend:
Background + {Vested} + (Project) = Total

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate with delay during the PM peak hour. Further review is needed.
- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound direction. The intersection operation is projected to be improved as part of the widening of SR 19.
- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic. The eastbound and the westbound movements are projected to operate at volume-to-capacity ratio of 1.09 and 1.03, respectively, which are not significantly over the available capacity. Therefore, no further review is needed.
- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement and no further review is needed.

The remaining study intersections are projected to operate adequately at the project buildout.

Intersection Capacity Analysis with Recommended Mitigation:

The proposed project does not significantly impact study area intersections. One (1) intersection has been reviewed further. The intersection is determined to need the following improvement to achieve acceptable LOS conditions at project buildout:

- Retiming the signal is recommended at the intersection of SR 19 and CR 48.

The traffic operations for the mitigated intersection is projected to have acceptable LOS, as detailed in **Table 8**. The background conditions and the buildout conditions with the mitigation analysis worksheets are included in **Appendix M**.

**Table 8
Projected Intersection Capacity Analysis with Mitigation**

Intersection	Peak Period	Scenario	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	AM	Background	--	--	117.3	F	25.9	C	14.6	B	59.0	E
		Buildout	--	--	134.8	F	26.1	C	14.8	B	67.0	E
		Mitigation	--	--	45.7	D	42.9	D	29.9	C	40.0	D
	PM	Background	--	--	274.3	F	18.9	B	10.8	B	161.4	F
		Buildout	--	--	>300	F	19.0	B	10.8	B	210.5	F
		Mitigation	--	--	41.5	D	32.8	C	36.6	D	39.2	D

Average delay is in seconds

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate at an acceptable overall LOS by optimizing the signal timing.

5.0 ACCESS REVIEW

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. SR 19 is a 2-lane undivided facility with a posted speed limit of 55 miles per hour (mph) near the project entrance. Number 2 Road is a 2-lane undivided facility with a posted speed limit of 30 mph in the east direction and 45 mph in the west direction near the project entrance. Orange Blossom Road is a 2-lane undivided facility with a posted speed limit of 30 mph near the project entrance.

5.1 Turn Lane Review

A review of the need for turn lanes at the project entrance intersections was conducted based on the Lake County *Land Development Code (LDC)* guidelines, which are provided in **Appendix N**. In accordance with the *LDC* guidelines, right and left turn lanes are warranted at the intersection of SR 19 and Revels Road, and at Number 2 Road and Spine Road. The intersection of Orange Blossom Road and Revels Road is expected to carry limited traffic; therefore, exclusive turn lanes are not recommended.

The recommended lengths of the turn lanes on SR 19 were calculated based on the requirements of the *FDOT Design Manual Exhibit 212-1*, provided in **Appendix O**, and the recommended lengths of the turn lanes on Number 2 Road were calculated based on the Lake County *LDC* guidelines. The calculations are provided as follows:

SR 19 and Revels Road

Left Turn Lane Length = Deceleration Distance + Queue Length

Deceleration at 60 mph (design speed) = 405 feet

95th Percentile Queue Length = 1 x 25 = 25 feet

Northbound Left Turn Lane = 405 feet + 25 feet = 430 feet (including a 50-foot taper)

Right Turn Lane Length = Deceleration Distance

Deceleration at 60 mph (design speed) = 405 feet

Southbound Right Turn Lane = 405 feet

Number 2 Road and Spine Road

Left Turn Lane Length = Taper Length + Storage Length

Taper Length at 50 mph (design speed) = 230 feet

Storage Length at 50 mph (design speed) = 195 feet

Westbound Left Turn Lane = 230 feet + 195 feet = 425 feet

Right Turn Lane Length = Taper Length + Storage Length

Taper Length at 35 mph (design speed) = 170 feet

Storage Length at 35 mph (design speed) = 80 feet

Eastbound Right Turn Lane = 170 feet + 80 feet = 250 feet

6.0 STUDY CONCLUSIONS

This traffic analysis was conducted to assess the impact of the proposed Mission Rise development in the Town of Howey-in-the-Hills, Florida. The project will include 592 single family residential units. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity.

The results of the traffic analysis are summarized as follows:

- The proposed development is projected to generate 5,181 trips per day, of which 376 trips occur during the AM peak hour and 529 trips occur during the PM peak hour.
- SR 19 from Lane Park Road to CR 48 is projected to operate over its capacity.
- SR 19 from CR 48 to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic.
- SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to 4 lanes.
- All remaining roadway segments are projected to continue to operate adequately at project buildout.
- The intersection of SR 19 and CR 48 is projected to operate with delay during the PM peak hour. It is recommended to retime the signal to maintain LOS standards.
- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound movement. The intersection operation is projected to be improved as part of the widening of SR 19.
- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic. The eastbound and the westbound movements are projected to operate at volume-to-capacity ratio of 1.09 and 1.03, respectively, which are not significantly over the available capacity.

- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement.
- All remaining study intersections are projected to operate adequately at project buildout.
- The turn lane recommendations are as follows:
 - Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.
 - Construct a 425-foot westbound left turn lane and a 250-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

APPENDICES

Appendix A
Study Methodology and Meeting Notes



MEMORANDUM

May 23, 2023

Re: Mission Rise
Traffic Impact Analysis Methodology, v1.1
Town of Howey-In-The-Hills, Florida
Project № 23017.1

This methodology outlines the proposed Traffic Impact Analysis (TIA) for the above referenced project. This methodology was prepared in accordance with the requirements of the Town of Howey-In-The-Hills and the Lake~Sumter Metropolitan Planning Organization (LSMPO) TIA guidelines for a Tier 2 TIA. This methodology has been revised in accordance with the comments provided by the Town of Howey-In-The-Hills. The comments and response to comments letter are included in the **Attachments**.

Project Description

The ±243.3-acre site is a single-family residential development consisting of 592 dwelling units. The project site consists of parcels 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, 02-21-25-0002-000-04800, and 27-20-25-0004-000-01200. The anticipated buildout year is 2033. A preliminary site plan is included in the **Attachments**.

Project Location

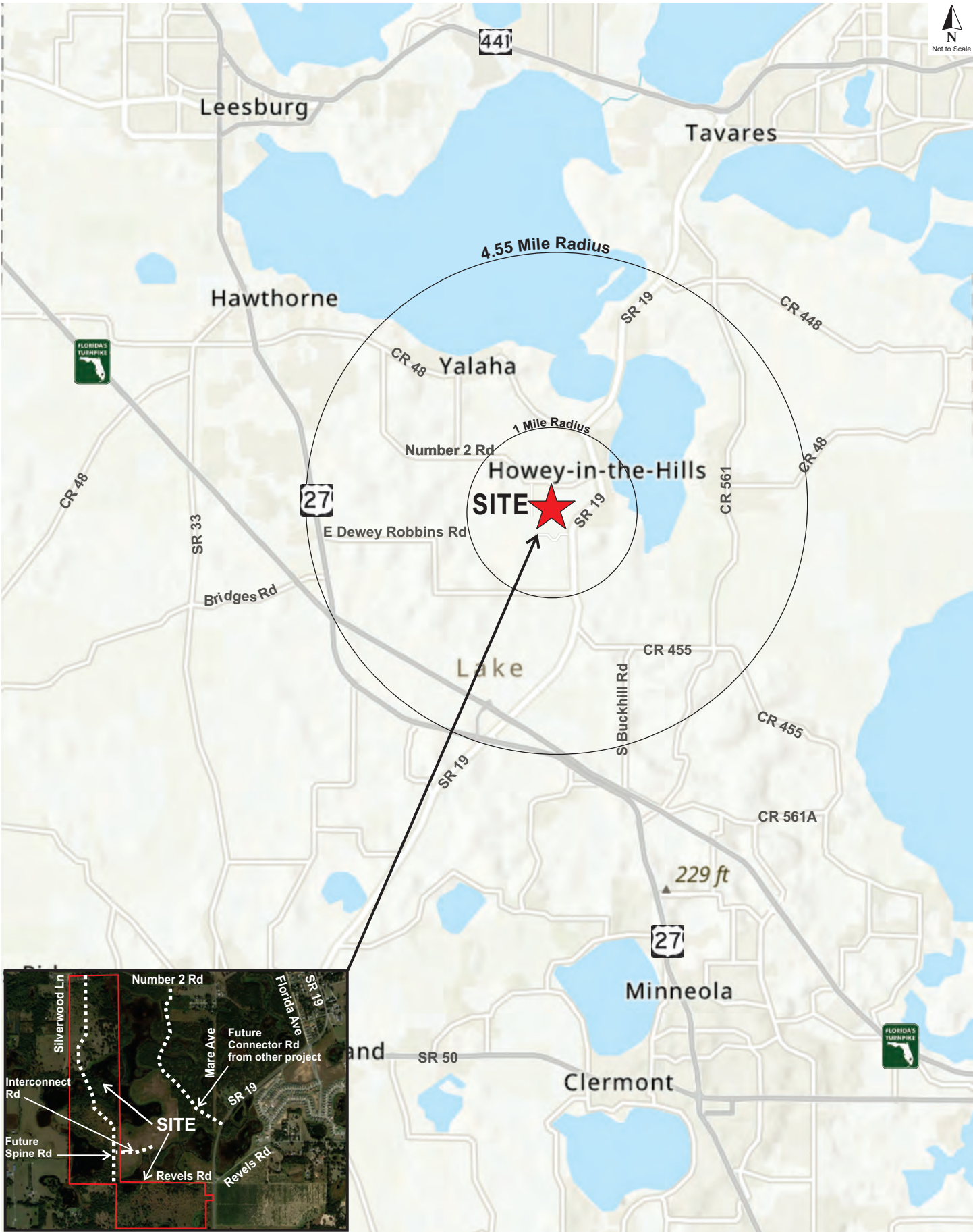
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road in the Town of Howey-in-the-Hills, Florida. The site will be crossed from north to south by a future two-lane spine road that will connect Number 2 Roadway with Revels Road, as shown in **Figure 1**.

Project Access

The project has access to the external network via one (1) full access driveway on Number 2 Road and one (1) full access driveway on SR 19. In addition, there is an emergency access to the south via Orange Blossom Road. The access configuration is depicted in the preliminary site plan included in the **Attachments**.

Trip Generation

A trip generation analysis was performed for the development using the trip generation information from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The ITE information sheets are included in the **Attachments**. The trip generation of the proposed development is summarized in **Table 1**.



Mission Rise

Traffic Impact Analysis Methodology, v1.1

Project № 23017.1

May 23, 2023

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Table 1
Trip Generation Analysis

ITE Code	Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
			Eqvlt Rate	Trips	Eqvlt Rate	Total	Enter	Exit	Eqvlt Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	592 DU	8.75	5,181	0.63	376	94	282	0.89	529	333	196

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development at project buildout is projected to generate 5,181 new daily trips of which 376 trips occur during the AM peak hour, and 529 trips occur during the PM peak hour.

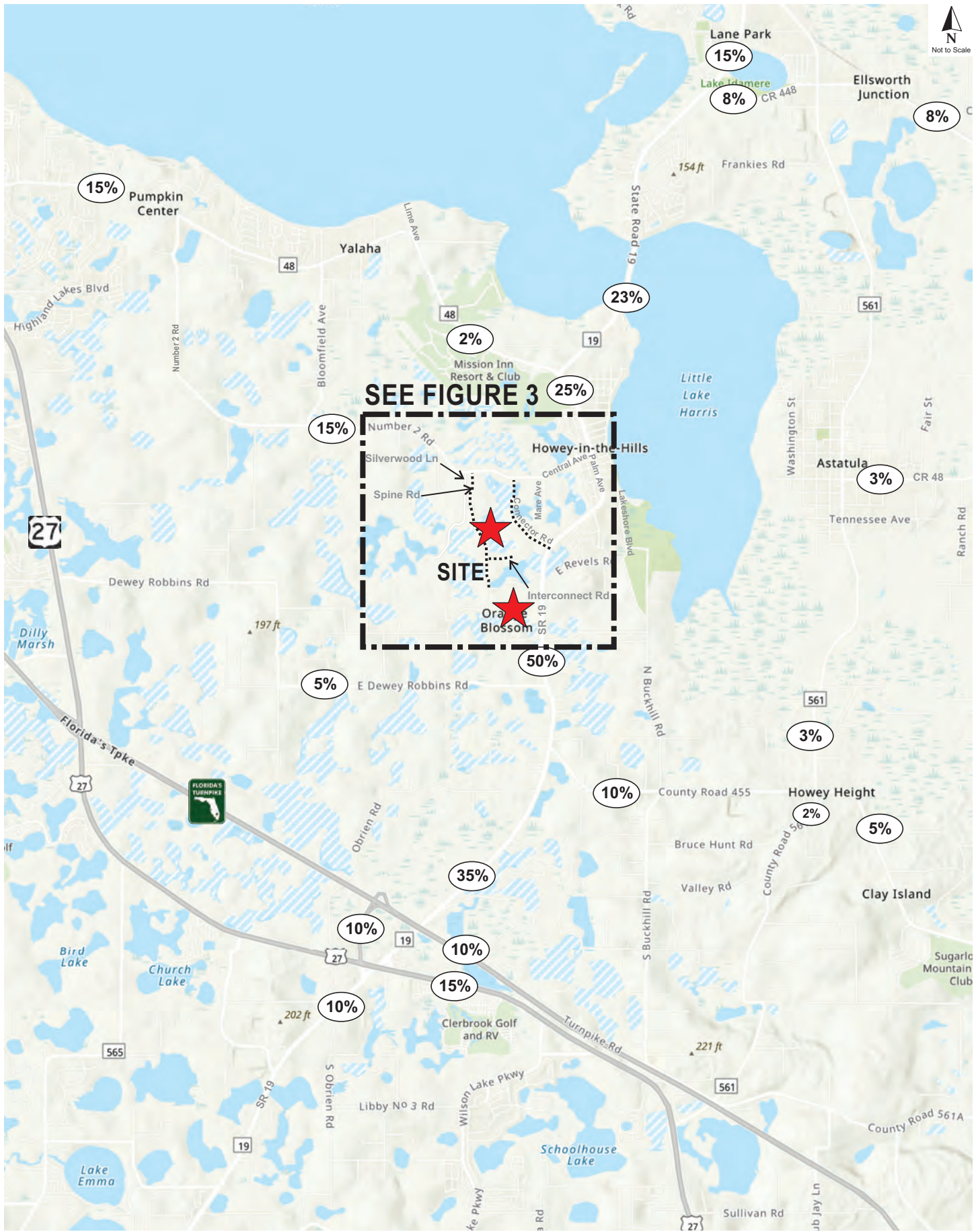
Trip Distribution

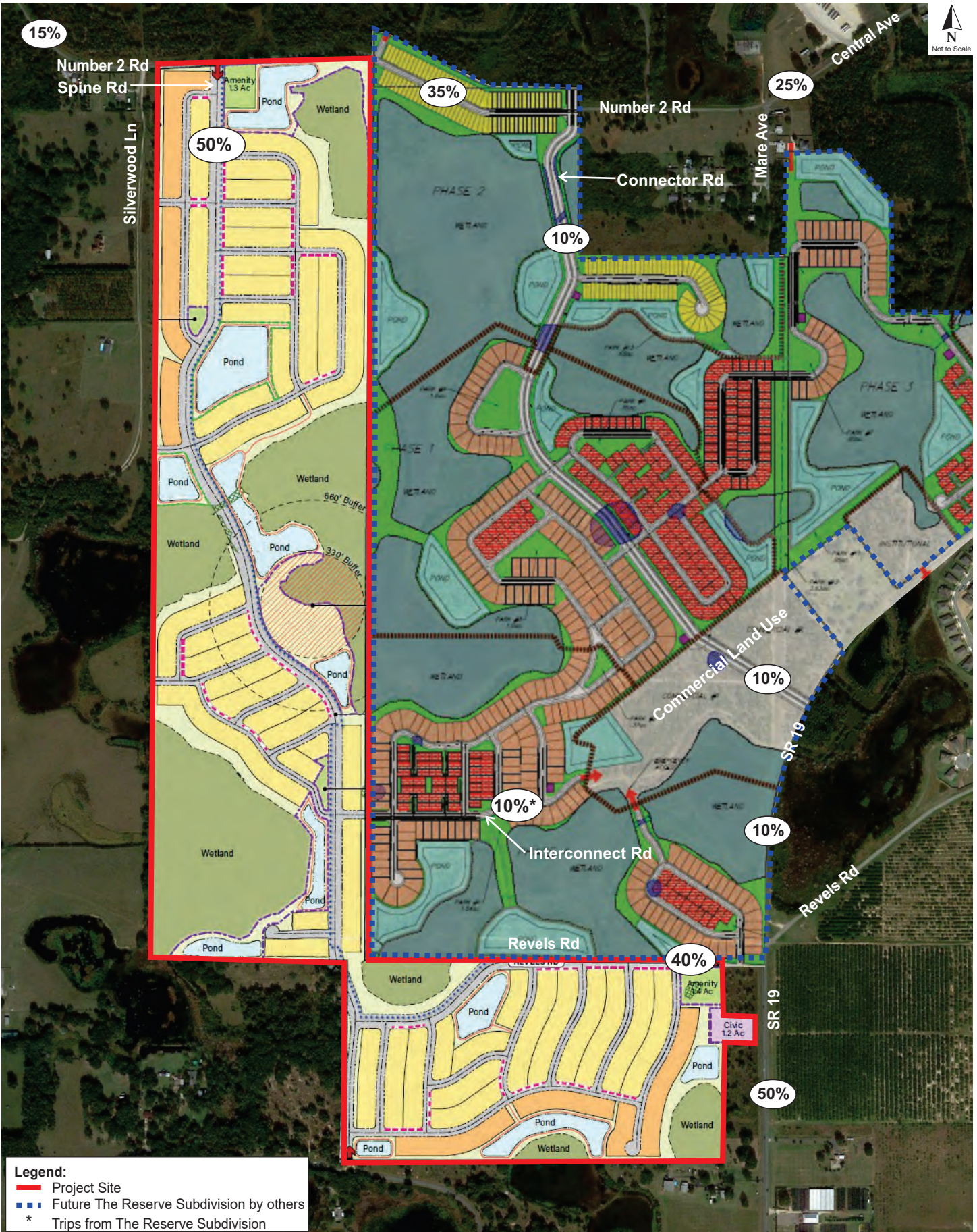
A trip distribution pattern in the general vicinity of the project site was initially determined based on the *Central Florida Regional Planning Model (CFRPM v7)*. Two (2) future connections (Spine Road and Connector Road) from SR 19 to Number 2 Road were included in the model for this project. The model distribution was modified to reflect the local network and prevailing traffic patterns. The proposed trip distribution pattern is provided in **Figure 2**. Detailed trip distribution near the project site is shown in **Figure 3**. The model distribution plots are included in the **Attachments**.

Study Area

In accordance with the LSMPO requirements for a Tier 2 TIA methodology, the study area will include a minimum 1-mile radius plus all roadway segments within a 4.55-mile radius in addition to roadways where the development is projected to consume 5% or more of their adopted Level of Service (LOS), unless otherwise specified by the City/LSMPO.

The extent of the study impact area shall be determined by the area of influence of the project. The area of influence shall be established as one-half ($\frac{1}{2}$) the total trip length associated with the land use of the proposed development, based upon the *2021 Lake County Transportation Impact Fee Update Study Final Report*. The total trip length for single-family is 9.1-miles. Accordingly, the area of influence will encompass all roadway segments within 4.55-mile radius. Excerpts of the *2022 Lake County Congestion Management Process (CMP) Database*, the *2021 Lake County Transportation Impact Fee Update Study Final Report*, and the *2023 FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B* are included in the **Attachments**. **Table 2** lists all roadway segments within the area of influence along with their capacities and percentages consumed by the project trips.





Mission Rise

Traffic Impact Analysis Methodology, v1.1

Project № 23017.1

May 23, 2023

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Table 2 Study Area

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project		Within 1-Mile? **	% Cap	In Study?
									Dist	Trips			
CR 455													
SR 19 to CR 561	950	2	R	Undivided	45	C	740	EB WB	10%	20 33	NO	2.7% 4.5%	NO
CR 561 to CR 561A	960	2	R	Undivided	25	C	410	EB WB	5%	10 17	NO	2.4% 4.1%	NO
CR 48													
US 27 to Lime Ave	1240	2	U	Undivided	40	D	1,080	EB WB	15%	50 29	NO	4.6% 2.7%	NO
Lime Ave to SR 19	1250	2	U	Undivided	40	D	1,080	EB WB	2%	7 4	NO	0.6% 0.4%	NO
CR 561 to Ranch Rd	1260	2	U	Undivided	40	D	840	EB WB	3%	6 10	NO	0.7% 1.2%	NO
Ranch Rd to CR 448A	1270	2	R	Undivided	40	C	410	EB WB	3%	6 10	NO	1.5% 2.4%	NO
CR 561													
CR 448 to CR 48	1410	2	U	Undivided	50	D	1,080	NB SB	0%	0 0	NO	0.0% 0.0%	NO
CR 48 to South Astatula City Limit	1420	2	U	Undivided	40	D	620	NB SB	3%	10 6	NO	1.6% 1.0%	NO
South Astatula City Limit to CR 455	1430	2	U	Undivided	40	D	1,080	NB SB	3%	10 6	NO	0.9% 0.6%	NO
CR 455 to Howey Cross Rd	1440	2	R	Undivided	35	C	470	NB SB	2%	7 4	NO	1.5% 0.9%	NO
Howey CRoss Rd to Turnpike Rd / CR 561A	1450	2	R	Undivided	40	C	640	NB SB	2%	7 4	NO	1.1% 0.6%	NO
SR 19													
Lane Park Rd to CR 48	3040	2	U	Undivided	55	D	920	NB SB	23%	45 77	NO	4.9% 8.4%	YES
CR 48 to Central Ave	3050	2	U	Undivided	40	D	700	NB SB	25%	49 83	NO	7.0% 11.9%	YES
Central Ave to CR 455	3060	2	U	Undivided	35	D	1,200	NB SB	50%	167 98	YES	13.9% 8.2%	YES
CR 455 to US 27 / SR 25	3070	2	R	Undivided	55	C	450	NB SB	35%	117 69	NO	26.0% 15.3%	YES
US 27 / SR 25 to CR 478	3080	2	R	Undivided	55	C	450	NB SB	20%	67 39	NO	14.9% 8.7%	YES
SR 91 (Florida Turnpike)													
US 27/SR 25 to US 27/SR 25/SR 19 Interchange	3566	4	U	Freeway	70	B	2,230	EB WB	10%	20 33	NO	0.9% 1.5%	NO
US 27/SR 25													
SR 19 to CR 561	3830	4	U	Divided	55	D	3,280	EB WB	15%	29 50	NO	0.9% 1.5%	NO
Central Ave													
SR 19 to Mare Ave	N/A	2	U	Undivided	30	D	770 *	EB WB	25%	49 83	YES	6.4% 10.8%	YES
Number 2 Rd													
Mare Ave to Silverwood Ln	N/A	2	U	Undivided	30	D	730 *	EB WB	35%	69 117	YES	9.5% 16.0%	YES
Silverwood Ln to CR 48	N/A	2	U	Undivided	45	D	730 *	EB WB	15%	29 50	YES	4.0% 6.8%	YES

Source: 2022 Lake County CMP Database

* 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables

Bold numbers represent capacity equal or higher than 5%.

Mission Rise

Traffic Impact Analysis Methodology, v1.1

Project № 23017.1

May 23, 2023

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Based on the study area analysis, the following roadway segments will be analyzed for the PM peak hour:

- SR 19
 - Lane Park Road to CR 48
 - CR 48 to Central Avenue
 - Central Avenue to CR 455
 - CR 455 to US 27 / SR 25
 - US 27 / SR 25 to CR 478
- Central Avenue
 - SR 19 to Mare Avenue
- Number 2 Road
 - Mare Avenue to Silverwood Lane
 - Silverwood Lane to CR 48

The following intersections will be analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- SR 19 and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (South Project Access) (Proposed)

Mission Rise

Traffic Impact Analysis Methodology, v1.1

Project № 23017.1

May 23, 2023

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Projected Traffic

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic will be calculated using the historical growth rates obtained from the *Lake County CMP* database and *FDOT Florida Traffic Online* web-based database. A 2% minimum growth rate will be applied if the calculated growth rates are lower than 2%. The committed trips for the following approved developments within the study area will be added to the background traffic:

- The Reserve (traffic study obtained)
- Talichet Phase 2 (traffic study obtained)
- Whispering Hills (traffic study obtained)
- Lake Hills (City to provide traffic study)
- Watermark (City to provide traffic study)

Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP)*, as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. As shown in **Table 3**, construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in the **Attachments**.

Table 3
Planned and Programmed Improvements

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

* LSMPO TIP Fiscal Year 2023-2027

** LSMPO 2022 LOPP Tier 2 project

Capacity Analysis

The traffic study will include existing and 2033 buildout conditions for the roadway segment and intersection capacity analyses. A capacity analysis of the study roadway segments will be conducted for the PM peak hour under existing and projected conditions. The capacity analysis will be based on service volumes, capacities, and existing volumes, as documented in *2022 Lake County CMP Database* and the *FDOT's 2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook*, included in the **Attachments**.

Mission Rise

Traffic Impact Analysis Methodology, v1.1

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May 23, 2023

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The intersection turning movement counts will be seasonally adjusted, if needed, using the *2022 FDOT Peak Season Factor Category Report* obtained from the *Florida Traffic Online (FTO)* website.

