MISSION RISE
Project № 19011
February 2019

TRAFFIC IMPACT ANALYSIS
LAKE COUNTY
FLORIDA

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EXECUTIVE SUMMARY

Project Information

Name:	Mission Rise
Location:	West of SR 19, south of number 2 Road, Howey-in-the-Hills, Florida
Description:	629 Single Family Residential Units

Findings

Trip Generation: 5,648 New Daily Trips / 453 AM Peak Hour Trips / 591 PM Peak Hour Trips

Roadway Capacity: Study segments currently operate within their adopted Level of Service (LOS) standards and will continue to do so at project buildout.

Intersection Capacity The intersections of SR 19 & CR 48 and US 27 & Florida Turnpike Ramps will require modifications to the signal timing and phasing plans in order to operate adequately.

The 2-Way Stop controlled intersections of SR 19 and Central and SR 19 and CR 455 should be monitored in the future for a possible signal warrant.

The intersection of SR 19 and Orange Blossom Road should be improved by the addition of a northbound left turn lane and a southbound right turn lane by the start of Phase 2 of the project.

Access Review: The proposed development will be accessed as follows:

- Project Access #1 at Number 2 Road
- Project Access #2 at SR 19 (Main Entrance)
- Project Access #3 at Orange Blossom Road

Southbound right turn lane and northbound left turn lane on SR 19 at project access #2 (main entrance) are warranted at this intersection, the recommended right turn lane and left turn lane lengths are 405 feet and 465 feet, respectively.

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: Lake County, Florida

CLIENT: Hanover Land Company, 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.

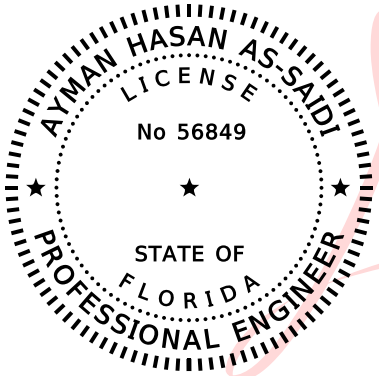

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

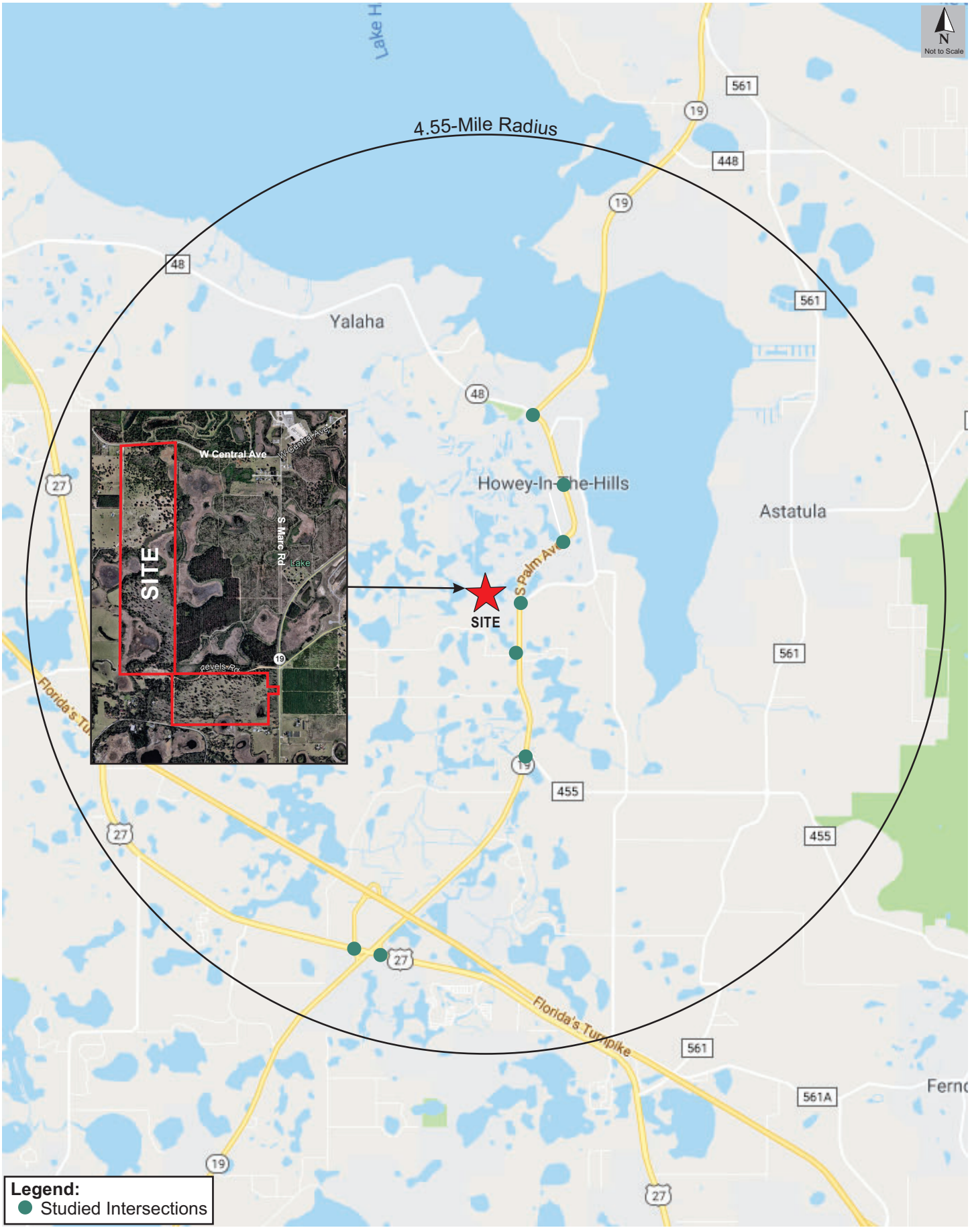
This Traffic Impact Study (TIS) was conducted to assess the impact of the proposed Mission Rise development in the town of Howey-in-the-Hills, Lake County, Florida. The proposed development is a residential community with 629 single family units, which will be built in three phases (approximately 210 units per phase) with an anticipated build out year of 2024. The site is located north of the intersection of SR 19 and E Dewey Robbins Road. **Figure 1** depicts the site location and the surrounding transportation network. The analysis was prepared in accordance with the methodology submitted to the Town of Howey-in-the-Hills and reviewed by Lake-Sumter Metropolitan Planning Organization (LSMPO). The methodology comments were addressed in this TIA. Copies of the methodology and the LSMPO comments are included in **Appendix A**.

The development will be accessed via three (3) proposed driveways on SR 19, Number 2 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, and roadway capacities obtained from the Lake County TMS Segment Report and from FDOT for SR 19.

1.1 Study Area

The project study area was established based on the standard requirements of the Lake Sumter Metropolitan Planning Organization (LSMPO) methodology. In accordance with the requirements of Tier 2 TIS methodology, the impact area includes roadway segments and intersections within 4.55-mile radius in addition to roadways where development is expected to consume 5% or more of their adopted Level of Service (LOS) capacities. A HIGHPLAN Analysis was conducted for SR 19, from Taylor Memorial Cemetery to US 27, which is provided in **Appendix C**. The project study area determination is provided in **Table 1**.



Site Location Map
Mission Rise
19011

Figure
1

Table 1
Study Area

Road Name	Segment	# LNS	A T	LOS Std	LOS Cap	Project Trips			Within 1 mile?	% Cap	In Study?
						% Dist	NB/EB	SB/WB			
SR 19	CR 452 (Main St) to CR 561	4	U	D	2,000	19%	71	41	NO	3.6%	**NO**
SR 19	CR 561 to Lake Harris North End	2	U	D	1,190	25%	93	55	NO	7.8%	**YES**
SR 19	Lake Harris North End to CR 48	2	T	D	1,200	25%	93	55	NO	7.8%	**YES**
SR 19	CR 48 to Central Ave	2	T	D	800	45%	167	99	NO	20.9%	**YES**
SR 19	Central Ave to Taylor Memorial Cemetery	2	T	D	800	45%	99	167	YES	20.9%	**YES**
SR 19	Taylor Memorial Cemetery to CR 455 (1)	2	T	C	900	46%	101	171	YES	19.0%	**YES**
SR 19	CR 455 to US 27/SR 25 (1)	2	T	C	900	35%	77	130	NO	14.4%	**YES**
SR 19	US 27/SR 25 to CR 478	2	T	C	850	5%	11	19	NO	2.2%	**NO**
CR 455	SR 19 to CR 561	2	T	D	1,200	15%	33	56	NO	4.7%	**NO**
CR 455	CR 561 to CR 561A	2	T	D	1,200	5%	11	19	NO	1.6%	**NO**
CR 48	US 27 to Lime Ave	2	U	D	792	25%	55	93	NO	11.7%	**YES**
CR 48	Lime Ave to SR 19	2	U	D	792	20%	44	74	NO	9.3%	**YES**
Orange Blossom Rd	Chris Rd to Revels Rd	2	T	D	612	0%	0	0	YES	0.0%	**YES**
Orange Blossom Rd	Revels Rd to SR 19	2	T	D	612	33%	72	123	YES	20.1%	**YES**
Number 2 Rd	Blue Sink Rd to Mare Ave	2	T	D	612	5%	19	11	YES	3.1%	**YES**
Central Ave	Mare Ave to SR 19	2	T	D	612	28%	104	61	YES	17.0%	**YES**
CR 561	SR19 to CR 448	2	U	D	792	1%	4	2	NO	0.5%	**NO**
CR 561	CR 448 to CR 48	2	U	D	792	2%	7	5	NO	0.9%	**NO**
CR 561	CR48 to South Astatula City Limit	2	T	D	720	2%	7	5	NO	1.0%	**NO**
CR 561	South Astatula City Limit to CR 455	2	T	D	720	10%	37	22	NO	5.1%	**YES**
CR 561	CR 455 to Howey Cross Rd	2	T	D	720	0%	0	0	NO	0.0%	**NO**

(1) FDOT QLOS HIGHPLAN Analysis for these segments of SR 19. Remaining capacities from LSMPO TMS Segment Report

Based on the information presented in **Table 1**, the study roadway segments are as follows:

- SR 19
  - SR 561 to Lake Harris North End
  - Lake Harris North End to CR 48
  - CR 48 to Central Avenue
  - Central Avenue to CR 455
  - CR 455 to US 27/SR25
- CR 48
  - US 27 to Lime Avenue
  - Lime Avenue to SR 19
- Orange Blossom Road
  - Revels Road to SR 19
- Number 2 Rd
  - Blue Sink Road to Mare Avenue
- Central Avenue
  - Blue Sink Road to Mare Avenue
- CR 561
  - South Astatula City Limit to CR 455

The study intersections are as follows*:*

- SR 19 at CR 48
- SR 19 at Central Avenue
- SR 19 at Florida Avenue
- SR 19 at CR 455
- US 27 at Turnpike Ramp
- US 27 at SR 19 Ramp

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 road segment capacity analysis.

Table 2
Existing Roadway Segment Capacity Analysis

Roadway Segment	Seg ID	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	LOS
SR 19							
CR 561 to Lake Harris North End	NA	4	D	1,190	NB SB	657 805	C C
Lake Harris North End to CR 48	NA	2	D	1,200	NB SB	657 805	C C
CR 48 to Central Ave	NA	2	D	800	NB SB	432 436	C C
Central Ave to Taylor Memorial Cemetery	NA	2	D	800	NB SB	432 436	C C
Taylor Memorial Cemetery to CR 455 (1)	NA	2	C	900	NB SB	508 503	B B
CR 455 to US 27/SR 25 (1)	NA	2	C	900	NB SB	526 541	C C
CR 48 (2)							
US 27 to Lime Ave	16	2	D	792	EB WB	366 483	C C
Lime Ave to SR 19	16	2	D	792	EB WB	366 483	C C
Orange Blossom Rd (2)							
Revels Rd to SR 19	NA	2	D	612	EB WB	8 13	C C
Number 2 Rd (2)							
Blue Sink Rd to Mare Ave	NA	2	D	612	EB WB	59 50	C C
Central Ave (2)							
Mare Ave to SR 19	NA	2	D	612	EB WB	59 50	C C
CR 561							
South Astatula City Limit to CR 455	16	2	D	720	EB WB	520 534	C C

Source: 2018 Lake County Annual Traffic Counts
(1) FDOT QLOS HIGHPLAN Analysis for these segments of SR 19
(2) Volumes Obtained from PM Peak Turning Movement Counts

The analysis indicates that all study roadway segments currently operate adequately within their LOS standard.

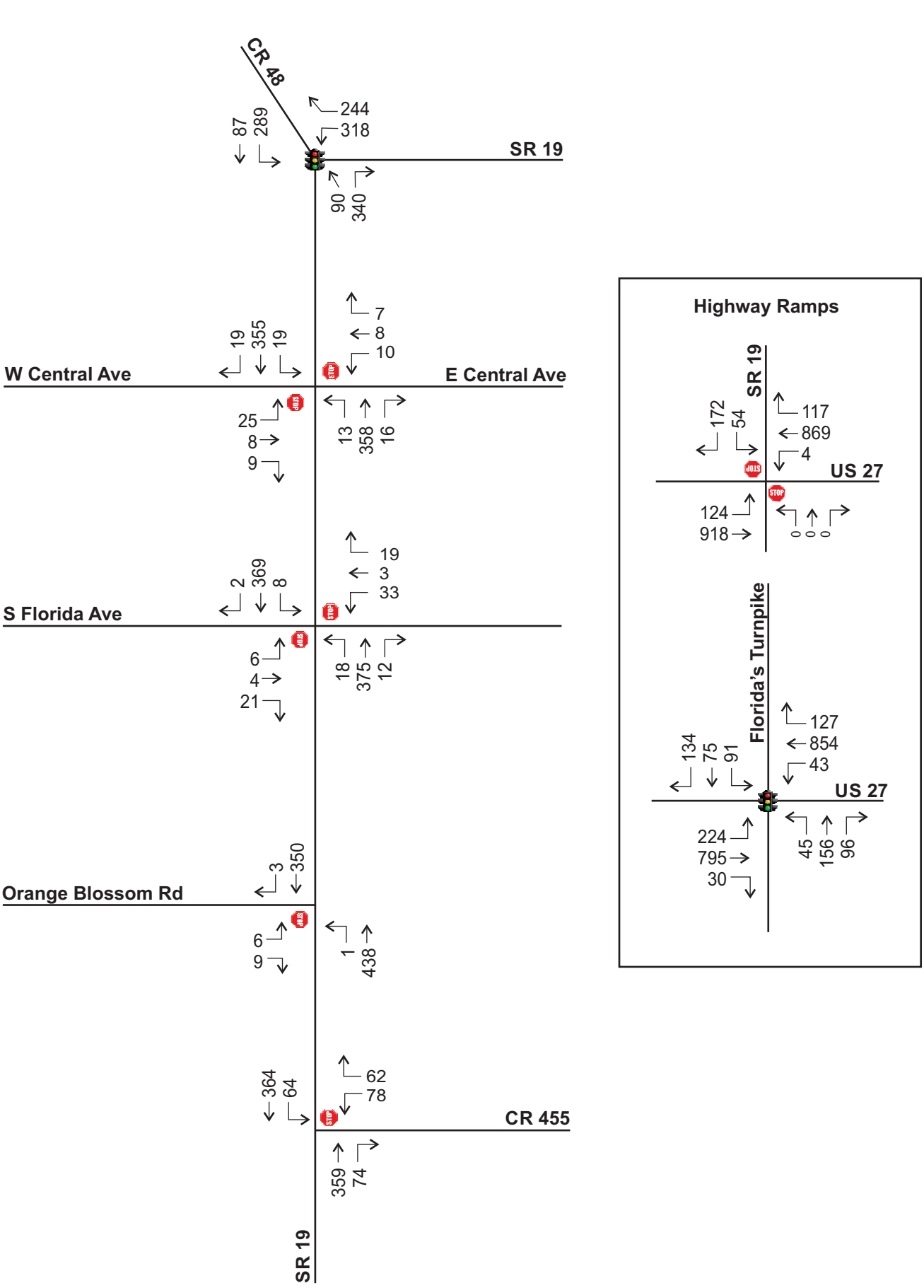
2.2 Intersection Capacity

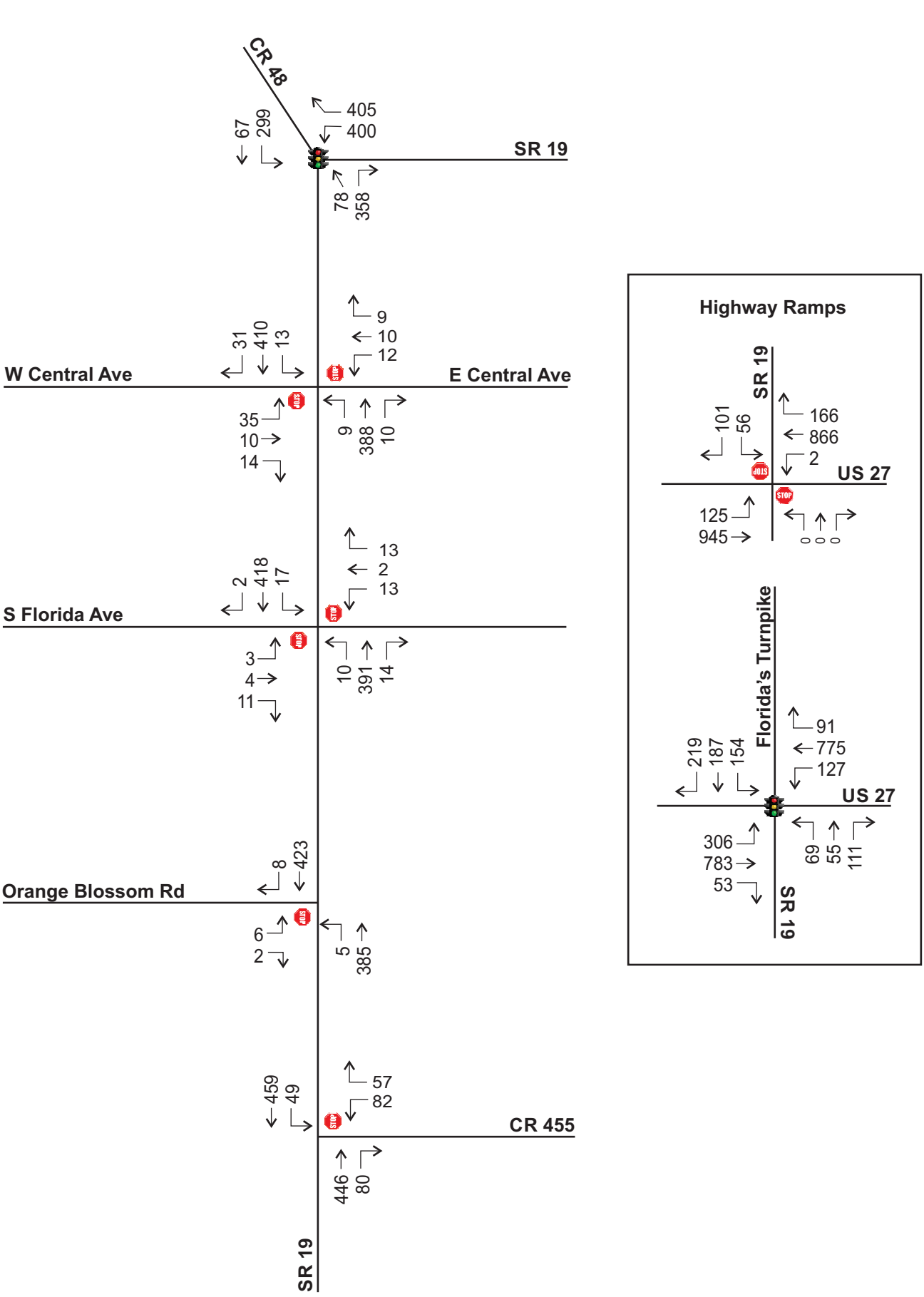
The intersection capacity analysis was performed for the AM and PM peak hour periods. The capacity analysis was performed using the Synchro and the methods of the *Highway Capacity Manual (HCM), 6th Edition*. Turning movement volumes obtained during the AM and PM peak hour are displayed in **Figure 2.** Existing turning movement counts were collected during peak season; therefore, a seasonal adjustment factor was not applied. The turning movement counts and the seasonal factor report for Lake County are included in **Appendix D**.

The summary results of the intersection capacity analysis, summarized in **Table 3,** reveal that the intersection of SR 19 and CR 48 is currently operating inadequately during the PM peak hour. The remaining 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	--	--	11.1	B	20.5	C	74.6	E	46.6	D
		PM	--	--	10.8	B	20.1	C	133.6	F	90.5	F
SR 19 & Central Ave	TWSC	AM	22.7	C	19.2	C	--	--	--	--	--	--
		PM	23.7	C	19.6	C	--	--	--	--	--	--
SR 19 & Florida Ave	TWSC	AM	16.4	C	15.9	C	7.3	A	7.3	A	--	--
		PM	15.1	C	18.1	C	7.5	A	7.3	A	--	--
SR 19 & Revels Rd	TWSC	AM	0.0	A	11.4	B	--	--	--	--	--	--
		PM	14.7	B	10.7	B	--	--	--	--	--	--
SR 19 & Orange Blossom Rd	TWSC	AM	13.6	B	--	--	8.2	A	--	--	--	--
		PM	16.7	C	--	--	8.4	A	--	--	--	--
SR 19 & CR 455	TWSC	AM	--	--	19.1	C	--	--	8.6	A	--	--
		PM	--	--	21.6	C	--	--	8.8	A	--	--
US 27 & Florida Turnpike Ramps	Signal	AM	59.9	E	55.3	E	75.9	E	46.4	D	59.2	E
		PM	79.6	E	49.8	D	63.5	E	48.9	D	63.5	E
SR 19 Ramps & US 27	TWSC	AM	10.6	B	10.0	A	--	--	31.2	D	--	--
		PM	11.3	B	10.2	B	--	--	33.2	D	--	--


N
Not to Scale
CR 48
SR 19
W Central Ave
E Central Ave
S Florida Ave
Orange Blossom Rd
CR 455
SR 19
87
289
244
318
90
340
19
355
19
7
8
10
25
8
9
13
358
16
2
369
8
19
3
33
6
4
21
18
375
12
3
350
6
9
1
438
364
64
62
78
359
74
Highway Ramps
SR 19
US 27
172
54
117
869
4
124
918
0
0
0
Florida's Turnpike
US 27
134
75
91
127
854
43
224
795
30
45
156
96


N
Not to Scale
CR 48
SR 19
W Central Ave
E Central Ave
S Florida Ave
Orange Blossom Rd
CR 455
SR 19
67
299
405
400
78
358
9
10
12
31
410
13
35
10
14
9
388
10
13
2
13
2
418
17
3
4
11
10
391
14
8
423
6
2
5
385
459
49
57
82
446
80
Highway Ramps
SR 19
US 27
101
56
166
866
2
125
945
0
0
0
Florida's Turnpike
US 27
SR 19
219
187
154
91
775
127
306
783
53
69
55
111

3.0 PROJECT TRAFFIC

3.1 Trip Generation

The traffic generation of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. The trip generation for the project is summarized in **Table 4** and the ITE charts are provided in **Appendix F**.

Table 4
Trip Generation Analysis

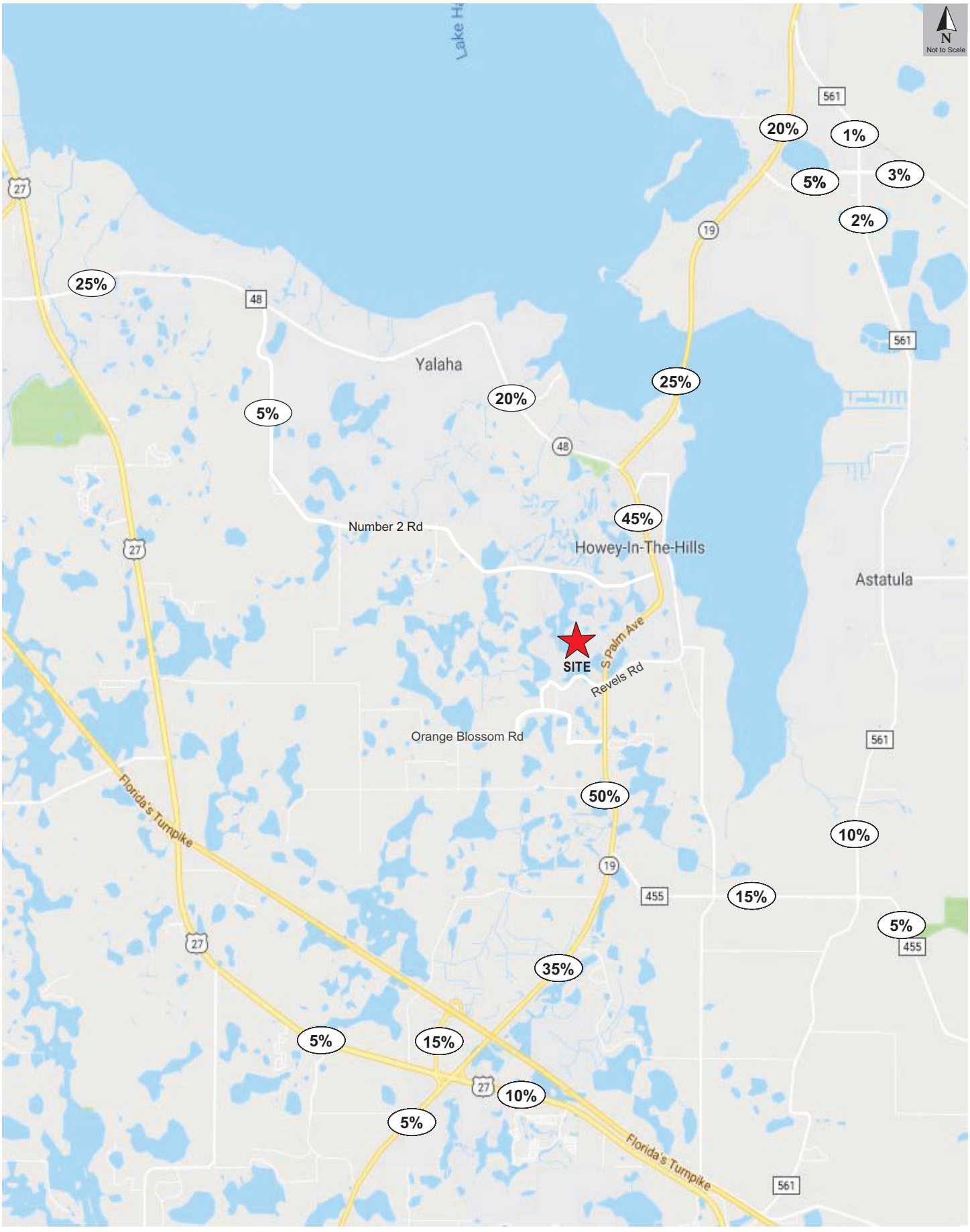
ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single-Family	629 DU	8.98	5,648	0.72	453	113	340	0.94	591	372	219

Trip generation analysis based on ITE Trip Generation Manual, 10th Edition
ITE equations were used as R^2 were greater than 0.75

The proposed development will generate 5,648 new trips per day, of which 453 trips occur during the AM peak hour and 591 trips occur during the PM peak hour.