Right and left turn lane warrant reviews will be performed at the Spine Road accesses on Number 2 Road and at SR 19 and Revels Road in accordance with the Lake County requirements for turn lanes.

In cases where projected conditions require mitigation as a result of the proposed development, an analysis including the recommended mitigation will be conducted.

Alternative Mode Analysis

A review of transit, pedestrian, and bicycle facilities will be conducted in accordance with the LSMPO requirements.

Report

A TIA report detailing the methods and findings of the study, including all associated graphics, tables, calculations, and supporting information will be prepared for submittal to the Town of Howey-In-The-Hills.

ATTACHMENTS



May 23, 2023

Mr. John Brock
Town Clerk
PO Box 125
Howey-In-The-Hills, Florida 34737
jbrock@howey.org

Re: Mission Rise
Response to Methodology Comments
TMC Project № 23017.1
Town Howey-In-The-Hills, Florida

Dear Mr. Brock,

Please find below our responses to the review comments prepared on behalf of The Town of Howey-In-The-Hills by TMH Consulting Inc dated May 8, 2023, regarding the above referenced Methodology dated April 28, 2023. The comments are listed in **bold** typeface and the TMC responses follow in *italic* typeface. Additionally, a revised Methodology is provided under cover reflecting the changes resulting from these comments.

- 1. The Revels Road access to the south cannot be limited to emergency access as this is a public road now. Since we have received comments from residents to the south, it will be very useful to get some type of prediction about how many trips are likely to use this access point as opposed to SR 19 and Number 2 Road.**

TMC Response: The emergency access on Orange Blossom Road will be restricted to emergency vehicles only; therefore, no trips were assigned to that access.

- 2. There is an interconnect between the Mission Rise parcel and The Reserve parcel. Is the model sensitive enough to determine if this interconnect will impact trip assignments? The Reserve has an approved connecting road which is discussed in the TMC methodology. The Reserve also includes a future commercial development area that might be an attractor.**

TMC Response: Noted. The Reserve Subdivision includes a future commercial development, therefore, 10% of the trips are assumed to originate from The Reserve's commercial development and use the interconnect road to access the project site.

- 3. The study needs to include those projects that have some level of approval. TMC has done the traffic studies for several of these and been provided with traffic studies from others. The projects that need to be included are:**

- **The Reserve**
- **Watermark**
- **Talichet Phase 2 (Phase 1 is mostly in the background traffic by now.)**
- **Whispering Heights**
- **Lake Hills**

TMC Response: Noted. The vested trips from The Reserve, Watermark, Talichet Phase 2, Whispering Heights [Whispering Hills], and Lake Hills will be included in the traffic study as indicated in the revised methodology (attached).

- 4. The study needs to include CFRPM distributions that show the percentages of future background through traffic that will use the new roads in Mission Rise and The Reserve that link No 2 Road to SR 19. Use that data to project future background traffic volumes on those links.**

TMC Response: Noted. As reflected in Figure 2, the future Spine Road, which transverses the project site from north to south and connects Number 2 Road with Revels Road, and the future Connector Road, which connects SR 19 and Number 2 Road are included in the project trip distribution Figure 2 in the revised methodology (attached).

- 5. The project trip distribution map is basically unreadable. They need to provide a graphic that someone can review and understand.**

TMC Response: Noted. The distribution map has been revised to show an inset with the detail project distribution within the project site. See Figure 2 in the revised methodology (attached).

- 6. SR 19 at Central Avenue is listed as signalized, but it is only a flashing light. The analysis cannot assume it is a true signal.**

TMC Response: Noted. SR 19 at Central Avenue intersection is listed as an unsignalized intersection in the revised methodology (attached).

- 7. The ITE land use, code 210, shows traffic generation as 9.43 trips per unit with 0.70% for the AM Peak and 0.94% for the PM Peak. Why did they use 8.75, 0.63 and 0.89 respectively for the project traffic generation?**

TMC Response: Per the Trip Generation Handbook, 3rd Edition Figure 4.2 (Process for selecting average rate or equation in trip generation manual data) linear curve equations should be used for the weekday, AM, and PM peak period trip generation calculation. The linear curve equations have an R^2 equal to 0.75 or greater, therefore, the fitted curve equations were used instead of average rate.

The linear curve equations used for the 592 dwelling residential units corresponding to the weekday, AM, and PM trips are as follows:

*Weekday: $\ln(T)=0.92 \ln(X)+2.68$ which is equivalent to an average rate of 8.75 (5,181/592).
AM: $\ln(T)=0.91 \ln(X)+0.12$ which is equivalent to an average rate of 0.63 (376/592).
PM: $\ln(T)=0.94 \ln(X)+0.27$ which is equivalent to an average rate of 0.89 (529/592).*

Mr. John Brock
Mission Rise
Response to Methodology Comments
TMC Project № 23017.1
May 23, 2023
Page 3 of 3

END OF COMMENTS

We trust these responses and the revised Methodology adequately address the review comments. We remain available to discuss this matter further or to answer any questions you may have.

Kind regards,

TRAFFIC & MOBILITY CONSULTANTS LLC



Charlotte N. Davidson, PE
Senior Transportation Engineer

Mission Rise PUD

Meeting with Lake County

August 21, 2023 at 2:00 pm

Attendees

Seth Lynch (Lake County)

Jeffery Earhart (Lake County)

Rhea Lopes (RVI)

Charlotte Davidson (Traffic & Mobility Consultants)

Santiago Machado (Atwell)

Number 2 Rd

- Need right and left turn lanes on Number 2 Rd.
- Must accommodate full turn lanes (right and left with que lengths). The existing right-of-way is too narrow, and the Mission Rise site will be the only property that can provide additional right-of-way.
- Will need to dedicate right-of-way to accommodate widening improvements. Lake County suggest widening to the south side of the road since Mission Rise will be able to allocate the required right-of-way.
- Speed limit on Number 2 Rd is 30 MPH on east side, but higher to west. Speed changes in front of project. Speed limit changes from 30 MPH to 45 MPH.
- Widen the thru lanes where the turn lanes are designed. Thru lanes and turn lanes shall meet t Lake County standards
- Provide 5 ft sidewalk along frontage. Need to discuss further with County as design progresses. The County understands the area is tight and there are drainage features that need to be accommodated as well.
- Number 2 Rd was an old clay road that was paved. Probably need pavement cores to see what was built.

Revels Rd

- Vacate existing road right-of-way for County and dedicate to Town up to S Palm Rd (SR 19)
- Onsite roads to be maintained by Town.

CR 19 (S Palm Ave)

- Will require FDOT permitting.
- Add right and left turn lanes at entrance to Mission Rise.
- Provide intersection layout for County review before final design. This is an "A Typical" intersection due to the angle of E Revels Rd.

South connection

- Need to pave up to boundary.
- Seth will further discuss internally on how to handle this connection and if connection to Orange Blossom Rd will be required.

West Connections

- Plan for corner clips at entrances for all road stubs to the west.

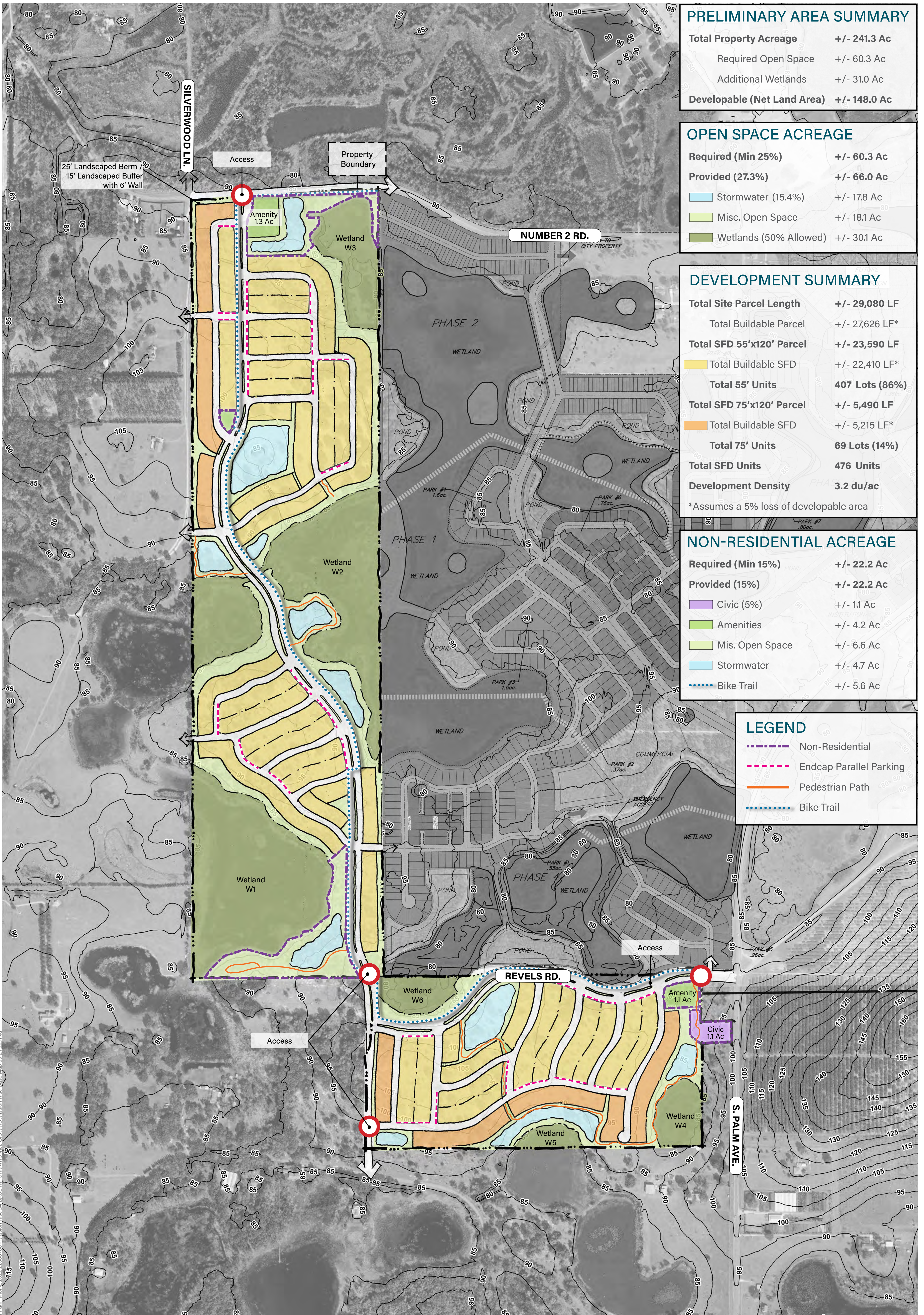
East Connections

- East roadway connections not provided to the east due to wetlands.

General

- Provide Lake County with floodplain impacts and compensation calculations.
- Floodplain compensation will be provided as cup-for-cup volume.
- TIA will be shared with lake County (Sharon Lewis and Seth Lynch)

Appendix B
Preliminary Development Plan



PRELIMINARY AREA SUMMARY

Total Property Acreage	+/- 241.3 Ac
Required Open Space	+/- 60.3 Ac
Additional Wetlands	+/- 31.0 Ac
Developable (Net Land Area)	+/- 148.0 Ac

OPEN SPACE ACREAGE

Required (Min 25%)	+/- 60.3 Ac
Provided (27.3%)	+/- 66.0 Ac
Stormwater (15.4%)	+/- 17.8 Ac
Misc. Open Space	+/- 18.1 Ac
Wetlands (50% Allowed)	+/- 30.1 Ac

DEVELOPMENT SUMMARY

Total Site Parcel Length	+/- 29,080 LF
Total Buildable Parcel	+/- 27,626 LF*
Total SFD 55'x120' Parcel	+/- 23,590 LF
Total Buildable SFD	+/- 22,410 LF*
Total 55' Units	407 Lots (86%)
Total SFD 75'x120' Parcel	+/- 5,490 LF
Total Buildable SFD	+/- 5,215 LF*
Total 75' Units	69 Lots (14%)
Total SFD Units	476 Units
Development Density	3.2 du/ac

*Assumes a 5% loss of developable area

NON-RESIDENTIAL ACREAGE

Required (Min 15%)	+/- 22.2 Ac
Provided (15%)	+/- 22.2 Ac
Civic (5%)	+/- 1.1 Ac
Amenities	+/- 4.2 Ac
Mis. Open Space	+/- 6.6 Ac
Stormwater	+/- 4.7 Ac
Bike Trail	+/- 5.6 Ac

LEGEND

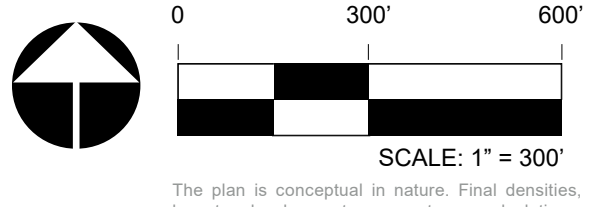
- Non-Residential
- Endcap Parallel Parking
- Pedestrian Path
- Bike Trail

Copyright RVI



MISSION RISE • CONCEPTUAL PLAN

Town of Howey Hills, FL
 December 22, 2022
 # 22003786
 Turnstone Group



The plan is conceptual in nature. Final contours, layout, development parameters, calculations, and site conditions may change upon further development of the Preliminary and/or Master Site Plan, and upon evaluation of topographic survey, water management and existing historic and specimen trees to remain.

Appendix C
Lake County CMP Database and 2023 FDOT Q/LOS

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

Peak Hour Directional

Peak Hour Two-Way

AADT



(C3C-Suburban Commercial)

	B	C	D	E
1 Lane	*	760	1,070	**
2 Lane	*	1,520	1,810	**
3 Lane	*	2,360	2,680	**
4 Lane	*	3,170	3,180	**

	B	C	D	E
2 Lane	*	1,380	1,950	**
4 Lane	*	2,760	3,290	**
6 Lane	*	4,290	4,870	**
8 Lane	*	5,760	5,780	**

	B	C	D	E
2 Lane	*	15,300	21,700	**
4 Lane	*	30,700	36,600	**
6 Lane	*	47,700	54,100	**
8 Lane	*	64,000	64,200	**



(C3R-Suburban Residential)

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Adjustment Factors

The peak hour directional service volumes should be adjusted by multiplying by 1.2 for one-way facilities
 The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided
 Roadway with an Exclusive Left Turn Lane(s): Multiply by 1.05

2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80

Exclusive right turn lane(s): Multiply by 1.05

Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95

Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75

Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

C1 & C2

Motor Vehicle Highway Generalized Service Volume Tables



(C1-Natural & C2-Rural)

Peak Hour Directional

	B	C	D	E
1 Lane	240	430	730	1,490
2 Lane	1,670	2,390	2,910	3,340
3 Lane	2,510	3,570	4,370	5,010

Peak Hour Two-Way

	B	C	D	E
2 Lane	440	780	1,330	2,710
4 Lane	3,040	4,350	5,290	6,070
6 Lane	4,560	6,490	7,950	9,110

AADT

	B	C	D	E
2 Lane	4,600	8,200	14,000	28,500
4 Lane	32,000	45,800	55,700	63,900
6 Lane	48,000	68,300	83,700	95,900

Adjustment Factors

- 2 Lane Divided Roadway with Exclusive Left Turn Adjustment: Multiply by 1.05
- Multilane Undivided Highway with Exclusive Left Turn Adjustment: Multiply by 0.95
- Multilane Undivided Highway without Exclusive Left Turn Adjustment: Multiply by 0.75

Appendix D
Turning Movement Counts and Seasonal Factor Data

TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

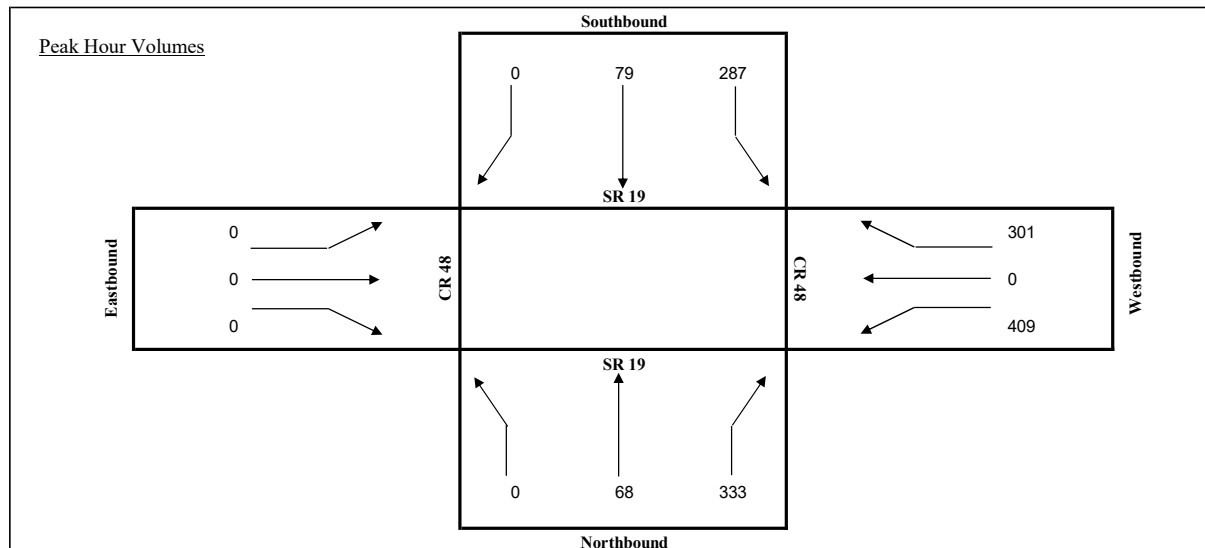
Intersection (N/S): SR 19

Intersection (E/W): CR 48

Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	19	82	68	13	0	0	0	0	84	0	65	331
4:15 PM	4:30 PM	0	24	91	71	13	0	0	0	0	83	0	79	361
4:30 PM	4:45 PM	0	18	72	68	17	0	0	0	0	93	0	76	344
4:45 PM	5:00 PM	0	23	90	85	15	0	0	0	0	92	0	61	366
5:00 PM	5:15 PM	0	18	71	73	23	0	0	0	0	88	0	73	346
5:15 PM	5:30 PM	0	15	80	71	19	0	0	0	0	114	0	80	379
5:30 PM	5:45 PM	0	12	92	58	22	0	0	0	0	115	0	87	386
5:45 PM	6:00 PM	0	16	70	54	14	0	0	0	0	94	0	72	320

Total for:	4:00 PM	5:00 PM	0	84	335	292	58	0	0	0	0	352	0	281	1402
Total for:	5:00 PM	6:00 PM	0	61	313	256	78	0	0	0	0	411	0	312	1431
Tota Peak Hour:	4:45 PM	5:45 PM	0	68	333	287	79	0	0	0	0	409	0	301	1477
Overall PHF:	0.96														

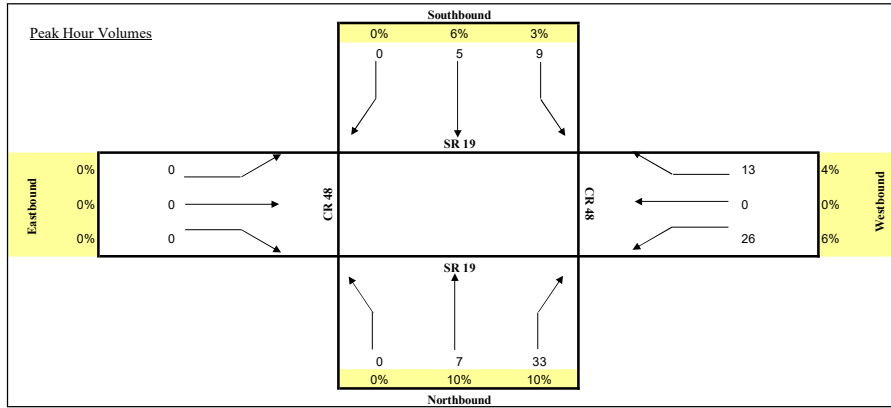


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 7/19/2023

Start	End	SR 19			SR 19			CR 48			CR 48			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	3	10	5	0	0	0	0	0	4	0	6	28
4:15 PM	4:30 PM	0	4	11	1	3	0	0	0	0	8	0	2	29
4:30 PM	4:45 PM	0	0	8	2	1	0	0	0	0	7	0	4	22
4:45 PM	5:00 PM	0	0	4	1	1	0	0	0	0	7	0	1	14
5:00 PM	5:15 PM	0	1	7	2	2	0	0	0	0	6	0	0	18
5:15 PM	5:30 PM	0	0	7	2	0	0	0	0	0	6	0	0	15
5:30 PM	5:45 PM	0	0	2	0	0	0	0	0	0	2	0	1	5
5:45 PM	6:00 PM	0	2	4	2	1	0	0	0	0	5	0	1	15

Total for:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	0	26	0	13	93
Total for:	5:00 PM	6:00 PM	0	3	20	6	3	0	0	0	0	0	19	0	2	53
Total Peak Hour:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	0	26	0	13	93
Overall PHF:	0.80															



TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

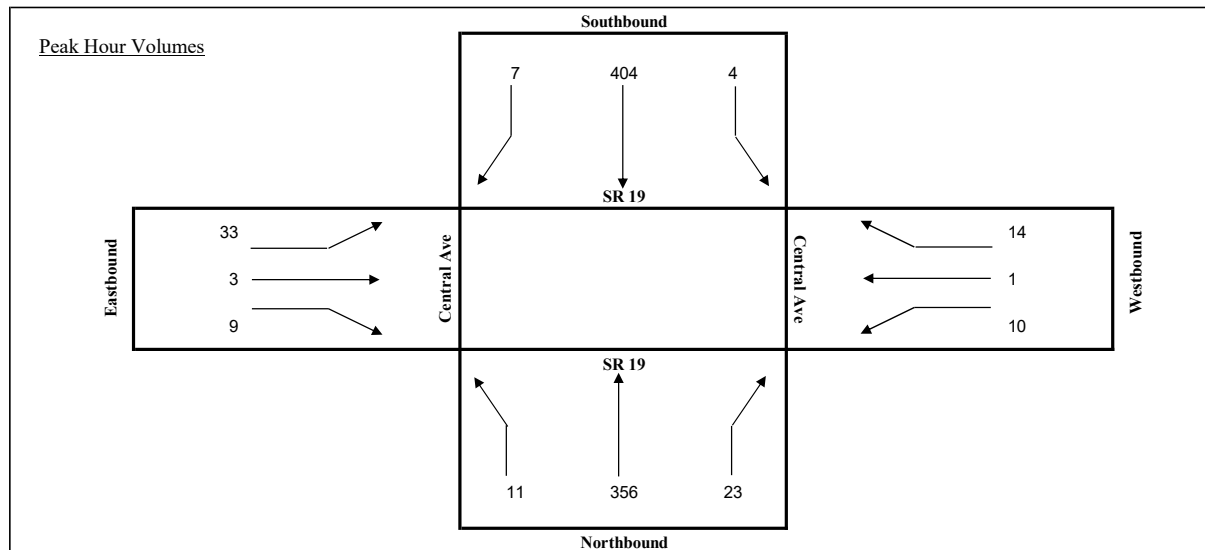
Intersection (N/S): SR 19

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	7	76	6	1	88	3	5	0	4	3	1	3	197
7:15 AM	7:30 AM	3	92	4	1	101	0	15	1	1	1	0	2	221
7:30 AM	7:45 AM	1	96	4	1	106	2	9	0	1	2	0	4	226
7:45 AM	8:00 AM	5	85	4	2	93	2	4	1	4	4	0	3	207
8:00 AM	8:15 AM	2	83	11	0	104	3	5	1	3	3	1	5	221
8:15 AM	8:30 AM	8	70	1	1	91	5	7	2	0	0	0	4	189
8:30 AM	8:45 AM	3	96	5	1	101	5	5	2	6	2	0	1	227
8:45 AM	9:00 AM	3	77	10	4	68	2	13	0	1	2	0	4	184

Total for:	7:00 AM	8:00 AM	16	349	18	5	388	7	33	2	10	10	1	12	851
Total for:	8:00 AM	9:00 AM	16	326	27	6	364	15	30	5	10	7	1	14	821
Tota Peak Hour:	7:15 AM	8:15 AM	11	356	23	4	404	7	33	3	9	10	1	14	875
Overall PHF:	0.97														



**TURNING MOVEMENT COUNT ANALYSIS
TRUCKS**

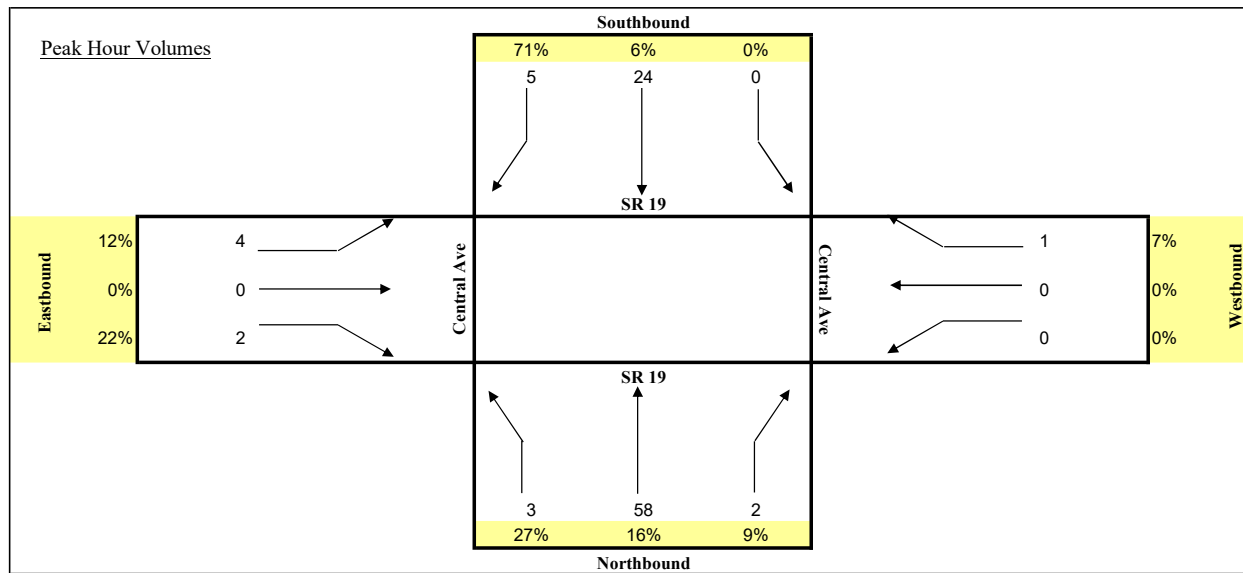
Intersection (N/S): SR 19

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	SR 19			SR 19			Central Ave			Central Ave			TOTAL
		NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	1	13	0	0	10	0	1	0	0	0	0	0	25
7:15 AM	7:30 AM	1	15	1	1	13	0	1	0	0	0	0	0	32
7:30 AM	7:45 AM	0	9	0	0	7	0	0	0	0	0	0	2	18
7:45 AM	8:00 AM	1	12	1	0	2	0	0	0	0	1	0	0	17
8:00 AM	8:15 AM	0	14	1	0	5	0	0	0	0	0	0	1	21
8:15 AM	8:30 AM	2	7	1	0	8	1	2	0	0	0	0	0	21
8:30 AM	8:45 AM	1	19	0	0	6	2	0	0	2	0	0	0	30
8:45 AM	9:00 AM	0	18	0	0	5	2	2	0	0	0	0	0	27

Total for:	7:00 AM	8:00 AM	3	49	2	1	32	0	2	0	0	1	0	2	92
Total for:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Tota Peak Hour:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Overall PHF:	0.83														



TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

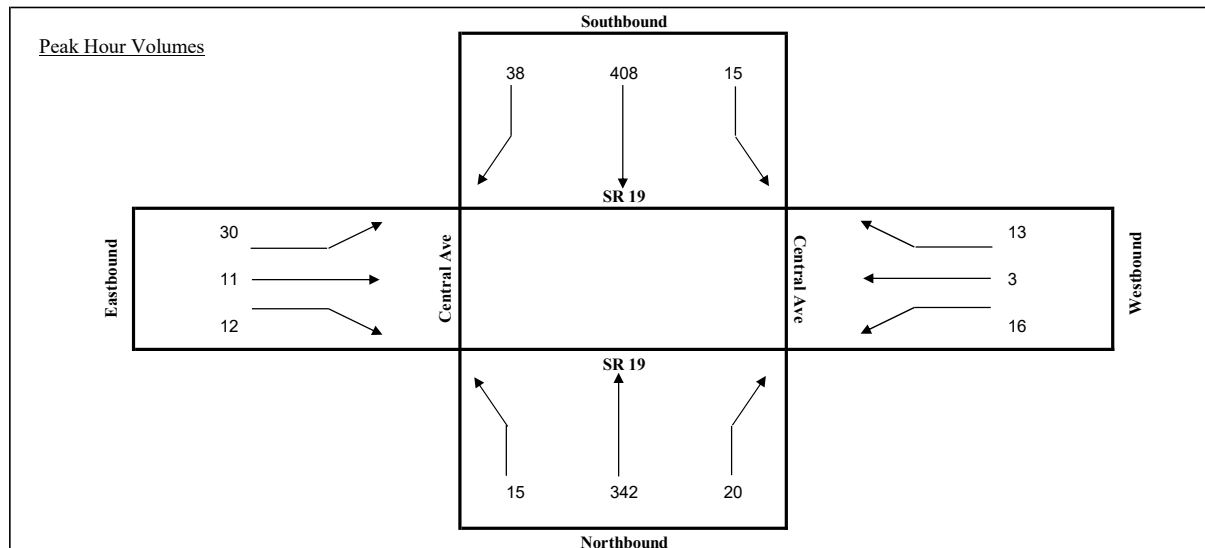
Intersection (N/S): SR 19

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	2	88	5	3	81	10	7	1	2	1	0	4	204
4:15 PM	4:30 PM	2	98	3	1	79	9	12	0	4	1	3	3	215
4:30 PM	4:45 PM	2	75	7	6	89	10	11	3	4	4	1	1	213
4:45 PM	5:00 PM	2	102	7	4	90	6	6	1	3	1	0	2	224
5:00 PM	5:15 PM	5	66	5	0	96	10	12	5	5	5	0	6	215
5:15 PM	5:30 PM	4	84	4	3	113	8	5	1	1	6	3	2	234
5:30 PM	5:45 PM	4	90	4	8	109	14	7	4	3	4	0	3	250
5:45 PM	6:00 PM	1	71	6	1	86	9	7	1	1	0	2	3	188

Total for:	4:00 PM	5:00 PM	8	363	22	14	339	35	36	5	13	7	4	10	856
Total for:	5:00 PM	6:00 PM	14	311	19	12	404	41	31	11	10	15	5	14	887
Tota Peak Hour:	4:45 PM	5:45 PM	15	342	20	15	408	38	30	11	12	16	3	13	923
Overall PHF:	0.92														

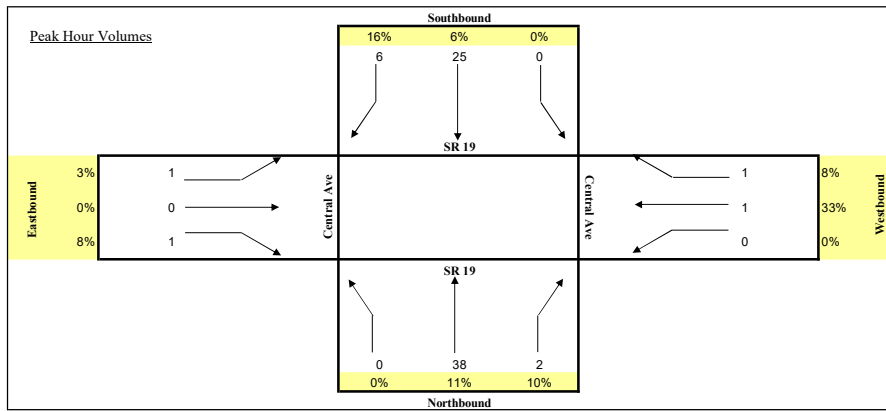


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	13	2	0	2	2	0	0	0	0	0	0	19
4:15 PM	4:30 PM	0	14	0	0	9	2	0	0	0	0	1	1	27
4:30 PM	4:45 PM	0	8	0	0	8	0	0	0	0	0	0	0	16
4:45 PM	5:00 PM	0	3	0	0	6	2	1	0	1	0	0	0	13
5:00 PM	5:15 PM	1	7	0	0	8	0	1	0	0	0	0	0	17
5:15 PM	5:30 PM	0	7	0	0	6	0	0	0	1	0	0	0	14
5:30 PM	5:45 PM	1	2	0	1	0	1	0	0	1	1	0	0	7
5:45 PM	6:00 PM	0	6	0	0	6	0	0	0	0	0	1	0	13

Total for:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Total for:	5:00 PM	6:00 PM	2	22	0	1	20	1	1	0	2	1	1	0	51
Total Peak Hour:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Overall PHF:	0.69														



TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

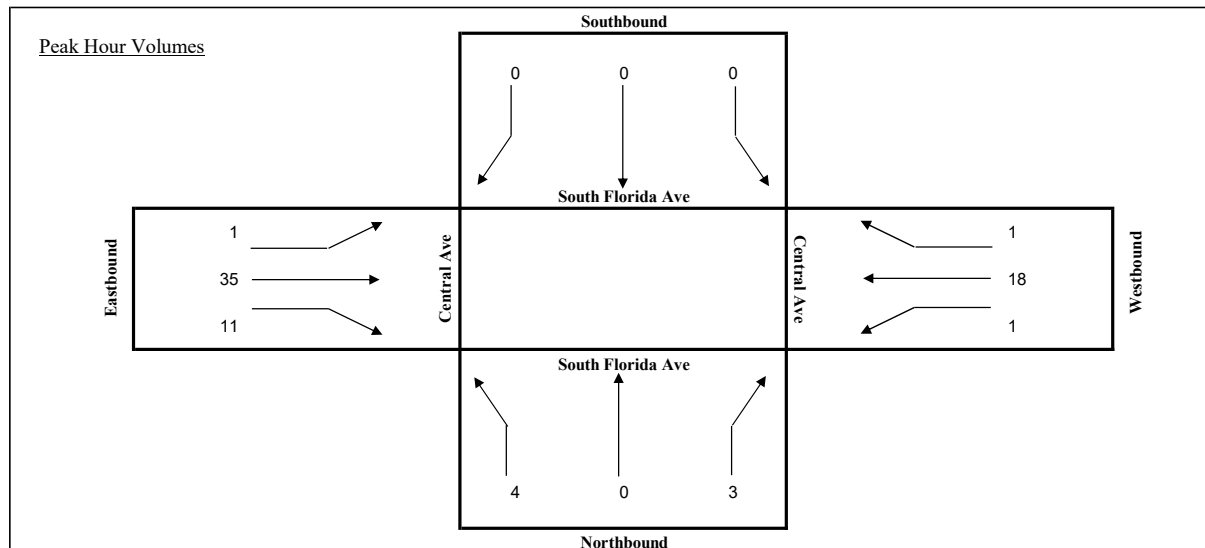
Intersection (N/S): South Florida Ave

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	0	0	0	0	0	0	0	6	4	0	8	1	19
7:15 AM	7:30 AM	2	0	1	0	0	0	1	13	2	0	4	0	23
7:30 AM	7:45 AM	2	0	1	0	0	0	0	9	4	1	1	0	18
7:45 AM	8:00 AM	0	0	1	0	0	0	0	7	1	0	5	0	14
8:00 AM	8:15 AM	0	0	2	0	0	0	0	5	0	2	5	0	14
8:15 AM	8:30 AM	0	0	3	0	0	0	0	8	2	1	3	2	19
8:30 AM	8:45 AM	0	0	1	1	0	1	0	3	1	3	7	0	17
8:45 AM	9:00 AM	1	0	2	0	0	0	0	7	2	1	6	1	20

Total for:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Total for:	8:00 AM	9:00 AM	1	0	8	1	0	1	0	23	5	7	21	3	70
Tota Peak Hour:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Overall PHF:			0.80												

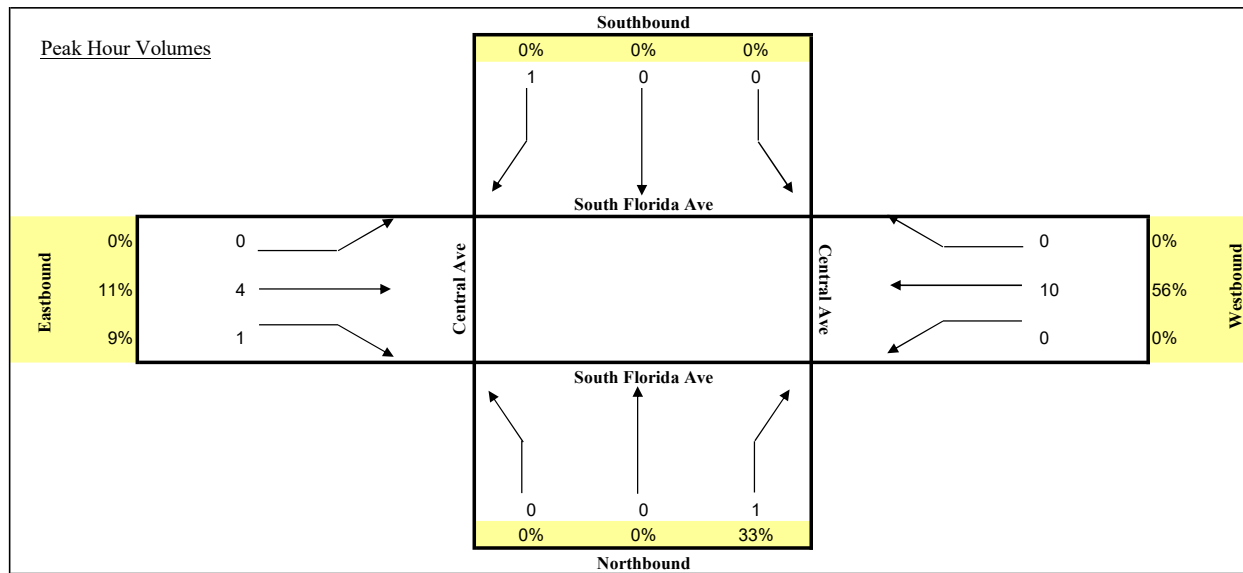


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): South Florida Ave
 Intersection (E/W): Central Ave
 Date: 7/19/2023

		South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
Start	End	NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:15 AM	7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	8:30 AM	0	0	1	0	0	0	0	2	0	0	2	0	5
8:30 AM	8:45 AM	0	0	0	0	0	1	0	1	0	0	3	0	5
8:45 AM	9:00 AM	0	0	0	0	0	0	0	1	1	0	5	0	7

Total for:	7:00 AM	8:00 AM	0	0	0	0	0	0	2	0	0	3	0	5	
Total for:	8:00 AM	9:00 AM	0	0	1	0	0	1	4	1	0	10	0	17	
Tota Peak Hour:	8:00 AM	9:00 AM	0	0	1	0	0	1	4	1	0	10	0	17	
Overall PHF:	0.61														



TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

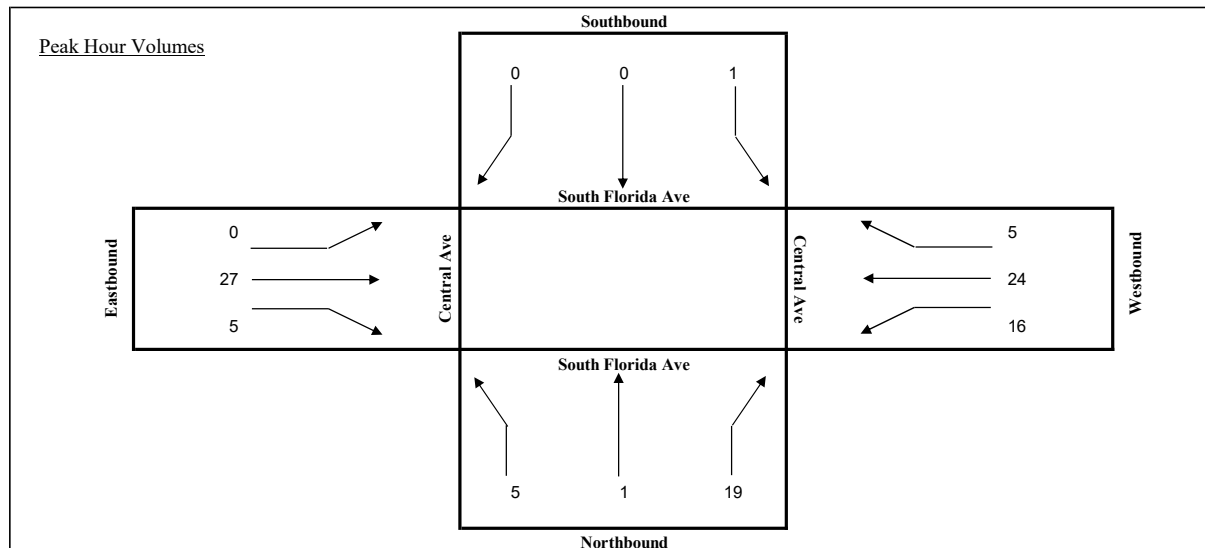
Intersection (N/S): South Florida Ave

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	3	0	3	0	0	0	0	3	0	4	5	0	18
4:15 PM	4:30 PM	3	0	5	0	0	0	0	6	2	4	8	0	28
4:30 PM	4:45 PM	2	0	6	0	0	0	0	2	3	3	7	0	23
4:45 PM	5:00 PM	1	0	4	0	0	0	0	5	1	1	4	0	16
5:00 PM	5:15 PM	1	1	7	0	0	0	0	10	2	5	6	0	32
5:15 PM	5:30 PM	1	0	4	0	0	0	0	5	1	0	4	4	19
5:30 PM	5:45 PM	1	0	4	1	0	0	0	6	2	5	9	0	28
5:45 PM	6:00 PM	2	0	4	0	0	0	0	6	0	6	5	1	24

Total for:	4:00 PM	5:00 PM	9	0	18	0	0	0	0	16	6	12	24	0	85
Total for:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Tota Peak Hour:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Overall PHF:	0.80														

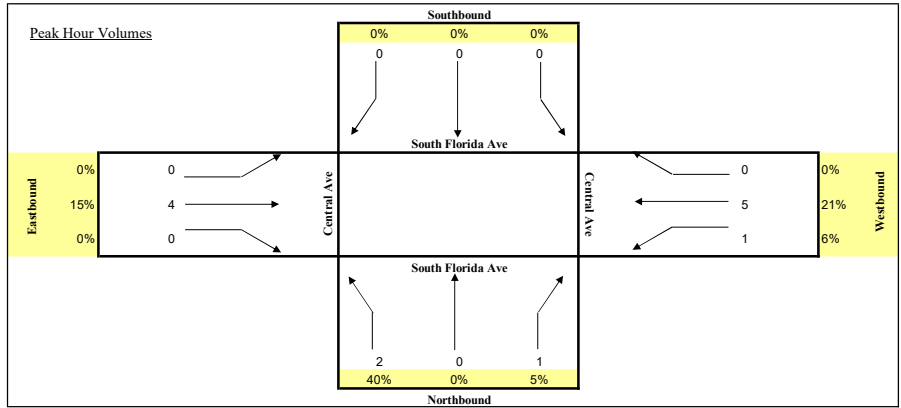


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	2
4:15 PM	4:30 PM	1	0	0	0	0	0	0	0	0	1	2	0	4
4:30 PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	5:00 PM	1	0	0	0	0	0	0	2	0	1	1	0	5
5:00 PM	5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
5:15 PM	5:30 PM	1	0	0	0	0	0	0	2	0	0	1	0	4
5:30 PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
5:45 PM	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

Total for:	4:00 PM	5:00 PM	2	0	0	0	0	0	0	2	0	3	4	0	11
Total for:	5:00 PM	6:00 PM	1	0	1	0	0	0	0	2	0	0	4	0	8
Total Peak Hour:	4:45 PM	5:45 PM	2	0	1	0	0	0	0	4	0	1	5	0	13
Overall PHF:	0.65														



TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

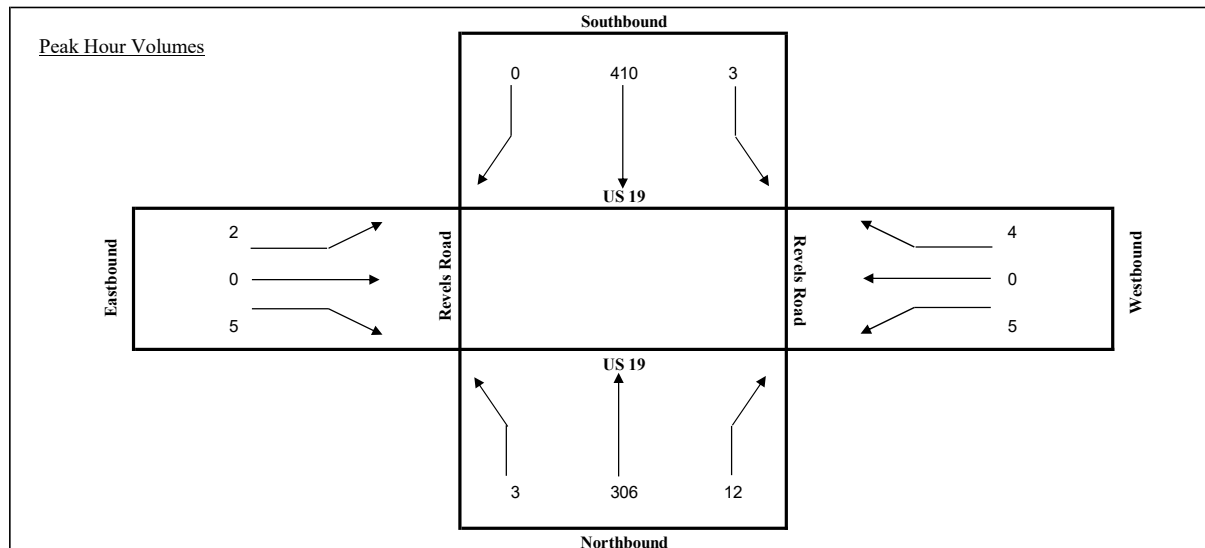
Intersection (N/S): US 19

Intersection (E/W): Revels Road

Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	3	80	1	0	74	2	0	0	0	3	0	2	165
7:15 AM	7:30 AM	2	60	1	1	94	1	1	0	0	0	1	0	161
7:30 AM	7:45 AM	1	72	0	1	107	0	0	0	2	1	0	1	185
7:45 AM	8:00 AM	1	97	5	0	100	0	0	0	2	2	0	1	208
8:00 AM	8:15 AM	0	71	2	2	110	0	2	0	0	2	0	2	191
8:15 AM	8:30 AM	1	66	5	0	93	0	0	0	1	0	0	0	166
8:30 AM	8:45 AM	0	58	1	0	60	1	1	0	2	4	0	2	129
8:45 AM	9:00 AM	0	57	3	1	63	2	0	0	1	1	0	2	130

Total for:	7:00 AM	8:00 AM	7	309	7	2	375	3	1	0	4	6	1	4	719
Total for:	8:00 AM	9:00 AM	1	252	11	3	326	3	3	0	4	7	0	6	616
Tota Peak Hour:	7:30 AM	8:30 AM	3	306	12	3	410	0	2	0	5	5	0	4	750
Overall PHF:	0.90														



TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

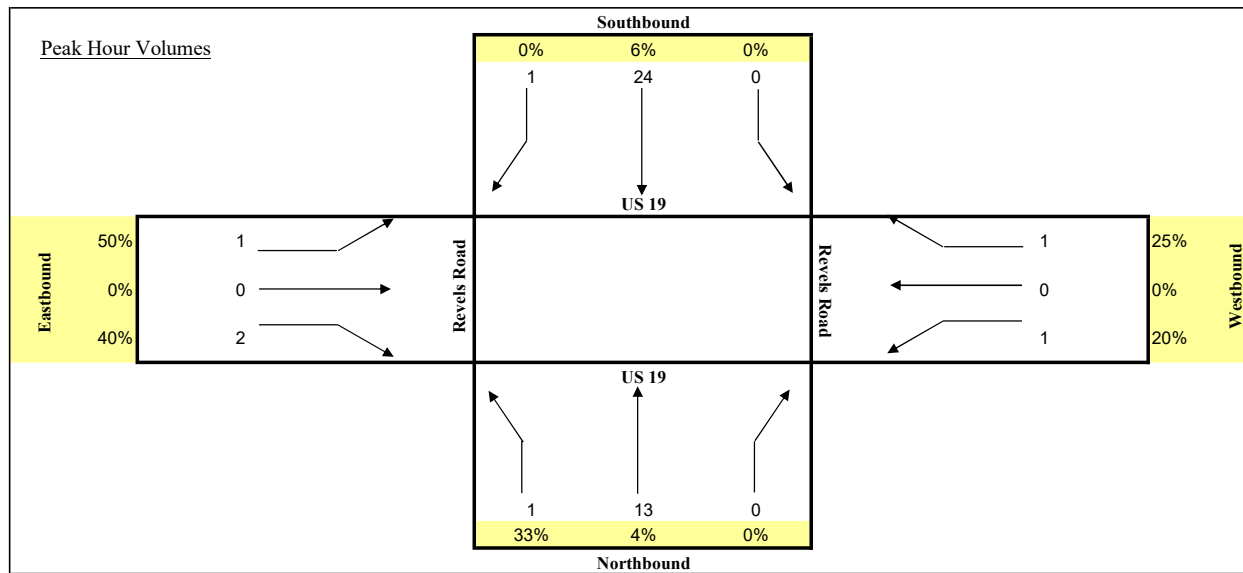
Intersection (N/S): US 19

Intersection (E/W): Revels Road

Date: 7/19/2023

Start	End	US 19			US 19			Revels Road			Revels Road			TOTAL
		NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	1	3	0	0	5	0	0	0	0	0	0	0	9
7:15 AM	7:30 AM	0	1	0	0	6	0	0	0	0	0	0	0	7
7:30 AM	7:45 AM	0	2	0	0	5	0	0	0	0	0	0	0	7
7:45 AM	8:00 AM	1	6	0	0	3	0	0	0	0	0	0	1	11
8:00 AM	8:15 AM	0	1	0	0	8	0	0	0	0	0	0	0	9
8:15 AM	8:30 AM	0	3	0	0	6	0	0	0	1	0	0	0	10
8:30 AM	8:45 AM	0	3	0	0	7	1	1	0	1	0	0	0	14
8:45 AM	9:00 AM	0	1	0	0	3	1	0	0	0	0	0	0	5