3.2 Trip Distribution/Assignment

The Central Florida Regional Planning Model (CFRPM) based on the Florida Standard Transportation Model Structure (FSUTMS) was utilized to analyze the project's trip distribution percentages onto the roadway network. A plot of the model generated distribution pattern for the project is provided in **Appendix G**. Adjustments were made to the model generated distribution were applied to better reflect the surrounding transportation network, land uses, and known access routes. The final trip distribution pattern used in the analysis is illustrated in **Figure 3.**



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Project Trip Distribution

Mission Rise
19011

Figure
4

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 2024.

4.1 Background Traffic Projection

Projected background traffic was calculated for the buildout year 2024 by applying the historical growth rates for each study roadway. Historical traffic volumes were obtained from the County's traffic volume report and a growth trend analysis was performed for the study segments. The buildout traffic volume is the sum of the projected background traffic and the generated project trips. The detailed growth rate analysis and historical traffic counts are included in **Appendix H**.

4.2 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 and project trips. **Table 5** summarizes the roadway segment capacity analysis, which reveals that all roadway segments will continue to operate adequately at project buildout.

Table 5
Projected Roadway Segment Capacity Analysis

Roadway Segment	Seg ID	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2024 Backg'd	Trip Distr	Proj Dir	Project Volume	Total Volume	LOS
SR 19													
CR 561 to Lake Harris North End	NA	4	D	1,190	NB SB	657 805	4.24%	796 976	25%	OUT IN	55 93	851 1,069	D D
Lake Harris North End to CR 48	NA	2	D	1,200	NB SB	657 805	4.24%	796 976	25%	OUT IN	55 93	851 1,069	D D
CR 48 to Central Ave	NA	2	D	800	NB SB	432 436	3.29%	503 508	45%	OUT IN	99 167	602 675	C C
Central Ave to Taylor Memorial Cemetery	NA	2	D	800	NB SB	432 436	3.29%	503 508	45%	OUT IN	99 167	602 675	C C
Taylor Memorial Cemetery to CR 455 (1)	NA	2	C	900	NB SB	508 503	8.65%	728 721	46%	OUT IN	101 171	829 892	C C
CR 455 to US 27/SR 25 (1)	NA	2	C	900	NB SB	526 541	8.65%	753 775	35%	IN OUT	130 77	883 852	C C
CR 48 (2)													
US 27 to Lime Ave	16	2	D	792	EB WB	366 483	5.62%	469 619	25%	IN OUT	93 55	562 674	C C
Lime Ave to SR 19	16	2	D	792	EB WB	366 483	5.62%	469 619	20%	IN OUT	74 44	543 663	C C
Orange Blossom Rd (2)													
Revels Rd to SR 19	NA	2	D	612	EB WB	8 13	2.00%	9 14	33%	OUT IN	72 123	81 137	C C
Number 2 Rd (2)													
Blue Sink Rd to Mare Ave	NA	2	D	612	EB WB	59 50	2.00%	65 55	5%	OUT IN	11 19	76 74	C C
Central Ave (2)													
Mare Ave to SR 19	NA	2	D	612	EB WB	59 50	2.00%	65 55	28%	OUT IN	61 104	126 159	C C
CR 561													
South Astatula City Limit to CR 455	16	2	D	720	EB WB	520 534	5.33%	659 676	10%	IN OUT	37 22	696 698	D D

Source: 2018 Lake County Annual Traffic Counts
(1) FDOT QLOS HIGHPLAN Analysis for these segments of SR 19
(2) Volumes Obtained from PM Peak Turning Movement Counts

4.3 Intersection Capacity Analysis

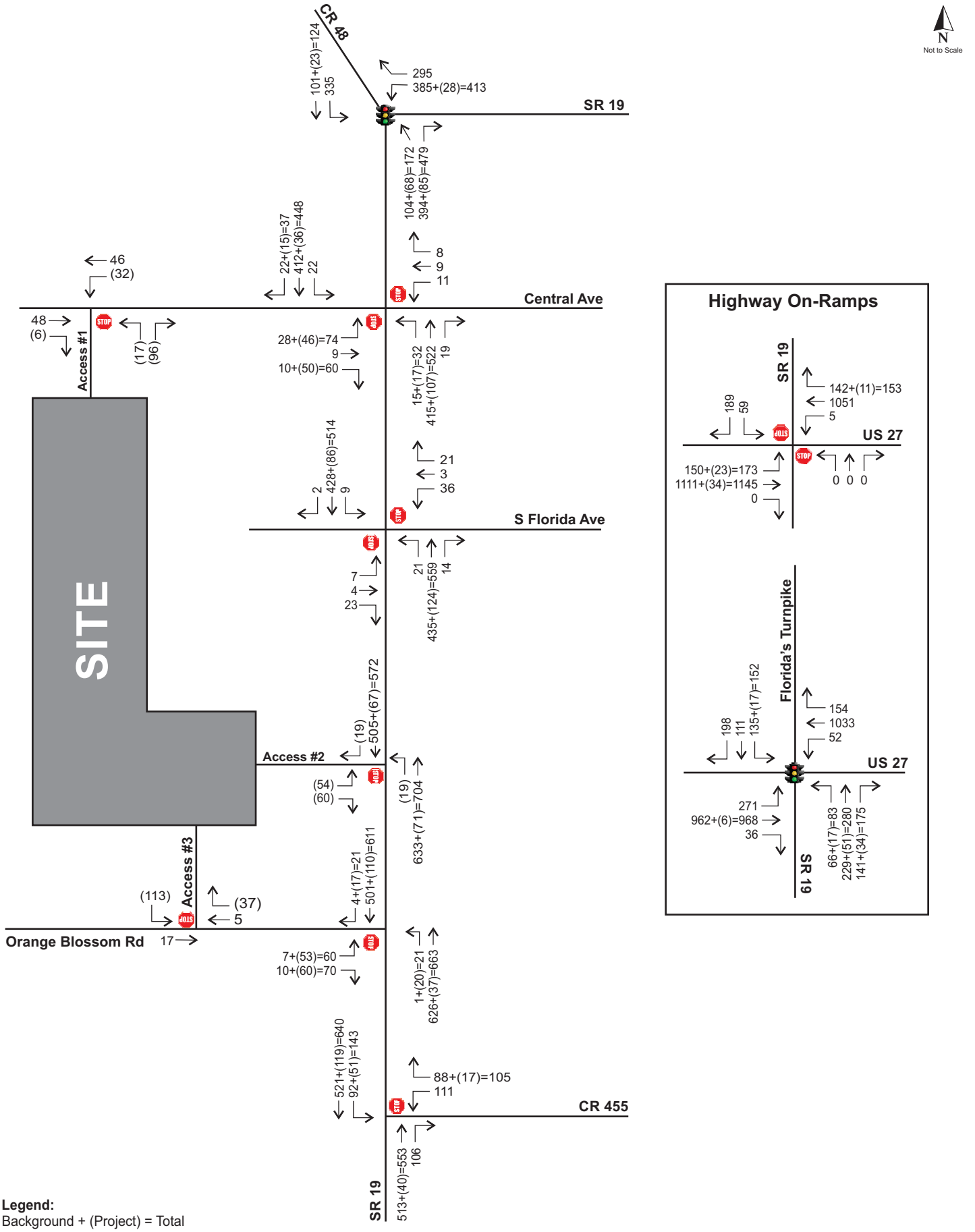
The projected volumes for the intersection capacity and operations analysis were calculated by assigning the project trips to the project driveways and adding those volumes to the background volumes at the study intersections. Projected background traffic was estimated using the annual growth rate discussed in the previous section.

The projected AM and PM peak hour volumes are illustrated in **Figures 5 & 6**, respectively. The results of the analysis are summarized in **Table 6,** the analysis worksheets and the intersection volume projection sheets are included in **Appendix I**.

Table 6
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	--	--	152.1	F	22.3	C	12.6	B	87.6	F
		PM	--	--	406.9	F	21.7	C	12.3	B	258.8	F
SR 19 & CR 48 (with Improvements)	Signal	AM	--	--	34.3	C	39.6	D	25.3	C	31.9	C
		PM	--	--	44.8	D	40.6	D	40.9	D	43.3	D
SR 19 & Central Ave	TWSC	AM	119.9	F	36.6	E	9.4	A	9.7	A	--	--
		PM	365.2	F	72.0	F	10.9	B	9.6	A	--	--
SR 19 & Florida Ave	TWSC	AM	8.6	A	8.8	A	30.8	D	19.1	C	--	--
		PM	9.0	A	8.9	A	28.3	D	22.2	C	--	--
SR 19 & Orange Blossom Rd	TWSC	AM	50.7	F	--	--	9.3	A	--	--	--	--
		PM	106.0	F	--	--	10.2	B	--	--	--	--
SR 19 & Orange Blossom Rd (with Improvements)	TWSC	AM	19.4	C	--	--	9.3	A	--	--	--	--
		PM	21.2	C	--	--	10.2	B	--	--	--	--
SR 19 & CR 455	TWSC	AM	--	--	183.0	F	--	--	9.9	A	--	--
		PM	--	--	405.1	F	--	--	11.1	B	--	--
US 27 & Florida Turnpike Ramps	Signal	AM	85.3	F	87.6	F	112.3	F	33.0	D	84.8	F
		PM	132.2	F	65.5	E	69.8	E	46.0	D	89.0	F
US 27 & Florida Turnpike Ramps (with Improvements)	Signal	AM	51.3	D	68.7	E	71.0	E	40.2	D	59.1	E
		PM	75.2	E	85.9	F	81.5	F	52.1	D	74.6	E
SR 19 Ramps & US 27	TWSC	AM	12.9	B	38.1	E	--	--	38.1	E	--	--
		PM	13.9	B	0.0	A	--	--	47.6	E	--	--
Number 2 Road & Project Access #1	TWSC	AM	--	--	7.4	A	9.2	A	--	--	--	--
		PM	--	--	7.6	A	9.4	A	--	--	--	--
SR 19 & Project Access #2 (Main Entrance)	TWSC	AM	17.0	C	--	--	8.9	A	--	--	--	--
		PM	18.6	C	--	--	9.9	A	--	--	--	--
Orange Blossom Rd & Project Access #3	TWSC	AM	--	--	--	--	--	--	9.3	A	--	--
		PM	--	--	--	--	--	--	9.4	A	--	--

The analysis reveals that the intersection of SR 19 & CR 48, and the minor street of the intersection of SR 19 at Central Avenue, CR 455 and Orange Blossom Road are projected to operate inadequately at the project buildout due to heavy projected background traffic. Likewise, the intersection of US 27 and Florida Turnpike ramps is projected to operate inadequately at the project buildout. The remaining study intersections will operate adequately at project buildout.



Legend:
Background + (Project) = Total

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Projected AM Peak Intersection Volumes

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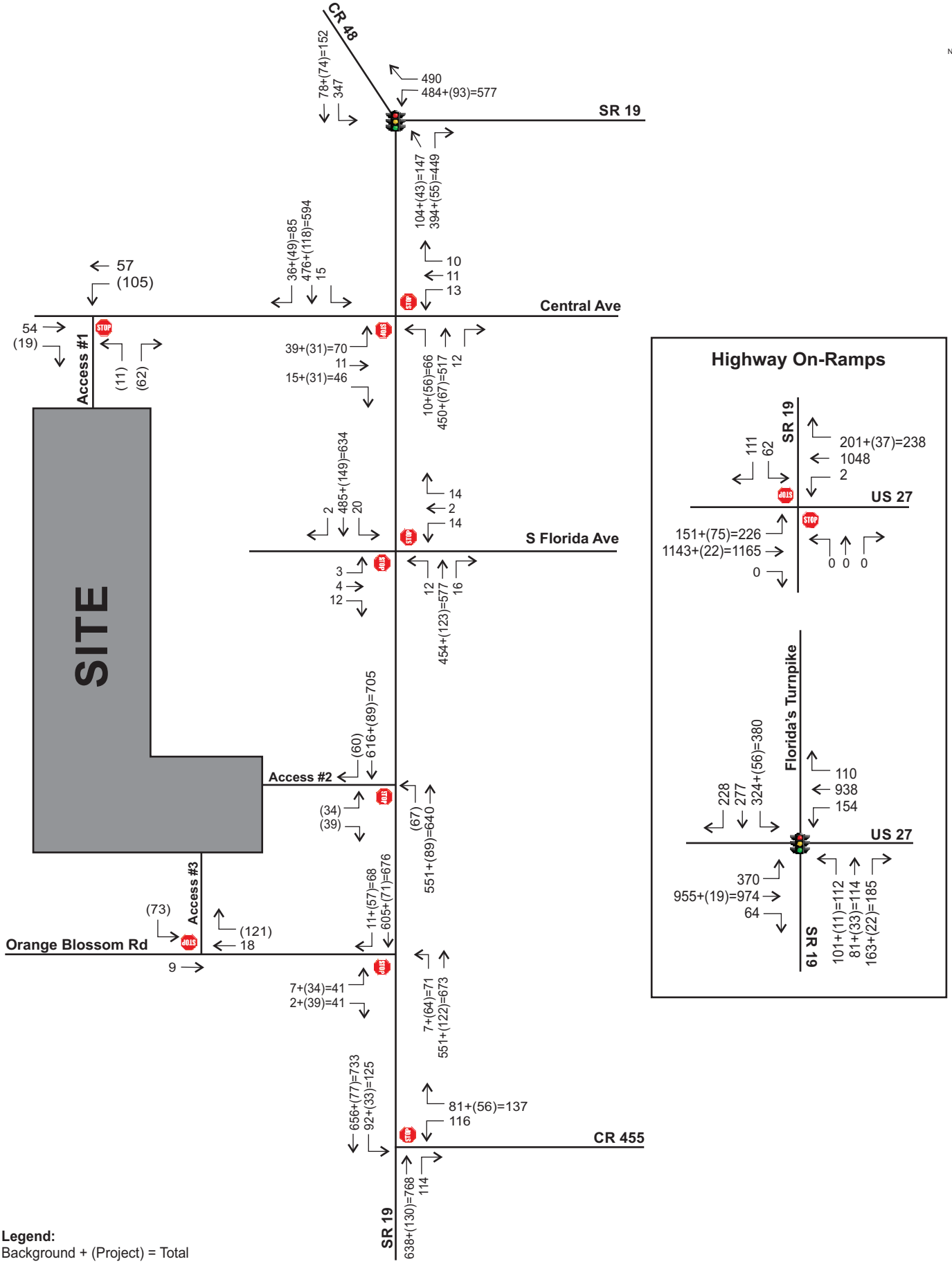
19011

Figure
5



Legend:
Background + (Project) = Total

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Projected PM Peak Intersection Volumes

Mission Rise
19011

Figure
6

In order to improve the operation of both signalized intersections of SR 18 & CR 48 and US 27 & Florida Turnpike ramps, it is recommended to modify the signal timing and phasing plans for both signals. The improved LOS for both signals is presented in Table 6. As for the 2-Way Stop controlled intersections of SR 19 and Central and SR 19 and CR 455, both intersections will be failing based on background traffic growth in the area and both intersections should be monitored in the future for a possible signal warrant. Finally, the intersection of SR 19 and Orange Blossom Road should be improved by the addition of a northbound left turn lane and a southbound right turn lane. This improvement will be warranted by the proposed development as Phase 2 of the project starts, because the project access for Phase 2 will be via Orange Blossom Road. The improved LOS for this intersection is also presented in Table 6.

5.0 ACCESS REVIEW

The development will be accessed via proposed access point on SR 19, Number 2 Road and Orange Blossom Road. The proposed project access #1 will provide access the north end of the project from Number 2 Road, which is Phase 3. Access #2 will be the main entrance to the development on SR 19 (Phase 1), while Access #3 will access the south end of the project from Orange Blossom Road (Phase 2).

5.1 Turn Lane Review

Right Turn Deceleration Lane at Project Driveways

A right turn deceleration lane warrant was conducted for each of the proposed project access driveways based on the *NCHRP Report 457* Methodology. The results of the right turn warrant analysis show that a right turn deceleration lane is warranted at proposed project Access #2 on SR 19. The dimension of the northbound right turn lane is calculated based on the requirements of *FDOT Design Manual Exhibit FDM 212.1*, included in **Appendix L**, which shows a deceleration length of 405 feet for a design speed of 60 mph. Therefore, the recommended southbound right turn deceleration lanes on SR 19 at the project access #2 is 405 feet (including a 50-foot taper). The right turn lane warrant analyses sheets are included in **Appendix M** for all three access driveways.

Left Turn Deceleration Lane at Project Driveways

Based on the *NCHRP Report 457* Methodology, a left turn deceleration lane is only warranted on SR 19 at the project access #2 (the main project entrance). Based on roadway posted speed limit of 55mph, the required length of the left turn lane is calculated as follows:

Left Turn Lane = Deceleration + Queue Storage
Deceleration @ 60 mph design speed = 405 feet (using FDM Exhibit 212-1)
Queue length = 2 x 25 x Left Turn Volume (67 veh)/60 = 56 feet (use 60 feet)
Left Turn Lane = 405+ 60 = 465 feet (including a 50-foot taper)

Therefore, the approach will be provided with 465 ft northbound left turn deceleration lane. The left turn lane warrant analyses sheets are included in **Appendix M** for all three access driveways.

6.0 STUDY CONCLUSIONS

This traffic analysis was conducted to assess the impact of the proposed development of Mission Rise in the Town of Howey-in-the-Hills, Lake County, Florida. The project is a residential community with 629 single family units to be built in three phases. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity, and access review.

The results of the traffic analysis are summarized as follows:

- The proposed development will generate 5,648 trips per day, of which 453 trips will occur during the AM peak hour and 591 trips will occur during the PM peak hour.

- The analysis indicates that the roadway segments currently operate adequately within their Level of Service (LOS) standard and will continue to do so at the buildout of the project.

- The intersections of SR 19 & CR 48 and US 27 & Florida Turnpike Ramps will require modifications to the signal timing and phasing plans in order to operate adequately.

- The 2-Way Stop controlled intersections of SR 19 and Central and SR 19 and CR 455 should be monitored in the future for a possible signal warrant.

- The intersection of SR 19 and Orange Blossom Road should be improved by the addition of a northbound left turn lane and a southbound right turn lane. This improvement will be warranted by the proposed development at the start of Phase 2 of the project.

- A southbound right turn lane and northbound left turn lane are warranted at the intersection of SR 19 and project access #2 (main entrance). The study recommends 405 feet and 465 feet for the southbound right turn lane and northbound left turn lane, respectively.

APPENDICES

Appendix A
Study Methodology &
LSMPO Comments

MEMORANDUM

January 28, 2019

Re: MISSION RISE
Traffic Impact Analysis Methodology
Project № 19011

The following is a methodology outline for the Traffic Impact Analysis (TIA) for the above referenced project. The methodology is consistent with the requirements of Lake County and the Lake-Sumter Metropolitan Planning Organization (LSMPO) for a Tier 2 TIA.

Project Description

The proposed project is a residential community of 629 single family dwelling units with anticipated buildout in 2024. A copy of the proposed site plan is provided in the **Attachments**.

Project Location

The +/- 241-acre site is located west of SR 19, south of Number Two Road and approximately 1.3 miles north of CR 455 in the town of Howey in the Hills, Lake County, Florida, as shown in **Figure 1**.

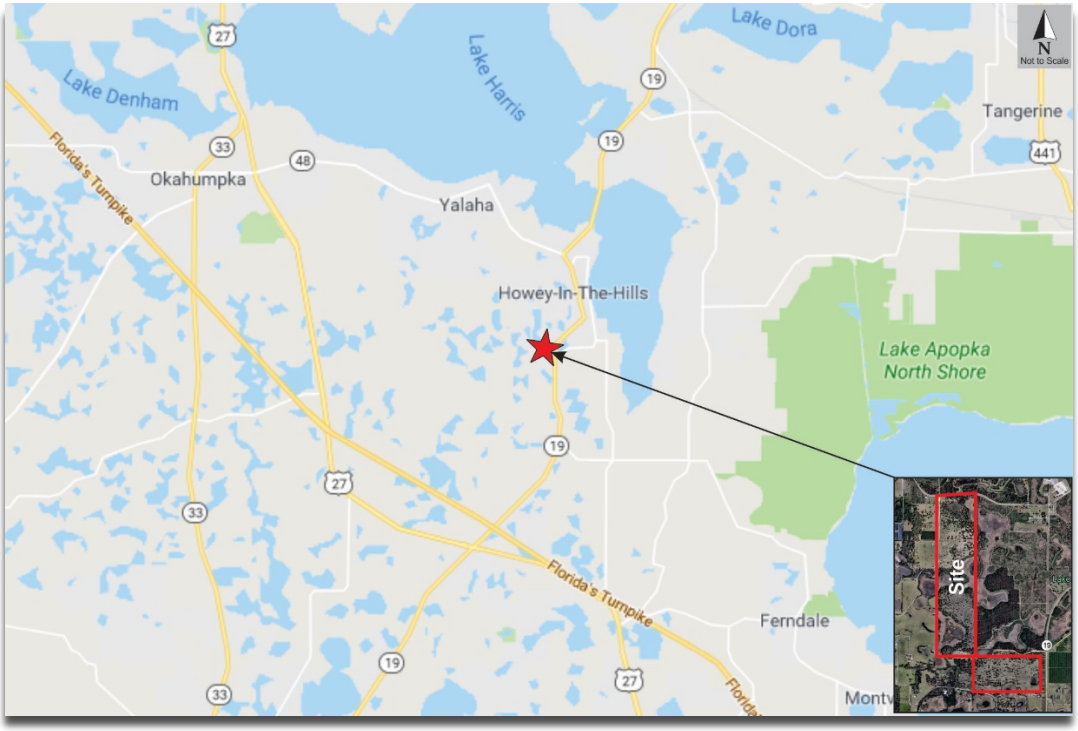


Figure 1 – Project Location

Project Access

Access to the site is proposed via four (4) full accesses driveway on these roadways:

- SR 19
- Revels Rd
- Number Two Road
- Orange Blossom Road

Trip Generation

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

Table 1
Trip Generation

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	629 DU	8.98	5,648	0.72	453	113	340	0.94	591	372	219

Trip Generation analysis based on ITE Trip Generation Manual, 10th Edition.

The development is projected to generate more than 100 net new peak hour trips and therefore a Tier 2 Traffic Impact Analysis is required.

Trip Distribution

The travel demand model based on the Florida Standard Transportation Model Structure (FSUTMS) was used to generate a general distribution pattern for the development. The model output is included in the **Attachments**. The proposed trip distribution pattern presents as follows:

To/from North (SR 19)	25%
To/from South (SR 19)	35%
To/from East (CR 455)	15%
To/from West (CR 48)	25%

Study Area

In accordance with the requirements of Tier 2 TIA methodology, the study area will encompass significance roadway segments and intersections within 4.55-mile radius in addition to roadways where development is expected to consume 5% or more of their adopted Level of Service (LOS) capacities.