Total for:	7:00 AM	8:00 AM	2	12	0	0	19	0	0	0	0	0	1	34
Total for:	8:00 AM	9:00 AM	0	8	0	0	24	2	1	0	2	1	0	38
Tota Peak Hour:	7:45 AM	8:45 AM	1	13	0	0	24	1	1	0	2	1	0	44
Overall PHF:	0.79													



TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

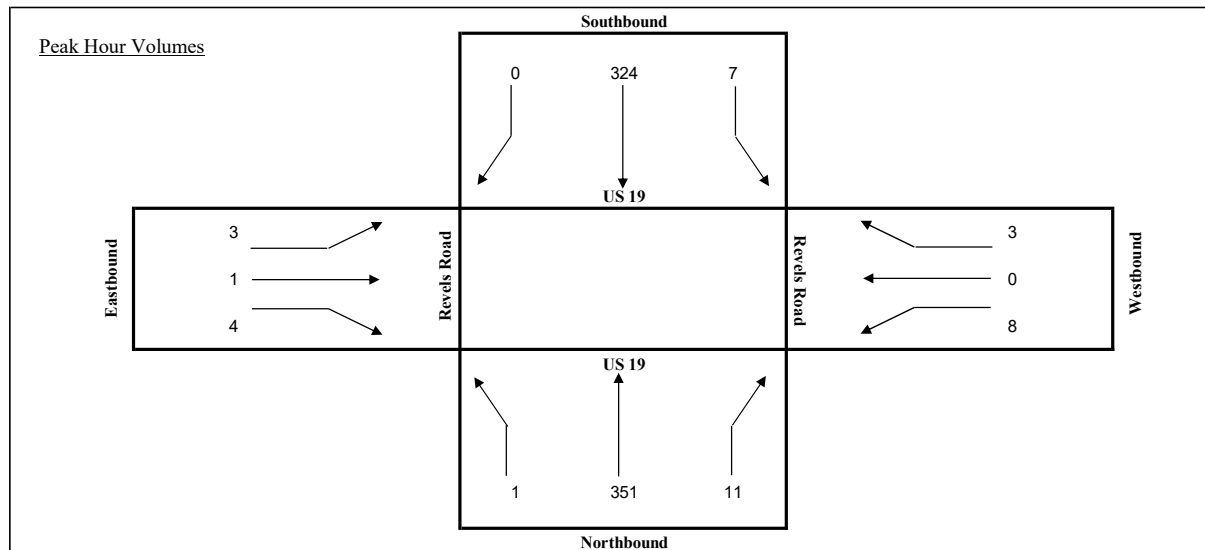
Intersection (N/S): US 19

Intersection (E/W): Revels Road

Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	2	89	6	5	61	3	1	0	0	1	1	2	171
4:15 PM	4:30 PM	0	76	3	0	74	1	1	0	1	3	0	1	160
4:30 PM	4:45 PM	1	78	1	2	88	0	0	0	1	2	0	0	173
4:45 PM	5:00 PM	0	93	6	1	91	0	0	0	0	2	0	2	195
5:00 PM	5:15 PM	0	88	3	2	70	0	1	0	2	2	0	0	168
5:15 PM	5:30 PM	0	92	1	2	75	0	2	1	1	2	0	1	177
5:30 PM	5:45 PM	0	92	2	1	70	0	0	0	1	0	0	0	166
5:45 PM	6:00 PM	0	86	3	0	72	0	1	0	0	2	0	1	165

Total for:	4:00 PM	5:00 PM	3	336	16	8	314	4	2	0	2	8	1	5	699
Total for:	5:00 PM	6:00 PM	0	358	9	5	287	0	4	1	4	6	0	2	676
Tota Peak Hour:	4:30 PM	5:30 PM	1	351	11	7	324	0	3	1	4	8	0	3	713
Overall PHF:	0.91														

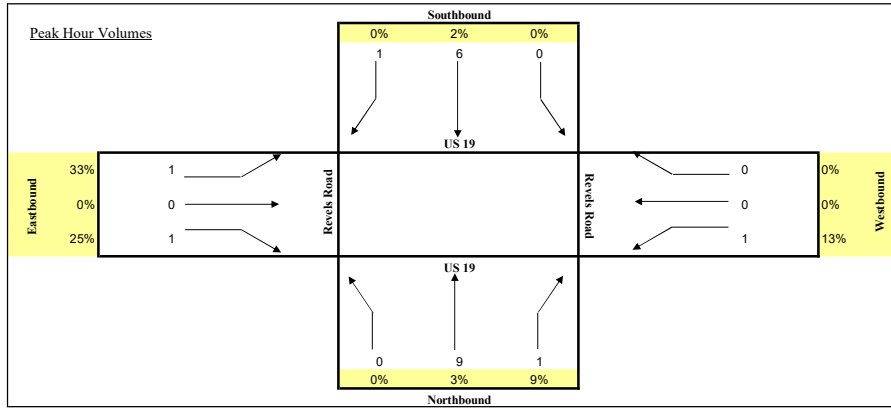


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	1	0	0	1	1	0	0	0	0	0	0	3
4:15 PM	4:30 PM	0	4	1	0	2	0	1	0	0	0	0	0	8
4:30 PM	4:45 PM	0	1	0	0	0	0	0	0	1	1	0	0	3
4:45 PM	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	6
5:00 PM	5:15 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
5:15 PM	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	5:45 PM	0	5	0	0	2	0	0	0	0	0	0	0	7
5:45 PM	6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1

Total for:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Total for:	5:00 PM	6:00 PM	0	9	0	0	4	0	0	0	0	0	0	0	13
Total Peak Hour:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Overall PHF:	0.63														



TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

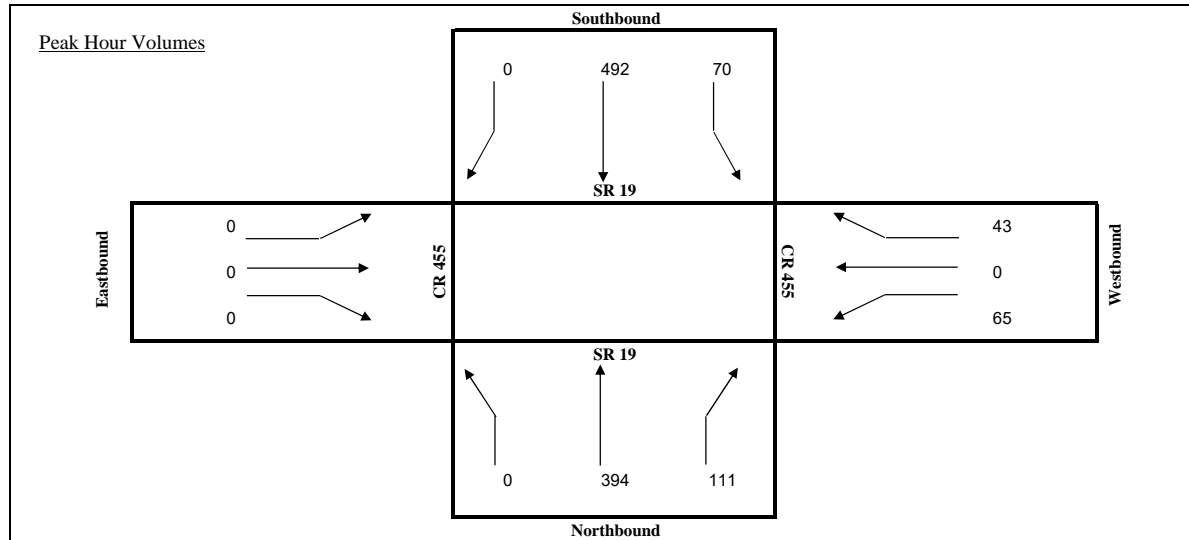
Intersection (N/S): SR 19

Intersection (E/W): CR 455

Date: 1/24/2023

Start	End	SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	0	92	15	11	131	0	0	0	0	7	0	4	260
7:15 AM	7:30 AM	0	93	23	16	144	0	0	0	0	9	0	6	291
7:30 AM	7:45 AM	0	111	27	21	105	0	0	0	0	13	0	11	288
7:45 AM	8:00 AM	0	91	26	20	124	0	0	0	0	17	0	12	290
8:00 AM	8:15 AM	0	99	35	13	119	0	0	0	0	26	0	14	306
8:15 AM	8:30 AM	0	93	29	18	98	0	0	0	0	22	0	11	271
8:30 AM	8:45 AM	0	74	27	11	94	0	0	0	0	22	0	12	240
8:45 AM	9:00 AM	0	81	22	9	94	0	0	0	0	17	0	9	232

Total for:	7:00 AM	8:00 AM	0	387	91	68	504	0	0	0	0	46	0	33	1129
Total for:	8:00 AM	9:00 AM	0	347	113	51	405	0	0	0	0	87	0	46	1049
Tota Peak Hour:	7:15 AM	8:15 AM	0	394	111	70	492	0	0	0	0	65	0	43	1175
Overall PHF:	0.96														



**TURNING MOVEMENT COUNT ANALYSIS
TRUCKS**

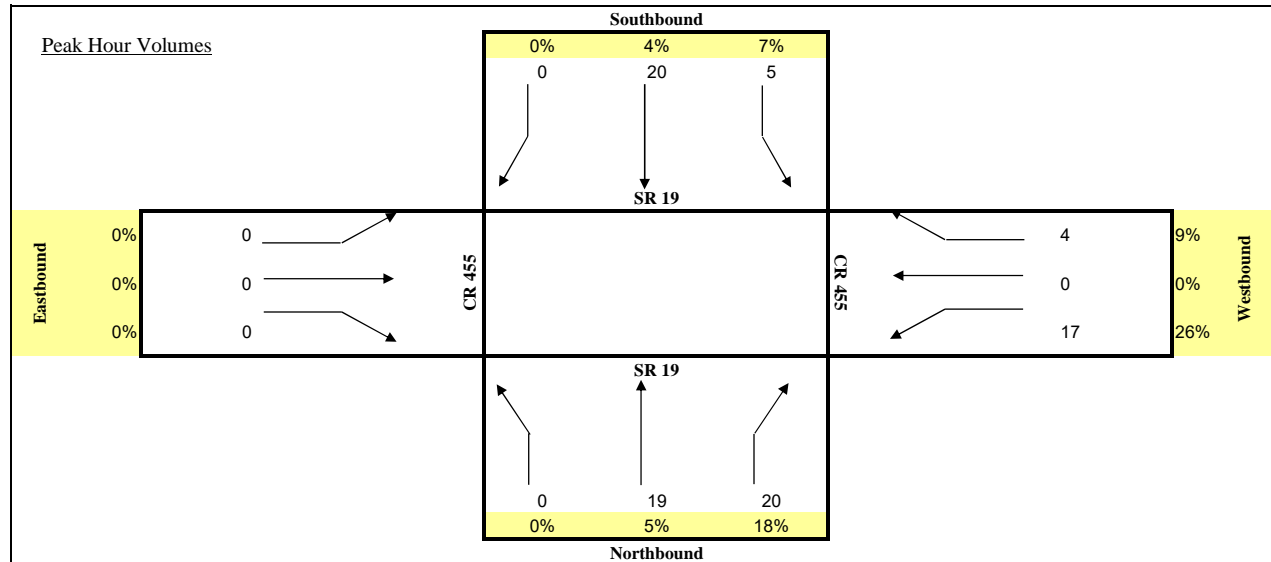
Intersection (N/S): SR 19

Intersection (E/W): CR 455

Date: 1/24/2023

Start	End	SR 19			SR 19			CR 455			CR 455			TOTAL
		NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	0	3	3	0	7	0	0	0	0	2	0	1	16
7:15 AM	7:30 AM	0	6	1	1	8	0	0	0	0	2	0	0	18
7:30 AM	7:45 AM	0	7	7	3	5	0	0	0	0	3	0	2	27
7:45 AM	8:00 AM	0	3	2	1	3	0	0	0	0	1	0	0	10
8:00 AM	8:15 AM	0	6	5	0	5	0	0	0	0	5	0	1	22
8:15 AM	8:30 AM	0	3	6	3	6	0	0	0	0	3	0	2	23
8:30 AM	8:45 AM	0	3	6	1	5	0	0	0	0	6	0	0	21
8:45 AM	9:00 AM	0	7	3	1	4	0	0	0	0	3	0	1	19

Total for:	7:00 AM	8:00 AM	0	19	13	5	23	0	0	0	0	8	0	3	71
Total for:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Tota Peak Hour:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Overall PHF:	0.92														



TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

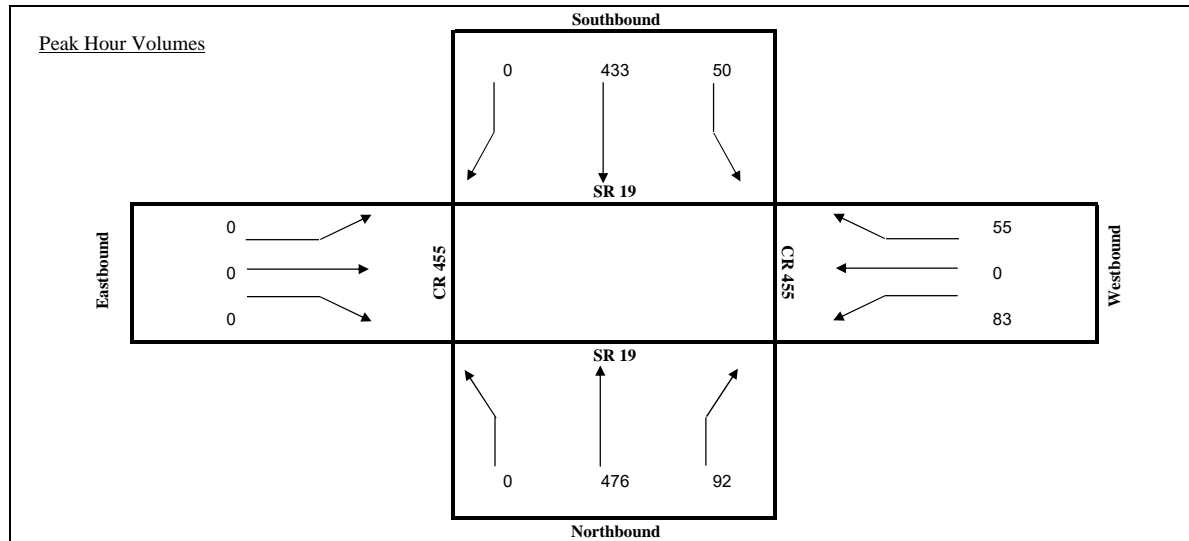
Intersection (N/S): SR 19

Intersection (E/W): CR 455

Date: 1/24/2023

Start	End	SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	97	20	6	117	0	0	0	0	18	0	14	272
4:15 PM	4:30 PM	0	111	22	9	109	0	0	0	0	22	0	11	284
4:30 PM	4:45 PM	0	114	25	13	108	0	0	0	0	19	0	16	295
4:45 PM	5:00 PM	0	118	22	9	108	0	0	0	0	25	0	13	295
5:00 PM	5:15 PM	0	131	21	14	104	0	0	0	0	18	0	10	298
5:15 PM	5:30 PM	0	113	24	14	113	0	0	0	0	21	0	16	301
5:30 PM	5:45 PM	0	96	28	17	94	0	0	0	0	17	0	19	271
5:45 PM	6:00 PM	0	87	21	10	102	0	0	0	0	21	0	12	253

Total for:	4:00 PM	5:00 PM	0	440	89	37	442	0	0	0	0	84	0	54	1146
Total for:	5:00 PM	6:00 PM	0	427	94	55	413	0	0	0	0	77	0	57	1123
Tota Peak Hour:	4:30 PM	5:30 PM	0	476	92	50	433	0	0	0	0	83	0	55	1189
Overall PHF:	0.99														



TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

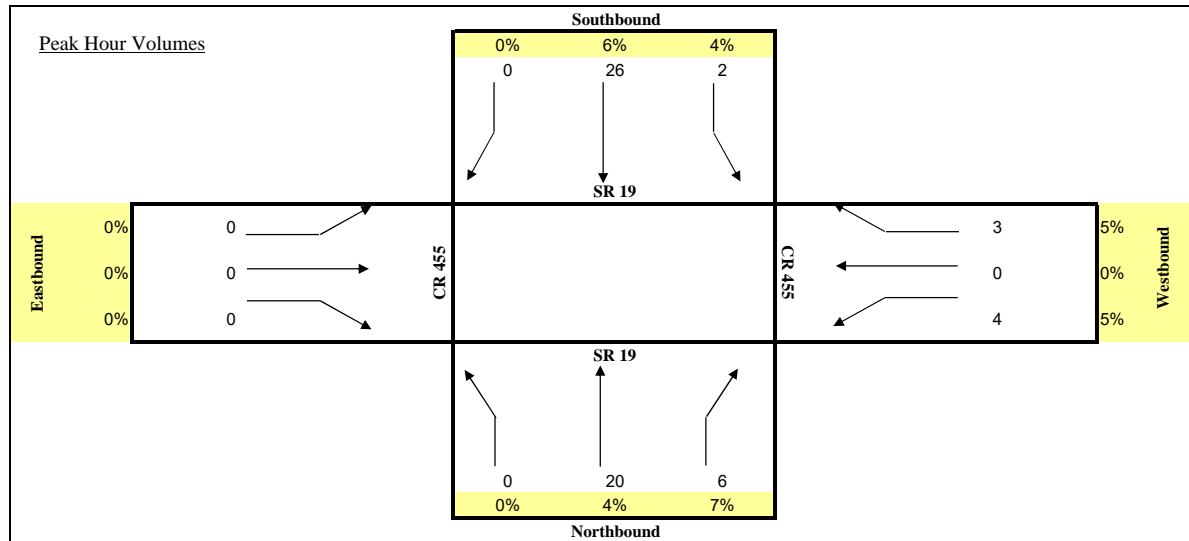
Intersection (N/S): SR 19

Intersection (E/W): CR 455

Date: 1/24/2023

Start	End	SR 19			SR 19			CR 455			CR 455			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	6	3	0	7	0	0	0	0	1	0	1	18
4:15 PM	4:30 PM	0	5	0	1	7	0	0	0	0	1	0	1	15
4:30 PM	4:45 PM	0	7	2	1	4	0	0	0	0	0	0	0	14
4:45 PM	5:00 PM	0	2	1	0	8	0	0	0	0	2	0	1	14
5:00 PM	5:15 PM	0	4	3	1	2	0	0	0	0	0	0	0	10
5:15 PM	5:30 PM	0	3	1	0	7	0	0	0	0	1	0	0	12
5:30 PM	5:45 PM	0	0	4	1	1	0	0	0	0	0	0	2	8
5:45 PM	6:00 PM	0	0	1	0	5	0	0	0	0	1	0	1	8

Total for:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Total for:	5:00 PM	6:00 PM	0	7	9	2	15	0	0	0	0	2	0	3	38
Tota Peak Hour:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Overall PHF:	0.85														



2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 1100 LAKE COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.95 PSCF
1	01/01/2022 - 01/01/2022	0.99	1.04
2	01/02/2022 - 01/08/2022	1.01	1.06
3	01/09/2022 - 01/15/2022	1.03	1.08
4	01/16/2022 - 01/22/2022	1.02	1.07
5	01/23/2022 - 01/29/2022	1.00	1.05
* 6	01/30/2022 - 02/05/2022	0.98	1.03
* 7	02/06/2022 - 02/12/2022	0.97	1.02
* 8	02/13/2022 - 02/19/2022	0.95	1.00
* 9	02/20/2022 - 02/26/2022	0.95	1.00
*10	02/27/2022 - 03/05/2022	0.94	0.99
*11	03/06/2022 - 03/12/2022	0.94	0.99
*12	03/13/2022 - 03/19/2022	0.93	0.98
*13	03/20/2022 - 03/26/2022	0.94	0.99
*14	03/27/2022 - 04/02/2022	0.95	1.00
*15	04/03/2022 - 04/09/2022	0.95	1.00
*16	04/10/2022 - 04/16/2022	0.96	1.01
*17	04/17/2022 - 04/23/2022	0.97	1.02
*18	04/24/2022 - 04/30/2022	0.98	1.03
19	05/01/2022 - 05/07/2022	0.99	1.04
20	05/08/2022 - 05/14/2022	0.99	1.04
21	05/15/2022 - 05/21/2022	1.00	1.05
22	05/22/2022 - 05/28/2022	1.01	1.06
23	05/29/2022 - 06/04/2022	1.02	1.07
24	06/05/2022 - 06/11/2022	1.03	1.08
25	06/12/2022 - 06/18/2022	1.04	1.09
26	06/19/2022 - 06/25/2022	1.05	1.11
27	06/26/2022 - 07/02/2022	1.05	1.11
28	07/03/2022 - 07/09/2022	1.06	1.12
29	07/10/2022 - 07/16/2022	1.06	1.12
30	07/17/2022 - 07/23/2022	1.06	1.12
31	07/24/2022 - 07/30/2022	1.05	1.11
32	07/31/2022 - 08/06/2022	1.05	1.11
33	08/07/2022 - 08/13/2022	1.04	1.09
34	08/14/2022 - 08/20/2022	1.04	1.09
35	08/21/2022 - 08/27/2022	1.05	1.11
36	08/28/2022 - 09/03/2022	1.06	1.12
37	09/04/2022 - 09/10/2022	1.07	1.13
38	09/11/2022 - 09/17/2022	1.08	1.14
39	09/18/2022 - 09/24/2022	1.05	1.11
40	09/25/2022 - 10/01/2022	1.02	1.07
41	10/02/2022 - 10/08/2022	1.00	1.05
42	10/09/2022 - 10/15/2022	0.97	1.02
43	10/16/2022 - 10/22/2022	0.98	1.03
44	10/23/2022 - 10/29/2022	0.99	1.04
45	10/30/2022 - 11/05/2022	0.99	1.04
46	11/06/2022 - 11/12/2022	1.00	1.05
47	11/13/2022 - 11/19/2022	1.01	1.06
48	11/20/2022 - 11/26/2022	1.00	1.05
49	11/27/2022 - 12/03/2022	1.00	1.05
50	12/04/2022 - 12/10/2022	0.99	1.04
51	12/11/2022 - 12/17/2022	0.99	1.04
52	12/18/2022 - 12/24/2022	1.01	1.06
53	12/25/2022 - 12/31/2022	1.03	1.08

* PEAK SEASON

23-FEB-2023 09:11:22













830UPD

5_1100_PKSEASON.TXT

Appendix E
HCM Analysis Worksheets - Existing Conditions

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	346	229	316	455	277	98
Future Volume (veh/h)	346	229	316	455	277	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	357	117	326	0	286	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	390	315	751		564	1114
Arrive On Green	0.23	0.23	0.42	0.00	0.12	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	357	117	326	0	286	101
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	18.9	6.6	11.8	0.0	8.2	2.1
Cycle Q Clear(g_c), s	18.9	6.6	11.8	0.0	8.2	2.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	390	315	751		564	1114
V/C Ratio(X)	0.91	0.37	0.43		0.51	0.09
Avail Cap(c_a), veh/h	417	336	751		705	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	29.2	18.4	0.0	11.8	7.1
Incr Delay (d2), s/veh	23.6	0.7	1.8	0.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	3.7	8.6	0.0	5.1	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	29.9	20.3	0.0	12.6	7.3
LnGrp LOS	E	C	C		B	A
Approach Vol, veh/h	474		326	A		387
Approach Delay, s/veh	50.7		20.3			11.2
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.3	45.0		28.6		62.3
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	10.2	13.8		20.9		4.1
Green Ext Time (p_c), s	0.5	1.9		0.3		0.5
Intersection Summary						
HCM 6th Ctrl Delay			29.5			
HCM 6th LOS			C			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	434	319	72	353	304	84
Future Volume (veh/h)	434	319	72	353	304	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	447	210	74	0	313	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	405	327	729		767	1107
Arrive On Green	0.24	0.24	0.41	0.00	0.13	0.61
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	447	210	74	0	313	87
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.1	2.4	0.0	9.5	1.8
Cycle Q Clear(g_c), s	22.7	13.1	2.4	0.0	9.5	1.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	405	327	729		767	1107
V/C Ratio(X)	1.10	0.64	0.10		0.41	0.08
Avail Cap(c_a), veh/h	405	327	729		880	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	31.8	16.9	0.0	11.2	7.4
Incr Delay (d2), s/veh	76.1	4.3	0.3	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	7.8	1.8	0.0	5.8	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	111.6	36.1	17.1	0.0	11.5	7.6
LnGrp LOS	F	D	B		B	A
Approach Vol, veh/h	657		74	A		400
Approach Delay, s/veh	87.5		17.1			10.7
Approach LOS	F		B			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.6	45.0		30.0		63.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	11.5	4.4		24.7		3.8
Green Ext Time (p_c), s	0.6	0.4		0.0		0.4
Intersection Summary						
HCM 6th Ctrl Delay			55.7			
HCM 6th LOS			E			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th TWSC
 2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Future Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	36	3	10	11	1	15	12	389	25	4	441	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	887	891	445	885	882	402	448	0	0	414	0	0
Stage 1	453	453	-	426	426	-	-	-	-	-	-	-
Stage 2	434	438	-	459	456	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	254	251	613	266	285	648	946	-	-	960	-	-
Stage 1	568	521	-	606	586	-	-	-	-	-	-	-
Stage 2	581	529	-	582	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	243	245	613	255	278	648	946	-	-	960	-	-
Mov Cap-2 Maneuver	243	245	-	255	278	-	-	-	-	-	-	-
Stage 1	558	518	-	596	576	-	-	-	-	-	-	-
Stage 2	556	520	-	565	565	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.7		15.1		0.3		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	278	386	960	-	-
HCM Lane V/C Ratio	0.013	-	-	0.178	0.072	0.004	-	-
HCM Control Delay (s)	8.9	0	-	20.7	15.1	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-

HCM 6th TWSC
 2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Future Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	33	12	13	18	3	14	16	374	22	16	445	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	924	926	466	927	935	385	486	0	0	396	0	0
Stage 1	498	498	-	417	417	-	-	-	-	-	-	-
Stage 2	426	428	-	510	518	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	240	239	597	249	265	663	914	-	-	975	-	-
Stage 1	536	496	-	613	591	-	-	-	-	-	-	-
Stage 2	587	535	-	546	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	225	228	597	225	253	663	914	-	-	975	-	-
Mov Cap-2 Maneuver	225	228	-	225	253	-	-	-	-	-	-	-
Stage 1	524	485	-	599	577	-	-	-	-	-	-	-
Stage 2	558	523	-	508	521	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.6		17.9		0.4		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	914	-	-	263	313	975	-	-
HCM Lane V/C Ratio	0.018	-	-	0.223	0.112	0.017	-	-
HCM Control Delay (s)	9	0	-	22.6	17.9	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.4	0.1	-	-

HCM 6th TWSC
 3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
Future Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	46	15	1	24	1	5	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	61	0	0	83	83	54	85	90	25
Stage 1	-	-	-	-	-	-	56	56	-	27	27	-
Stage 2	-	-	-	-	-	-	27	27	-	58	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1589	-	-	1542	-	-	904	807	1013	901	800	1051
Stage 1	-	-	-	-	-	-	956	848	-	990	873	-
Stage 2	-	-	-	-	-	-	990	873	-	954	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1589	-	-	1542	-	-	902	805	1013	896	798	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	902	805	-	896	798	-
Stage 1	-	-	-	-	-	-	955	847	-	989	872	-
Stage 2	-	-	-	-	-	-	989	872	-	950	841	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			8.8			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	946	1589	-	-	1542	-	-	-
HCM Lane V/C Ratio	0.009	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	8.8	7.3	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

HCM 6th TWSC
 3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
Future Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	6	21	31	6	6	1	25	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	42	0	0	115	118	39	128	118	34
Stage 1	-	-	-	-	-	-	39	39	-	76	76	-
Stage 2	-	-	-	-	-	-	76	79	-	52	42	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1574	-	-	1567	-	-	862	772	1033	845	772	1039
Stage 1	-	-	-	-	-	-	976	862	-	933	832	-
Stage 2	-	-	-	-	-	-	933	829	-	961	860	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1574	-	-	1567	-	-	853	761	1033	815	761	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	853	761	-	815	761	-
Stage 1	-	-	-	-	-	-	976	862	-	933	820	-
Stage 2	-	-	-	-	-	-	920	817	-	936	860	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.7			8.8			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	980	1574	-	-	1567	-	-	815
HCM Lane V/C Ratio	0.033	-	-	-	0.014	-	-	0.002
HCM Control Delay (s)	8.8	0	-	-	7.3	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th TWSC
4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Future Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	2	0	6	6	0	4	3	360	14	3	483	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	864	869	483	865	862	367	483	0	0	374	0	0
Stage 1	489	489	-	373	373	-	-	-	-	-	-	-
Stage 2	375	380	-	492	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	290	584	274	293	678	1080	-	-	1184	-	0
Stage 1	561	549	-	648	618	-	-	-	-	-	-	0
Stage 2	646	614	-	558	549	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	271	288	584	270	291	678	1080	-	-	1184	-	-
Mov Cap-2 Maneuver	271	288	-	270	291	-	-	-	-	-	-	-
Stage 1	559	547	-	645	616	-	-	-	-	-	-	-
Stage 2	639	612	-	551	547	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		15		0.1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1080	-	-	439	369	1184	-
HCM Lane V/C Ratio	0.003	-	-	0.018	0.027	0.003	-
HCM Control Delay (s)	8.3	-	-	13.3	15	8	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th TWSC
4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Future Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	3	1	4	9	0	3	1	413	13	8	381	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	820	825	381	822	819	420	381	0	0	426	0	0
Stage 1	397	397	-	422	422	-	-	-	-	-	-	-
Stage 2	423	428	-	400	397	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	294	308	666	293	310	633	1177	-	-	1133	-	0
Stage 1	629	603	-	609	588	-	-	-	-	-	-	0
Stage 2	609	585	-	626	603	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	290	305	666	288	307	633	1177	-	-	1133	-	-
Mov Cap-2 Maneuver	290	305	-	288	307	-	-	-	-	-	-	-
Stage 1	628	598	-	608	587	-	-	-	-	-	-	-
Stage 2	605	584	-	615	598	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14		16.1		0		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1177	-	-	408	338	1133	-
HCM Lane V/C Ratio	0.001	-	-	0.022	0.036	0.007	-
HCM Control Delay (s)	8.1	-	-	14	16.1	8.2	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th TWSC
5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	43	394	111	70	492
Future Vol, veh/h	65	43	394	111	70	492
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	68	45	410	116	73	513

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1069	410	0	0	526	0
Stage 1	410	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	210	614	-	-	1006	-
Stage 1	599	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	189	614	-	-	1006	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	189	614	1006
HCM Lane V/C Ratio	-	-	0.358	0.073	0.072
HCM Control Delay (s)	-	-	34.3	11.3	8.9
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2	0.2

HCM 6th TWSC
5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	55	476	92	50	433
Future Vol, veh/h	83	55	476	92	50	433
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	86	57	496	96	52	451

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1051	496	0	0	592	0
Stage 1	496	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	215	548	-	-	950	-
Stage 1	544	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	199	548	-	-	950	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	472	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.7	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	199	548	950
HCM Lane V/C Ratio	-	-	0.434	0.105	0.055
HCM Control Delay (s)	-	-	36.3	12.3	9
HCM Lane LOS	-	-	E	B	A
HCM 95th %tile Q(veh)	-	-	2	0.3	0.2

Appendix F
ITE Trip Generation Sheets

Single-Family Detached Housing (210)

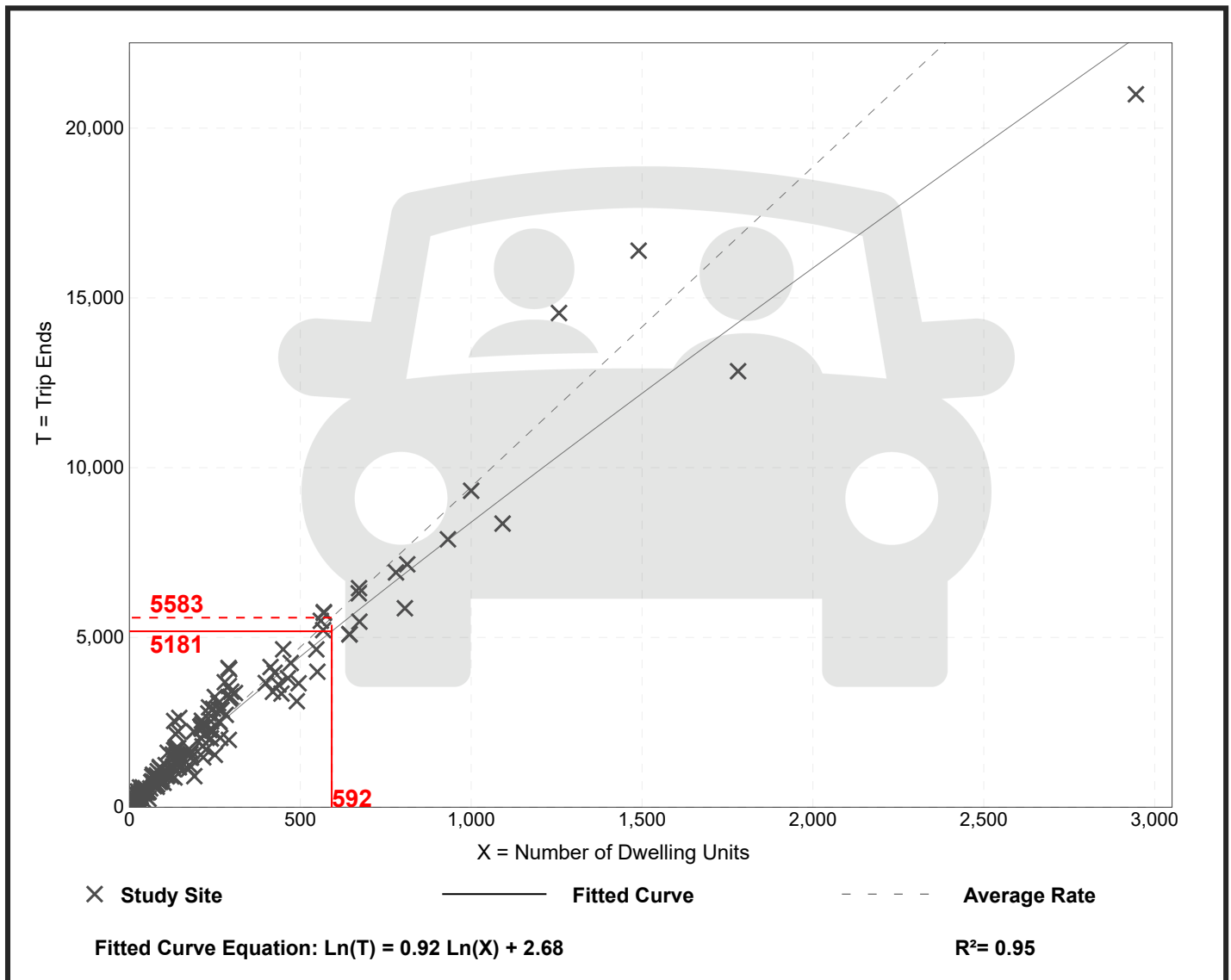
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

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

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 192

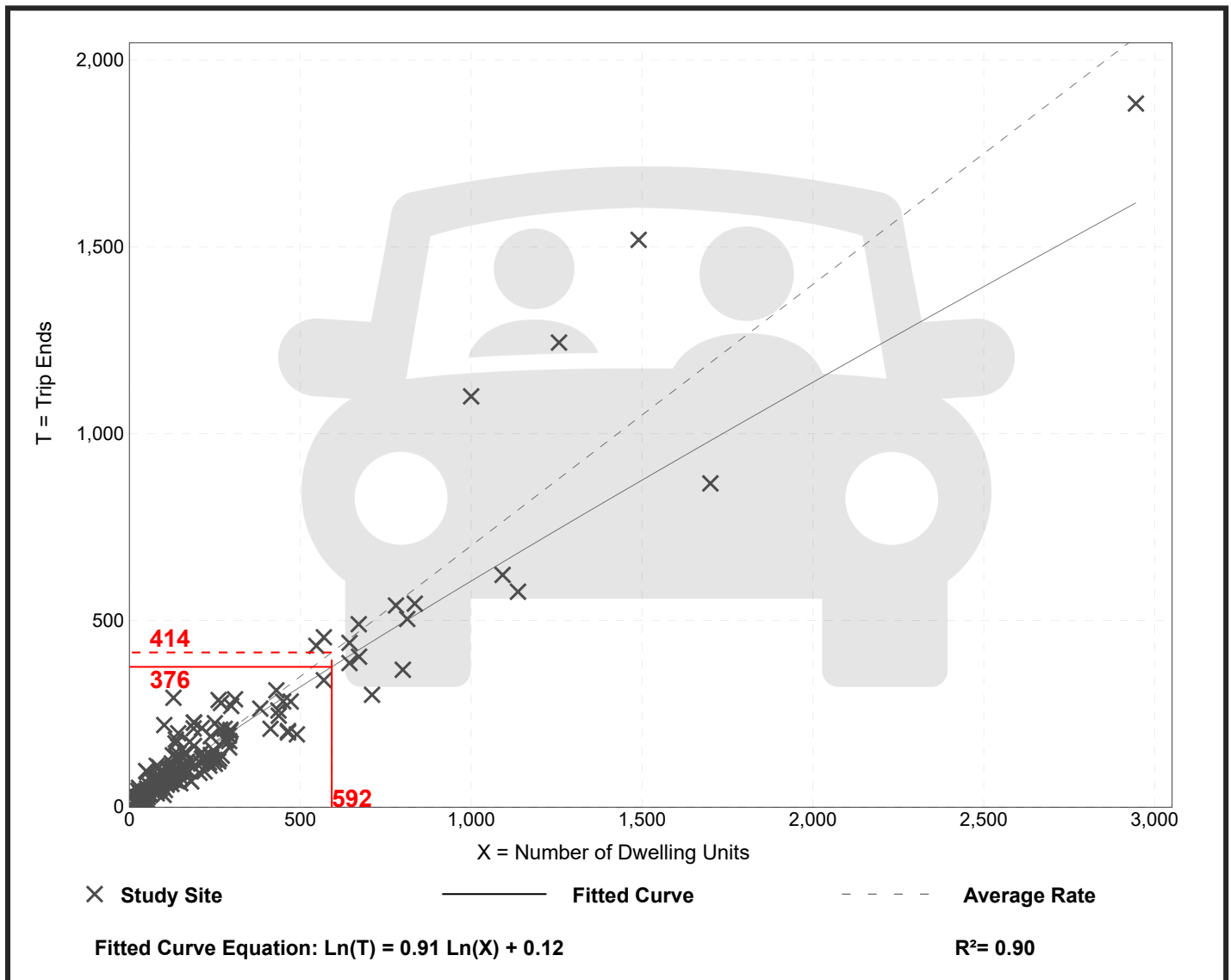
Avg. Num. of Dwelling Units: 226

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 208

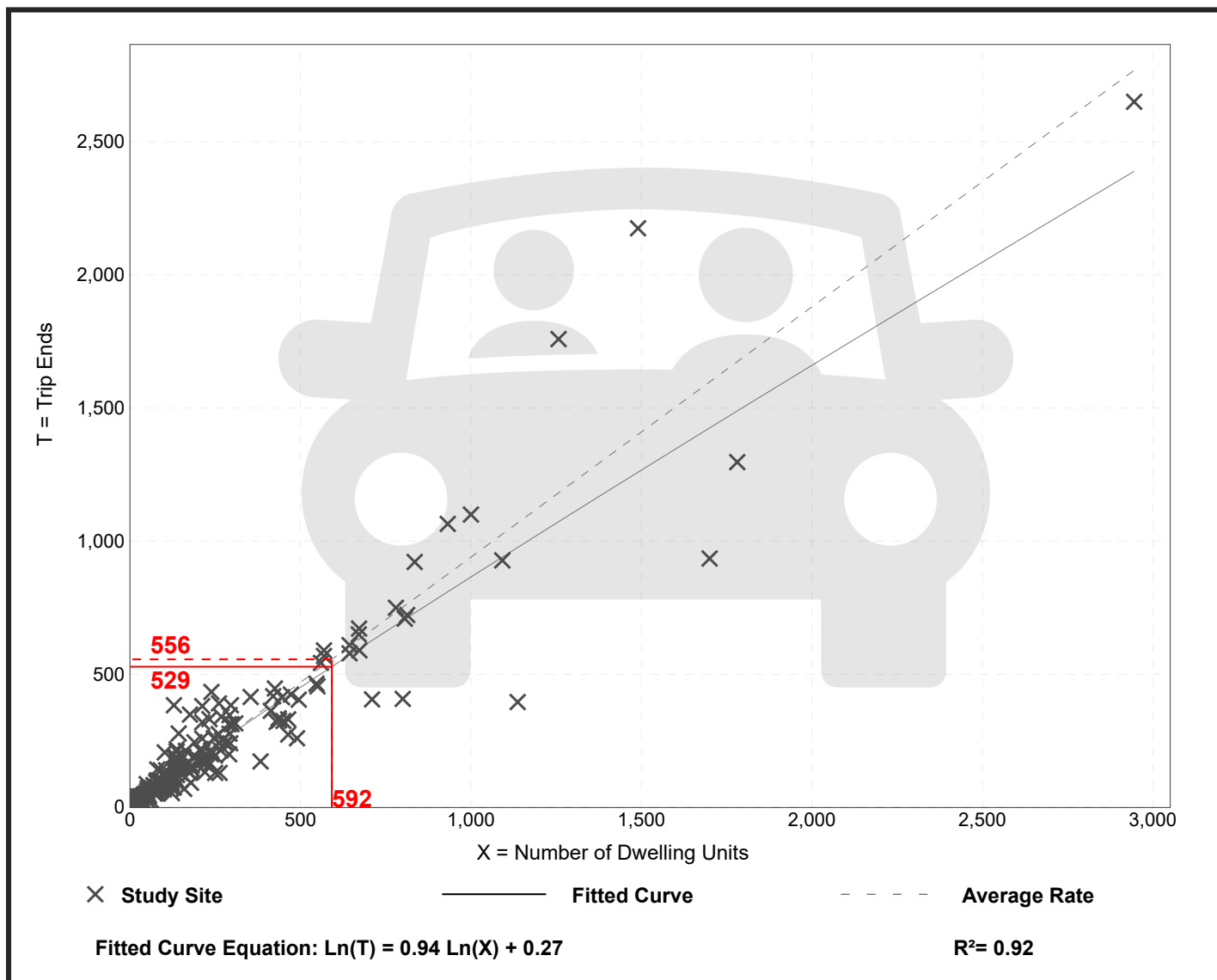
Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

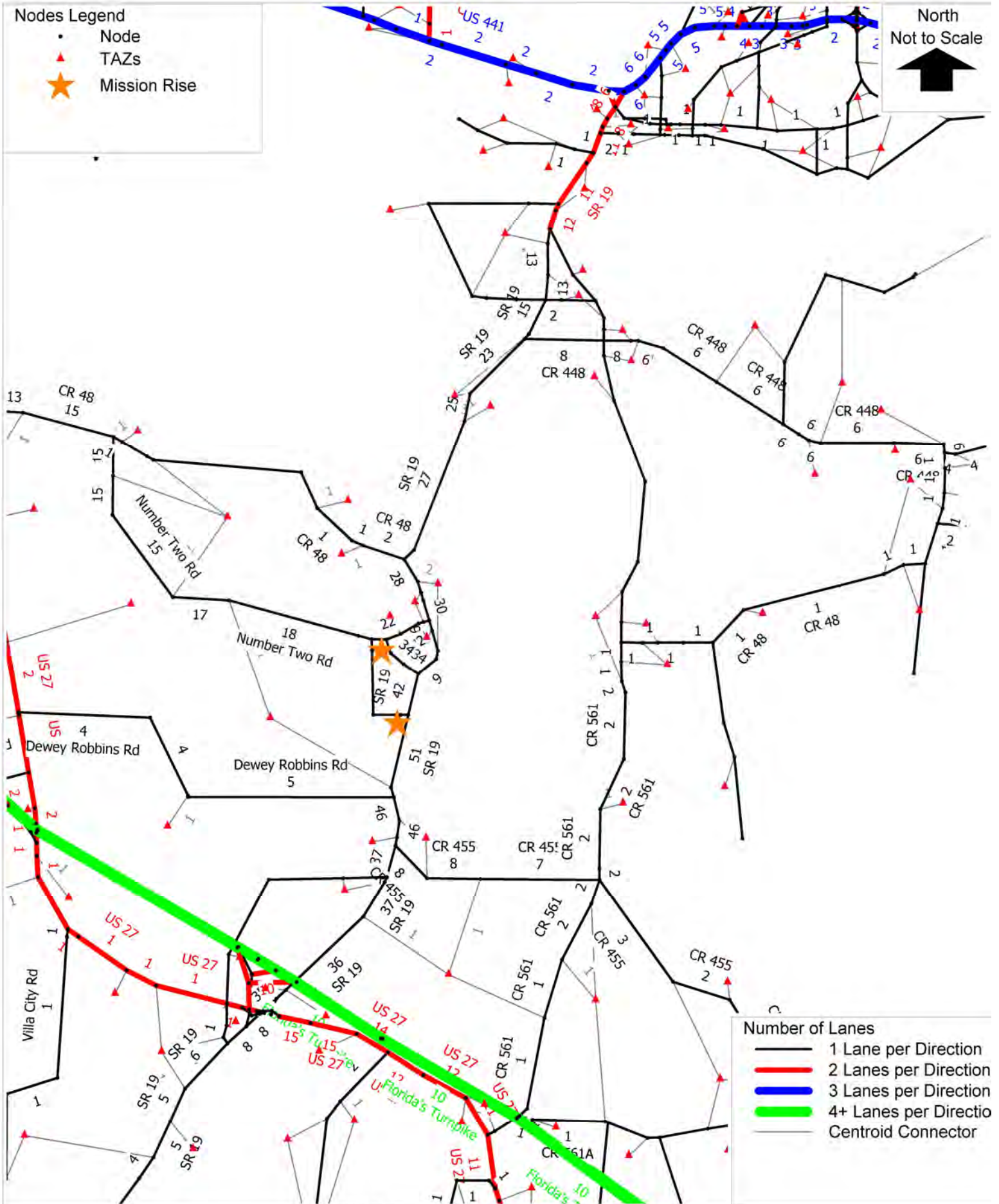
Data Plot and Equation



Appendix G
CFRPM Model Output

- Nodes Legend**
- Node
 - ▲ TAZs
 - ★ Mission Rise

North
Not to Scale

- Number of Lanes**
- 1 Lane per Direction
 - 2 Lanes per Direction
 - 3 Lanes per Direction
 - 4+ Lanes per Direction
 - Centroid Connector

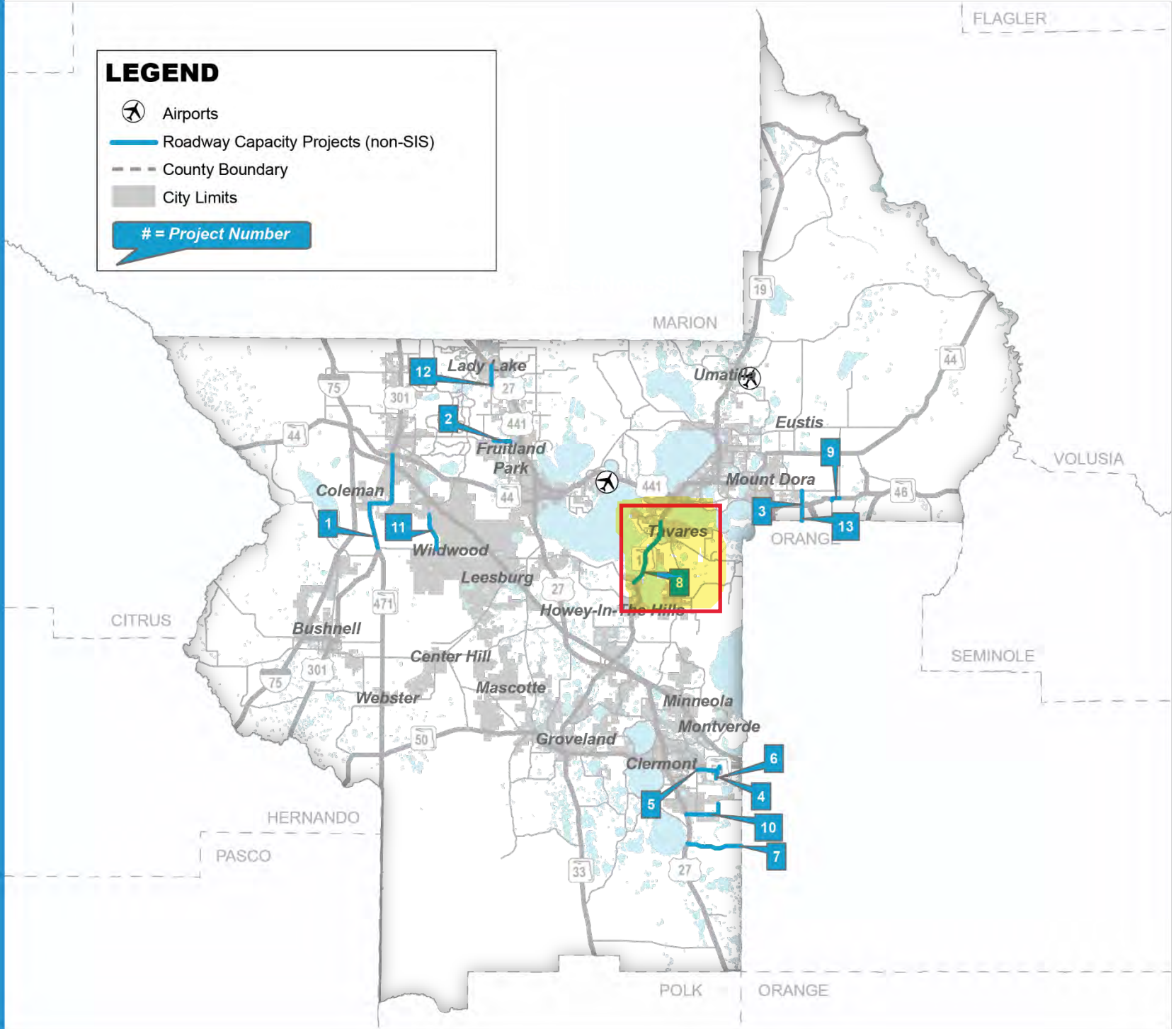
23017 Mission Rise - Osceola County, FL TAZ 7676, 7677

Project Distribution

C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

Appendix H
LSMPO TIP and LSMPO LOPP

ROADWAY CAPACITY PROJECTS (NON-SIS)



7

Project Description: WELLNESS WAY FROM US-27 TO THE LAKE/ORANGE COUNTY LINE

FM#

Funding Source(s):