Table 2
Study Area

Road Name	From	To	#LNS	AT	LOS STD	LOS CAP	Project Trips			% Cap	Within 4.55 mi.?	In Study?
							% Dist	NB/EB	SB/WB			
SR 19	Savage Ct	CR 48	2	T	C	850	21%	78	46	9.2%	YES	**YES**
	CR 48	W Central Ave	2	T	C	710	45%	99	167	23.5%	YES	**YES**
	W Central Ave	Revels Rd	2	T	C	850	48%	105	179	21.1%	YES	**YES**
	Revels Rd	Orange Blossom Rd	2	T	C	850	52%	114	193	22.7%	YES	**YES**
	Orange Blossom Rd	E Dewey Robbins Rd	2	T	C	850	50%	110	186	21.9%	YES	**YES**
	E Dewey Robbins Rd	CR 455	2	T	C	850	50%	110	186	21.9%	YES	**YES**
CR 48	Bella Vista Blvd	SR 19	2	T	D	720	23%	50	86	11.9%	YES	**YES**
Orange Blossom Rd	Revels Rd	SR 19	2	T	D	612	23%	50	86	14.1%	YES	**YES**
Number Two Rd	Blue Sink Rd	Mare Ave	2	T	D	612	26%	57	97	15.8%	YES	**YES**
W Central Ave	Mare Ave	SR 19	2	T	D	612	26%	57	97	15.8%	YES	**YES**
	SR 19	Lakeshore Blvd	2	T	D	612	3%	7	11	1.8%	YES	**NO**
Revels Rd	SR 19	Lakeshore Blvd	2	T	D	612	22%	48	82	13.4%	YES	**YES**
CR 455	CR 561	SR 19	2	T	D	1,200	15%	56	33	4.7%	YES	**NO**

Source: 2015 Lake County TCMS Segment Report 01-16-2015

The following roadway segments and intersections will be analyzed for the PM peak hour as part of this study:

Roadway Segments

- SR 19
  - CR 48 to W Central Avenue
  - Central Avenue to Revels Road
  - Revels Road to Orange Blossom Road
  - Orange Blossom Road to E. Dewey Robbins Road
  - E. Dewey Robbins Road to CR 455

- CR 48
  - Bella Vista Boulevard to SR 19

- Orange Blossom Road
  - Chris Road to Revels Road
  - Revels Road to SR 19

- Number Two Road
  - Blue Sink Road to Mare Avenue

- Central Avenue
  - Mare Avenue to SR 19

- Revels Road
  - SR 19 to Lakeshore Boulevard

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

Study Intersections

- SR 19 and Revels Rd (Unsignalized)
- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- SR 19 and Orange Blossom Road (Unsignalized)
- Site Access driveway No. 1 at SR 19 (Proposed)
- Site Access driveway No. 2 at Orange Blossom Road (Proposed)
- Site Access driveway No. 3 at Number Two Road (Proposed)
- Site Access driveway No. 1 at Revels Road (Proposed)

Capacity Analysis

The TIA will include an analysis of the peak hour conditions in the existing year and the project buildout year (2024). The capacity analysis will be based on service volumes from the *FDOT's 2013 Quality/Level of Service (Q/LOS) Manual* and the methods of the *Highway Capacity Manual* (HCM 6th Edition). Roadway conditions will be analyzed for the PM peak conditions while intersections will be analyzed for the AM and PM peak hour conditions.

Projected Traffic

The TIA will include an analysis of the roadway segments in the PM peak hour. The study intersections will be analyzed for both AM and PM peak hour operations. Offsite and access improvements necessary to support the proposed development at buildout will be identified in the study. The capacity analysis will be based on service volumes from FDOT's *2013 Quality/Level of Service (Q/LOS) Manual* and the methods of *Highway Capacity Manual* (HCM 6th Edition).

Projected background traffic for the buildout year (2024) will be calculated using a 5-year historical annual growth rate or a minimum annual growth rate of 2.0% and/or committed trips generated by approved developments within the study area if applicable. Historical traffic volume counts will be obtained from Lake County or FDOT to determine the observed traffic growth on the study segments. Up to 5 years of historical traffic data will be analyzed to obtain the observed regional annual growth rate.

Planned and Programmed Improvements

Planned and programmed improvements that may be available from the County's Capital Improvement Program (CIP), the FDOT's Work Program, and/or the LSMPO Transportation Improvement Program (TIP) for any of the study segments will be utilized, if applicable.

Report

A report will be prepared for submittal to Lake County and LSMPO documenting the analysis and findings.

Lake-Sumter MPO
Metropolitan Planning Organization

Lake County
Sumter County
Town of Astatula
City of Bushnell
City of Center Hill
City of Clermont
City of Coleman
City of Eustis
City of Fruitland Park
City of Groveland
Town of Howey-in-the-Hills
Town of Lady Lake
City of Leesburg
City of Mascotte
City of Minneola
Town of Montverde
City of Mount Dora
City of Tavares
City of Umatilla
City of Webster
City of Wildwood
Florida Central Railroad
Lake County Schools
Sumter County Schools

February 6, 2019

Dairian Burke
Town Clerk\Finance Director
Town of Howey-in-the-Hills
101 N. Palm Avenue
PO Box 128
Howey-in-the-Hills, FL 34737

RE: Mission Rise Methodology for a Tier 2 Traffic Impact Analysis (TIA)

Mr. Burke,

The Lake~Sumter MPO has reviewed the documents submitted for the Mission Rise Methodology for a Tier 2 Traffic Impact Analysis (TIA) dated January 28, 2019. The Lake~Sumter MPO offers the following Comments:

Comments Regarding the Project:

1. The project site is located on the west side of SR 19, at the intersection of Revels Road, in the Town of Howey-in-the-Hills, Lake County, Florida.
2. The applicant is proposing to construct 629 single family residential dwelling units on approximately 241 acres of vacant land.
3. The proposed buildout year is 2024.
4. There are four (4) access points proposed for the project as follows:
   - The primary access will be provided via a driveway onto SR 19 just south of Revels Road.
   - One driveway onto Revels Road (currently a dirt road).
   - One driveway onto Number 2 Road (narrow paved road with no center line).
   - One driveway onto Orange Blossom Road (narrow paved road with no center line).

   Please provide a map or site plan that clearly shows the access points.
5. The trip generation for this development as shown in Table 1 uses the ITE Equations. When the equations are used, please show the inputs and calculations (either in the text of the document or in the appendix) so that non-transportation professionals can understand how the trip generation rates and volumes were derived.
6. The trip generation shows the proposed development would have approximately 5,648 daily trips, 453 AM Peak Hour Trips, and 591 PM Peak Hour Trips.
7. A study area distance of 4.55 miles, and where the project trips are 5% of the adopted Level of Service (LOS), is acceptable. However, when showing the roadway segments (Table 2), show the next roadway segment that has project trips that are less than 5% of LOS capacity (show where the project impact ends).
8. For the Roadway segment to study, at a minimum, please include:
   - SR 19 from Savage Ct. to CR 48 (as identified in Table 2).
   - SR 19 from CR 455 to US 27.

9. Please add the following intersections to the study:
    - SR 19 at Florida Ave.
    - SR 19 at CR 455.
    - SR 19 at Florida's Turnpike.
    - US 27 at Turnpike Ramps/SR 19.
10. Please provide a map showing the study area roadway segments and intersections to be studied.
11. It is proposed that both the AM and PM Peak Hours will be analyzed. This is acceptable.
12. The future traffic conditions will use a growth rate calculated from historical traffic counts with a minimum 2% growth. This is acceptable. Please be sure to use the latest available traffic counts from Lake County and the FDOT.
13. The Lake~Sumter MPO reserves the right to provide additional recommendations which may include expanding the scope of the analysis based on the results of the initial TIA.
14. Please include the Recommended Multimodal Accommodations listed below when developing the project site plan.

Recommended Multimodal Accommodations:

1. Provide continuous pedestrian facilities along all major streets; these should be direct and interconnect with all other modes of transportation within the project and onto adjacent properties.
2. Require the developer to provide ramps and curb cuts throughout the pedestrian system for physically challenged persons.

Should you have any questions please contact me by email at bhutt@lakesumtermpo.com or by phone at (352) 315-0170 ext. 3.

Thank You,

Brian R. Hutt

Brian R. Hutt, AICP
Lake~Sumter MPO
TMS Project Manager

Appendix B
Preliminary Development Plan

PROJECT CHARACTERISTICS

TOTAL PROPERTY AREA .... 241.32 ACRES; 10,511,869.71 SQ.FT.
TOTAL PROJECT AREA .... 179.79 ACRES
TOTAL UNITS PROPOSED 629
NET DENSITY PROPOSED .... 2.61 DU/ACRE
PROPOSED USE .... SINGLE FAMILY RESIDENTIAL, CONSERVATION, AND RELATED ACCESSORY USES INCLUDING RECREATIONAL USES AND FACILITIES

NUMBER OF PHASES 3

100-YEAR FLOOD ZONE .... INDICATED ON PLAN

RESIDENTIAL REGULATIONS
MINIMUM DWELLING SIZE .... 1,350 SF. FOR SINGLE-FAMILY UNITS
MAXIMUM BUILDING HEIGHT .... 35 FT
MINIMUM PARKING REQUIRED .... 4 PER LOT; 2 GARAGE / 2 DRIVEWAY

PUBLIC / CIVIC SPACE REGULATIONS
MAXIMUM BUILDING HEIGHT .... 15 FT

LAND USE ACREAGE
RESIDENTIAL AREA .... 97.36 ACRES
PARK LAND .... 12.36 ACRES*
DRY RETENTION .... 32.29 ACRES
LANDSCAPE BUFFERS / OTHER OPEN SPACE .... 7.35 ACRES
WETLANDS .... 61.53 ACRES
PUBLIC UTILITIES .... 0.20 ACRES
ROAD RIGHT-OF-WAY .... 30.03 ACRES

*INCLUDES 0.25 ACRES OF AMENITIES

OPEN SPACE TOTALS BY LAND USE
WETLANDS .... 30.16 ACRES
DRY RETENTION .... 32.29 ACRES
NON-PARK OPEN SPACE .... 9.38 ACRES
PARK .... 10.28 ACRES
AMENITIES .... 0.25 ACRES
TOTAL .... 82.36 ACRES

RESIDENTIAL BUILDING SETBACKS
FRONT .... 20'
REAR .... 20' FOR PRINCIPLE STRUCTURES
10' FOR ANCILLARY STRUCTURES
SIDE .... 5' (EXCEPT 10' FOR CORNER LOTS AT STREET SIDE)

LANDSCAPE BUFFERS
DEDICATED ADJACENT TO S.R. 19 AND NUMBER 2 RD RIGHT-OF-WAY .... 25'

NOTES
- POTABLE WATER SERVICE SHALL BE PROVIDED BY THE TOWN OF HOWEY-IN-THE-HILLS. THE DEVELOPER SHALL EXTEND THE TOWN'S EXISTING POTABLE WATER DISTRIBUTION SYSTEM TO AND THROUGH THE PROJECT TO SERVE EVERY LOT WITHIN THE DEVELOPMENT.
- STORM WATER MANAGEMENT SHALL BE THROUGH A SYSTEM OF SWALES, STORM DRAINS AND DRY BOTTOM RETENTION PONDS AS REQUIRED.
- SANITARY SEWER SERVICE SHALL BE PROVIDED BY THE TOWN OF HOWEY-IN-THE-HILLS. THE DEVELOPER SHALL EXTEND THE TOWN'S EXISTING SANITARY SEWER COLLECTION / TRANSMISSION SYSTEM TO AND THROUGH THE PROJECT TO SERVE EVERY LOT WITHIN THE DEVELOPMENT. WASTEWATER TREATMENT SHALL BE PROVIDED BY THE MISSION INN WWTF.
- EXISTING VEGETATION WILL BE UTILIZED IN LANDSCAPE BUFFERS WHEREVER POSSIBLE.
- THIS PROJECT WILL BE DEVELOPED IN MULTIPLE PHASES. EACH PHASE, AS IT DEVELOPS, SHALL HAVE THE NECESSARY INFRASTRUCTURE TO SERVE THAT PHASE. PHASES MAY BE FURTHER SUBDIVIDED.
- THE PROJECT WILL ALSO PROVIDE PARK LAND AND PARK FACILITIES/RECREATION AREAS. THESE PARKS WILL PROVIDE OPEN SPACE OPPORTUNITIES FOR RESIDENTS TO UTILIZE THE NATURAL RESOURCES. A PAVED TRAIL SYSTEM WILL BE PLACED WITHIN THE COMMUNITY PARKS TO ENCOURAGE COMMUNITY WELLNESS AND ACTIVE RECREATION. THE PROJECT WILL HAVE AN AMENITY CENTER WITH A POOL THAT WILL BE CONSTRUCTED AND COMPLETED PRIOR TO ISSUANCE OF A CERTIFICATE OF COMPLETION FOR PHASE 2 OF THE PROJECT.
- PARKING WILL BE PROVIDED AT AMENITY CENTER
- MASS GRADING BETWEEN PHASES MAY OCCUR WITH WATER MANAGEMENT DISTRICT PERMIT. MASS GRADING WILL ADHERE TO NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS.
- THERE SHALL BE A CONSTRUCTION ENTRANCE AT THE PROPOSED SUBDIVISION ENTRANCE ROAD ON SR19 AND THE PROPOSED SUBDIVISION ENTRANCES ON NUMBER 2 ROAD. ALL CONSTRUCTION ENTRANCES SHALL BE STABILIZED FOR HEAVY VEHICULAR TRAFFIC AND SHALL ADHERE TO NPDES PERMIT REQUIREMENTS

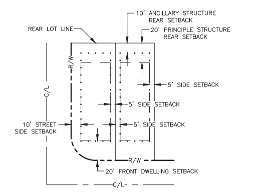
TRACT AREAS

DESCRIPTION	AREA (AC.)	LAND USE
PHASE 1		
RIGHT-OF-WAY	11.82	PARKWAY
RESIDENTIAL	34.97	SF LOTS
TRACT 1-A	1.83	PARK FACILITIES
TRACT 1-B	0.23	OPEN SPACE
TRACT 1-C	0.12	LIFT STATION
TRACT 1-D	1.57	DRY RETENTION
TRACT 1-E	0.38	WETLANDS
TRACT 1-F	1.26	OPEN SPACE
TRACT 1-G	2.53	DRY RETENTION
TRACT 1-H	3.30	WETLANDS
TRACT 1-I	0.30	OPEN SPACE
TRACT 1-J	1.18	DRY RETENTION
TRACT 1-K	0.25	AMENITY CENTER
TRACT 1-L	4.66	PARK LAND
TRACT 1-M	1.11	DRY RETENTION
TRACT 1-N	0.20	OPEN SPACE
TRACT 1-O	1.08	DRY RETENTION
TRACT 1-P	1.21	OPEN SPACE
TRACT 1-Q	1.28	WETLANDS
TRACT 1-R	0.32	DRY RETENTION
TRACT 1-S	2.60	DRY RETENTION
TRACT 1-T	2.56	WETLANDS
TRACT 1-U	0.19	OPEN SPACE
TRACT 1-V	0.02	LANDSCAPE BUFFER
TRACT 1-W	0.02	LANDSCAPE BUFFER
TOTAL PHASE 1 =	74.99	
PHASE 2		
RIGHT-OF-WAY	6.78	PARKWAY
RESIDENTIAL	22.88	SF LOTS
TRACT 2-A	23.58	WETLANDS
TRACT 2-B	0.23	OPEN SPACE
TRACT 2-C	0.04	LIFT STATION
TRACT 2-D	3.80	DRY RETENTION
TRACT 2-E	0.31	OPEN SPACE
TRACT 2-F	2.28	DRY RETENTION
TRACT 2-G	5.78	WETLANDS
TRACT 2-H	13.52	WETLANDS
TRACT 2-I	2.25	PARK LAND
TRACT 2-J	4.16	DRY RETENTION
TOTAL PHASE 2 =	85.61	
PHASE 3		
RIGHT-OF-WAY	11.43	PARKWAY
RESIDENTIAL	39.51	SF LOTS
TRACT 3-A	3.40	WETLANDS
TRACT 3-B	3.10	DRY RETENTION
TRACT 3-C	0.04	LIFT STATION
TRACT 3-D	2.38	DRY RETENTION
TRACT 3-E	1.16	WETLANDS
TRACT 3-F	0.71	OPEN SPACE
TRACT 3-G	0.22	OPEN SPACE
TRACT 3-H	3.37	PARK LAND
TRACT 3-I	0.96	OPEN SPACE
TRACT 3-J	0.11	OPEN SPACE
TRACT 3-K	6.57	WETLANDS
TRACT 3-L	6.18	DRY RETENTION
TRACT 3-M	0.26	OPEN SPACE
TRACT 3-N	0.50	OPEN SPACE
TRACT 3-O	0.11	OPEN SPACE
TRACT 3-P	0.24	LANDSCAPE BUFFER
TRACT 3-Q	0.47	LANDSCAPE BUFFER
TOTAL PHASE 3 =	80.72	

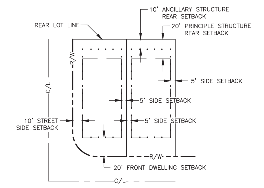
CUMULATIVE OPEN SPACE TOTALS PER PHASE

PHASE(S)	PHASE(S) AREA (AC.)	25% REQ. OPEN SPACE AREA (AC.)	UPLAND OPEN SPACE AREA (AC.)	WETLAND OPEN SPACE AREA* (AC.)	TOTAL OPEN SPACE AREA (AC.)	TOTAL OPEN SPACE AREA (%)
1	74.99	18.75	20.56	7.52	28.08	37.44
1 & 2	160.60	40.15	33.59	20.07	53.66	33.41
1, 2 & 3	241.32	60.33	52.20	30.16	82.36	34.13

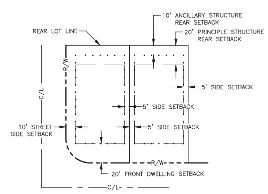
*UP TO 50% OF THE OPEN SPACE REQUIREMENT MAY BE MET WITH WETLANDS.



TYPICAL 40' LOT DWELLING SETBACKS
SCALE 1"=60'

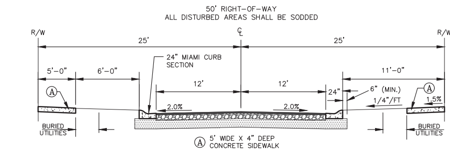


TYPICAL 50' LOT DWELLING SETBACKS
SCALE 1"=60'



TYPICAL 60' LOT DWELLING SETBACKS
SCALE 1"=60'

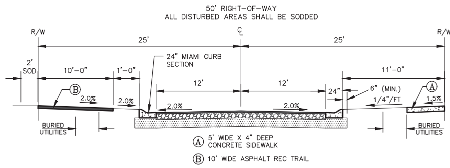
50' RIGHT-OF-WAY
ALL DISTURBED AREAS SHALL BE SODDED



Ⓐ 5" WIDE X 4" DEEP CONCRETE SIDEWALK

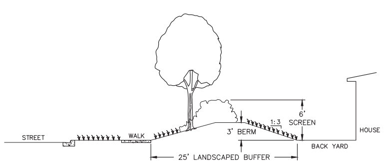
TYPICAL 50' RIGHT-OF-WAY SECTION
N.T.S

50' RIGHT-OF-WAY
ALL DISTURBED AREAS SHALL BE SODDED

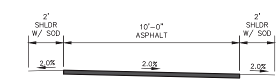


Ⓐ 5" WIDE X 4" DEEP CONCRETE SIDEWALK
Ⓑ 10' WIDE ASPHALT REC TRAIL

TYPICAL 50' RIGHT-OF-WAY WITH REC TRAIL SECTION
N.T.S



RESIDENTIAL LANDSCAPE BUFFER SECTION
N.T.S



NOTE: TOTAL LENGTH OF REC TRAIL IS APPROXIMATELY 11,240 FT

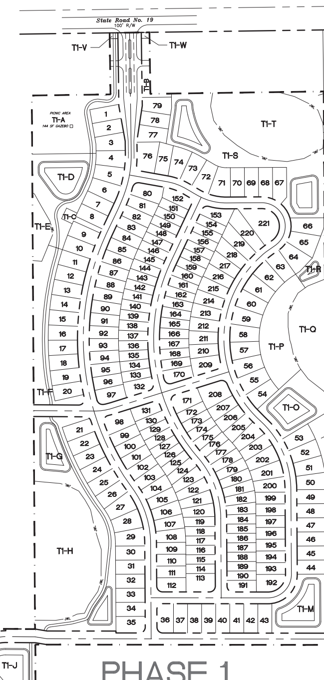
TYPICAL REC TRAIL SECTION
N.T.S

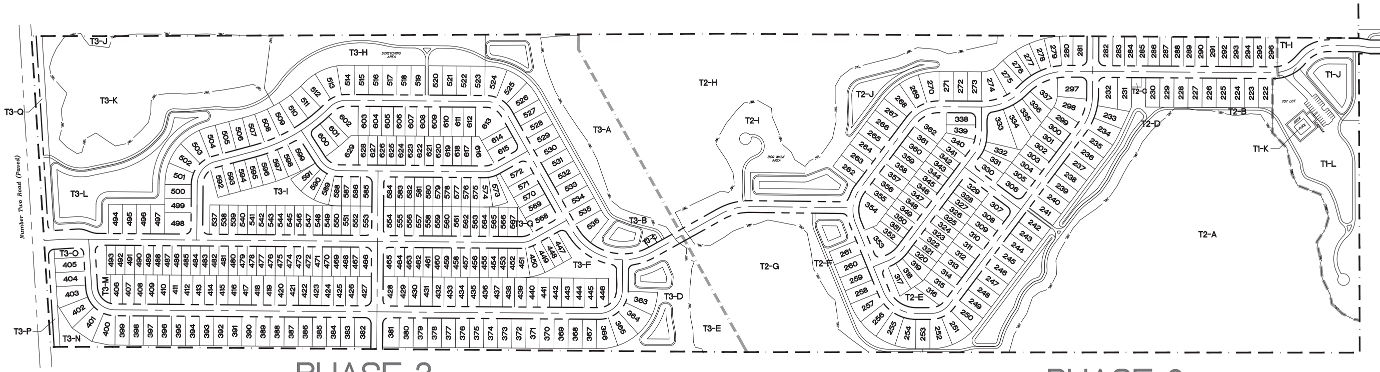
GRAPHIC SCALE

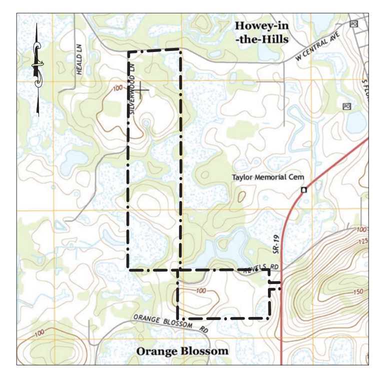
(IN FEET)
1 inch = 250 ft.