Local and State

4487331

Work Description: NEW ROAD CONSTRUCTION

LRTP Page:

PG. 4-12

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded	
PDE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
PE	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000,000	
ENV	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
ROW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
LAR	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
RRU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CST	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000,000	
Responsible Agency: RESPONSIBLE AGENCY NOT AVAILABLE					County: LAKE		Total Project Cost: \$ 3,000,000		

8

Project Description: SR 19 FROM CR 48 TO CR 561

FM#

Funding Source(s):

State and Federal

2383191

Work Description: ADD LANES & RECONSTRUCT

LRTP Page:

PG. 4-12

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded	
PDE	\$ 1,161,015	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,161,015	
PE	\$ 4,141,718	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,141,718	
ENV	\$ 492,196	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 692,196	
ROW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
LAR	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
RRU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
CST	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 5,794,929	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,994,929	
Responsible Agency: FDOT					County: LAKE		Total Project Cost: \$ 5,994,929		



2022 List of Priority Projects

Lake~Sumter Metropolitan Planning Organization

Adopted June 22, 2022

Table 3 – Roadway Capacity (Non-SIS) Project Priorities

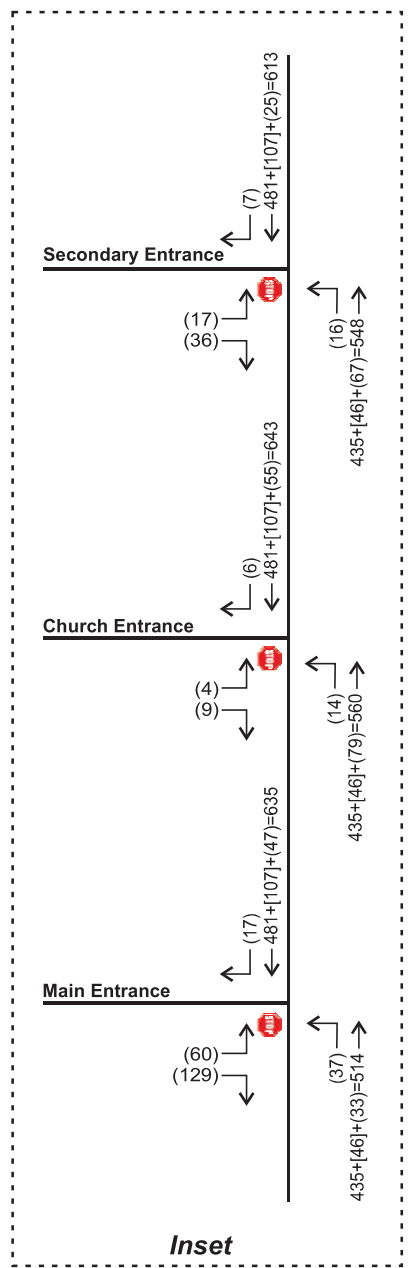
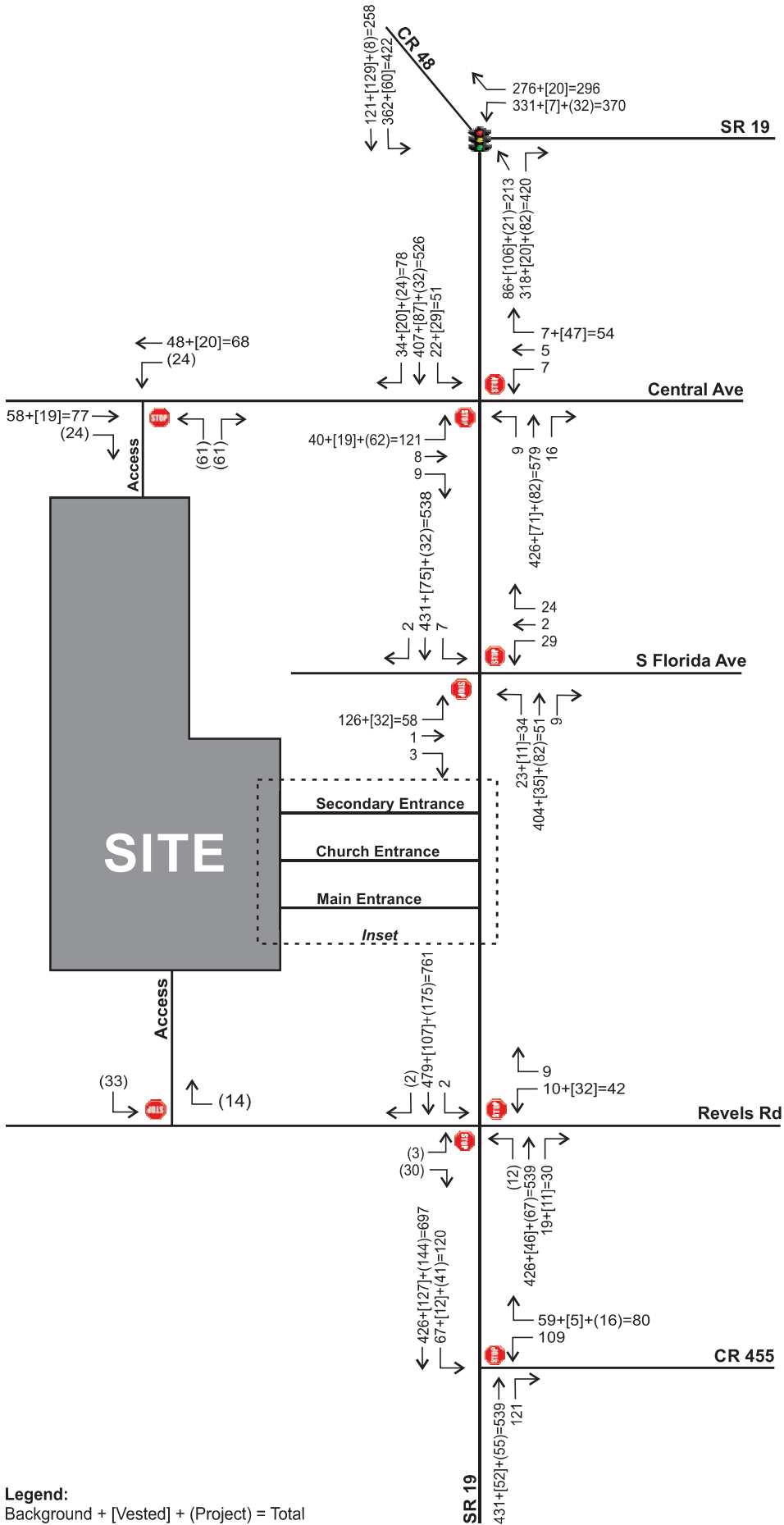
Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
1	FDOT/ Sumter County	430132-1	SR 35 (US 301)	SR 44	CR 470	Road Widening	System Performance	ROW	2026/27	\$27,000,000	Design	2022/23 2025/26	Extremely Congested (2021)
2	FDOT/ Lake County	409870-1	SR 44 (CR44B)	US 441	SR44	Road Widening	System Performance; Safety	CST	2024/25	\$23,701,500	ROW		Extremely Congested (2021)
3	Sumter County	447931-1	Marsh Bend Trail (CR 501)	Corbin Trail	Central Parkway	Roadway Improvements	System Performance	CST	2023/24	\$1,275,400	CST	2022/23	Operating at Acceptable Level of Service
4	FDOT/ Lake County	238394-3	SR 500 (US 441)	Perkins Street	SR 44	Road Widening	System Performance	CST	2023/24	\$13,794,537			Congested (2026)
5	FDOT/ Lake County	429356-1	SR 500 (US 441)	SR 44	N of SR 46	Road Widening	System Performance	CST	2023/24	\$22,233,040	ROW	2021/22	Not Congested
6	Lake County/ Lady Lake	439665-1	Rolling Acres Road	West Lady Lake Ave.	Griffin Ave	Road Widening	System Performance	Design	2026/27	\$2,000,000	PD&E	2025/26	Extremely Congested (2026)
7	Lake County	441710-1	Round Lake Road	Wolfbranch Rd	North of SR 44	New Roadway/ Alignment	System Performance	CST	2024/25	\$30,000,000	Design		Operating at Acceptable Level of Service
8	Lake County	441779-1	CR 455 (Hartle Rd)	Lost Lake Rd.	Hartwood Marsh Rd.	Roadway Extension/ Widening	System Performance	CST	2024/25	\$19,800,000	ROW	2022/23	New Roadway, Not on CMP Network
9	Lake County	-	CR 455 (Hartle Rd)	Hartwood Marsh Rd	CFX Lake-Orange Connector	Road Extension	System Performance	Design	2023/24	\$3,000,000	PDE		New Roadway, Not on CMP Network

Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
10	Lake County	-	Citrus Grove Phase II	West of Scrub Jay Lane	Grassy Lake Rd	New Alignment/Widening	System Performance	CST	2024/25	\$10,000,000	ROW		New Roadway, Not on CMP Network
11	Lake County	-	Citrus Grove Phase V	Turnpike	Blackstill Lake Dr	New Roadway/Alignment	System Performance	CST	2024/25	\$5,000,000	Design		New Roadway, Not on CMP Network
12	Lake County	441393-1	CR 437 Realignment	Oak Tree Dr	SR 46	New Alignment/Widening	System Performance	CST	2024/25	\$4,000,000	Design		New Roadway, Not on CMP Network
13	Lake County	-	Hartwood Marsh	Regency Hills Dr	Innovation Lane	Road Widening	System Performance	Design	2023/24	\$750,000	PDE		Approaching Congestion
14	Lake County	-	CR 455 Paved Shoulder	CR 561	CR 561A	Paved Shoulder	System Performance	Design	2023/24	\$700,000			Operating at Acceptable Level of Service
15	FDOT/Lake County	-	CR 470/CR 48	Meggison Road at The Villages	US 27	Road Widening	System Performance	Design	2023/24	\$4,000,000			Congested (2026)
16	Lake County/ Mount Dora	-	Vista Ridge Drive/Wolf Branch Innovation Boulevard	Niles Rd	Round Lake Road	New Roadway	System Performance	Design	2023/24	\$1,000,000	Study		New Roadway, Not on CMP Network
17	Lake County	-	CR 561A	CR 561	CR 455	Realignment	System Performance; Safety	PDE	2023/24	\$750,000	Study		Operating at Acceptable Level of Service
18	FDOT/ Lake County	-	SR 44	Orange Ave	CR 46A	Road Widening	System Performance	PDE	2023/24	\$TBD			Congested (2021)
19	FDOT	-	SR 19	SR 50	CR 455	Road Widening	System Performance	PDE	2023/24	\$TBD			Congested (2021)

Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
20	Lake County	-	Woodlea Road	SR 19	End	Road Widening	System Performance	Design Update/ ROW	2023/24	\$3,000,000			Operating at Acceptable Level of Service
21	FDOT/ Lake County	238319-1	SR 19	Howey Bridge	CR 561	Road Widening	System Performance	CST	2023/24	\$35,000,000			Extremely Congested (2021)
22	Lake County	-	Hancock Road	Hartwood Marsh Rd	Wellness Way	New Road	System Performance	CST	2025/26	\$20,000,000			New Roadway, Not on CMP Network
23	Lake County	-	SR 46A	SR 44	SR 46	Road Widening	System Performance	CST	2023/24	\$TBD	Design		Congested (2021)

Top 20 Project

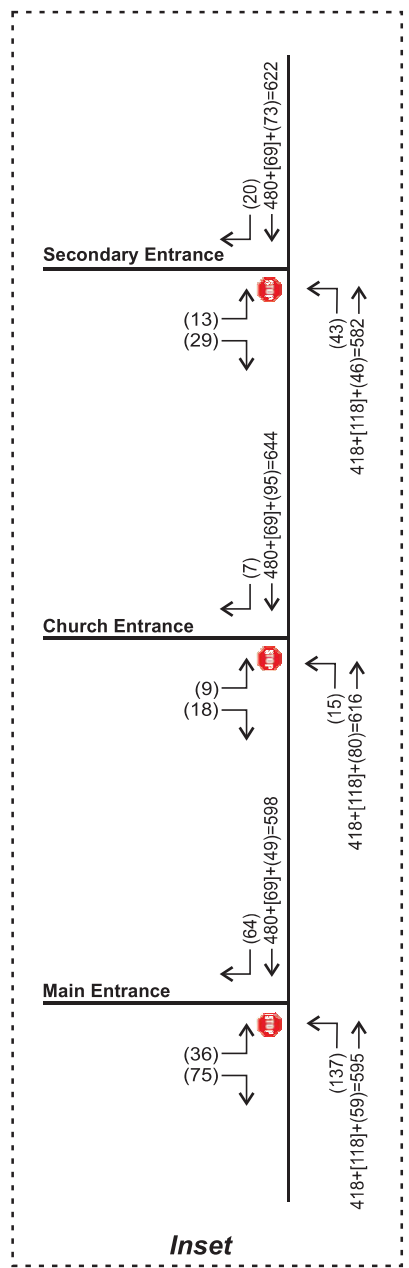
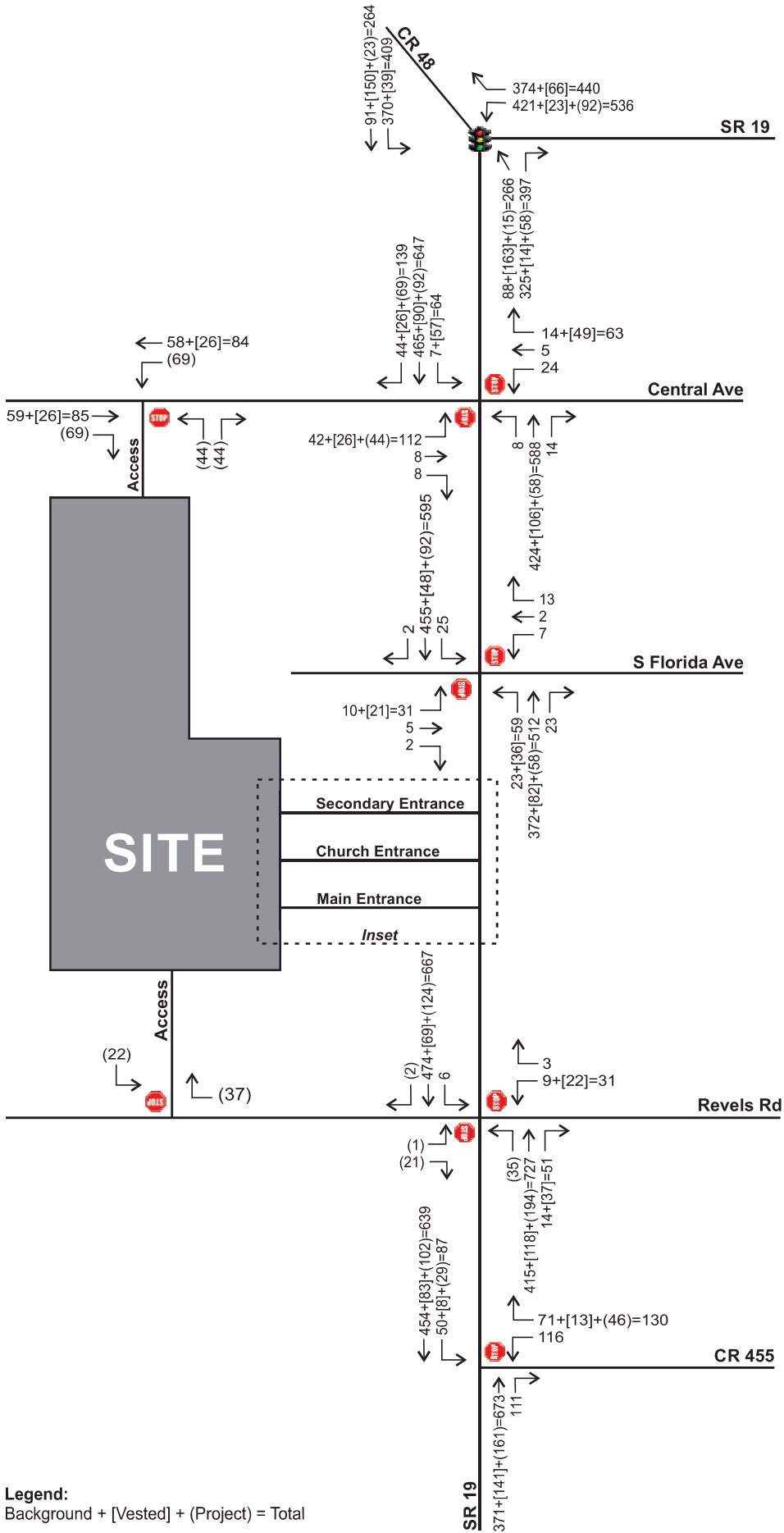
Appendix I
Vested Trips Data



Legend:
 Background + [Vested] + (Project) = Total



Projected AM Peak Intersection Volumes
 The Reserve at Howey in the Hills
 21082



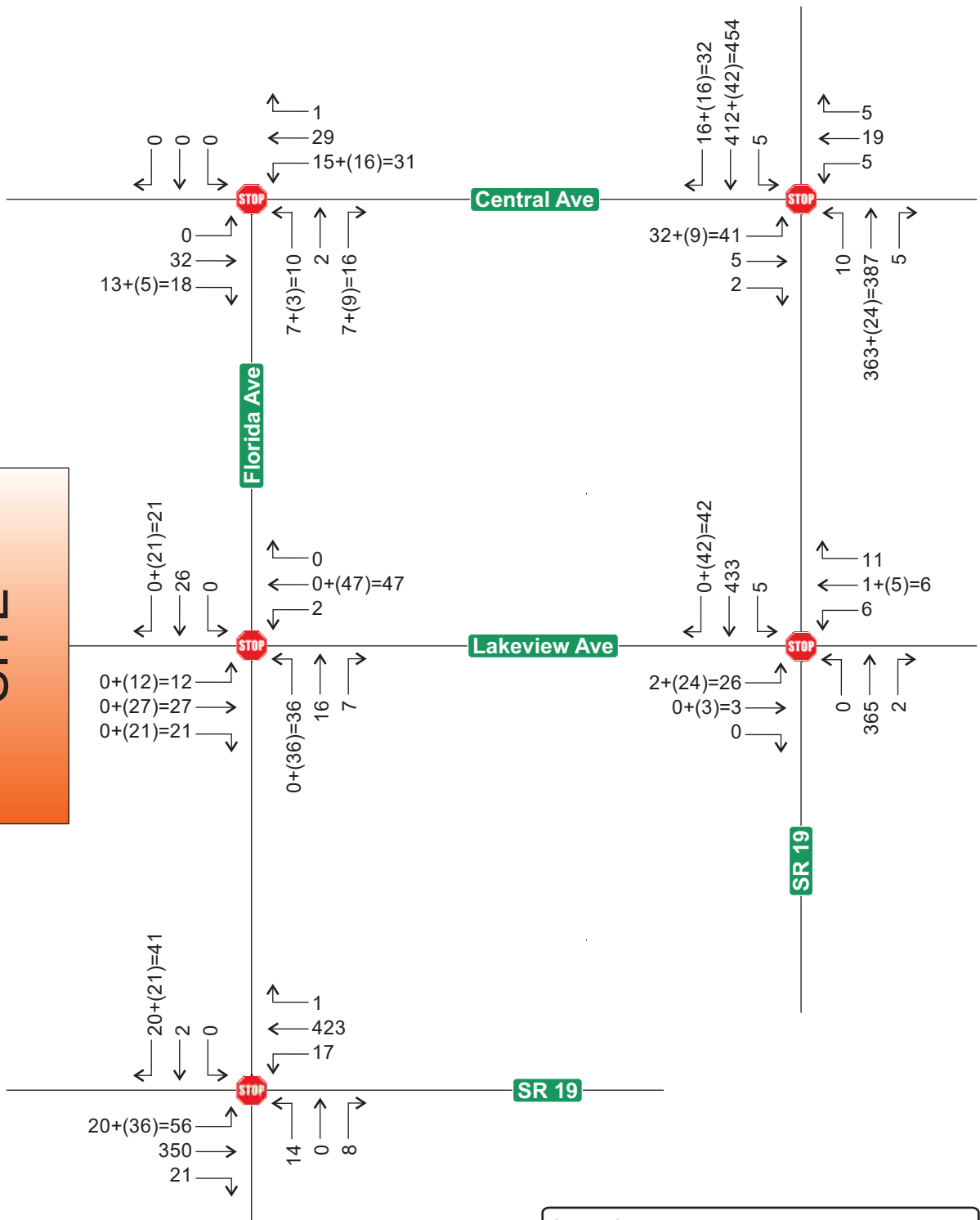
Legend:
 Background + [Vested] + (Project) = Total



Projected PM Peak Intersection Volumes
 The Reserve at Howey in the Hills
 21082

Figure
6

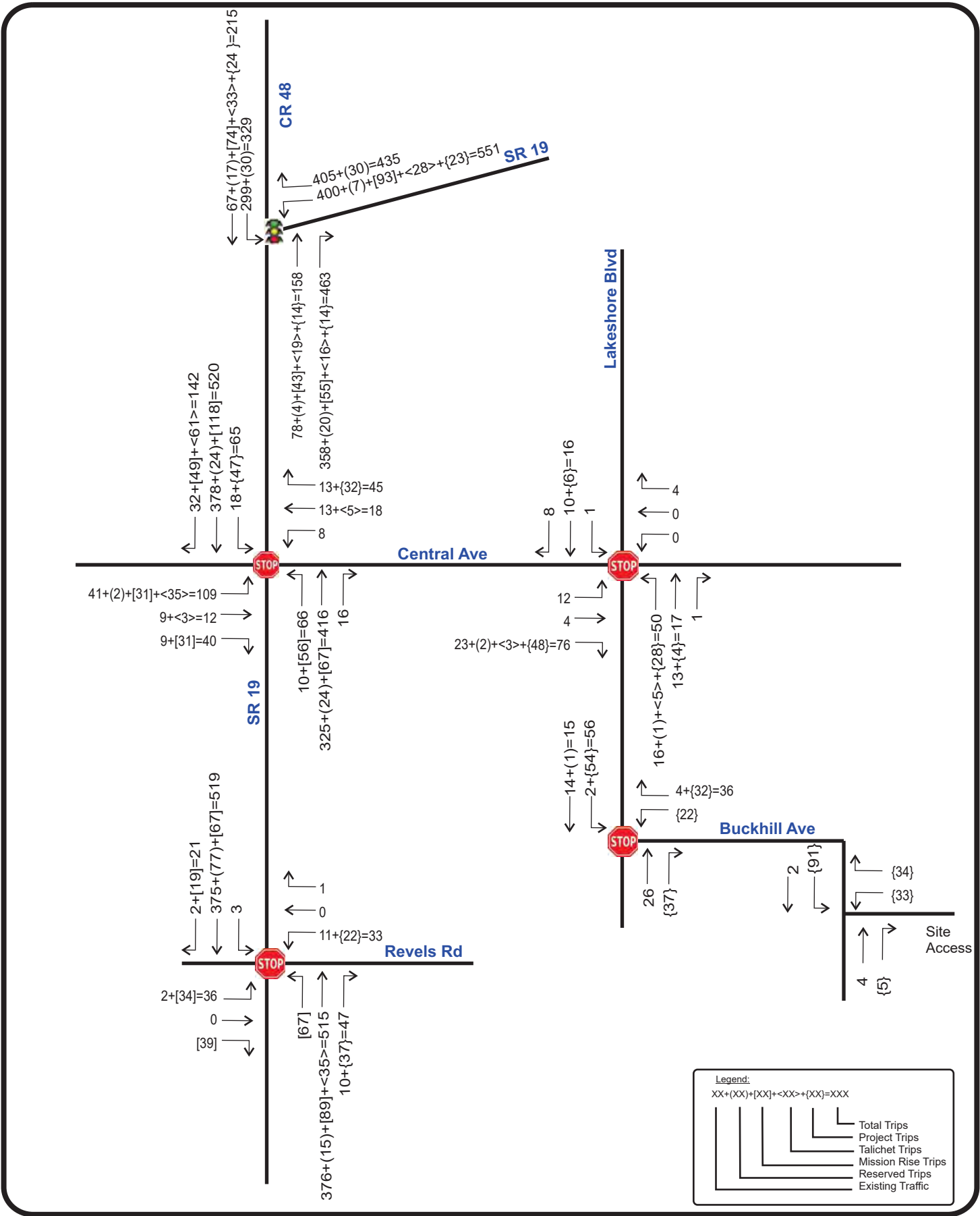
SITE



Legend:
 XX+(XX)=XXX
 ——— Total Traffic
 ——— Project Trips
 ——— Background Traffic

*Schematic drawing. Not to scale.
 ** Any +/- 1 project trip discrepancy is due to rounding