LEGEND

PROPERTY LINE
RIGHT-OF-WAY LINE
ROADWAY CENTERLINE
PROPOSED LOT LINE
JURISDICTIONAL WETLAND LINE
PHASE LINE







LOCATION MAP
SCALE: 1"=1500' | SOURCE: USGS NATIONAL MAP

LOT TABLE

PHASE	40' LOTS	50' LOTS	60' LOTS	TOTAL # OF LOTS
1	79	63	79	221
2	37	50	54	141
3	111	70	86	267
TOTAL	227	183	219	629

MISSION RISE

SECTIONS 27 & 34, TOWNSHIP 20S, RANGE 25E, LAKE COUNTY, FL
SECTION 2, TOWNSHIP 21S, RANGE 25E, LAKE COUNTY, FL
DEVELOPER: HANOVER MISSION RISE, LLC
605 COMMONWEALTH AVE., ORLANDO, FL 32803 (407) 704-9226

Knight Engineering Services
Planning, Design, Permitting, Inspection
770 Almond Street, Suite B, Clermont, Florida 34711
Phone: (352) 394-8514
Certificate of Authorization No. 00029972

PUD CONCEPT PLAN

THOMAS L. KNIGHT LICENSE No. 47614 STATE OF FLORIDA PROFESSIONAL ENGINEER

THOMAS L. KNIGHT, P.E.
FLORIDA REGISTRATION #47614

DATE
January 2019

DRAWN BY
TLK

PROJECT NUMBER
17-05

SCALE
1" = 250'

SHEET NUMBER
1

HANOVER
Land Company, LLC

MISSION RISE

HOWEY-IN-THE-HILLS

60' LOTS [219]

50' LOTS [183]

40' LOTS [227]

Total Lots - 629

TRAIL NETWORK

1 - Secondary Entry Off Number 2 Road
2 - Wetland Protection Area
3 - Amenity Area With Pool and Tot Lot
4 - Main Entry Off SR-19

Open Space Totals By Land Use

Wetlands	30.16 ac
Dry Rentention	32.29 ac
Non-Park Open Space	9.38 ac
Park	10.28 ac
Amenities	.25 ac
Total	82.36 ac

Appendix C
2018 Lake County TMS & FDOT High-plan Service Volume

2018 Lake County Annual Traffic Counts

MAP STA #	ROAD NAME	LOCATION	Map Sheet	TMS ID	SEC	TWP	RNG	ANNUAL ADJUSTED DAILY TRAFFIC (AADT)					5-YEAR ANNUAL AVERAGE GROWTH RATE PERCENT	ADJUSTED PEAK HR VOLUME 2018	BEGIN PEAK HOUR 2018	ADJUSTED P.M. PEAK HOUR VOLUME 2018 (3-7 pm reported as 15:00-19:00)				
								2014	2015	2016	2017	2018				Total	NB/EB	SB/WB	Pk Dir	Time
16	C.R. 48	0.25 Mi E OF U.S. 27	B	97	14	20	24	8,765	6,895	9,996	10,428	10,908	5.62%	948	15:30	948	373	576	WB	15:30
17	C.R. 48	0.18 Mi E OF C.R. 33	B	219	15	20	24	4,978	6,580	11,043	8,307	8,867	15.53%	720	15:30	720	336	384	WB	15:30
18	C.R. 48	0.12 Mi W OF C.R. 33	B	224	22	20	24	2,221	2,019	3,559	3,520	3,145	9.08%	281	16:30	281	91	190	WB	16:30
34	C.R. 48	0.18 Mi W OF S.R. 19	B	99	23	20	25	7,252	8,181	8,304	9,300	9,304	6.43%	757	16:30	757	367	390	WB	16:30
59	C.R. 48	0.15 Mi E OF C.R. 561	B	356	32	20	26	5,448	7,855	5,857	5,977	6,305	3.72%	800	7:45	595	288	307	WB	16:45
153	C.R. 48	0.12 Mi W OF U.S. 27	B	218	14	20	24	6,733	8,459	7,698	8,996	9,714	9.60%	788	10:30	738	365	372	WB	16:00
68	C.R. 50	0.05 Mi W OF PARK TRAIL DR	B	158	17	22	26	10,129	9,478	7,238	8,979	8,482	-4.34%	791	7:30	761	322	439	WB	16:30
69	C.R. 50	0.06 Mi W OF ORANGE CO LINE	A	155	25	22	26	6,100	5,051	5,950	7,322	7,060	3.72%	770	17:00	770	224	546	WB	17:00
158	C.R. 50	0.08 Mi W OF C.R. 455	B	156	23	22	26	4,308	6,698	5,592	7,593	6,693	11.64%	716	17:15	716	491	225	EB	17:15
275	C.R. 50/SUNSET AV	0.03 Mi N OF S.R. 50	B	161	14	22	24	1,144	1,224	1,810	1,342	1,456	6.23%	153	16:45	153	68	86	SB	16:45
37	C.R. 561	0.16 Mi S OF BRIDGE #114046	B	781	23	22	25	2,886	3,073	3,272	3,564	3,579	5.52%	323	16:15	323	169	154	NB	16:15
55	C.R. 561	0.26 Mi S OF S.R. 19	C	613	6	20	26	10,380	10,585	12,230	13,334	14,040	7.84%	1,165	16:30	1,165	548	616	SB	16:30
57	C.R. 561	0.07 Mi S OF WOODLAND DR	B	118	20	20	26	7,393	8,032	8,017	8,600	9,245	5.75%	813	16:30	813	364	449	SB	16:30
60	C.R. 561	0.55 Mi S OF C.R. 48	B	719	32	20	26	8,772	9,150	9,404	10,141	10,798	5.33%	1,053	16:30	1,053	520	534	SB	16:30
61	C.R. 561	0.13 Mi S OF C.R. 455	B	121	17	21	26	6,147	6,213	5,548	6,639	7,090	3.63%	688	16:45	688	332	357	SB	16:45
63	C.R. 561	0.04 Mi N OF C.R. 561A	B	0	30	21	26	6,289	6,582	6,492	7,281	10,671	14.13%	1,060	16:30	1,060	518	542	SB	16:30
102	C.R. 561	0.08 Mi S OF C.R. 565B/LOG HOUSE	A	128	11	23	25	2,557	4,585	2,094	2,340	3,399	7.37%	663	7:45	447	266	181	NB	15:00
139	C.R. 561	0.11 Mi E OF S.R. 33	A	131	8	24	25	1,231	1,483	1,467	2,050	2,002	12.93%	201	16:30	201	114	86	NB	16:30
176	C.R. 561	0.08 Mi S OF S.R. 50	A	720	24	22	25	5,515	5,871	6,142	6,165	6,728	5.10%	635	16:45	635	307	327	SB	16:45
207	C.R. 561	0.10 Mi N OF C.R. 565A	B	605	14	22	25	4,173	5,073	4,391	5,294	5,863	8.87%	511	7:30	492	221	271	SB	16:45
66	C.R. 561 (LAKE MINNEOLA SH	0.11 Mi W OF U.S. 27	B	602	7	22	26	7,561	8,743	9,426	8,727	9,602	6.15%	828	7:30	803	345	458	WB	17:00
36	C.R. 561/C.R. 561A	0.09 Mi E OF U.S. 27	B	125	36	21	25	7,664	8,680	10,449	9,629	9,788	6.31%	868	16:45	868	420	448	WB	16:45
62	C.R. 561A	0.18 Mi E OF C.R. 561	B	596	30	21	26	1,397	1,544	1,531	1,676	4,669	35.21%	456	6:45	448	199	248	WB	16:15
64	C.R. 561A	0.35 Mi E OF SCRUB JAY RD	B	596	32	21	26	1,378	1,570	1,381	1,773	6,227	45.81%	612	6:45	599	330	269	EB	16:30
35	C.R. 565	0.07 Mi S OF U.S. 27	B	610	18	21	25	978	1,189	1,277	1,588	1,981	19.31%	196	7:15	186	177	9	NB	17:00
206	C.R. 565 (VILLA CITY RD)	0.134 Mi N OF S.R. 50	B	612	24	22	24	2,838	3,744	3,180	3,359	4,422	11.72%	373	17:00	373	192	181	NB	17:00
136	C.R. 565A	0.2 Mi N OF S.R. 50	B	599	20	22	25	7,386	9,936	10,992	8,120	9,069	5.27%	1,006	6:45	699	375	324	NB	17:15
137	C.R. 565A	0.27 Mi S OF S.R. 50	A	594	20	22	25	1,965	3,541	2,186	2,213	2,149	2.27%	199	16:45	199	122	77	NB	16:45
138	C.R. 565B	0.10 Mi E OF C.R. 565A	A	593	3	23	25	2,055	2,194	2,173	2,511	2,433	4.31%	230	15:30	230	115	114	EB	15:30
227	CANAL ST	0.026 Mi N OF MAIN ST	C	663	26	19	24	3,913	5,849	4,776	4,335	4,188	1.71%	348	16:45	348	180	168	NB	16:45
228	CANAL ST	0.035 MI S OF MAIN ST	C	663	26	19	24	3,183	5,107	3,361	3,417	3,312	1.00%	272	14:30	266	154	112	NB	15:00
309	CHULA VISTA AV	BETWEEN RIO & SAN REMO	B	159	18	18	24	*****	2,503	2,678	3,805	3,249		385	14:15	346	153	193	SB	15:00
195	CITRUS GROVE ROAD	0.14 Mi E OF U.S. 27	B	546	6	22	26	904	1,009	1,385	1,612	1,847	19.57%	198	6:45	160	57	103	WB	17:15
169	CITRUS TOWER BV	0.14 Mi N OF S.R. 50	A	833	28	22	26	17,147	15,715	16,110	15,791	15,478	-2.53%	1,254	14:30	1,226	579	647	SB	16:15
178	CITRUS TOWER BV	0.113 Mi E OF U.S. 27	B	135	19	22	26	11,752	12,303	12,177	12,067	12,548	1.65%	1,102	16:30	1,102	483	619	WB	16:30
197	CITRUS TOWER BV	0.10 Mi N OF JOHNS LAKE RD	A	884	32	22	26	14,849	17,884	18,431	18,370	19,580	7.16%	1,588	17:45	1,588	604	984	SB	17:45
280	CITRUS TOWER BV	0.1 Mi S OF S.R. 50	A	146	28	22	26	15,687	17,410	17,355	17,358	18,604	4.36%	1,482	16:30	1,482	832	650	NB	16:30
283	CITRUS TOWER BV	0.18 E. OF US 27	A	910	5	23	26	12,393	14,550	14,579	14,720	15,036	4.95%	1,201	7:15	1,162	459	703	WB	16:30
288	CR 44A	0.17 MI N. OF CR 44A	C-1	823	5	19	27	1,817	1,945	1,935	2,092	2,171	4.54%	190	15:30	190	106	84	NB	15:30
291	CR 48	AT SUMTER COUNTY LINE	B	225	7	21	24	2,218	1,429	2,778	2,912	2,849	6.46%	257	16:45	257	80	177	SB	16:45
293	CR 50	EAST OF HANCOCK RD	B	157	16	22	26	9,591	6,847	9,026	11,238	10,448	2.16%	979	16:30	979	474	505	WB	16:30
292	CR 561A	WEST OF CR 455	B	132	27	21	26	1,496	1,675	1,579	1,583	1,940	6.72%	219	6:45	189	112	76	EB	16:30
315	CR 565A	NORTH OF SR 50	C	494	24	22	24	*****	469	363	582	4,343		379	15:30	379	192	187	NB	15:30
307	CR46A	SOUTH OF SR44	B	157	8	19	28	*****	7,237	8,047	9,046	8,995		762	15:00	762	472	290	NB	15:00
156	DAVID WALKER DR	0.05 Mi N OF U.S. 441/S.R. 500	C-1	424	22	19	26	4,363	5,239	5,459	5,928	7,235	13.48%	597	11:00	544	342	202	NB	16:45
157	DAVID WALKER DR	0.05 Mi W OF KURT ST (EUSTIS)	C-1	721	15	19	26	4,562	4,724	5,651	5,099	5,205	3.35%	511	16:30	511	323	188	EB	16:30
168	DAVID WALKER DR	0.20 Mi S OF U.S. 441	C-1	423	22	19	26	6,860	7,505	7,612	7,672	8,369	5.09%	679	14:15	672	370	302	EB	16:30
234	DEAD RIVER RD	0.2 Mi W OF S.R. 19	C-1	589	31	19	26	6,284	6,821	7,205	7,484	6,830	2.10%	564	17:00	564	233	331	WB	17:00
305	DEWEY ROBBINS RD	EAST OF US27	B	0	36	20	24	*****	380	448	500	609		63	15:30	63	36	27	EB	15:30

HIGHPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst	TMC	**Highway Name**	SR 19	**Study Period**	**Standard K**
Date Prepared	2/13/2019 2:56:39 PM	**From**	Taylor Memorial Cemetery	**Analysis Type**	Two-Lane Segment
Agency	Lake Co	**To**	US 27	**Program**	HIGHPLAN 2012
Area Type	Transitioning/Urban	**Peak Direction**	Northbound	**Version Date**	12/12/2012
File Name	T:\AProjectFiles\2019\19011 Mission Rise\TIA\Highplan Service volume\Highplan SR 19 CR 455 to US 27.xhp				
User Notes					

Highway Data

Roadway Variables				Traffic Variables			
Segment Length	4.800	**Median**	No	**AADT**	11800	**PHF**	0.970
# Thru Lanes	2	**Left Turn Impact**	No	**K**	0.090	**% Heavy Vehicles**	10.0
Terrain	Level	**Pass Lane Length**	N/A	**D**	0.545	**Base Capacity**	1700
Posted Speed	55	**% NPZ**	43	**Peak Dir. Hrly. Vol.**	579	**Local Adj. Factor**	0.95
Free Flow Speed	60	**Class**	3	**Off Peak Dir. Hrly. Vol.**	483	**Adjusted Capacity**	1615

LOS Results

v/c Ratio	0.37	**Density**	N/A	**PTSF**	75.1	**ATS**	49.3	**% FFS**	82.2
FFS Delay	62.2	**LOS Thresh. Delay**	4.6	**Service Measure**	PctFFS	**LOS**	C		

Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1650 veh/h/ln.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	150	520	900	1240	1560
2					
3					
4					
Lanes	**Hourly Volume In Both Directions**				
2	280	960	1660	2280	2870
4					
6					
8					
Lanes	**Annual Average Daily Traffic**				
2	3200	10700	18500	25400	31900
4					
6					
8					

*** Cannot be achieved based on input data provided.**
 # Performance measure results are no longer applicable with the presence of passing lanes. Refer to the service volume tables to obtain the LOS.

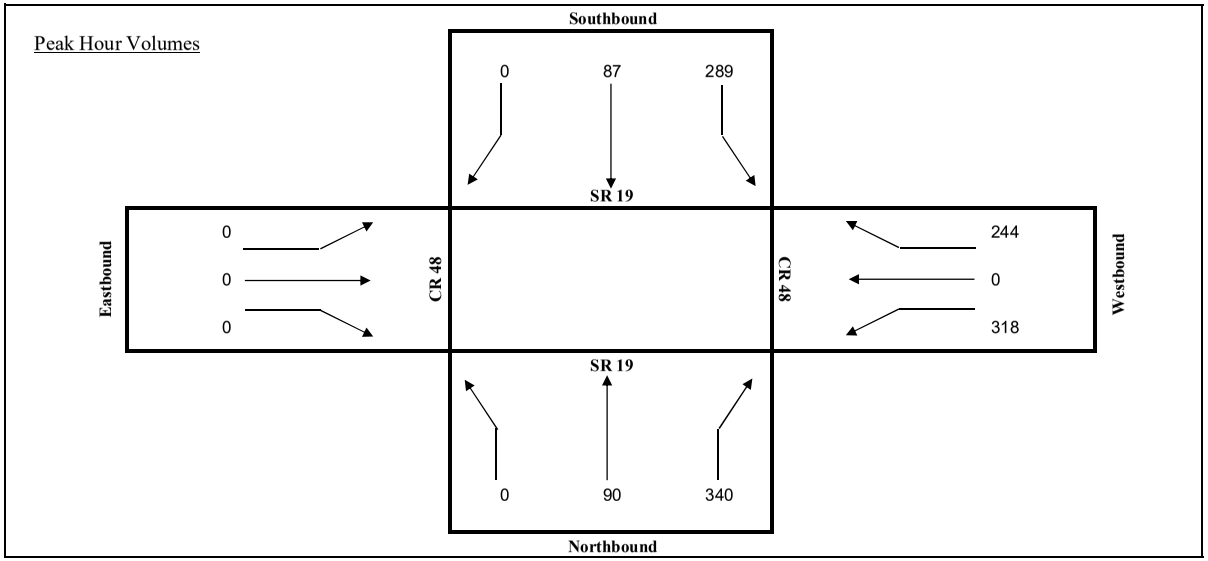
Appendix D
Turning Movement Counts & Seasonal Factor Data

TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 1/23/2019

			SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	0	22	88	54	19	0	0	0	0	50	0	42	275
7:15 AM	7:30 AM	0	23	86	55	19	0	0	0	0	75	0	85	343
7:30 AM	7:45 AM	0	27	98	91	23	0	0	0	0	96	0	60	395
7:45 AM	8:00 AM	0	21	81	63	23	0	0	0	0	75	0	58	321
8:00 AM	8:15 AM	0	19	75	80	22	0	0	0	0	72	0	41	309
8:15 AM	8:30 AM	0	19	81	63	10	0	0	0	0	66	0	67	306
8:30 AM	8:45 AM	0	20	70	60	15	0	0	0	0	58	0	54	277
8:45 AM	9:00 AM	0	21	63	63	12	0	0	0	0	51	0	60	270
Total for:	7:00 AM	8:00 AM	0	93	353	263	84	0	0	0	0	296	0	245	1334
Total for:	8:00 AM	9:00 AM	0	79	289	266	59	0	0	0	0	247	0	222	1162
Tota Peak Hour:	7:15 AM	8:15 AM	0	90	340	289	87	0	0	0	0	318	0	244	1368
Overall PHF:	0.87														

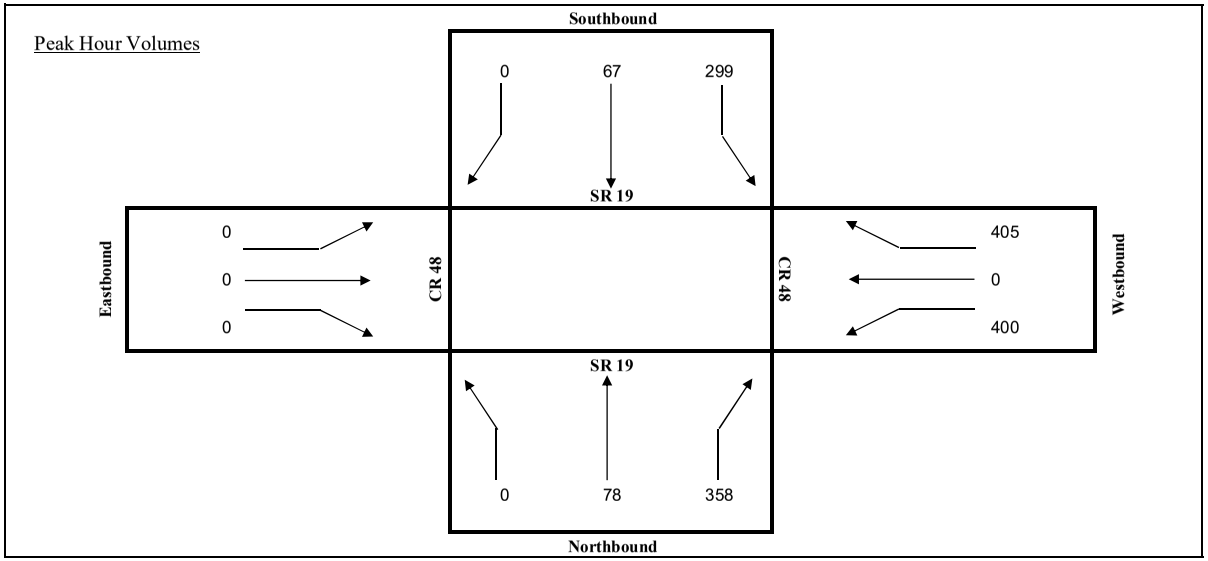


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 1/23/2019

			SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	21	80	53	24	0	0	0	0	97	0	57	332
4:15 PM	4:30 PM	0	14	66	93	25	0	0	0	0	84	0	56	338
4:30 PM	4:45 PM	0	18	71	90	31	0	0	0	0	96	0	60	366
4:45 PM	5:00 PM	0	19	82	67	12	0	0	0	0	113	0	68	361
5:00 PM	5:15 PM	0	20	76	99	21	0	0	0	0	85	0	100	401
5:15 PM	5:30 PM	0	20	103	64	15	0	0	0	0	121	0	107	430
5:30 PM	5:45 PM	0	20	88	70	18	0	0	0	0	100	0	102	398
5:45 PM	6:00 PM	0	18	91	66	13	0	0	0	0	94	0	96	378
Total for:	4:00 PM	5:00 PM	0	72	299	303	92	0	0	0	0	390	0	241	1397
Total for:	5:00 PM	6:00 PM	0	78	358	299	67	0	0	0	0	400	0	405	1607
Tota Peak Hour:	5:00 PM	6:00 PM	0	78	358	299	67	0	0	0	0	400	0	405	1607
Overall PHF:	0.93														

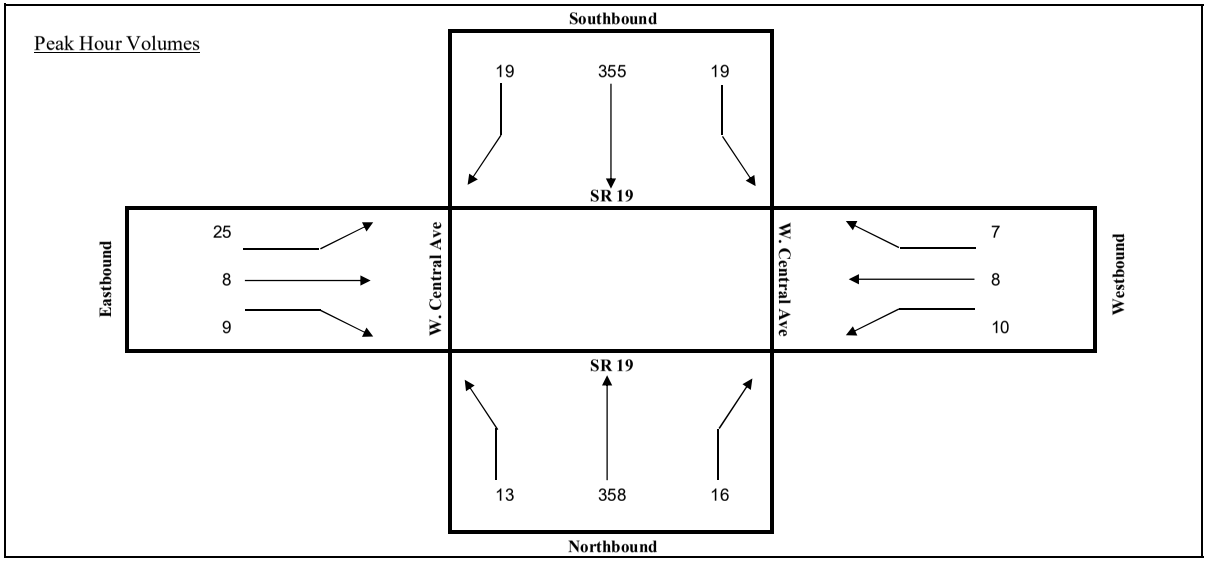


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): W. Central Ave
Date: 1/23/2019

			SR 19 NB			SR 19 SB			W. Central Ave EB			W. Central Ave WB			
Start	**End**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOTAL**
7:00 AM	7:15 AM	0	81	4	1	58	4	13	2	6	5	1	1	176
7:15 AM	7:30 AM	1	88	5	4	88	6	13	2	1	2	1	0	211
7:30 AM	7:45 AM	1	108	7	7	100	5	4	4	2	4	1	2	245
7:45 AM	8:00 AM	9	79	4	3	87	3	2	1	2	2	1	3	196
8:00 AM	8:15 AM	2	83	0	5	80	5	6	1	4	2	5	2	195
8:15 AM	8:30 AM	0	94	1	2	57	7	9	1	6	3	0	1	181
8:30 AM	8:45 AM	2	87	2	5	70	5	4	0	0	4	0	2	181
8:45 AM	9:00 AM	1	80	1	3	61	4	2	1	3	2	1	2	161
Total for:	7:00 AM	8:00 AM	11	356	20	15	333	18	32	9	11	13	4	6	828
Total for:	8:00 AM	9:00 AM	5	344	4	15	268	21	21	3	13	11	6	7	718
Tota Peak Hour:	7:15 AM	8:15 AM	13	358	16	19	355	19	25	8	9	10	8	7	847
Overall PHF:	0.86														

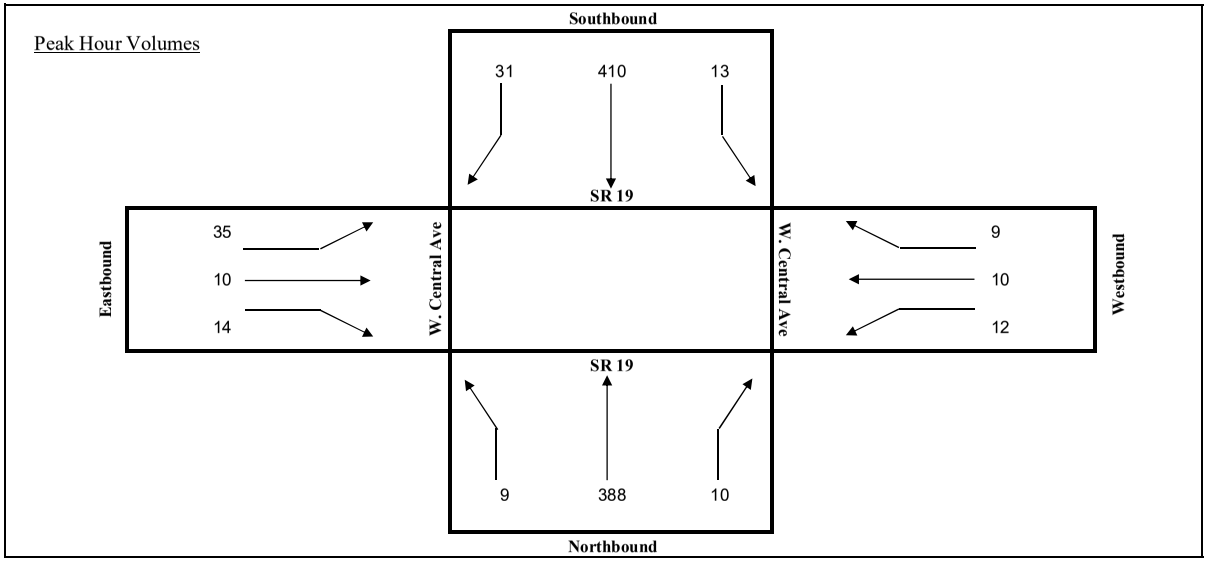


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): W. Central Ave
Date: 1/23/2019

			SR 19 NB			SR 19 SB			W. Central Ave EB			W. Central Ave WB			
Start	**End**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOTAL**
4:00 PM	4:15 PM	4	104	4	4	90	7	8	2	2	6	2	3	236
4:15 PM	4:30 PM	2	83	1	3	102	12	9	5	3	2	0	5	227
4:30 PM	4:45 PM	0	93	4	2	76	7	9	3	3	3	1	6	207
4:45 PM	5:00 PM	4	81	3	6	92	8	3	2	9	3	5	2	218
5:00 PM	5:15 PM	1	90	2	2	91	9	9	7	2	3	1	3	220
5:15 PM	5:30 PM	3	113	5	3	100	6	15	1	1	2	1	2	252
5:30 PM	5:45 PM	1	104	0	2	127	8	8	0	2	4	3	2	261
5:45 PM	6:00 PM	2	61	2	4	68	5	3	0	0	3	1	1	150
Total for:	4:00 PM	5:00 PM	10	361	12	15	360	34	29	12	17	14	8	16	888
Total for:	5:00 PM	6:00 PM	7	368	9	11	386	28	35	8	5	12	6	8	883
Tota Peak Hour:	4:45 PM	5:45 PM	9	388	10	13	410	31	35	10	14	12	10	9	951
Overall PHF:	0.91														