Projected P.M. Peak Hour Intersection Volumes

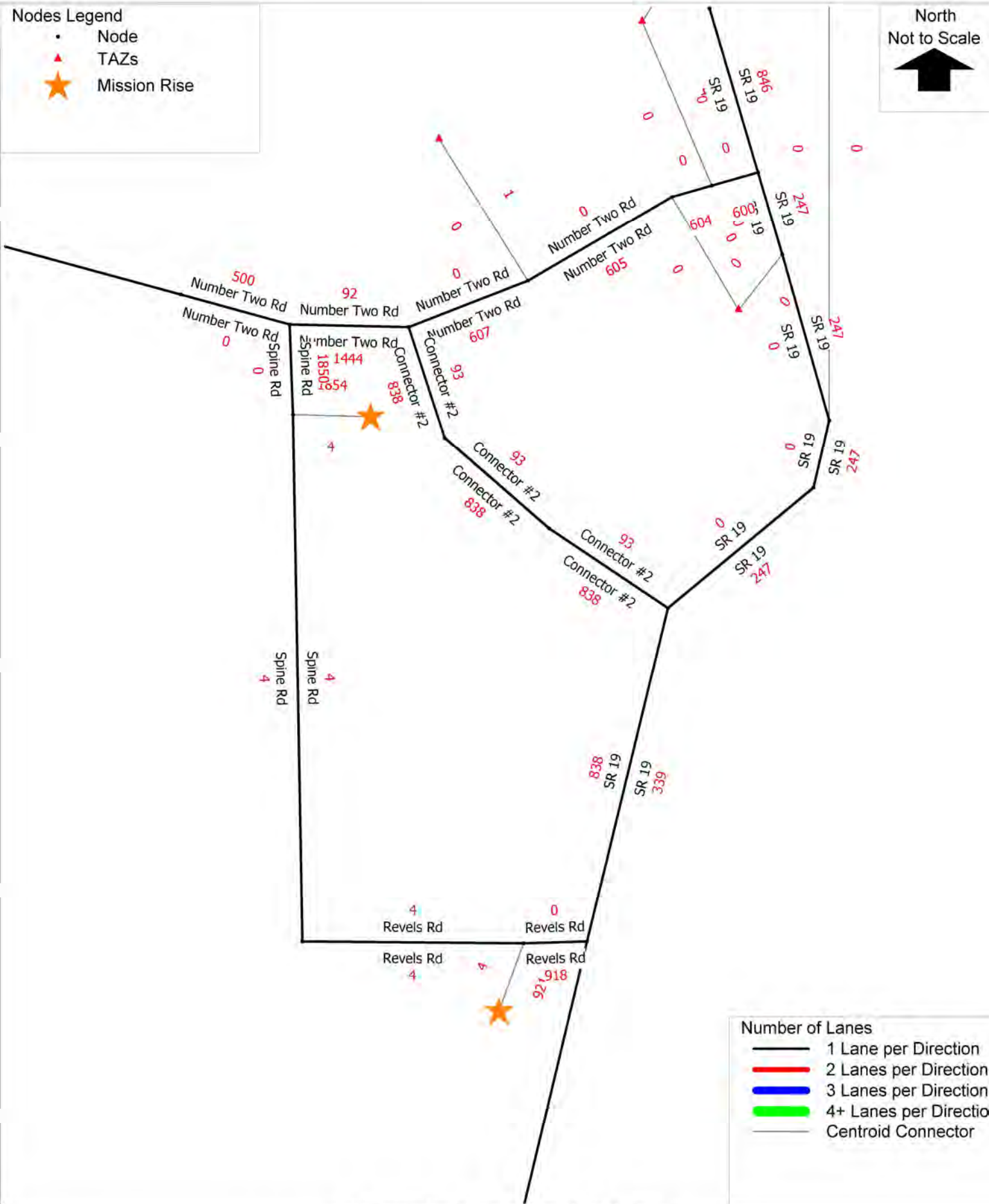


Appendix J
AADT Model Plot

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise

North
Not to Scale



Number of Lanes

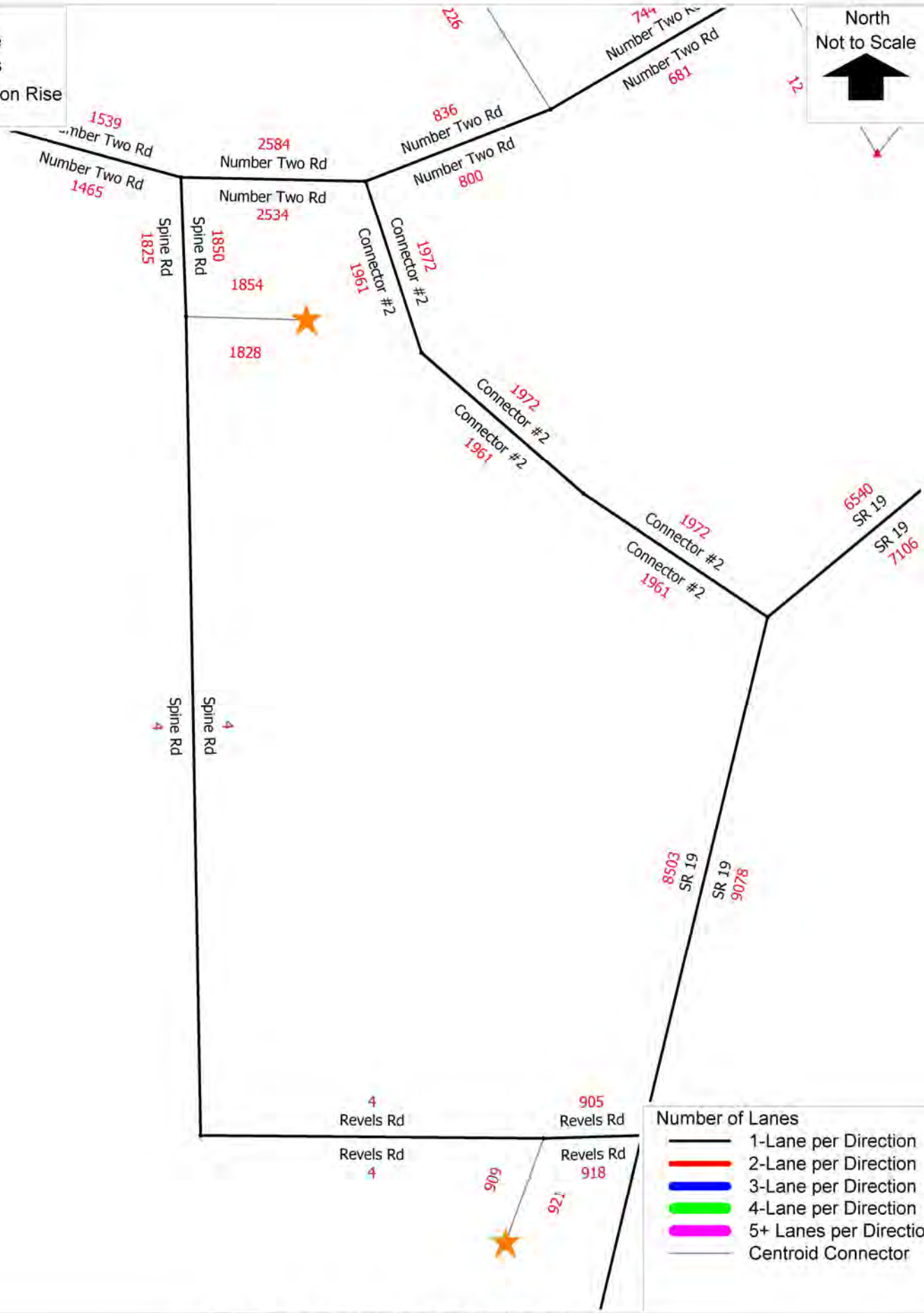
- 1 Lane per Direction
- 2 Lanes per Direction
- 3 Lanes per Direction
- 4+ Lanes per Direction
- Centroid Connector

23017 Mission Rise - Lake County, FL TAZ 7676, 7677
Future AADT

C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise















23017.1 Mission Rise - Lake County, FL TAZ 7676, 7677
 Future AADT
 C:\FSUTMS\D5\CFRPM7

Appendix K
HCM Worksheets - Projected Conditions

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	482	275	429	716	332	142
Future Volume (veh/h)	482	275	429	716	332	142
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	497	145	442	0	342	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	400	323	720		491	1115
Arrive On Green	0.24	0.24	0.41	0.00	0.14	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	497	145	442	0	342	146
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	8.7	18.7	0.0	10.7	3.2
Cycle Q Clear(g_c), s	22.7	8.7	18.7	0.0	10.7	3.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	400	323	720		491	1115
V/C Ratio(X)	1.24	0.45	0.61		0.70	0.13
Avail Cap(c_a), veh/h	400	323	720		584	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	30.7	22.2	0.0	14.8	7.6
Incr Delay (d2), s/veh	128.9	1.0	3.9	0.0	2.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	34.5	5.0	12.8	0.0	7.1	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	164.9	31.7	26.1	0.0	17.7	7.9
LnGrp LOS	F	C	C		B	A
Approach Vol, veh/h	642		442	A		488
Approach Delay, s/veh	134.8		26.1			14.8
Approach LOS	F		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.7	45.0		30.0		64.7
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	12.7	20.7		24.7		5.2
Green Ext Time (p_c), s	0.6	2.5		0.0		0.8
Intersection Summary						
HCM 6th Ctrl Delay			67.0			
HCM 6th LOS			E			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	713	383	119	541	365	155
Future Volume (veh/h)	713	383	119	541	365	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	735	199	123	0	376	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	394	318	710		746	1125
Arrive On Green	0.24	0.24	0.40	0.00	0.15	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	735	199	123	0	376	160
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	12.7	4.3	0.0	12.0	3.5
Cycle Q Clear(g_c), s	22.7	12.7	4.3	0.0	12.0	3.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	394	318	710		746	1125
V/C Ratio(X)	1.86	0.63	0.17		0.50	0.14
Avail Cap(c_a), veh/h	394	318	710		814	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	32.9	18.5	0.0	11.6	7.6
Incr Delay (d2), s/veh	398.5	3.8	0.5	0.0	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	82.2	7.6	3.2	0.0	7.4	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	435.1	36.7	19.0	0.0	12.1	7.8
LnGrp LOS	F	D	B		B	A
Approach Vol, veh/h	934		123	A		536
Approach Delay, s/veh	350.2		19.0			10.8
Approach LOS	F		B			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.1	45.0		30.0		66.1
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	14.0	6.3		24.7		5.5
Green Ext Time (p_c), s	0.5	0.6		0.0		0.9
Intersection Summary						
HCM 6th Ctrl Delay			210.5			
HCM 6th LOS			F			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th TWSC
2: SR 19 & W Central Ave

Intersection												
Int Delay, s/veh	53.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	148	4	12	13	1	65	14	618	29	37	584	50
Future Vol, veh/h	148	4	12	13	1	65	14	618	29	37	584	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	153	4	12	13	1	67	14	637	30	38	602	52

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1418	1399	628	1392	1410	652	654	0	0	667	0	0
Stage 1	704	704	-	680	680	-	-	-	-	-	-	-
Stage 2	714	695	-	712	730	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 109	121	483	119	138	468	784	-	-	760	-	-
Stage 1	412	396	-	441	451	-	-	-	-	-	-	-
Stage 2	407	400	-	423	428	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 85	108	483	104	123	468	784	-	-	760	-	-
Mov Cap-2 Maneuver	~ 85	108	-	104	123	-	-	-	-	-	-	-
Stage 1	400	365	-	428	438	-	-	-	-	-	-	-
Stage 2	338	388	-	375	394	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	502.8		22.2		0.2		0.6	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	784	-	-	91	290	760	-	-
HCM Lane V/C Ratio	0.018	-	-	1.858	0.281	0.05	-	-
HCM Control Delay (s)	9.7	0	-	502.8	22.2	10	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	14.2	1.1	0.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	55.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	111	14	16	20	4	49	19	547	25	66	702	166
Future Vol, veh/h	111	14	16	20	4	49	19	547	25	66	702	166
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	114	14	16	21	4	51	20	564	26	68	724	171

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1591	1576	810	1578	1648	577	895	0	0	590	0	0
Stage 1	946	946	-	617	617	-	-	-	-	-	-	-
Stage 2	645	630	-	961	1031	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 82	94	380	89	99	516	627	-	-	816	-	-
Stage 1	301	302	-	477	481	-	-	-	-	-	-	-
Stage 2	445	430	-	308	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 60	74	380	61	78	516	627	-	-	816	-	-
Mov Cap-2 Maneuver	~ 60	74	-	61	78	-	-	-	-	-	-	-
Stage 1	287	250	-	454	458	-	-	-	-	-	-	-
Stage 2	379	409	-	230	257	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	\$ 655.2		48.9		0.4		0.7	
HCM LOS	F		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	627	-	-	68	154	816	-	-
HCM Lane V/C Ratio	0.031	-	-	2.138	0.489	0.083	-	-
HCM Control Delay (s)	10.9	0	-	\$ 655.2	48.9	9.8	0	-
HCM Lane LOS	B	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	13.7	2.3	0.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	72	17	10	32	1	10	0	20	0	0	0
Future Vol, veh/h	1	72	17	10	32	1	10	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	90	21	13	40	1	13	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	111	0	0	170	170	101	182	180	41
Stage 1	-	-	-	-	-	-	103	103	-	67	67	-
Stage 2	-	-	-	-	-	-	67	67	-	115	113	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1479	-	-	794	723	954	779	714	1030
Stage 1	-	-	-	-	-	-	903	810	-	943	839	-
Stage 2	-	-	-	-	-	-	943	839	-	890	802	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1479	-	-	788	716	954	753	707	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	788	716	-	753	707	-
Stage 1	-	-	-	-	-	-	902	809	-	942	831	-
Stage 2	-	-	-	-	-	-	935	831	-	866	801	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.7			9.2			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	891	1568	-	-	1479	-	-	-
HCM Lane V/C Ratio	0.042	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

HCM 6th TWSC
 3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	55	11	36	63	6	9	1	33	1	0	0
Future Vol, veh/h	0	55	11	36	63	6	9	1	33	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	69	14	45	79	8	11	1	41	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	83	0	0	249	253	76	270	256	83
Stage 1	-	-	-	-	-	-	76	76	-	173	173	-
Stage 2	-	-	-	-	-	-	173	177	-	97	83	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1509	-	-	1514	-	-	705	650	985	683	648	976
Stage 1	-	-	-	-	-	-	933	832	-	829	756	-
Stage 2	-	-	-	-	-	-	829	753	-	910	826	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1509	-	-	1514	-	-	688	630	985	638	628	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	688	630	-	638	628	-
Stage 1	-	-	-	-	-	-	933	832	-	829	733	-
Stage 2	-	-	-	-	-	-	803	730	-	871	826	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.6			9.3			10.7		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	893	1509	-	-	1514	-	-	638
HCM Lane V/C Ratio	0.06	-	-	-	0.03	-	-	0.002
HCM Control Delay (s)	9.3	0	-	-	7.5	0	-	10.7
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 6th TWSC
 4: SR 19 & Revels Rd/Revels Rd

Intersection												
Int Delay, s/veh	18.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↔			↕	
Traffic Vol, veh/h	47	0	135	43	0	5	49	465	38	4	725	16
Future Vol, veh/h	47	0	135	43	0	5	49	465	38	4	725	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	52	0	150	48	0	6	54	517	42	4	806	18

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1472	1490	815	1544	1478	538	824	0	0	559	0	0
Stage 1	823	823	-	646	646	-	-	-	-	-	-	-
Stage 2	649	667	-	898	832	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	105	124	377	94	126	543	806	-	-	1012	-	-
Stage 1	368	388	-	460	467	-	-	-	-	-	-	-
Stage 2	458	457	-	334	384	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	96	111	377	52	113	543	806	-	-	1012	-	-
Mov Cap-2 Maneuver	96	111	-	52	113	-	-	-	-	-	-	-
Stage 1	332	385	-	415	421	-	-	-	-	-	-	-
Stage 2	409	412	-	200	381	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	93.6		217.4		0.9		0	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	806	-	-	215	57	1012	-	-
HCM Lane V/C Ratio	0.068	-	-	0.941	0.936	0.004	-	-
HCM Control Delay (s)	9.8	-	-	93.6	217.4	8.6	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	7.9	4.2	0	-	-

HCM 6th TWSC
4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	21.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↔			↕	
Traffic Vol, veh/h	34	1	94	32	0	4	153	673	51	8	556	52
Future Vol, veh/h	34	1	94	32	0	4	153	673	51	8	556	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	38	1	104	36	0	4	170	748	57	9	618	58

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1784	1810	647	1835	1811	777	676	0	0	805	0	0
Stage 1	665	665	-	1117	1117	-	-	-	-	-	-	-
Stage 2	1119	1145	-	718	694	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	63	79	471	58	79	397	915	-	-	819	-	-
Stage 1	449	458	-	252	283	-	-	-	-	-	-	-
Stage 2	251	274	-	420	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	45	51	471	~ 32	51	397	915	-	-	819	-	-
Mov Cap-2 Maneuver	45	51	-	~ 32	51	-	-	-	-	-	-	-
Stage 1	296	450	-	166	187	-	-	-	-	-	-	-
Stage 2	164	181	-	320	436	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	168.6		\$ 355		1.7		0.1	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	915	-	-	132	36	819	-	-
HCM Lane V/C Ratio	0.186	-	-	1.086	1.111	0.011	-	-
HCM Control Delay (s)	9.8	-	-	168.6	\$ 355	9.4	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	8.1	4.1	0	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
5: SR 19 & CR 455

Intersection

Int Delay, s/veh 24.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	77	561	133	153	833
Future Vol, veh/h	78	77	561	133	153	833
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	81	80	584	139	159	868

Major/Minor	Minor1	Major1	Major2	Major2	Major2
Conflicting Flow All	1770	584	0	0	723
Stage 1	584	-	-	-	-
Stage 2	1186	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19
Critical Hdwy Stg 1	5.78	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281
Pot Cap-1 Maneuver	~ 74	488	-	-	848
Stage 1	493	-	-	-	-
Stage 2	246	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 47	488	-	-	848
Mov Cap-2 Maneuver	~ 47	-	-	-	-
Stage 1	493	-	-	-	-
Stage 2	157	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	278.4	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	47	488	848
HCM Lane V/C Ratio	-	-	1.729	0.164	0.188
HCM Control Delay (s)	-	-	\$ 539.6	13.8	10.2
HCM Lane LOS	-	-	F	B	B
HCM 95th %tile Q(veh)	-	-	8.1	0.6	0.7

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	37.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	145	849	110	109	691
Future Vol, veh/h	100	145	849	110	109	691
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	104	151	884	115	114	720

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1832	884	0	0	999	0
Stage 1	884	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 68	326	-	-	666	-
Stage 1	350	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	~ 49	326	-	-	666	-
Mov Cap-2 Maneuver	~ 49	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	300	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	49	326	666	-
HCM Lane V/C Ratio	-	-	2.126	0.463	0.17	-
HCM Control Delay (s)	-	-	\$ 698.5	25.2	11.5	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	10.6	2.3	0.6	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 6: Spine Road & Interconnect Road

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	34	79	0	48	45
Future Vol, veh/h	0	34	79	0	48	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	37	86	0	52	49

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	239	86	0	0	86
Stage 1	86	-	-	-	-
Stage 2	153	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	749	973	-	-	1510
Stage 1	937	-	-	-	-
Stage 2	875	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	723	973	-	-	1510
Mov Cap-2 Maneuver	723	-	-	-	-
Stage 1	937	-	-	-	-
Stage 2	844	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	3.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1510
HCM Lane V/C Ratio	-	-	0.038	0.035
HCM Control Delay (s)	-	-	8.8	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th TWSC
 6: Interconnect Road & Spine Road

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	66	0	45	90
Future Vol, veh/h	0	53	66	0	45	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	58	72	0	49	98

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	268	72	0	0	72
Stage 1	72	-	-	-	-
Stage 2	196	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	721	990	-	-	1528
Stage 1	951	-	-	-	-
Stage 2	837	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	696	990	-	-	1528
Mov Cap-2 Maneuver	696	-	-	-	-
Stage 1	951	-	-	-	-
Stage 2	809	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	990	1528
HCM Lane V/C Ratio	-	-	0.058	0.032
HCM Control Delay (s)	-	-	8.9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th TWSC
7: Spine Road & Number 2 Road

Intersection						
Int Delay, s/veh	5.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	62	29	49	33	58	86
Future Vol, veh/h	62	29	49	33	58	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	32	53	36	63	93

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	99	0	225 83
Stage 1	-	-	-	-	83 -
Stage 2	-	-	-	-	142 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1494	-	763 976
Stage 1	-	-	-	-	940 -
Stage 2	-	-	-	-	885 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1494	-	736 976
Mov Cap-2 Maneuver	-	-	-	-	736 -
Stage 1	-	-	-	-	940 -
Stage 2	-	-	-	-	853 -

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	863	-	-	1494	-
HCM Lane V/C Ratio	0.181	-	-	0.036	-
HCM Control Delay (s)	10.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

HCM 6th TWSC
7: Spine Road & Number 2 Road

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	65	97	39	44	70
Future Vol, veh/h	46	65	97	39	44	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	71	105	42	48	76

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	121	0	338
Stage 1	-	-	-	-	86
Stage 2	-	-	-	-	252
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1467	-	658
Stage 1	-	-	-	-	937
Stage 2	-	-	-	-	790
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1467	-	610
Mov Cap-2 Maneuver	-	-	-	-	610
Stage 1	-	-	-	-	937
Stage 2	-	-	-	-	732

Approach	EB	WB	NB
HCM Control Delay, s	0	5.5	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	791	-	-	1467	-
HCM Lane V/C Ratio	0.157	-	-	0.072	-
HCM Control Delay (s)	10.4	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

HCM 6th TWSC
 8: Revels Road & Spine Road

Intersection						
Int Delay, s/veh	7.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	11	115	6	6	155	10
Future Vol, veh/h	11	115	6	6	155	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	125	7	7	168	11

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	358	11	0	0	14
Stage 1	11	-	-	-	-
Stage 2	347	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	640	1070	-	-	1604
Stage 1	1012	-	-	-	-
Stage 2	716	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	573	1070	-	-	1604
Mov Cap-2 Maneuver	573	-	-	-	-
Stage 1	1012	-	-	-	-
Stage 2	641	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	995	1604
HCM Lane V/C Ratio	-	-	0.138	0.105
HCM Control Delay (s)	-	-	9.2	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.4

HCM 6th TWSC
 8: Revels Road & Spine Road

Intersection						
Int Delay, s/veh	7.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	11	177	10	13	146	6
Future Vol, veh/h	11	177	10	13	146	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	192	11	14	159	7

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	343	18	0	0	25	0
Stage 1	18	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	653	1061	-	-	1589	-
Stage 1	1005	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	588	1061	-	-	1589	-
Mov Cap-2 Maneuver	588	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	7.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1013	1589
HCM Lane V/C Ratio	-	-	0.202	0.1
HCM Control Delay (s)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.3

HCM 6th TWSC
 9: Orange Blossom Road & Revels Road

Intersection						
Int Delay, s/veh	7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	7	0	0	5	14	7
Future Vol, veh/h	7	0	0	5	14	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	5	15	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	5	0	-	0	19
Stage 1	-	-	-	-	3
Stage 2	-	-	-	-	16
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1616	-	-	-	998
Stage 1	-	-	-	-	1020
Stage 2	-	-	-	-	1007
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1616	-	-	-	993
Mov Cap-2 Maneuver	-	-	-	-	993
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	1007

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1616	-	-	-	1021
HCM Lane V/C Ratio	0.005	-	-	-	0.022
HCM Control Delay (s)	7.2	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th TWSC
 9: Orange Blossom Road & Revels Road

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	7	0	0	16	10	7
Future Vol, veh/h	7	0	0	16	10	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	17	11	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	17	0	-	0	25
Stage 1	-	-	-	-	9
Stage 2	-	-	-	-	16
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1600	-	-	-	991
Stage 1	-	-	-	-	1014
Stage 2	-	-	-	-	1007
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1600	-	-	-	986
Mov Cap-2 Maneuver	-	-	-	-	986
Stage 1	-	-	-	-	1009
Stage 2	-	-	-	-	1007

Approach	EB	WB	SB
HCM Control Delay, s	7.3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1600	-	-	-	1020
HCM Lane V/C Ratio	0.005	-	-	-	0.018
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix L
Intersection Volume Projections

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Years	Legend
AM Peak		94	282	1.06	2.00%	10	Backg'd + {Vested} + (Project) =

Intersection= SR 19 & CR 48 1																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0				0			0	0	
	T	0	1.06	0	1.20		0				0			0	0	
	R	0	1.06	0	1.20		0				0			0	0	
WB	L	326	1.06	346	1.20		415	32	14		46	23%		21	482	415 + {46} + (21) = 482
	T	0	1.06	0	1.20		0				0			0	0	
	R	216	1.06	229	1.20		275				0			0	275	275
NB	L	0	1.06	0	1.20		0				0			0	0	
	T	298	1.06	316	1.20		379	21	24		45	2%		5	429	379 + {45} + (5) = 429
	R	429	1.06	455	1.20		546	82	23		105	23%		65	716	546 + {105} + (65) = 716
SB	L	261	1.06	277	1.20		332				0			0	332	332
	T	92	1.06	98	1.20		118	8	14		22	2%		2	142	118 + {22} + (2) = 142
	R	0	1.06	0	1.20		0				0			0	0	

Intersection= SR 19 & Central Ave 2																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	33	1.06	35	1.20		42	62		16	78		10%	28	148	42 + {78} + (28) = 148
	T	3	1.06	3	1.20		4				0			0	4	4
	R	9	1.06	10	1.20		12				0			0	12	12
WB	L	10	1.06	11	1.20		13				0			0	13	13
	T	1	1.06	1	1.20		1				0			0	1	1
	R	14	1.06	15	1.20		18		47		47			0	65	18 + {47} = 65
NB	L	11	1.06	12	1.20		14				0			0	14	14
	T	356	1.06	377	1.20		452	82		42	124		15%	42	618	452 + {124} + (42) = 618
	R	23	1.06	24	1.20		29				0			0	29	29
SB	L	4	1.06	4	1.20		5		32		32			0	37	5 + {32} = 37
	T	404	1.06	428	1.20		514	32		24	56	15%		14	584	514 + {56} + (14) = 584
	R	7	1.06	7	1.20		8	24		9	33	10%		9	50	8 + {33} + (9) = 50