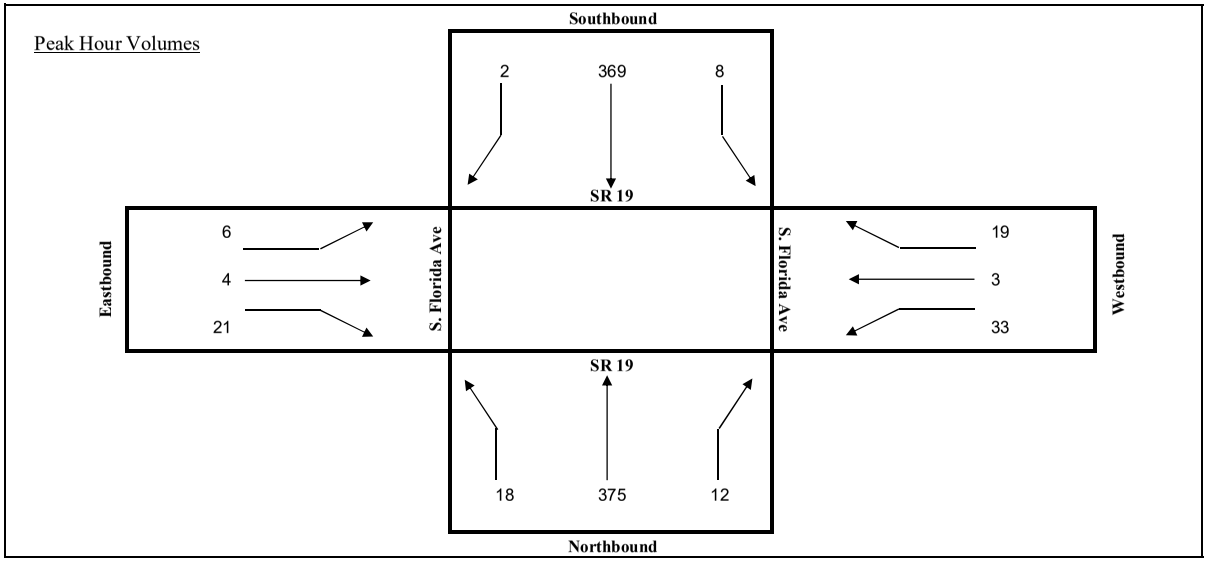


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): S. Florida Ave
Date: 2/7/2019

			SR 19 NB			SR 19 SB			S. Florida Ave EB			S. Florida Ave WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	7:00 AM	7:15 AM	9	90	0	2	90	5	0	0	4	1	0	6	207
	7:15 AM	7:30 AM	2	62	3	0	82	0	1	0	5	3	0	6	164
	7:30 AM	7:45 AM	5	105	5	0	89	0	0	0	0	7	0	1	212
	7:45 AM	8:00 AM	7	87	2	5	91	1	3	3	8	9	2	6	224
	8:00 AM	8:15 AM	2	98	1	1	100	0	2	0	11	11	0	8	234
	8:15 AM	8:30 AM	4	85	4	2	89	1	1	1	2	6	1	4	200
	8:30 AM	8:45 AM	2	79	5	0	75	0	0	0	4	3	2	2	172
	8:45 AM	9:00 AM	3	80	3	1	84	2	1	1	4	5	1	3	188
Total for:	7:00 AM	8:00 AM	23	344	10	7	352	6	4	3	17	20	2	19	807
Total for:	8:00 AM	9:00 AM	11	342	13	4	348	3	4	2	21	25	4	17	794
Tota Peak Hour:	7:30 AM	8:30 AM	18	375	12	8	369	2	6	4	21	33	3	19	870
Overall PHF:	0.93														

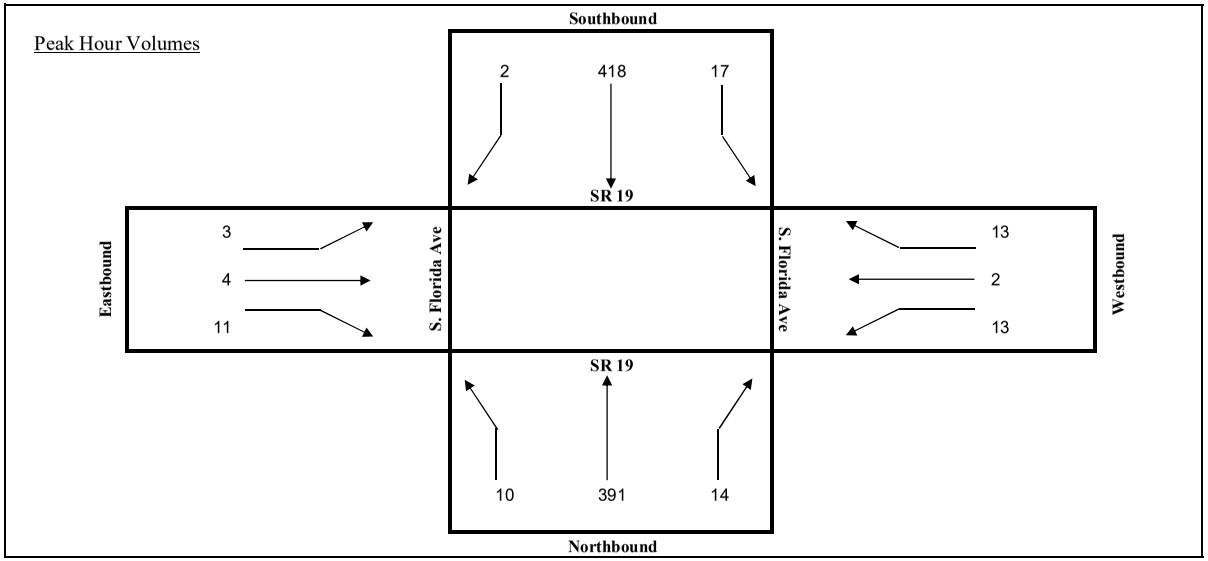


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): S. Florida Ave
Date: 2/7/2019

			SR 19 NB			SR 19 SB			S. Florida Ave EB			S. Florida Ave WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	4:00 PM	4:15 PM	1	93	4	4	138	1	0	2	5	3	1	1	253
	4:15 PM	4:30 PM	4	98	3	4	84	0	0	0	3	3	0	3	202
	4:30 PM	4:45 PM	2	101	5	5	100	0	1	1	1	2	1	4	223
	4:45 PM	5:00 PM	3	99	2	4	96	1	2	1	2	5	0	5	220
	5:00 PM	5:15 PM	4	88	2	3	104	0	0	0	5	1	0	2	209
	5:15 PM	5:30 PM	6	91	3	6	111	2	1	0	3	4	1	3	231
	5:30 PM	5:45 PM	5	85	5	7	97	1	0	1	5	3	0	1	210
	5:45 PM	6:00 PM	6	92	4	6	89	1	2	0	3	5	1	3	212
Total for:	4:00 PM	5:00 PM	10	391	14	17	418	2	3	4	11	13	2	13	898
Total for:	5:00 PM	6:00 PM	21	356	14	22	401	4	3	1	16	13	2	9	862
Tota Peak Hour:	4:00 PM	5:00 PM	10	391	14	17	418	2	3	4	11	13	2	13	898
Overall PHF:	0.89														

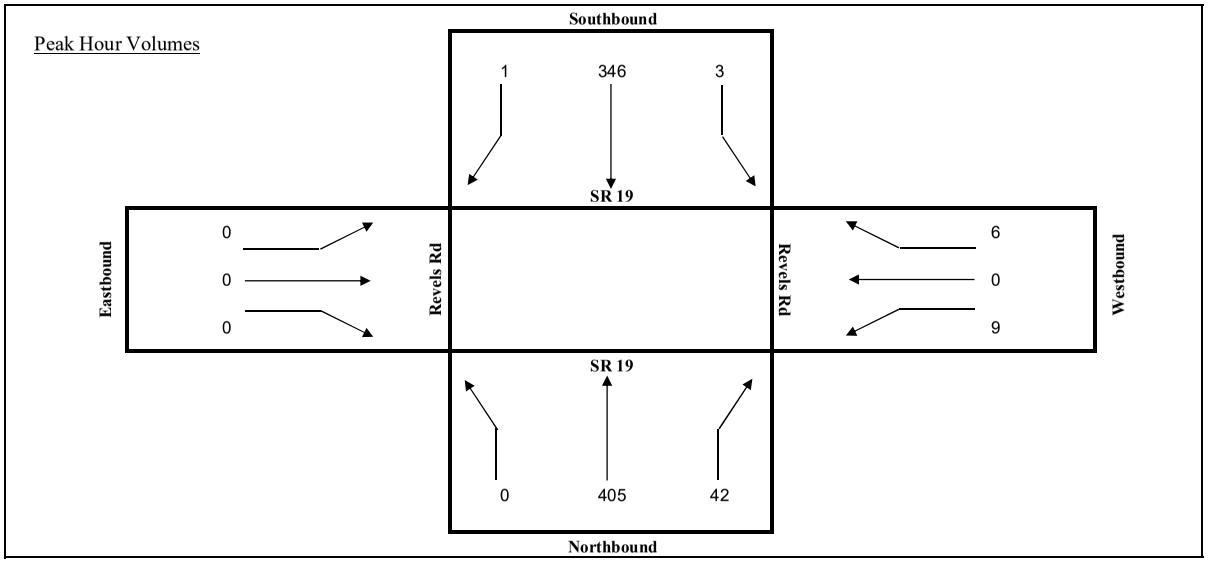


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Revels Rd
Date: 1/23/2019

			SR 19 NB			SR 19 SB			Revels Rd EB			Revels Rd WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	0	79	1	0	77	0	0	0	0	2	0	1	160
7:15 AM	7:30 AM	0	102	8	0	95	0	0	0	0	2	0	1	208
7:30 AM	7:45 AM	0	124	10	2	100	1	0	0	0	3	0	1	241
7:45 AM	8:00 AM	0	99	11	1	82	0	0	0	0	3	0	2	198
8:00 AM	8:15 AM	0	80	13	0	69	0	0	0	0	1	0	2	165
8:15 AM	8:30 AM	0	92	10	0	75	0	0	1	0	3	0	1	182
8:30 AM	8:45 AM	0	70	2	0	70	0	0	0	0	4	1	1	148
8:45 AM	9:00 AM	0	75	2	1	61	1	0	0	0	2	0	2	144
Total for:	7:00 AM	8:00 AM	0	404	30	3	354	1	0	0	0	10	0	5	807
Total for:	8:00 AM	9:00 AM	0	317	27	1	275	1	0	1	0	10	1	6	639
Tota Peak Hour:	7:15 AM	8:15 AM	0	405	42	3	346	1	0	0	0	9	0	6	812
Overall PHF:	0.84														

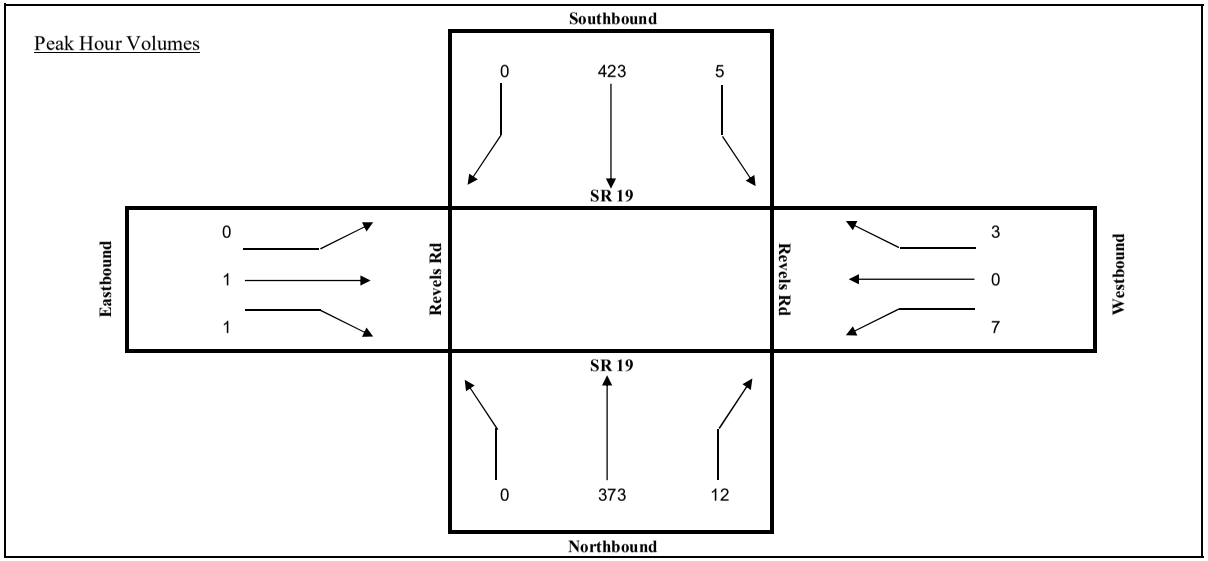


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Revels Rd
Date: 1/23/2019

			SR 19 NB			SR 19 SB			Revels Rd EB			Revels Rd WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	105	3	1	96	1	1	0	0	2	0	1	210
4:15 PM	4:30 PM	0	82	3	0	108	0	0	0	0	2	0	0	195
4:30 PM	4:45 PM	0	91	2	0	114	0	0	0	0	2	0	0	209
4:45 PM	5:00 PM	0	90	1	2	85	0	0	0	0	2	0	0	180
5:00 PM	5:15 PM	0	93	2	0	101	0	0	0	0	4	0	2	202
5:15 PM	5:30 PM	0	107	4	2	100	0	0	0	0	1	0	0	214
5:30 PM	5:45 PM	0	83	5	1	137	0	0	1	1	0	0	1	229
5:45 PM	6:00 PM	0	77	2	1	86	0	0	0	0	0	0	0	166
Total for:	4:00 PM	5:00 PM	0	368	9	3	403	1	1	0	0	8	0	1	794
Total for:	5:00 PM	6:00 PM	0	360	13	4	424	0	0	1	1	5	0	3	811
Tota Peak Hour:	4:45 PM	5:45 PM	0	373	12	5	423	0	0	1	1	7	0	3	825
Overall PHF:	0.90														

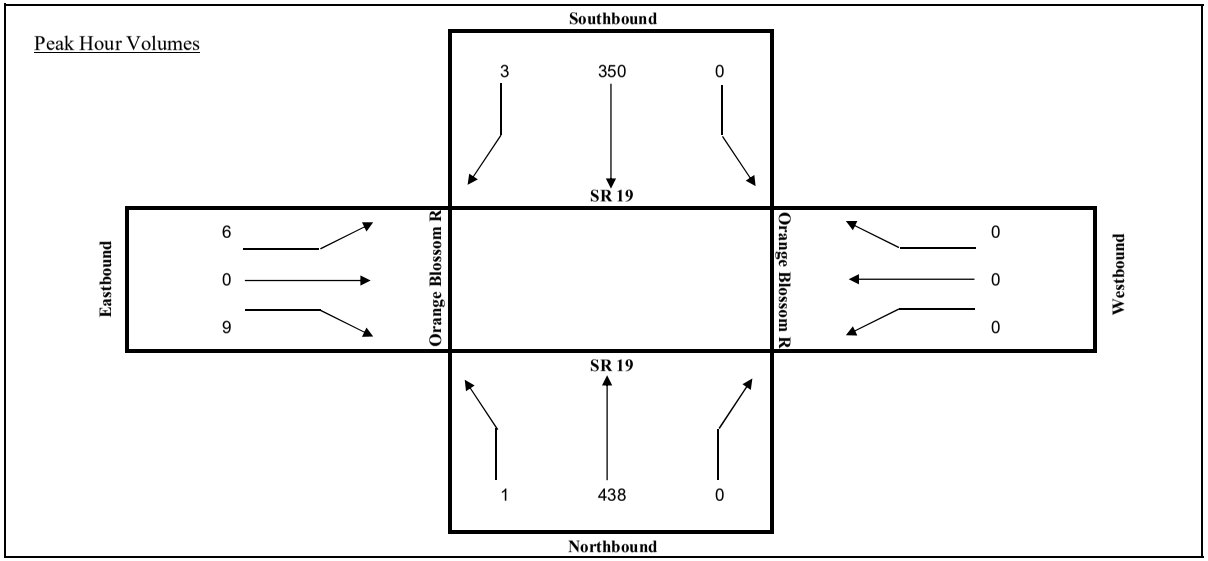


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Orange Blossom Rd
Date: 1/23/2019

			SR 19 NB			SR 19 SB			Orange Blossom Rd EB			Orange Blossom Rd WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	0	80	0	0	78	0	1	0	3	0	0	0	162
7:15 AM	7:30 AM	0	110	0	0	96	0	1	0	3	0	0	0	210
7:30 AM	7:45 AM	1	130	0	0	103	1	3	0	0	0	0	0	238
7:45 AM	8:00 AM	0	106	0	0	82	1	2	0	3	0	0	0	194
8:00 AM	8:15 AM	0	92	0	0	69	1	0	0	3	0	0	0	165
8:15 AM	8:30 AM	1	101	0	0	77	0	0	0	2	0	0	0	181
8:30 AM	8:45 AM	0	70	0	0	72	2	3	0	3	0	0	0	150
8:45 AM	9:00 AM	1	75	0	0	63	1	2	0	2	0	0	0	144
Total for:	7:00 AM	8:00 AM	1	426	0	0	359	2	7	0	9	0	0	0	804
Total for:	8:00 AM	9:00 AM	2	338	0	0	281	4	5	0	10	0	0	0	640
Tota Peak Hour:	7:15 AM	8:15 AM	1	438	0	0	350	3	6	0	9	0	0	0	807
Overall PHF:	0.85														

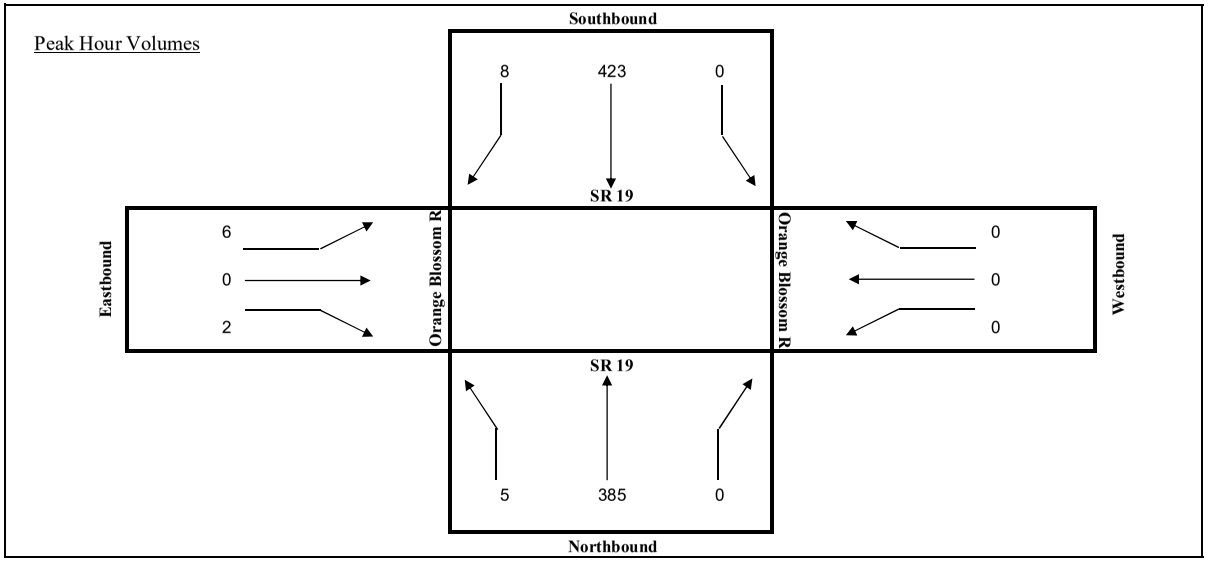


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Orange Blossom Rd
Date: 1/23/2019

			SR 19 NB			SR 19 SB			Orange Blossom Rd EB			Orange Blossom Rd WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	2	109	0	0	95	2	1	0	2	0	0	0	211
4:15 PM	4:30 PM	0	84	0	0	109	2	0	0	1	0	0	0	196
4:30 PM	4:45 PM	0	91	0	0	113	1	2	0	2	0	0	0	209
4:45 PM	5:00 PM	1	92	0	0	82	1	1	0	1	0	0	0	178
5:00 PM	5:15 PM	1	95	0	0	106	0	0	0	0	0	0	0	202
5:15 PM	5:30 PM	2	110	0	0	98	4	3	0	1	0	0	0	218
5:30 PM	5:45 PM	1	88	0	0	137	3	2	0	0	0	0	0	231
5:45 PM	6:00 PM	2	78	0	0	84	0	0	0	0	0	0	0	164
Total for:	4:00 PM	5:00 PM	3	376	0	0	399	6	4	0	6	0	0	0	794
Total for:	5:00 PM	6:00 PM	6	371	0	0	425	7	5	0	1	0	0	0	815
Tota Peak Hour:	4:45 PM	5:45 PM	5	385	0	0	423	8	6	0	2	0	0	0	829
Overall PHF:	0.90														

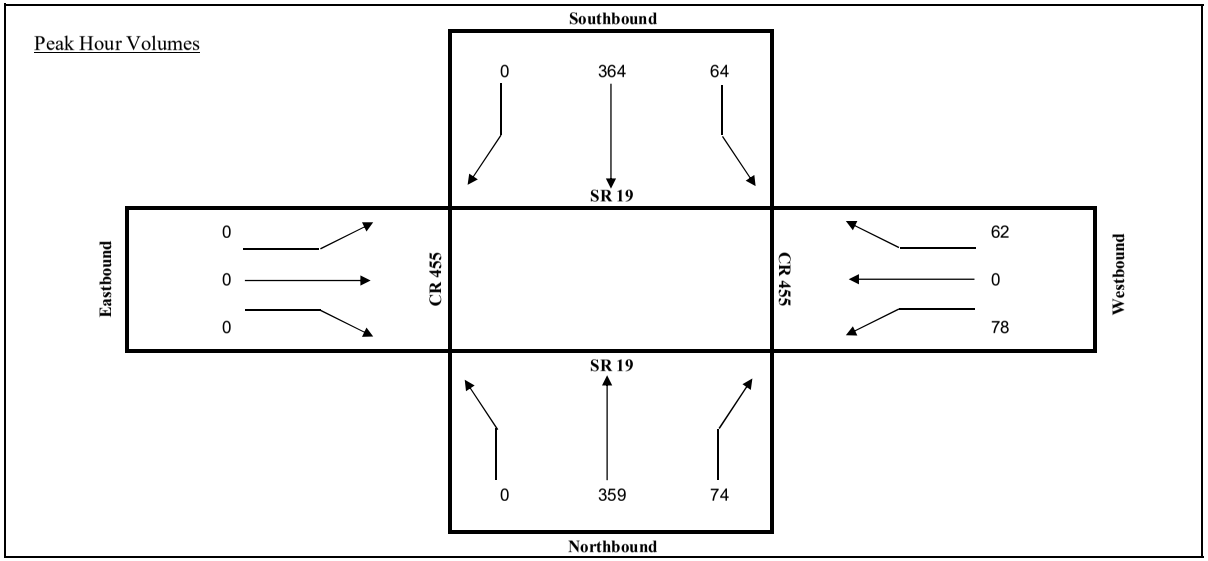


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 2/7/2019

			SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	7:15 AM	0	54	17	23	94	0	0	0	0	20	0	4	212
7:15 AM	7:30 AM	0	86	16	17	92	0	0	0	0	15	0	17	243
7:30 AM	7:45 AM	0	90	19	18	93	0	0	0	0	18	0	15	253
7:45 AM	8:00 AM	0	88	21	17	95	0	0	0	0	23	0	14	258
8:00 AM	8:15 AM	0	95	18	12	84	0	0	0	0	22	0	16	247
8:15 AM	8:30 AM	0	88	11	6	67	0	0	0	0	18	0	7	197
8:30 AM	8:45 AM	0	80	12	9	70	0	0	0	0	15	0	10	196
8:45 AM	9:00 AM	0	55	7	12	57	0	0	0	0	11	0	6	148
Total for:	7:00 AM	8:00 AM	0	318	73	75	374	0	0	0	0	76	0	50	966
Total for:	8:00 AM	9:00 AM	0	318	48	39	278	0	0	0	0	66	0	39	788
Tota Peak Hour:	7:15 AM	8:15 AM	0	359	74	64	364	0	0	0	0	78	0	62	1001
Overall PHF:	0.97														

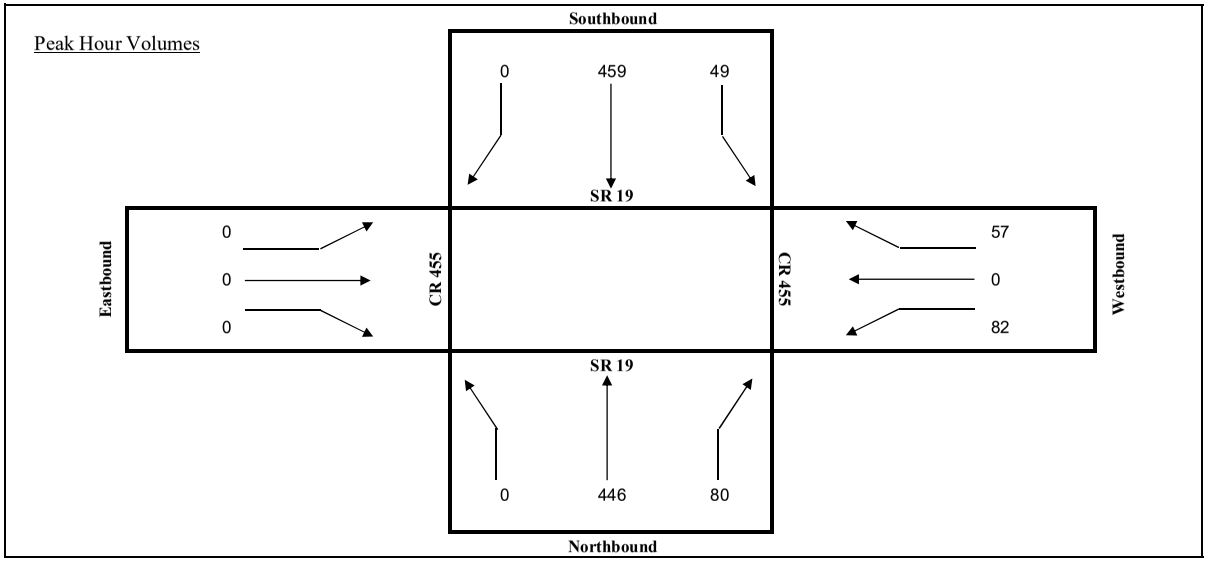


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 2/7/2019

			SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	100	20	9	130	0	0	0	0	30	0	10	299
4:15 PM	4:30 PM	0	115	16	12	102	0	0	0	0	17	0	8	270
4:30 PM	4:45 PM	0	123	19	11	110	0	0	0	0	21	0	9	293
4:45 PM	5:00 PM	0	113	19	10	122	0	0	0	0	15	0	17	296
5:00 PM	5:15 PM	0	120	15	13	119	0	0	0	0	17	0	12	296
5:15 PM	5:30 PM	0	90	27	15	108	0	0	0	0	29	0	19	288
5:30 PM	5:45 PM	0	89	21	17	102	0	0	0	0	24	0	22	275
5:45 PM	6:00 PM	0	87	19	9	87	0	0	0	0	26	0	15	243
Total for:	4:00 PM	5:00 PM	0	451	74	42	464	0	0	0	0	83	0	44	1158
Total for:	5:00 PM	6:00 PM	0	386	82	54	416	0	0	0	0	96	0	68	1102
Tota Peak Hour:	4:30 PM	5:30 PM	0	446	80	49	459	0	0	0	0	82	0	57	1173
Overall PHF:	0.99														

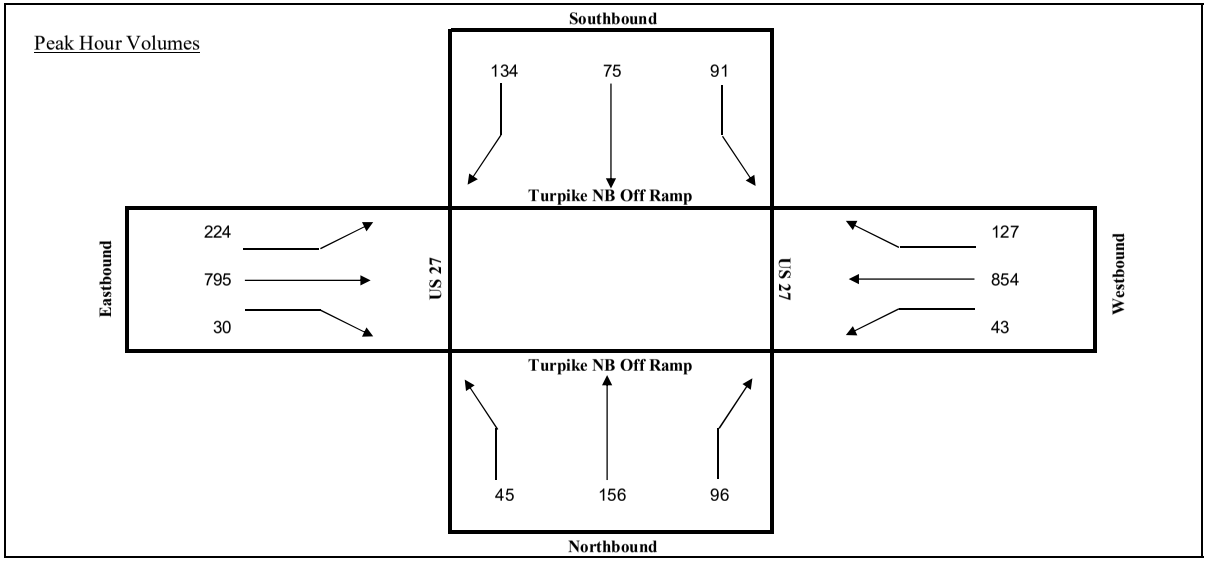


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): Turpike NB Off Ramp
Intersection (E/W): US 27
Date: 2/7/2019

			Turpike NB Off Ramp			Turpike NB Off Ramp			US 27			US 27			
			NB			SB			EB			WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	7:00 AM	7:15 AM	9	39	17	24	10	28	57	148	5	3	181	31	552
	7:15 AM	7:30 AM	11	40	25	25	15	33	49	190	10	9	204	40	651
	7:30 AM	7:45 AM	15	36	31	23	18	35	55	189	6	13	199	33	653
	7:45 AM	8:00 AM	10	43	19	21	22	35	62	219	9	11	244	25	720
	8:00 AM	8:15 AM	9	37	21	22	20	31	58	197	5	10	207	29	646
	8:15 AM	8:30 AM	15	41	19	19	13	29	60	175	8	11	216	29	635
	8:30 AM	8:45 AM	13	34	21	21	15	22	57	170	10	13	220	17	613
	8:45 AM	9:00 AM	7	25	22	15	8	17	55	139	4	10	192	20	514
Total for:	7:00 AM	8:00 AM	45	158	92	93	65	131	223	746	30	36	828	129	2576
Total for:	8:00 AM	9:00 AM	44	137	83	77	56	99	230	681	27	44	835	95	2408
Tota Peak Hour:	7:15 AM	8:15 AM	45	156	96	91	75	134	224	795	30	43	854	127	2670
Overall PHF:	0.93														

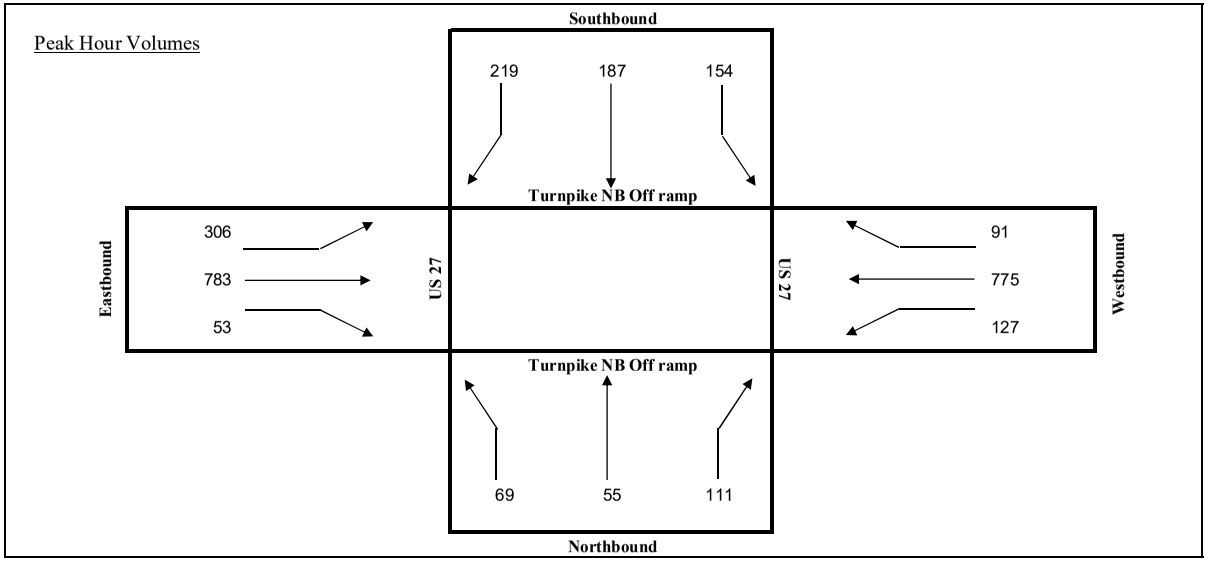


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): Turnpike NB Off ramp
Intersection (E/W): US 27
Date: 6/27/2018

			Turnpike NB Off ramp			Turnpike NB Off ramp			US 27			US 27			
			NB			SB			EB			WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	4:00 PM	4:15 PM	18	8	18	30	37	44	59	178	10	10	144	33	589
	4:15 PM	4:30 PM	19	12	22	27	45	51	64	201	13	19	170	25	668
	4:30 PM	4:45 PM	17	10	31	40	51	56	70	199	15	26	159	24	698
	4:45 PM	5:00 PM	15	15	29	40	50	48	68	224	10	33	175	27	734
	5:00 PM	5:15 PM	22	9	22	31	47	52	77	196	17	30	210	18	731
	5:15 PM	5:30 PM	13	13	31	44	39	60	81	183	10	34	202	26	736
	5:30 PM	5:45 PM	19	18	29	39	51	59	80	180	16	30	188	20	729
	5:45 PM	6:00 PM	15	15	33	42	47	61	73	183	10	25	170	17	691
Total for:	4:00 PM	5:00 PM	69	45	100	137	183	199	261	802	48	88	648	109	2689
Total for:	5:00 PM	6:00 PM	69	55	115	156	184	232	311	742	53	119	770	81	2887
Tota Peak Hour:	4:45 PM	5:45 PM	69	55	111	154	187	219	306	783	53	127	775	91	2930
Overall PHF:	1.00														

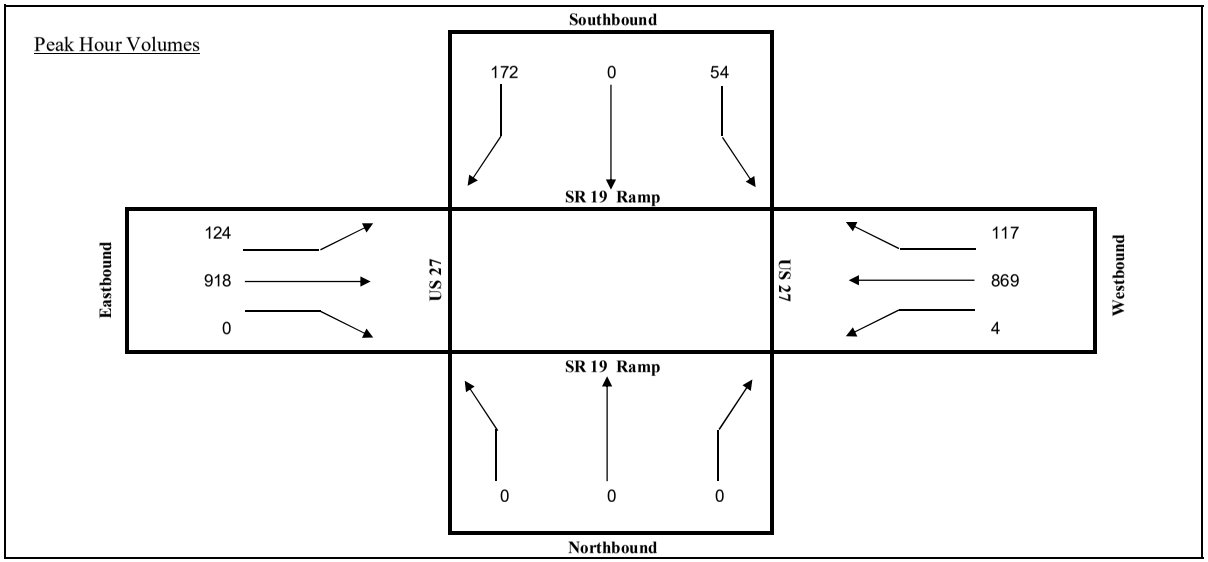


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19 Ramp
Intersection (E/W): US 27
Date: 2/7/2019

			SR 19 Ramp			SR 19 Ramp			US 27			US 27			
			NB			SB			EB			WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	7:00 AM	7:15 AM	0	0	0	9	0	40	25	199	0	0	167	20	460
	7:15 AM	7:30 AM	0	0	0	11	0	55	24	228	0	2	195	17	532
	7:30 AM	7:45 AM	0	0	0	10	0	62	31	225	0	0	181	29	538
	7:45 AM	8:00 AM	0	0	0	15	0	48	29	260	0	1	196	35	584
	8:00 AM	8:15 AM	0	0	0	12	0	41	38	215	0	0	225	31	562
	8:15 AM	8:30 AM	0	0	0	17	0	38	33	223	0	2	229	28	570
	8:30 AM	8:45 AM	0	0	0	10	0	45	24	220	0	1	219	23	542
	8:45 AM	9:00 AM	0	0	0	9	0	40	29	230	0	2	193	17	520
Total for:	7:00 AM	8:00 AM	0	0	0	45	0	205	109	912	0	3	739	101	2114
Total for:	8:00 AM	9:00 AM	0	0	0	48	0	164	124	888	0	5	866	99	2194
Tota Peak Hour:	7:45 AM	8:45 AM	0	0	0	54	0	172	124	918	0	4	869	117	2258
Overall PHF:	0.97														

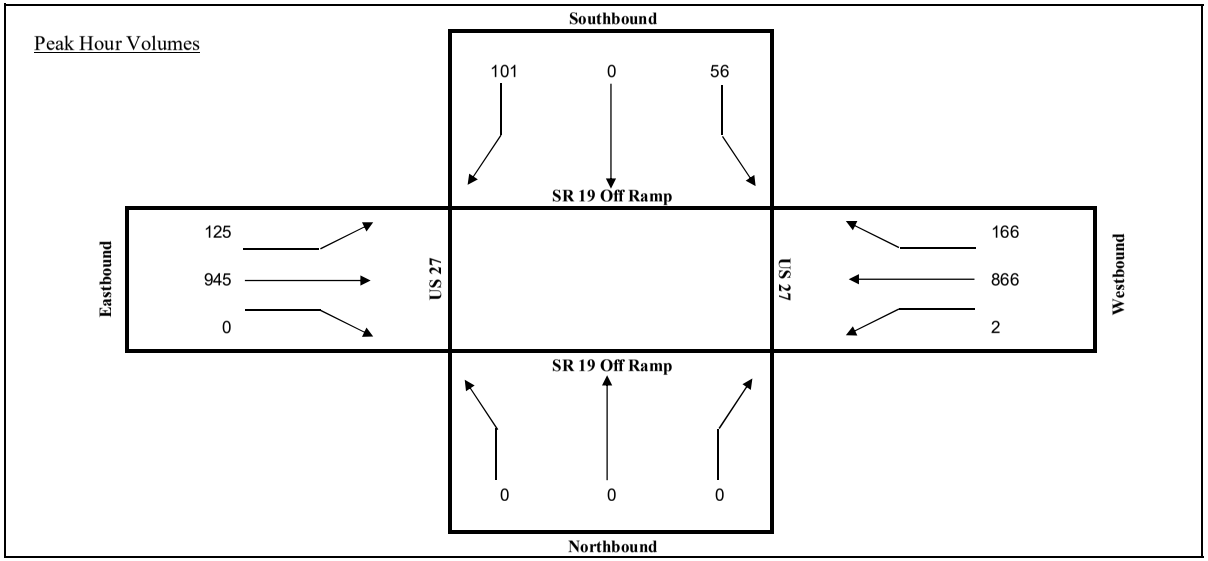


TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): SR 19 Off Ramp
Intersection (E/W): US 27
Date: 2/7/2019

			SR 19 Off Ramp			SR 19 Off Ramp			US 27			US 27			
			NB			SB			EB			WB			
Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	4:15 PM	0	0	0	12	0	33	20	209	0	2	155	20	451
4:15 PM	4:30 PM	0	0	0	15	0	27	29	221	0	0	189	40	521
4:30 PM	4:45 PM	0	0	0	11	0	30	33	239	0	1	182	39	535
4:45 PM	5:00 PM	0	0	0	15	0	27	35	257	0	0	210	44	588
5:00 PM	5:15 PM	0	0	0	13	0	24	31	219	0	0	234	39	560
5:15 PM	5:30 PM	0	0	0	17	0	20	26	230	0	1	240	44	578
5:30 PM	5:45 PM	0	0	0	13	0	24	33	217	0	0	214	25	526
5:45 PM	6:00 PM	0	0	0	11	0	26	32	183	0	0	187	24	463
Total for:	4:00 PM	5:00 PM	0	0	0	53	0	117	117	926	0	3	736	143	2095
Total for:	5:00 PM	6:00 PM	0	0	0	54	0	94	122	849	0	1	875	132	2127
Tota Peak Hour:	4:30 PM	5:30 PM	0	0	0	56	0	101	125	945	0	2	866	166	2261
Overall PHF:	0.96														



2017 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 1100 LAKE COUNTYWIDE

MOCF: 0.95

WEEK	DATES	SF	PSCF
1	01/01/2017 - 01/07/2017	0.99	1.04
2	01/08/2017 - 01/14/2017	0.99	1.04
3	01/15/2017 - 01/21/2017	1.00	1.05
4	01/22/2017 - 01/28/2017	0.98	1.03
* 5	01/29/2017 - 02/04/2017	0.97	1.02
* 6	02/05/2017 - 02/11/2017	0.96	1.01
* 7	02/12/2017 - 02/18/2017	0.94	0.99
* 8	02/19/2017 - 02/25/2017	0.94	0.99
* 9	02/26/2017 - 03/04/2017	0.94	0.99
*10	03/05/2017 - 03/11/2017	0.93	0.98
*11	03/12/2017 - 03/18/2017	0.93	0.98
*12	03/19/2017 - 03/25/2017	0.93	0.98
*13	03/26/2017 - 04/01/2017	0.94	0.99
*14	04/02/2017 - 04/08/2017	0.94	0.99
*15	04/09/2017 - 04/15/2017	0.95	1.00
*16	04/16/2017 - 04/22/2017	0.96	1.01
*17	04/23/2017 - 04/29/2017	0.97	1.02
18	04/30/2017 - 05/06/2017	0.98	1.03
19	05/07/2017 - 05/13/2017	0.99	1.04
20	05/14/2017 - 05/20/2017	1.00	1.05
21	05/21/2017 - 05/27/2017	1.02	1.07
22	05/28/2017 - 06/03/2017	1.03	1.08
23	06/04/2017 - 06/10/2017	1.05	1.11
24	06/11/2017 - 06/17/2017	1.06	1.12
25	06/18/2017 - 06/24/2017	1.07	1.13
26	06/25/2017 - 07/01/2017	1.07	1.13
27	07/02/2017 - 07/08/2017	1.07	1.13
28	07/09/2017 - 07/15/2017	1.08	1.14
29	07/16/2017 - 07/22/2017	1.07	1.13
30	07/23/2017 - 07/29/2017	1.06	1.12
31	07/30/2017 - 08/05/2017	1.05	1.11
32	08/06/2017 - 08/12/2017	1.04	1.09
33	08/13/2017 - 08/19/2017	1.04	1.09
34	08/20/2017 - 08/26/2017	1.05	1.11
35	08/27/2017 - 09/02/2017	1.06	1.12
36	09/03/2017 - 09/09/2017	1.08	1.14
37	09/10/2017 - 09/16/2017	1.09	1.15
38	09/17/2017 - 09/23/2017	1.07	1.13
39	09/24/2017 - 09/30/2017	1.05	1.11
40	10/01/2017 - 10/07/2017	1.03	1.08
41	10/08/2017 - 10/14/2017	1.01	1.06
42	10/15/2017 - 10/21/2017	0.99	1.04
43	10/22/2017 - 10/28/2017	0.99	1.04
44	10/29/2017 - 11/04/2017	0.99	1.04
45	11/05/2017 - 11/11/2017	0.99	1.04
46	11/12/2017 - 11/18/2017	1.00	1.05
47	11/19/2017 - 11/25/2017	1.00	1.05
48	11/26/2017 - 12/02/2017	1.00	1.05
49	12/03/2017 - 12/09/2017	0.99	1.04
50	12/10/2017 - 12/16/2017	0.99	1.04
51	12/17/2017 - 12/23/2017	0.99	1.04
52	12/24/2017 - 12/30/2017	0.99	1.04
53	12/31/2017 - 12/31/2017	1.00	1.05

* PEAK SEASON

Appendix E

HCM Analysis Worksheets - Existing Conditions & Signal Timings

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48

02/11/2019

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	289	87	90	340	318	244
Future Volume (veh/h)	289	87	90	340	318	244
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	1737	1811	1767	1811	1752	1589
Adj Flow Rate, veh/h	332	100	103	0	366	280
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	6	9	6	10	21
Cap, veh/h	795	1152	682		379	306
Arrive On Green	0.19	0.64	0.39	0.00	0.23	0.23
Sat Flow, veh/h	1654	1811	1767	1535	1668	1346
Grp Volume(v), veh/h	332	100	103	0	366	280
Grp Sat Flow(s),veh/h/ln	1654	1811	1767	1535	1668	1346
Q Serve(g_s), s	10.3	2.1	3.8	0.0	21.7	20.3
Cycle Q Clear(g_c), s	10.3	2.1	3.8	0.0	21.7	20.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	795	1152	682		379	306
V/C Ratio(X)	0.42	0.09	0.15		0.97	0.92
Avail Cap(c_a), veh/h	795	1152	682		379	306
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	10.7	7.0	20.0	0.0	38.3	37.7
Incr Delay (d2), s/veh	1.6	0.1	0.5	0.0	38.5	33.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.7	1.6	0.0	12.5	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	7.2	20.5	0.0	76.8	71.6
LnGrp LOS	B	A	C		E	E
Approach Vol, veh/h		432	103	A	646	
Approach Delay, s/veh		11.1	20.5		74.6	
Approach LOS		B	C		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.0	45.0		30.0		70.0
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	12.3	5.8		23.7		4.1
Green Ext Time (p_c), s	0.5	0.5		0.0		0.5

Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

Notes

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

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	299	67	78	358	400	405
Future Volume (veh/h)	299	67	78	358	400	405
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	1856	1900	1811	1841	1841	1856
Adj Flow Rate, veh/h	322	72	84	0	430	435
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	6	4	4	3
Cap, veh/h	863	1208	699		398	357
Arrive On Green	0.19	0.64	0.39	0.00	0.23	0.23
Sat Flow, veh/h	1767	1900	1811	1560	1753	1572
Grp Volume(v), veh/h	322	72	84	0	430	435
Grp Sat Flow(s),veh/h/ln	1767	1900	1811	1560	1753	1572
Q Serve(g_s), s	9.1	1.4	3.0	0.0	22.7	22.7
Cycle Q Clear(g_c), s	9.1	1.4	3.0	0.0	22.7	22.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	863	1208	699		398	357
V/C Ratio(X)	0.37	0.06	0.12		1.08	1.22
Avail Cap(c_a), veh/h	863	1208	699		398	357
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	10.4	6.9	19.8	0.0	38.7	38.7
Incr Delay (d2), s/veh	1.2	0.1	0.4	0.0	68.4	121.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.5	1.3	0.0	16.8	20.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.6	7.0	20.1	0.0	107.1	159.9
LnGrp LOS	B	A	C		F	F
Approach Vol, veh/h		394	84	A	865	
Approach Delay, s/veh		10.8	20.1		133.6	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.0	45.0		30.0		70.0
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	11.1	5.0		24.7		3.4
Green Ext Time (p_c), s	0.6	0.4		0.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	90.5
HCM 6th LOS	F

Notes

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

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	8	9	10	8	7	13	358	16	19	365	19
Future Vol, veh/h	25	8	9	10	8	7	13	358	16	19	365	19
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	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	29	9	10	12	9	8	15	416	19	22	424	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	943	944	435	945	946	426	446	0	0	435	0	0
Stage 1	479	479	-	456	456	-	-	-	-	-	-	-
Stage 2	464	465	-	489	490	-	-	-	-	-	-	-
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	233	233	621	242	262	628	948	-	-	941	-	-
Stage 1	549	506	-	584	568	-	-	-	-	-	-	-
Stage 2	560	514	-	561	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	215	221	621	221	249	628	948	-	-	941	-	-
Mov Cap-2 Maneuver	215	221	-	221	249	-	-	-	-	-	-	-
Stage 1	537	490	-	572	556	-	-	-	-	-	-	-
Stage 2	532	503	-	524	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	19.2	0.3	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	948	-	-	252	282	941	-	-
HCM Lane V/C Ratio	0.016	-	-	0.194	0.103	0.023	-	-
HCM Control Delay (s)	8.9	0	-	22.7	19.2	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	0.1	-	-