Intersection= Central Ave & S. Florida Ave 3																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	1	1.06	1	1.20		1				0			0	1	1
	T	35	1.06	37	1.20		44				0		10%	28	72	44 + (28) = 72
	R	11	1.06	12	1.20		14			3	3			0	17	14 + {3} = 17
WB	L	1	1.06	1	1.20		1			9	9			0	10	1 + {9} = 10
	T	18	1.06	19	1.20		23				0	10%		9	32	23 + (9) = 32
	R	1	1.06	1	1.20		1				0			0	1	1
NB	L	4	1.06	4	1.20		5			5	5			0	10	5 + {5} = 10
	T	0	1.06	0	1.20		0				0			0	0	0
	R	3	1.06	3	1.20		4			16	16			0	20	4 + {16} = 20
SB	L	0	1.06	0	1.20		0				0			0	0	0
	T	0	1.06	0	1.20		0				0			0	0	0
	R	0	1.06	0	1.20		0				0			0	0	0

Intersection= SR 19 & Revels Rd 4																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	2	1.06	2	1.20		2	3			3		15%	42	47	2 + {3} + (42) = 47
	T	0	1.06	0	1.20		0				0			0	0	0
	R	5	1.06	5	1.20		6	30			30		35%	99	135	6 + {30} + (99) = 135
WB	L	5	1.06	5	1.20		6		37		37			0	43	6 + {37} = 43
	T	0	1.06	0	1.20		0				0			0	0	0
	R	4	1.06	4	1.20		5				0			0	5	5
NB	L	3	1.06	3	1.20		4	12			12	35%		33	49	4 + {12} + (33) = 49
	T	306	1.06	324	1.20		389	67			67	10%		9	465	389 + {67} + (9) = 465
	R	12	1.06	13	1.20		16		22		22			0	38	16 + {22} = 38
SB	L	3	1.06	3	1.20		4				0			0	4	4
	T	410	1.06	435	1.20		522	175			175		10%	28	725	522 + {175} + (28) = 725
	R	0	1.06	0	1.20		0	2			2	15%		14	16	{2} + (14) = 16

Intersection= SR 19 & CR 455 5																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.00	0	1.20		0				0			0	0	0
	T	0	1.00	0	1.20		0				0			0	0	0
	R	0	1.00	0	1.20		0				0			0	0	0
WB	L	65	1.00	65	1.20		78				0			0	78	78
	T	0	1.00	0	1.20		0				0			0	0	0
	R	43	1.00	43	1.20		52	16			16	10%		9	77	52 + {16} + (9) = 77
NB	L	0	1.00	0	1.20		0				0			0	0	0
	T	394	1.00	394	1.20		473	55			55	35%		33	561	473 + {55} + (33) = 561
	R	111	1.00	111	1.20		133				0			0	133	133
SB	L	70	1.00	70	1.20		84	41			41		10%	28	153	84 + {41} + (28) = 153
	T	492	1.00	492	1.20		590	144			144		35%	99	833	590 + {144} + (99) = 833
	R	0	1.00	0	1.20		0				0			0	0	0

Intersection= Interconnect Rd & Spine Rd (Proposed) 6																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
WB	L						0							0	0	
	T						0							0	0	
	R						25					10%		9	34	25 + (9) = 34
NB	L						0							0	0	
	T						20							59	79	20 + (59) = 79
	R						0							0	0	
SB	L						20						10%	28	48	20 + (28) = 48
	T						25							20	45	25 + (20) = 45
	R						0							0	0	

Intersection= Number 2 Rd & Spine Road / North Access 7																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						59				3			0	62	59 + {3} = 62
	R						15					15%		14	29	15 + (14) = 29
WB	L						30					20%		19	49	30 + (19) = 49
	T						28				5			0	33	28 + {5} = 33
	R						0							0	0	
NB	L						15						15%	43	58	15 + (43) = 58
	T						0							0	0	
	R						30						20%	56	86	30 + (56) = 86
SB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	

Intersection= Revels Rd & Spine Rd / Proposed 8																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
WB	L						3							8	11	3 + (8) = 11
	T						0						3%	0	0	
	R						62					25%		54	116	62 + (54) = 116
NB	L						0							0	0	
	T						4					2%		2	6	4 + (2) = 6
	R						3					3%		3	6	3 + (3) = 6
SB	L						74							81	155	74 + (81) = 155
	T						4						25%	6	10	4 + (6) = 10
	R						0						2%	0	0	

Intersection= Revels Rd & Orange Blossom Rd / South Access 9																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						7							0	7	7
	T						0							0	0	
	R						0							0	0	
WB	L						0							0	0	
	T						0							0	0	
	R						0					5%		5	5	(5)
NB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
SB	L						0						5%	14	14	(14)
	T						0							0	0	
	R						7							0	7	7

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Years	Legend
PM Peak		333	196	1.06	2.00%	10	Backg'd + {Vested} + (Project) =

Intersection= SR 19 & CR 48 1																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0				0			0	0	
	T	0	1.06	0	1.20		0				0			0	0	
	R	0	1.06	0	1.20		0				0			0	0	
WB	L	409	1.06	434	1.20		521	92	23		115	23%		77	713	521 + {115} + (77) = 713
	T	0	1.06	0	1.20		0				0			0	0	
	R	301	1.06	319	1.20		383				0			0	383	383
NB	L	0	1.06	0	1.20		0				0			0	0	
	T	68	1.06	72	1.20		86	15	14		29	2%		4	119	86 + {29} + (4) = 119
	R	333	1.06	353	1.20		424	58	14		72	23%		45	541	424 + {72} + (45) = 541
SB	L	287	1.06	304	1.20		365				0			0	365	365
	T	79	1.06	84	1.20		101	23	24		47	2%		7	155	101 + {47} + (7) = 155
	R	0	1.06	0	1.20		0				0			0	0	

Intersection= SR 19 & Central Ave 2																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	30	1.06	32	1.20		38	44		9	53		10%	20	111	38 + {53} + (20) = 111
	T	11	1.06	12	1.20		14				0			0	14	14
	R	12	1.06	13	1.20		16				0			0	16	16
WB	L	16	1.06	17	1.20		20				0			0	20	20
	T	3	1.06	3	1.20		4				0			0	4	4
	R	13	1.06	14	1.20		17		32		32			0	49	17 + {32} = 49
NB	L	15	1.06	16	1.20		19				0			0	19	19
	T	342	1.06	363	1.20		436	58		24	82		15%	29	547	436 + {82} + (29) = 547
	R	20	1.06	21	1.20		25				0			0	25	25
SB	L	15	1.06	16	1.20		19		47		47			0	66	19 + {47} = 66
	T	408	1.06	432	1.20		518	92		42	134		15%	50	702	518 + {134} + (50) = 702
	R	38	1.06	40	1.20		48	69		16	85		10%	33	166	48 + {85} + (33) = 166

Intersection= Central Ave & S. Florida Ave 3																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0				0			0	0	
	T	27	1.06	29	1.20		35				0		10%	20	55	35 + (20) = 55
	R	5	1.06	5	1.20		6			5	5			0	11	6 + {5} = 11
WB	L	16	1.06	17	1.20		20			16	16			0	36	20 + {16} = 36
	T	24	1.06	25	1.20		30				0		10%	33	63	30 + (33) = 63
	R	5	1.06	5	1.20		6				0			0	6	6
NB	L	5	1.06	5	1.20		6			3	3			0	9	6 + {3} = 9
	T	1	1.06	1	1.20		1				0			0	1	1
	R	19	1.06	20	1.20		24			9	9			0	33	24 + {9} = 33
SB	L	1	1.06	1	1.20		1				0			0	1	1
	T	0	1.06	0	1.20		0				0			0	0	0
	R	0	1.06	0	1.20		0				0			0	0	0

Intersection= SR 19 & Revels Rd 4																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	3	1.06	3	1.20		4	1			1		15%	29	34	4 + {1} + (29) = 34
	T	1	1.06	1	1.20		1				0			0	1	1
	R	4	1.06	4	1.20		5	21			21		35%	68	94	5 + {21} + (68) = 94
WB	L	8	1.06	8	1.20		10		22		22			0	32	10 + {22} = 32
	T	0	1.06	0	1.20		0				0			0	0	0
	R	3	1.06	3	1.20		4				0			0	4	4
NB	L	1	1.06	1	1.20		1	35			35		35%	117	153	1 + {35} + (117) = 153
	T	351	1.06	372	1.20		446	194			194		10%	33	673	446 + {194} + (33) = 673
	R	11	1.06	12	1.20		14		37		37			0	51	14 + {37} = 51
SB	L	7	1.06	7	1.20		8				0			0	8	8
	T	324	1.06	343	1.20		412	124			124		10%	20	556	412 + {124} + (20) = 556
	R	0	1.06	0	1.20		0	2			2		15%	50	52	{2} + (50) = 52

Intersection= SR 19 & CR 455 5																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.00	0	1.20		0				0			0	0	
	T	0	1.00	0	1.20		0				0			0	0	
	R	0	1.00	0	1.20		0				0			0	0	
WB	L	83	1.00	83	1.20		100				0			0	100	100
	T	0	1.00	0	1.20		0				0			0	0	
	R	55	1.00	55	1.20		66	46			46		10%	33	145	66 + {46} + (33) = 145
NB	L	0	1.00	0	1.20		0				0			0	0	
	T	476	1.00	476	1.20		571	161			161		35%	117	849	571 + {161} + (117) = 849
	R	92	1.00	92	1.20		110				0			0	110	110
SB	L	50	1.00	50	1.20		60	29			29		10%	20	109	60 + {29} + (20) = 109
	T	433	1.00	433	1.20		520	102			102		35%	69	691	520 + {102} + (69) = 691
	R	0	1.00	0	1.20		0				0			0	0	

Intersection= Interconnect Rd & Spine Rd (Proposed) 6																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
WB	L						0							0	0	
	T						0							0	0	
	R						20					10%		33	53	20 + (33) = 53
NB	L						0							0	0	
	T						25							41	66	25 + (41) = 66
	R						0							0	0	
SB	L						25							20	45	25 + (20) = 45
	T						20						10%	70	90	20 + (70) = 90
	R						0							0	0	

Intersection= Number 2 Rd & Spine Road / North Access 7																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						41				5			0	46	41 + {5} = 46
	R						15					15%		50	65	15 + (50) = 65
WB	L						30					20%		67	97	30 + (67) = 97
	T						36				3			0	39	36 + {3} = 39
	R						0							0	0	
NB	L						15						15%	29	44	15 + (29) = 44
	T						0							0	0	
	R						30						20%	40	70	30 + (40) = 70
SB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	













Intersection= Revels Rd & Spine Rd / Proposed 8																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
WB	L						4							7	11	4 + (7) = 11
	T						0						3%	0	0	
	R						74					25%		104	178	74 + (104) = 178
NB	L						0							0	0	
	T						3					2%		7	10	3 + (7) = 10
	R						4					3%		9	13	4 + (9) = 13
SB	L						62							84	146	62 + (84) = 146
	T						3						25%	3	6	3 + (3) = 6
	R						0					2%		0	0	

Intersection= Revels Rd & Orange Blossom Rd / South Access 9																
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L						7							0	7	7
	T						0							0	0	
	R						0							0	0	
WB	L						0							0	0	
	T						0							0	0	
	R						0					5%		16	16	(16)
NB	L						0							0	0	
	T						0							0	0	
	R						0							0	0	
SB	L						0							10	10	(10)
	T						0						5%	0	0	
	R						7							0	7	7

Appendix M
Background Conditions / Buildout Conditions with Mitigation













HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	461	275	424	651	332	140
Future Volume (veh/h)	461	275	424	651	332	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	475	143	437	0	342	144
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	400	323	720		495	1115
Arrive On Green	0.24	0.24	0.41	0.00	0.14	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	475	143	437	0	342	144
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	8.6	18.4	0.0	10.7	3.1
Cycle Q Clear(g_c), s	22.7	8.6	18.4	0.0	10.7	3.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	400	323	720		495	1115
V/C Ratio(X)	1.19	0.44	0.61		0.69	0.13
Avail Cap(c_a), veh/h	400	323	720		587	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	30.6	22.1	0.0	14.7	7.6
Incr Delay (d2), s/veh	107.0	1.0	3.8	0.0	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	30.7	4.9	12.6	0.0	7.1	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	143.0	31.6	25.9	0.0	17.5	7.8
LnGrp LOS	F	C	C		B	A
Approach Vol, veh/h	618		437	A		486
Approach Delay, s/veh	117.3		25.9			14.6
Approach LOS	F		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.7	45.0		30.0		64.7
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	12.7	20.4		24.7		5.1
Green Ext Time (p_c), s	0.6	2.5		0.0		0.8
Intersection Summary						
HCM 6th Ctrl Delay			59.0			
HCM 6th LOS			E			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						













HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	636	383	115	496	365	148
Future Volume (veh/h)	636	383	115	496	365	148
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	656	199	119	0	376	153
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	394	318	710		750	1125
Arrive On Green	0.24	0.24	0.40	0.00	0.15	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	656	199	119	0	376	153
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	12.7	4.1	0.0	12.0	3.4
Cycle Q Clear(g_c), s	22.7	12.7	4.1	0.0	12.0	3.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	394	318	710		750	1125
V/C Ratio(X)	1.66	0.63	0.17		0.50	0.14
Avail Cap(c_a), veh/h	394	318	710		818	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	32.9	18.4	0.0	11.6	7.5
Incr Delay (d2), s/veh	309.7	3.8	0.5	0.0	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	66.4	7.6	3.1	0.0	7.4	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	346.4	36.7	18.9	0.0	12.1	7.8
LnGrp LOS	F	D	B		B	A
Approach Vol, veh/h	855		119	A		529
Approach Delay, s/veh	274.3		18.9			10.8
Approach LOS	F		B			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.1	45.0		30.0		66.1
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	14.0	6.1		24.7		5.4
Green Ext Time (p_c), s	0.5	0.6		0.0		0.8
Intersection Summary						
HCM 6th Ctrl Delay			161.4			
HCM 6th LOS			F			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	482	275	429	716	332	142
Future Volume (veh/h)	482	275	429	716	332	142
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	497	145	442	0	342	146
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	531	428	531		393	954
Arrive On Green	0.32	0.32	0.30	0.00	0.15	0.53
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	497	145	442	0	342	146
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	25.6	7.3	20.6	0.0	12.1	3.7
Cycle Q Clear(g_c), s	25.6	7.3	20.6	0.0	12.1	3.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	531	428	531		393	954
V/C Ratio(X)	0.94	0.34	0.83		0.87	0.15
Avail Cap(c_a), veh/h	560	452	531		393	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	23.0	28.8	0.0	19.4	10.8
Incr Delay (d2), s/veh	22.9	0.5	14.1	0.0	18.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	18.5	3.9	15.7	0.0	10.3	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.1	23.5	42.9	0.0	37.9	11.1
LnGrp LOS	D	C	D		D	B
Approach Vol, veh/h	642		442	A		488
Approach Delay, s/veh	45.7		42.9			29.9
Approach LOS	D		D			C
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.0	33.0		35.4		53.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	13.5	26.6		29.7		46.6
Max Q Clear Time (g_c+I1), s	14.1	22.6		27.6		5.7
Green Ext Time (p_c), s	0.0	1.0		0.5		0.8
Intersection Summary						
HCM 6th Ctrl Delay			40.0			
HCM 6th LOS			D			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	713	383	119	541	365	155
Future Volume (veh/h)	713	383	119	541	365	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	735	199	123	0	376	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	759	613	365		440	710
Arrive On Green	0.46	0.46	0.21	0.00	0.11	0.39
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	735	199	123	0	376	160
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	38.4	8.5	5.3	0.0	10.1	5.3
Cycle Q Clear(g_c), s	38.4	8.5	5.3	0.0	10.1	5.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	759	613	365		440	710
V/C Ratio(X)	0.97	0.32	0.34		0.85	0.23
Avail Cap(c_a), veh/h	767	619	365		440	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	15.6	30.3	0.0	29.1	18.2
Incr Delay (d2), s/veh	24.7	0.3	2.5	0.0	15.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.3	4.3	4.4	0.0	8.7	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.4	15.9	32.8	0.0	44.1	18.9
LnGrp LOS	D	B	C		D	B
Approach Vol, veh/h	934		123	A		536
Approach Delay, s/veh	41.5		32.8			36.6
Approach LOS	D		C			D
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.6	24.9		48.1		41.5
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	10.1	18.5		41.2		35.1
Max Q Clear Time (g_c+I1), s	12.1	7.3		40.4		7.3
Green Ext Time (p_c), s	0.0	0.4		0.3		0.8
Intersection Summary						
HCM 6th Ctrl Delay			39.2			
HCM 6th LOS			D			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Appendix N
Lake County Land Development Code (LDC)

2. Turn Lanes

Turn lanes consist of left-turn lanes and right-turn lanes (deceleration lanes). Turn lanes shall be installed on the road which is being accessed at the proposed entrance(s) to the development, as deemed necessary by the County Manager or Designee. The County Manager or Designee may also require turn lanes at adjacent or nearby intersections in lieu of, or in addition to, turn lanes at the development entrances.

Conditions which are to be considered in determining the need for turn lanes include the following:

- a) If the property accessing the road is projected to generate 500 or more vehicle trips per day, or 50 or more vehicle trips in any hour;
- b) If a traffic analysis indicates that turn lanes would be necessary to maintain capacity on fronting roads and/or on adjacent or nearby intersections.
- c) If entrances are proposed at locations where grade, topography, site distance, traffic, or other unusual conditions indicate that turn lanes would be needed for traffic safety. The need for turn lanes to accommodate right turn movements and left turn movements shall be based upon anticipated traffic distribution and projected turning movement volumes among other considerations, including traffic safety.

C. Traffic Analysis

1. Transportation Concurrency Management System

Transportation Concurrency Management System is administered by the Lake-Sumter Metropolitan Planning Organization (LSMPO). All information regarding traffic study could be found on LSPMO website www.lakesumtermpo.com/concurrency/index.aspx

D. Road Classification

1. Arterial Roads

An arterial road is a route providing service which is relatively continuous and of relatively high traffic volume, long average trip length, high operating speed and of high mobility importance.

Arterial roads are grouped into the following sub-categories:

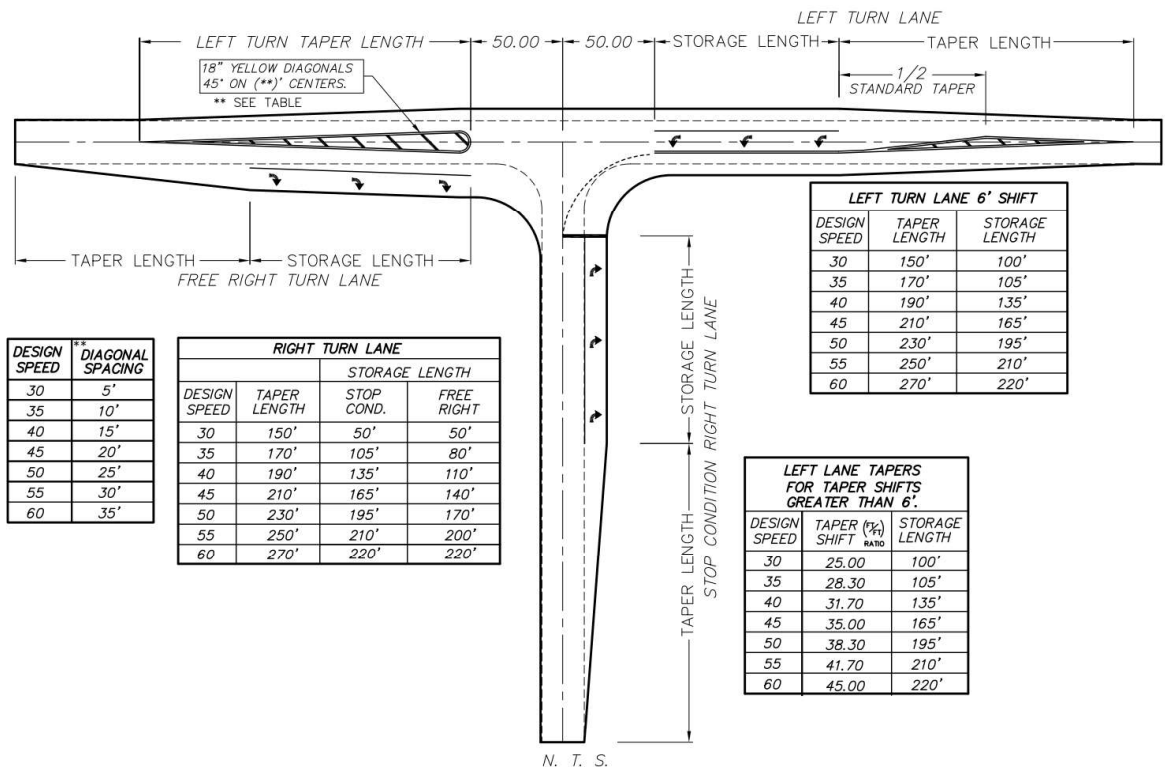
- a) Principal Arterial
- b) Minor Arterial

The classification of roads as arterials shall be based upon criteria established by the Florida Department of Transportation utilizing their most recent, adopted functional classification system.

2. Collector Roads

A collector road is a route providing services which is of relatively moderate traffic volume, moderate trip length and moderate operating speed. Collector roads collect and distribute the traffic between local roads and arterial roads and serves as a linkage between land access and mobility needs.

LAKE COUNTY STANDARD TURN LANES



DESIGN SPEED	** DIAGONAL SPACING
30	5'
35	10'
40	15'
45	20'
50	25'
55	30'
60	35'

RIGHT TURN LANE			
DESIGN SPEED	TAPER LENGTH	STORAGE LENGTH	
		STOP COND.	FREE RIGHT
30	150'	50'	50'
35	170'	105'	80'
40	190'	135'	110'
45	210'	165'	140'
50	230'	195'	170'
55	250'	210'	200'
60	270'	220'	220'

LEFT TURN LANE 6' SHIFT		
DESIGN SPEED	TAPER LENGTH	STORAGE LENGTH
30	150'	100'
35	170'	105'
40	190'	135'
45	210'	165'
50	230'	195'
55	250'	210'
60	270'	220'

LEFT LANE TAPERS FOR TAPER SHIFTS GREATER THAN 6'		
DESIGN SPEED	TAPER SHIFT (1/2) RATIO	STORAGE LENGTH
30	25.00	100'
35	28.30	105'
40	31.70	135'
45	35.00	165'
50	38.30	195'
55	41.70	210'
60	45.00	220'

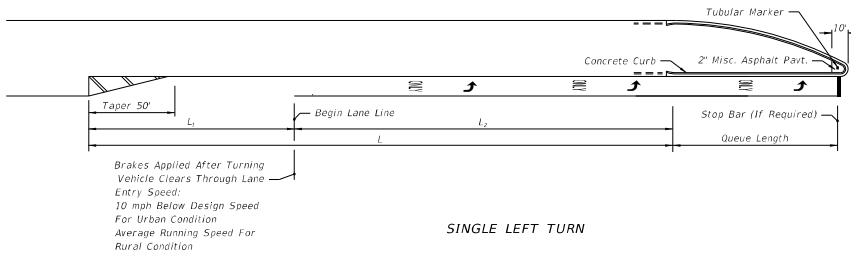
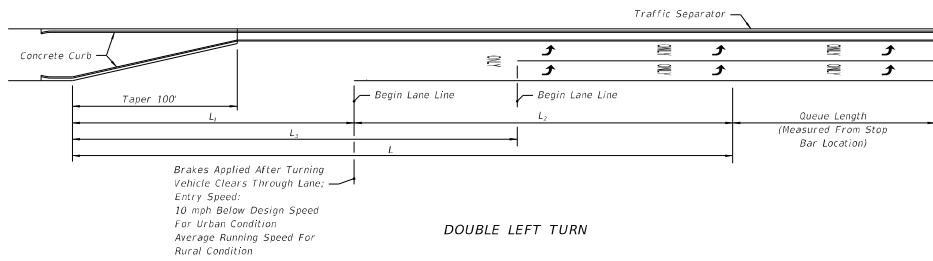
Typical Details

0:_CAD STANDARDS\DWG\Turn LanesR1.dwg (02/06/2007)

N. T. S.
THIS SHOULD BE USED AS A GUIDE LINE ONLY.
ALL DESIGNS SHALL BE SUBMITTED FOR REVIEW.

Appendix O
FDOT Design Manual Exhibit 212-1

MEDIAN TURN LANES MINIMUM DECELERATION LENGTHS



		MEDIAN TURN LANES							
		URBAN CONDITIONS				RURAL CONDITIONS			
Design Speed (mph)	Entry Speed (mph)	Clearance Distance L ₁ (ft.)	Brake To Stop Distance L ₂ (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L ₁ (ft.)	Brake To Stop Distance L ₂ (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L ₁ (ft.)	
35	25	70	75	145	110	—	—	—	
40	30	80	75	155	120	—	—	—	
45	35	85	100	185	135	—	—	—	
50	40/44	105	135	240	160	185	290	160	
55	48	125	—	—	225	350	195	—	
60	52	145	—	—	260	405	230	—	
65	55	170	—	—	290	460	270	—	

NOT TO SCALE

EXHIBIT 212-1
01/01/2022