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	35	10	14	12	10	9	9	388	10	13	410	31
Future Vol, veh/h	35	10	14	12	10	9	9	388	10	13	410	31
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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	2	29	2	2	2	44	5	2	2	5	8
Mvmt Flow	38	11	15	13	11	10	10	426	11	14	451	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	958	953	468	961	965	432	485	0	0	437	0	0
Stage 1	496	496	-	452	452	-	-	-	-	-	-	-
Stage 2	462	457	-	509	513	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.52	6.49	7.12	6.52	6.22	4.54	-	-	4.12	-	-
Critical Hdwy Stg 1	6.19	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.018	3.561	3.518	4.018	3.318	2.596	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	259	543	236	255	624	891	-	-	1123	-	-
Stage 1	543	545	-	587	570	-	-	-	-	-	-	-
Stage 2	567	568	-	547	536	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	213	251	543	216	247	624	891	-	-	1123	-	-
Mov Cap-2 Maneuver	213	251	-	216	247	-	-	-	-	-	-	-
Stage 1	535	536	-	578	561	-	-	-	-	-	-	-
Stage 2	539	559	-	512	527	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	19.6	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	891	-	-	257	281	1123	-	-
HCM Lane V/C Ratio	0.011	-	-	0.252	0.121	0.013	-	-
HCM Control Delay (s)	9.1	0	-	23.7	19.6	8.2	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0.4	0	-	-

Intersection	
Int Delay, s/veh	14.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	18	375	12	8	369	2	6	4	21	33	3	19
Future Vol, veh/h	18	375	12	8	369	2	6	4	21	33	3	19
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	-	-	0	-	-	-	250	-	250	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	403	13	9	397	2	6	4	23	35	3	20

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	299	109	4	319	122	13	23	0	0	27	0	0
Stage 1	16	16	-	83	83	-	-	-	-	-	-	-
Stage 2	283	93	-	236	39	-	-	-	-	-	-	-
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	653	781	1080	634	768	1067	1592	-	-	1587	-	-
Stage 1	1004	882	-	925	826	-	-	-	-	-	-	-
Stage 2	724	818	-	767	862	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	372	761	1080	358	748	1067	1592	-	-	1587	-	-
Mov Cap-2 Maneuver	372	761	-	358	748	-	-	-	-	-	-	-
Stage 1	1000	878	-	921	808	-	-	-	-	-	-	-
Stage 2	360	800	-	408	859	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	16.4	15.9	1.4	4.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	NBLn2	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1592	-	-	726	1080	732	1587	-	-
HCM Lane V/C Ratio	0.004	-	-	0.582	0.012	0.557	0.022	-	-
HCM Control Delay (s)	7.3	-	-	16.6	8.4	15.9	7.3	-	-
HCM Lane LOS	A	-	-	C	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.8	0	3.5	0.1	-	-

Intersection	
Int Delay, s/veh	15.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	391	14	17	418	2	3	4	11	13	2	13
Future Vol, veh/h	10	391	14	17	418	2	3	4	11	13	2	13
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	-	-	0	-	-	-	250	-	250	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	4	2	2	19	2	33	2	9	2	2	8
Mvmt Flow	11	439	16	19	470	2	3	4	12	15	2	15

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	286	57	4	284	62	10	17	0	0	16	0	0
Stage 1	10	10	-	40	40	-	-	-	-	-	-	-
Stage 2	276	47	-	244	22	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.54	6.22	7.12	6.69	6.22	4.43	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.54	-	6.12	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.54	-	6.12	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.036	3.318	3.518	4.171	3.318	2.497	-	-	2.218	-	-
Pot Cap-1 Maneuver	666	830	1080	668	797	1071	1420	-	-	1602	-	-
Stage 1	1011	883	-	975	829	-	-	-	-	-	-	-
Stage 2	730	852	-	760	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	346	821	1080	377	788	1071	1420	-	-	1602	-	-
Mov Cap-2 Maneuver	346	821	-	377	788	-	-	-	-	-	-	-
Stage 1	1009	881	-	973	822	-	-	-	-	-	-	-
Stage 2	309	844	-	375	842	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	15.1	18.1	1.3	3.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	NBLn2	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1420	-	-	794	1080	757	1602	-	-
HCM Lane V/C Ratio	0.002	-	-	0.567	0.015	0.649	0.009	-	-
HCM Control Delay (s)	7.5	-	-	15.3	8.4	18.1	7.3	-	-
HCM Lane LOS	A	-	-	C	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.6	0	4.8	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWU	SWL	SWR
Lane Configurations											
Traffic Vol, veh/h	0	0	0	405	42	1	346	0	9	0	6
Future Vol, veh/h	0	0	0	405	42	1	346	0	9	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	None	-	-	-
Storage Length	0	-	-	-	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-
Grade, %	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	8	12	2	10	2	2	2	2
Mvmt Flow	0	0	0	482	50	1	412	0	11	0	7

Major/Minor	Minor2		Major1			Major2			Minor1		
Conflicting Flow All	925	412	-	0	0	532	0	0	0	921	507
Stage 1	414	-	-	-	-	-	-	-	0	507	-
Stage 2	511	-	-	-	-	-	-	-	0	414	-
Critical Hdwy	7.12	6.22	-	-	-	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	6.12	-	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	250	640	0	-	-	1036	-	0	0	251	566
Stage 1	616	-	0	-	-	-	-	0	0	548	-
Stage 2	545	-	0	-	-	-	-	0	0	616	-
Platoon blocked, %				-	-		-		-		
Mov Cap-1 Maneuver	247	640	-	-	-	1036	-	-	0	251	566
Mov Cap-2 Maneuver	247	-	-	-	-	-	-	-	0	251	-
Stage 1	616	-	-	-	-	-	-	-	0	548	-
Stage 2	538	-	-	-	-	-	-	-	0	615	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	0	0	0	11.4
HCM LOS	A			B

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	-	1036	-	566
HCM Lane V/C Ratio	-	-	-	0.001	-	0.013
HCM Control Delay (s)	-	-	0	8.5	0	11.4
HCM Lane LOS	-	-	A	A	A	B
HCM 95th %tile Q(veh)	-	-	-	0	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWU	SWL	SWR
Lane Configurations											
Traffic Vol, veh/h	1	1	0	373	12	5	423	0	7	0	3
Future Vol, veh/h	1	1	0	373	12	5	423	0	7	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	-	None	-	-	None	-	-	-
Storage Length	0	-	-	-	-	-	-	-	-	0	-
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
Heavy Vehicles, %	2	2	2	3	2	2	10	2	2	2	2
Mvmt Flow	1	1	0	414	13	6	470	0	8	0	3

Major/Minor	Minor2		Major1			Major2			Minor1		
Conflicting Flow All	904	470	-	0	0	427	0	0	0	904	421
Stage 1	482	-	-	-	-	-	-	-	0	421	-
Stage 2	422	-	-	-	-	-	-	-	0	483	-
Critical Hdwy	7.12	6.22	-	-	-	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	6.12	-	-	-	-	-	-	-	-	6.12	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-	-	-	-	6.12	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	258	594	0	-	-	1132	-	0	0	258	632
Stage 1	565	-	0	-	-	-	-	0	0	610	-
Stage 2	609	-	0	-	-	-	-	0	0	565	-
Platoon blocked, %				-	-		-		-		
Mov Cap-1 Maneuver	255	594	-	-	-	1132	-	-	0	255	632
Mov Cap-2 Maneuver	255	-	-	-	-	-	-	-	0	255	-
Stage 1	565	-	-	-	-	-	-	-	0	610	-
Stage 2	606	-	-	-	-	-	-	-	0	559	-

Approach	EB	NB	SB	SW
HCM Control Delay, s	14.7	0	0.1	10.7
HCM LOS	B			B

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	374	1132	-	632
HCM Lane V/C Ratio	-	-	0.006	0.005	-	0.005
HCM Control Delay (s)	-	-	14.7	8.2	0	10.7
HCM Lane LOS	-	-	B	A	A	B
HCM 95th %tile Q(veh)	-	-	0	0	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	9	1	438	350	3
Future Vol, veh/h	6	9	1	438	350	3
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	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	8	10	2
Mvmt Flow	7	11	1	515	412	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	931	414	416	0	-	0
Stage 1	414	-	-	-	-	-
Stage 2	517	-	-	-	-	-
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	296	638	1143	-	-	-
Stage 1	667	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	296	638	1143	-	-	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1143	-	436	-	-
HCM Lane V/C Ratio	0.001	-	0.04	-	-
HCM Control Delay (s)	8.2	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	2	5	385	423	8
Future Vol, veh/h	6	2	5	385	423	8
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	85	85	85	85	85	85
Heavy Vehicles, %	6	2	2	3	6	2
Mvmt Flow	7	2	6	453	498	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	968	503	507	0	-	0
Stage 1	503	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Critical Hdwy	6.46	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	277	569	1058	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	275	569	1058	-	-	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1058	-	316	-	-
HCM Lane V/C Ratio	0.006	-	0.03	-	-
HCM Control Delay (s)	8.4	0	16.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	62	359	74	64	364
Future Vol, veh/h	78	62	359	74	64	364
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	97	97	97	97	97	97
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	80	64	370	76	66	375

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	877	370	0	0	446	0
Stage 1	370	-	-	-	-	-
Stage 2	507	-	-	-	-	-
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	277	648	-	-	1078	-
Stage 1	626	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	256	648	-	-	1078	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	256	648	1078	-
HCM Lane V/C Ratio	-	-	0.314	0.099	0.061	-
HCM Control Delay (s)	-	-	25.4	11.2	8.6	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.3	0.2	-

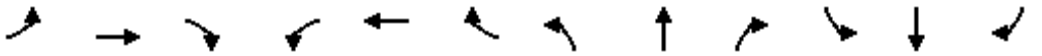
Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	82	57	446	80	49	459
Future Vol, veh/h	82	57	446	80	49	459
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	97	97	97	97	97	97
Heavy Vehicles, %	5	2	2	15	6	2
Mvmt Flow	85	59	460	82	51	473

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1035	460	0	0	542	0
Stage 1	460	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.45	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	254	601	-	-	1007	-
Stage 1	629	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	601	-	-	1007	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	519	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	601	1007	-
HCM Lane V/C Ratio	-	-	0.358	0.098	0.05	-
HCM Control Delay (s)	-	-	28.5	11.6	8.8	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.3	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	795	30	43	854	127	45	156	96	91	75	134
Future Volume (veh/h)	224	795	30	43	854	127	45	156	96	91	75	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1841	1648	1826	1841	1722	1870	1870	1870	1841	1870	1841
Adj Flow Rate, veh/h	241	855	0	46	918	0	48	168	103	98	81	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	4	17	5	4	12	2	2	2	4	2	4
Cap, veh/h	271	1062		275	1062		70	192	111	232	715	
Arrive On Green	0.16	0.30	0.00	0.16	0.30	0.00	0.20	0.20	0.20	0.13	0.38	0.00
Sat Flow, veh/h	1711	3497	1397	1739	3497	1459	198	945	545	1753	1870	1560
Grp Volume(v), veh/h	241	855	0	46	918	0	319	0	0	98	81	0
Grp Sat Flow(s),veh/h/ln	1711	1749	1397	1739	1749	1459	1689	0	0	1753	1870	1560
Q Serve(g_s), s	19.3	31.5	0.0	3.2	34.7	0.0	19.9	0.0	0.0	7.2	3.9	0.0
Cycle Q Clear(g_c), s	19.3	31.5	0.0	3.2	34.7	0.0	25.9	0.0	0.0	7.2	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.15		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	271	1062		275	1062		373	0	0	232	715	
V/C Ratio(X)	0.89	0.81		0.17	0.86		0.85	0.00	0.00	0.42	0.11	
Avail Cap(c_a), veh/h	271	1062		275	1062		373	0	0	232	715	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.7	44.9	0.0	51.0	46.0	0.0	54.6	0.0	0.0	55.8	27.9	0.0
Incr Delay (d2), s/veh	32.2	6.5	0.0	1.3	9.4	0.0	21.3	0.0	0.0	5.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	14.0	0.0	1.5	15.7	0.0	13.2	0.0	0.0	3.5	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.9	51.5	0.0	52.3	55.4	0.0	75.9	0.0	0.0	61.4	28.3	0.0
LnGrp LOS	F	D		D	E		E	A	A	E	C	
Approach Vol, veh/h		1096	A		964	A		319			179	A
Approach Delay, s/veh		59.9			55.3			75.9			46.4	
Approach LOS		E			E			E			D	

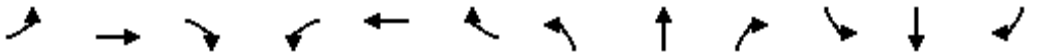
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	50.0		60.0	30.0	50.0	25.0	35.0				
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5				
Max Green Setting (Gmax), s	* 22	42.5		28.5	22.1	42.5	18.5	28.5				
Max Q Clear Time (g_c+I1), s	21.3	36.7		5.9	5.2	33.5	9.2	27.9				
Green Ext Time (p_c), s	0.1	2.7		0.3	0.1	3.4	0.1	0.1				

Intersection Summary		
HCM 6th Ctrl Delay	59.2	
HCM 6th LOS	E	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	783	53	127	775	91	69	55	111	154	187	219
Future Volume (veh/h)	306	783	53	127	775	91	69	55	111	154	187	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1841	1781	1870	1826	1826	1841	1841	1841	1870	1870	1811
Adj Flow Rate, veh/h	306	783	0	127	775	0	69	55	111	154	187	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	4	8	2	5	5	4	4	4	2	2	6
Cap, veh/h	267	1062		281	1053		110	85	144	235	715	
Arrive On Green	0.16	0.30	0.00	0.16	0.30	0.00	0.20	0.20	0.20	0.13	0.38	0.00
Sat Flow, veh/h	1682	3497	1510	1781	3469	1547	375	417	709	1781	1870	1535
Grp Volume(v), veh/h	306	783	0	127	775	0	235	0	0	154	187	0
Grp Sat Flow(s),veh/h/ln	1682	1749	1510	1781	1735	1547	1502	0	0	1781	1870	1535
Q Serve(g_s), s	22.2	28.1	0.0	9.1	28.0	0.0	16.7	0.0	0.0	11.5	9.6	0.0
Cycle Q Clear(g_c), s	22.2	28.1	0.0	9.1	28.0	0.0	20.5	0.0	0.0	11.5	9.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	267	1062		281	1053		339	0	0	235	715	
V/C Ratio(X)	1.15	0.74		0.45	0.74		0.69	0.00	0.00	0.65	0.26	
Avail Cap(c_a), veh/h	267	1062		281	1053		339	0	0	235	715	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.9	43.7	0.0	53.5	43.7	0.0	52.3	0.0	0.0	57.7	29.7	0.0
Incr Delay (d2), s/veh	100.7	4.6	0.0	5.2	4.6	0.0	11.1	0.0	0.0	13.3	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	12.3	0.0	4.3	12.2	0.0	8.8	0.0	0.0	6.0	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	159.6	48.3	0.0	58.6	48.3	0.0	63.5	0.0	0.0	71.0	30.6	0.0
LnGrp LOS	F	D		E	D		E	A	A	E	C	
Approach Vol, veh/h		1089	A		902	A		235			341	A
Approach Delay, s/veh		79.6			49.8			63.5			48.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	50.0		60.0	30.0	50.0	25.0	35.0				
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5				
Max Green Setting (Gmax), s	* 22	42.5		28.5	22.1	42.5	18.5	28.5				
Max Q Clear Time (g_c+I1), s	24.2	30.0		11.6	11.1	30.1	13.5	22.5				
Green Ext Time (p_c), s	0.0	3.7		0.8	0.2	3.7	0.2	0.6				

Intersection Summary		
HCM 6th Ctrl Delay		63.5
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	124	918	0	4	869	117	0	0	0	54	0	172
Future Vol, veh/h	124	918	0	4	869	117	0	0	0	54	0	172
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	-	-	Free	-	-	None	-	-	Free
Storage Length	320	-	-	-	-	480	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	2	2	4	5	0	0	0	2	0	6
Mvmt Flow	128	946	0	4	896	121	0	0	0	56	0	177

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	896	0	-	946	0	0			1633	-	-
Stage 1	-	-	-	-	-	-			904	-	-
Stage 2	-	-	-	-	-	-			729	-	-
Critical Hdwy	4.16	-	-	4.14	-	-			6.84	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	2.23	-	-	2.22	-	-			3.52	-	-
Pot Cap-1 Maneuver	747	-	0	721	-	0			92	0	0
Stage 1	-	-	0	-	-	0			355	0	0
Stage 2	-	-	0	-	-	0			438	0	0
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	747	-	-	721	-	-			75	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-			192	0	-
Stage 1	-	-	-	-	-	-			294	0	-
Stage 2	-	-	-	-	-	-			433	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0.1	31.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	747	-	721	-	192	-
HCM Lane V/C Ratio	0.171	-	0.006	-	0.29	-
HCM Control Delay (s)	10.8	-	10	0.1	31.2	0
HCM Lane LOS	B	-	B	A	D	A
HCM 95th %tile Q(veh)	0.6	-	0	-	1.1	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	125	945	0	2	866	166	0	0	0	56	0	101
Future Vol, veh/h	125	945	0	2	866	166	0	0	0	56	0	101
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	-	-	Free	-	-	None	-	-	Free
Storage Length	320	-	-	-	-	480	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	10	3	2	2	5	3	0	0	0	4	0	7
Mvmt Flow	130	984	0	2	902	173	0	0	0	58	0	105

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	902	0	-	984	0	0			1658	-	-
Stage 1	-	-	-	-	-	-			906	-	-
Stage 2	-	-	-	-	-	-			752	-	-
Critical Hdwy	4.3	-	-	4.14	-	-			6.88	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-			5.88	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.88	-	-
Follow-up Hdwy	2.3	-	-	2.22	-	-			3.54	-	-
Pot Cap-1 Maneuver	701	-	0	698	-	0			87	0	0
Stage 1	-	-	0	-	-	0			350	0	0
Stage 2	-	-	0	-	-	0			421	0	0
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	701	-	-	698	-	-			70	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-			185	0	-
Stage 1	-	-	-	-	-	-			285	0	-
Stage 2	-	-	-	-	-	-			418	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	33.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	701	-	698	-	185	-
HCM Lane V/C Ratio	0.186	-	0.003	-	0.315	-
HCM Control Delay (s)	11.3	-	10.2	0	33.2	0
HCM Lane LOS	B	-	B	A	D	A
HCM 95th %tile Q(veh)	0.7	-	0	-	1.3	-

CARTEGRAPH ID: LC-S-043 **DATE: 05/15/2015**

INTERSECTION NAME AND ID#: SR 19 & CR 48 076

PHASE	1	2	3	4	5	6	7	8
	EBL	WB		SB		EB		
INITIAL	8	15		8		15		
PASSAGE	3	3		3		3		
YELLOW	4.4	4.4		4.8		4.4		
RED CLEAR	2.1	2.0		2.5		2.0		
MAX 1	25	45		30		45		
MAX 2								
WALK								
DON'T WALK								
RECALL				SOFT				
DET. FUNC.	L	L		L		L		

SYSTEM TIMING

PATTERN	CYCLE Sec.	OFFSET Sec.	COORDINATED Phase	COORDINATED Sequence	BASE DAY 1 Mon.- Fri.		BASE DAY 2 Sat.- Sun.	

SPLIT ALLOCATION - Sec.

PHASE	1	2	3	4	5	6	7	8

NOTES: Naztec 980

CARTEGRAPH ID: LC-S-065 **DATE: 05/15/2015**

INTERSECTION NAME AND ID#: US 27 & SR 19 (TurnPike South) 046

PHASE	1	2	3	4	5	6	7	8
	NBL	SB		WB	SBL	NB	WBL	EB
INITIAL	5	15		8	5	15	6	8
PASSAGE	3	3		3	3	3	3	3
YELLOW	5.5	5.5		3.4	5.5	5.5	3.4	3.4
RED CLEAR	2.3	2.0		3.1	2.4	2.0	3.1	3.1
MAX 1	30	50		35	30	50	25	35
MAX 2								
WALK								
DON'T WALK								
RECALL		Min				Min		
DET. FUNC.		L				L		

SPLIT ALLOCATION - Sec.

PATTERN	CYCLE Sec.	OFFSET Sec.	COORDINATED Phase	COORDINATED Sequence	BASE DAY 1 Mon.- Fri.		BASE DAY 2 Sat.- Sun.	

SPLIT ALLOCATION - Sec.

PHASE	1	2	3	4	5	6	7	8

NOTES: Naztec TS-2

Appendix F
ITE Trip Generation Sheets

Single-Family Detached Housing
(210)

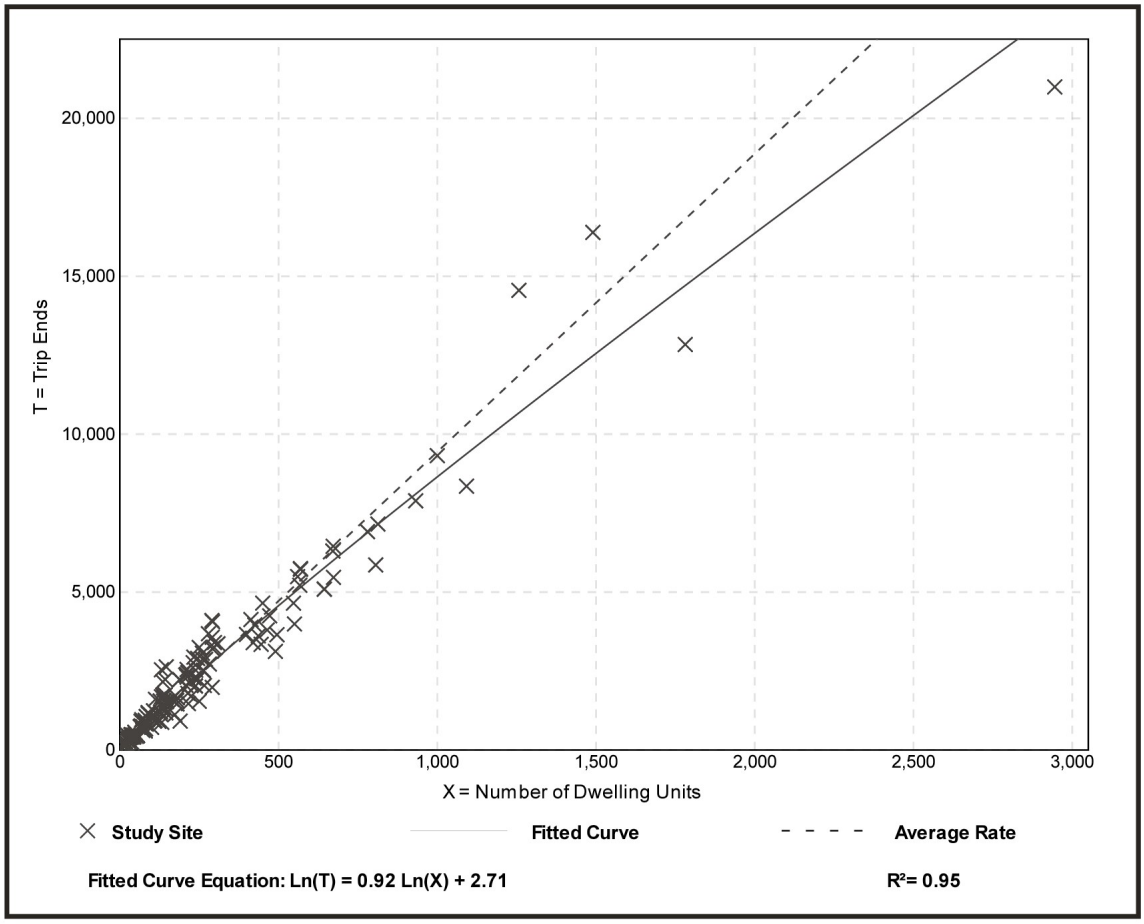
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



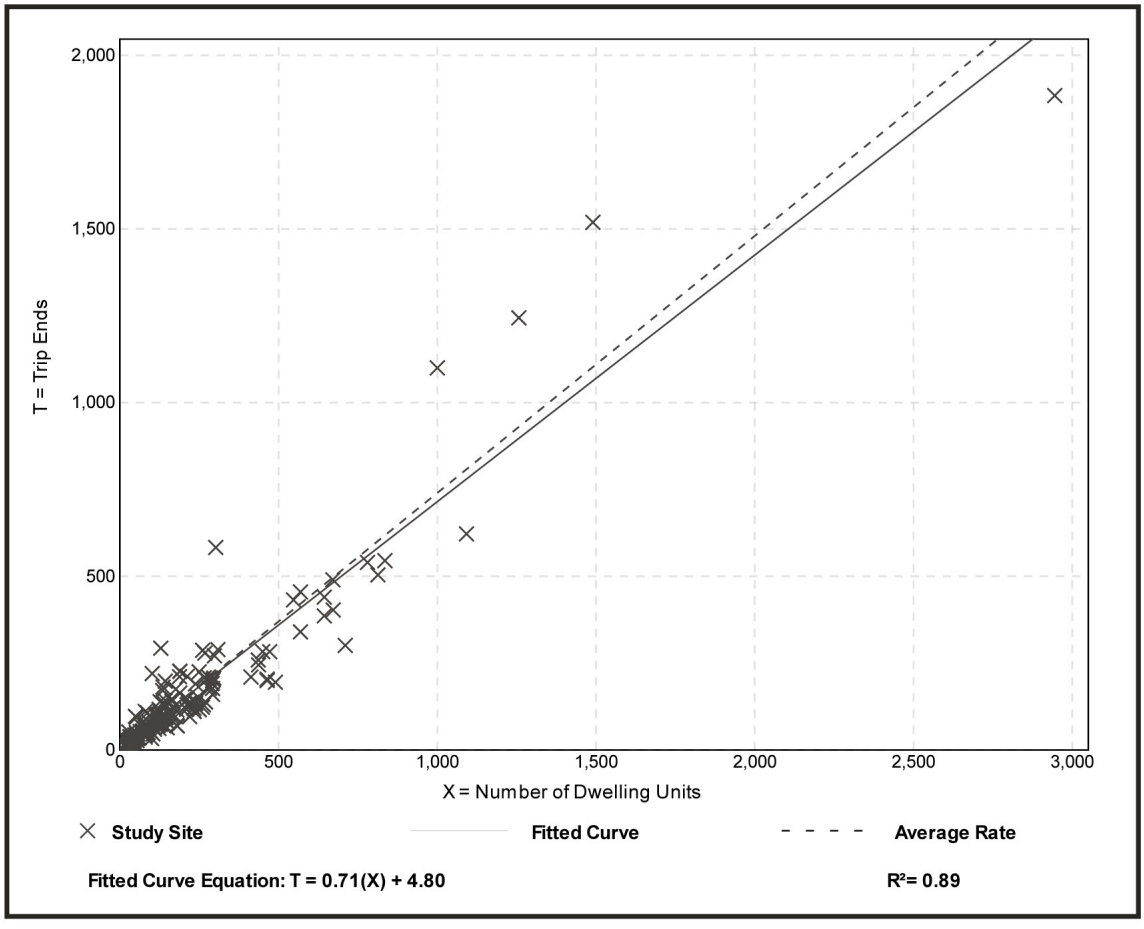
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 173
Avg. Num. of Dwelling Units: 219
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



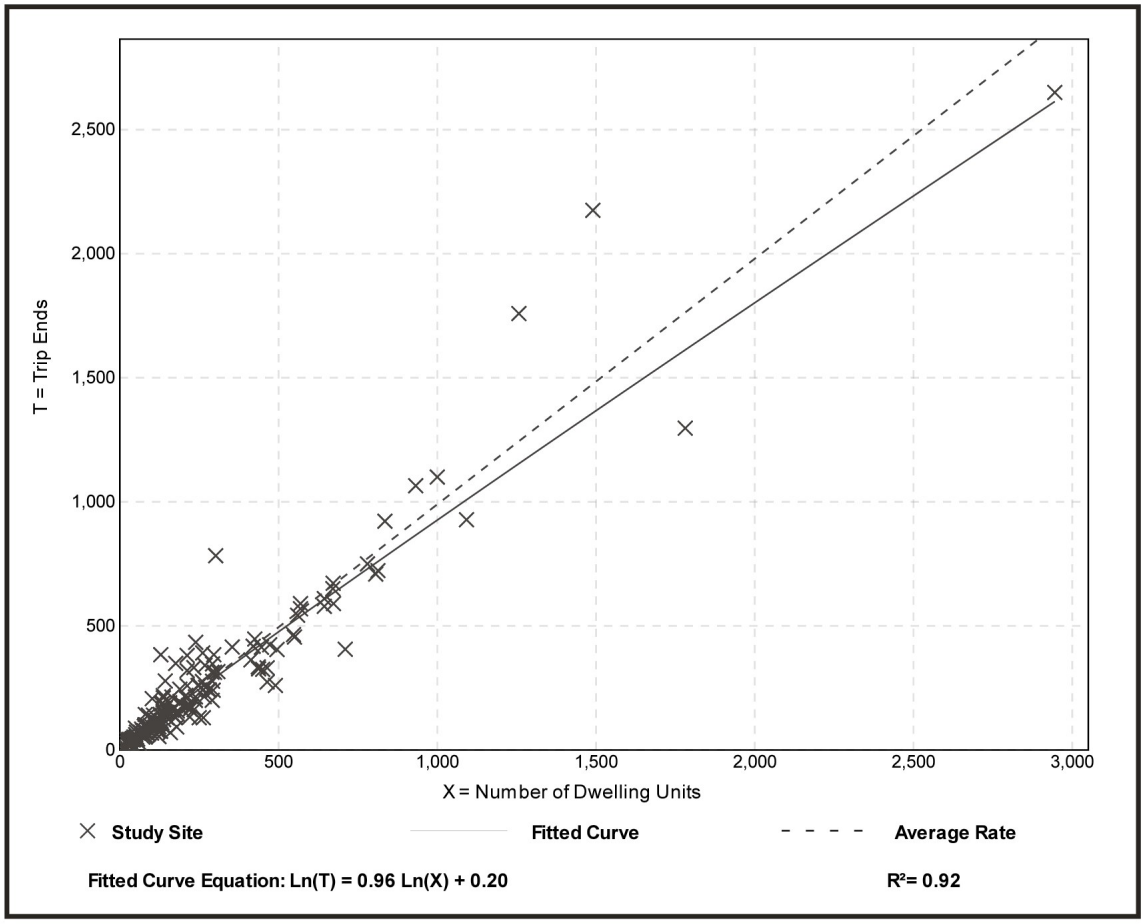
Single-Family Detached Housing
(210)

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

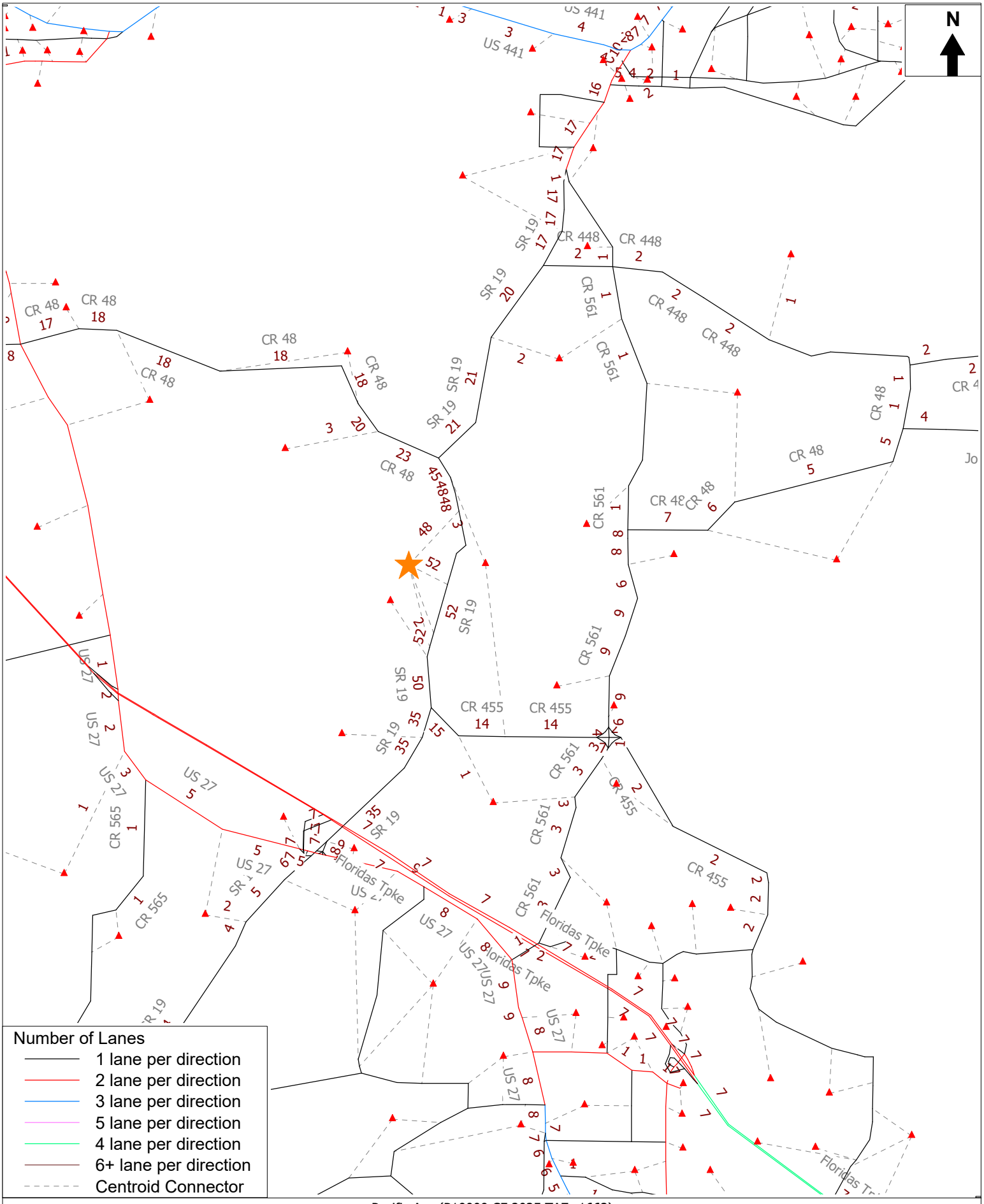
Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



Appendix G
CFRPM Model Output



Pacific Ace (P19009 CF 2025 TAZ=1662)
Project Distribution
C:\FSUTMS\D5\CFRPMV61_Daily\Base\CF_2025\P19011\Output\HWYLOAD_C25.NET 1/28/2019

cube

Appendix H
Growth Trend Analysis & Historical Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 11 - LAKE

SITE: 0494 - ON SR-19, 0.3 MI. N OF CR-48 (RCLP) CAB NW

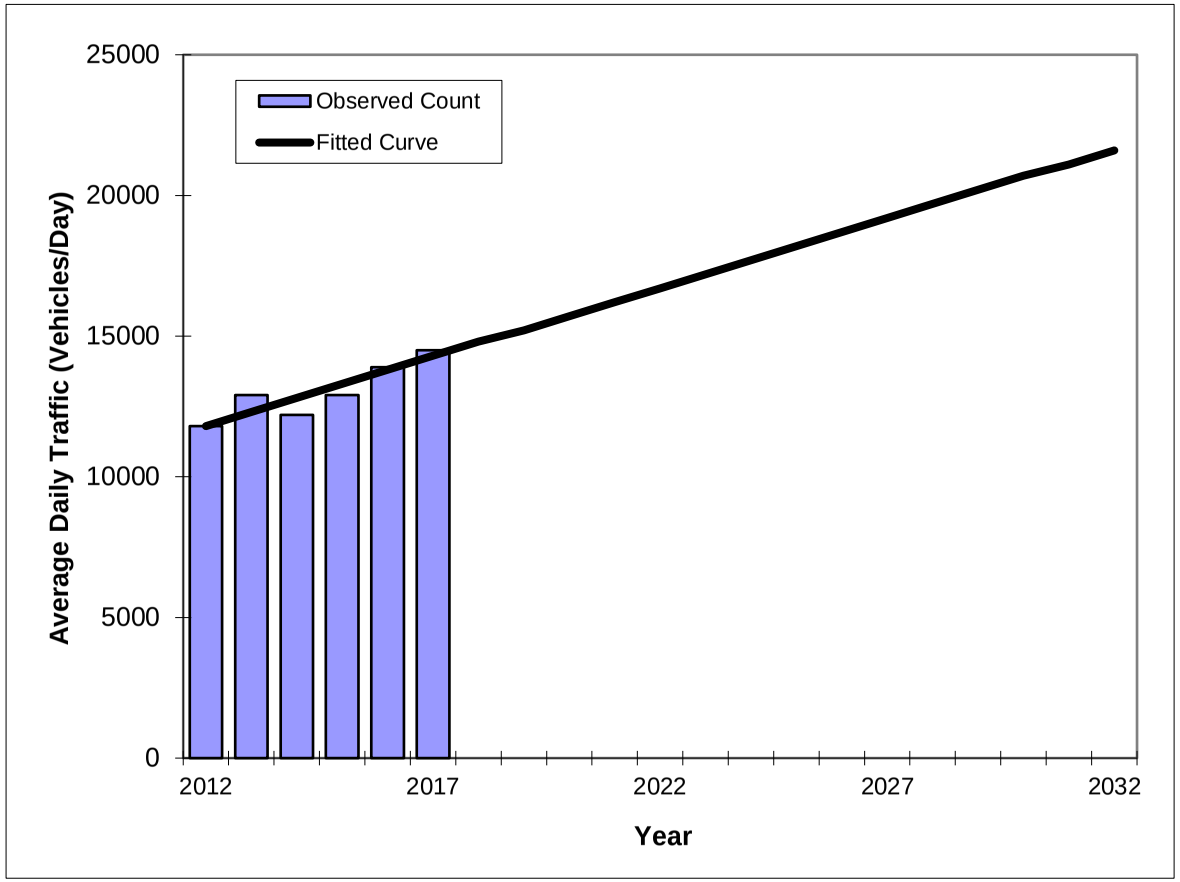
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	14500 C	N 7400	S 7100	9.00	54.20	11.50
2016	13900 C	N 7000	S 6900	9.00	53.90	11.20
2015	12900 C	N 6400	S 6500	9.00	54.60	11.00
2014	12200 C	N 6100	S 6100	9.00	54.50	15.10
2013	12900 C	N 6500	S 6400	9.00	54.70	24.50
2012	11800 C	N 5900	S 5900	9.00	55.10	11.10
2011	10400 C	N 4600	S 5800	9.00	54.20	10.10
2010	11000 C	N 4900	S 6100	9.86	54.75	7.60
2009	12400 C	N 6200	S 6200	9.96	54.94	12.60
2008	12300 C	N 6300	S 6000	10.42	55.39	12.60
2007	14000 C	N 7000	S 7000	10.24	59.56	11.20
2006	14400 C	N 7200	S 7200	10.23	59.48	11.00
2005	13800 C	N 6800	S 7000	10.30	57.70	15.00
2004	13000 C	N 6500	S 6500	10.10	57.60	15.00
2003	12500 C	N 6200	S 6300	9.80	55.30	12.90
2002	12100 C	N 6200	S 5900	10.10	57.30	11.70

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

SR 19 -- CR 561 to Lake Harris North End

County:	LAKE
Station #:	494
Highway:	SR 19



Year	Traffic (ADT/AADT) Count*	Trend**
2012	11800	11800
2013	12900	12300
2014	12200	12800
2015	12900	13300
2016	13900	13800
2017	14500	14300
2024 Opening Year Trend		
2024	N/A	17700
2030 Mid-Year Trend		
2030	N/A	20700
2040 Design Year Trend		
2040	N/A	25600
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	491
Trend R-squared:	82.0%
Trend Annual Historic Growth Rate:	4.24%
Trend Growth Rate (2017 to Design Year):	3.44%
Printed:	6-Feb-19

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 11 - LAKE

SITE: 0495 - ON SR-19, 0.326 MI. S OF CR-48 (RVL)

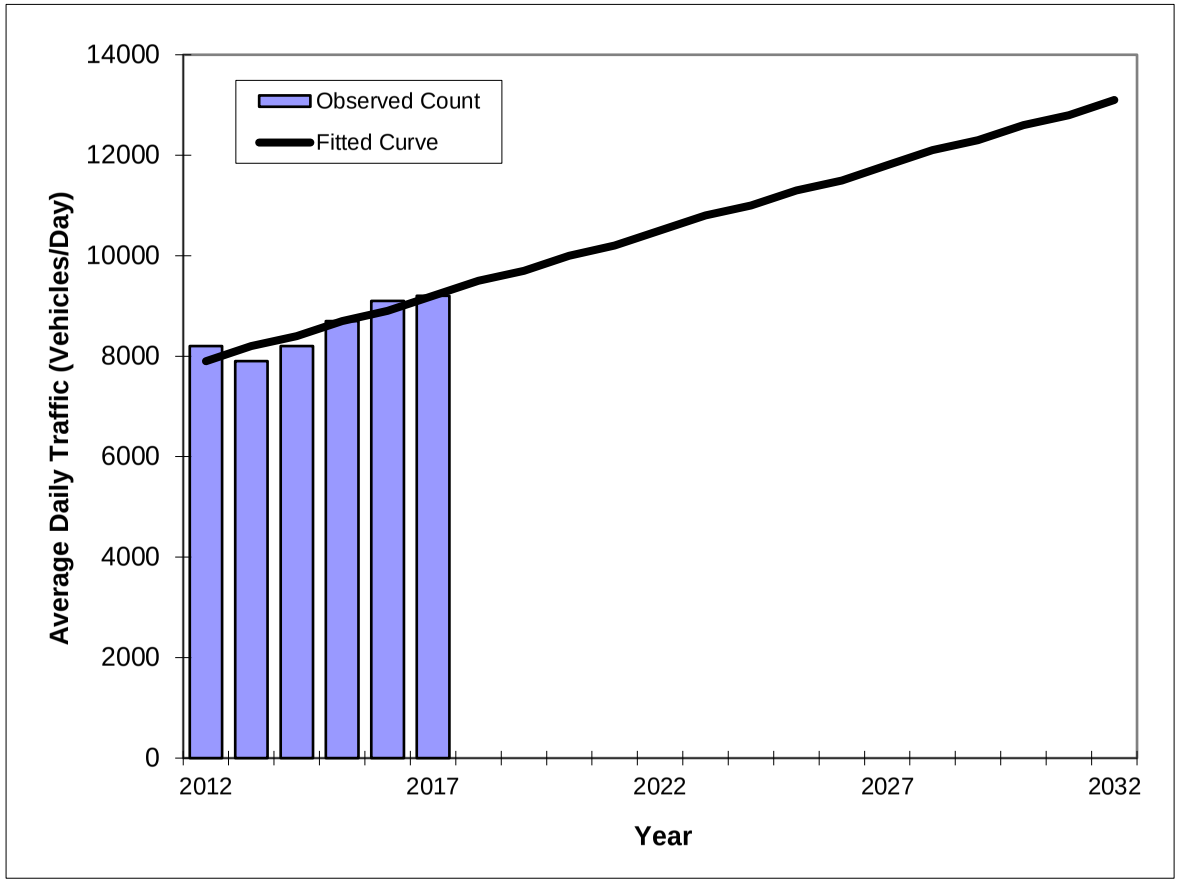
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	9200 C	N 4600	S 4600	9.00	54.20	16.50
2016	9100 C	N 4600	S 4500	9.00	53.90	19.70
2015	8700 C	N 4400	S 4300	9.00	54.60	13.90
2014	8200 C	N 4100	S 4100	9.00	54.50	15.80
2013	8700 C	N 4400	S 4300	9.00	54.70	16.70
2012	8200 C	N 4100	S 4100	9.00	55.10	14.80
2011	7900 C	N 4000	S 3900	9.00	54.20	15.10
2010	8200 C	N 4000	S 4200	9.86	54.75	13.50
2009	9000 C	N 4700	S 4300	9.96	54.94	9.90
2008	8200 C	N 4100	S 4100	10.42	55.39	16.40
2007	8800 C	N 4400	S 4400	10.24	59.56	18.60
2006	9200 C	N 4600	S 4600	10.23	59.48	21.50
2005	8800 C	N 4600	S 4200	10.30	57.70	14.50
2004	8100 C	N 4100	S 4000	10.10	57.60	21.90
2003	7600 C	N 3800	S 3800	9.80	55.30	19.80
2002	8800 C	N 4500	S 4300	10.10	57.30	14.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

SR 19 -- CR 480 to Central Ave

County:	LAKE
Station #:	495
Highway:	SR 19



Year	Traffic (ADT/AADT) Count*	Trend**
2012	8200	7900
2013	7900	8200
2014	8200	8400
2015	8700	8700
2016	9100	8900
2017	9200	9200
2024 Opening Year Trend		
2024	N/A	11000
2030 Mid-Year Trend		
2030	N/A	12600
2040 Design Year Trend		
2040	N/A	15200
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	260
Trend R-squared:	83.6%
Trend Annual Historic Growth Rate:	3.29%
Trend Growth Rate (2017 to Design Year):	2.84%
Printed:	6-Feb-19

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 11 - LAKE

SITE: 0255 - ON SR-19, 0.021 MI. S OF CR-455 (RVL) CAB NW

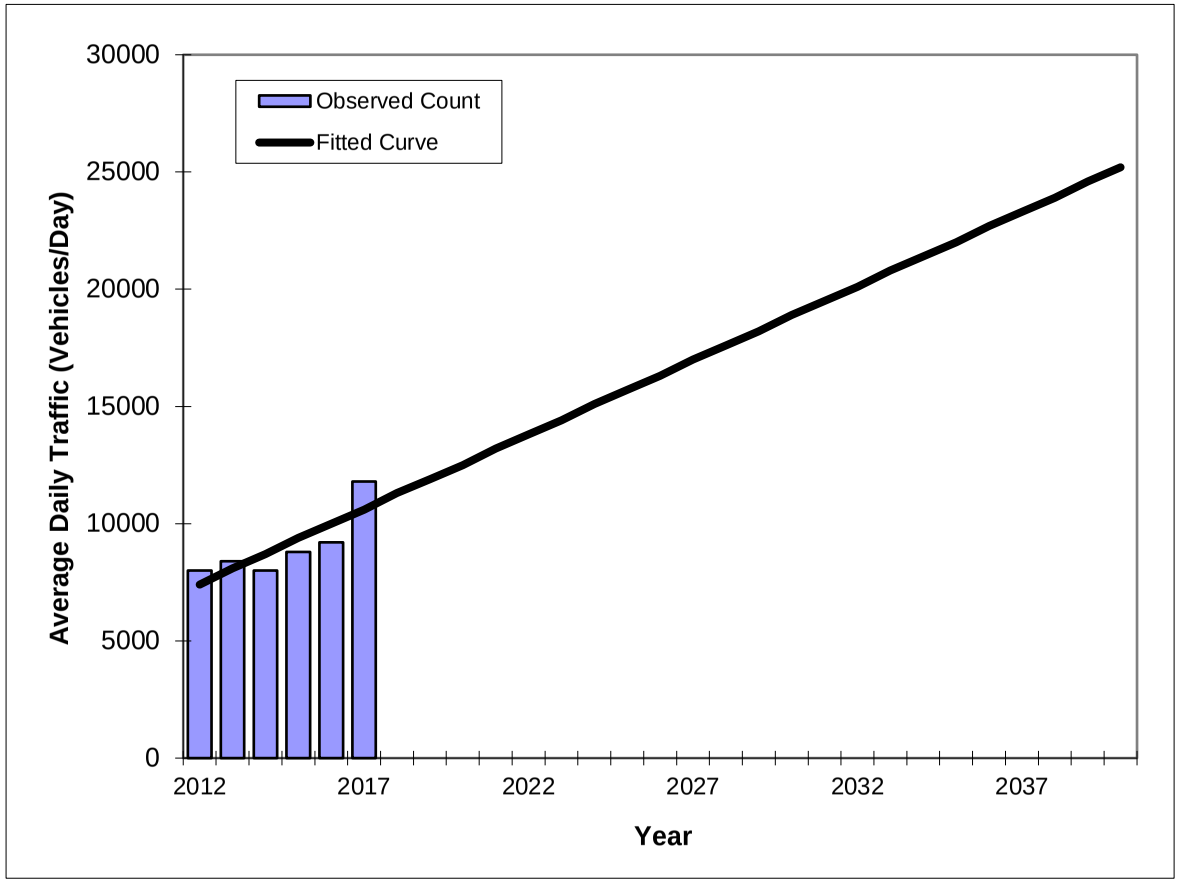
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	11800 C	N 5800	S 6000	9.50	54.20	16.50
2016	9200 C	N 4600	S 4600	9.00	53.90	19.70
2015	8800 C	N 4400	S 4400	9.00	54.60	13.90
2014	8000 C	N 4000	S 4000	9.00	54.50	15.80
2013	8400 C	N 4100	S 4300	9.00	54.70	16.70
2012	8000 C	N 4000	S 4000	9.00	55.10	14.80
2011	7600 C	N 3800	S 3800	9.00	54.20	15.10
2010	7700 C	N 3900	S 3800	9.86	54.75	13.50
2009	7700 C	N 3900	S 3800	9.96	54.94	9.90
2008	8100 C	N 4100	S 4000	10.42	55.39	16.40
2007	8800 C	N 4400	S 4400	10.24	59.56	18.60
2006	9700 C	N 4800	S 4900	10.23	59.48	21.50
2005	8800 C	N 4400	S 4400	10.30	57.70	14.50
2004	8000 C	N 4000	S 4000	10.10	57.60	21.90
2003	7800 C	N 3900	S 3900	9.80	55.30	19.80
2002	9500 C	N 4800	S 4700	10.10	57.30	14.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

SR 19 -- Central Ave to CR 455

County:	LAKE
Station #:	255
Highway:	SR 19



Year	Traffic (ADT/AADT) Count*	Trend**
2012	8000	7400
2013	8400	8100
2014	8000	8700
2015	8800	9400
2016	9200	10000
2017	11800	10600
2024 Opening Year Trend		
2024	N/A	15100
2030 Mid-Year Trend		
2030	N/A	18900
2040 Design Year Trend		
2040	N/A	25200
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	634
Trend R-squared:	68.5%
Trend Annual Historic Growth Rate:	8.65%
Trend Growth Rate (2017 to Design Year):	5.99%
Printed:	6-Feb-19

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 97 - FL. TURNPIKE

SITE: 2851 - MAINLINE NB OFF RAMP TO US-27/LEESBURG SOUTH, M285A

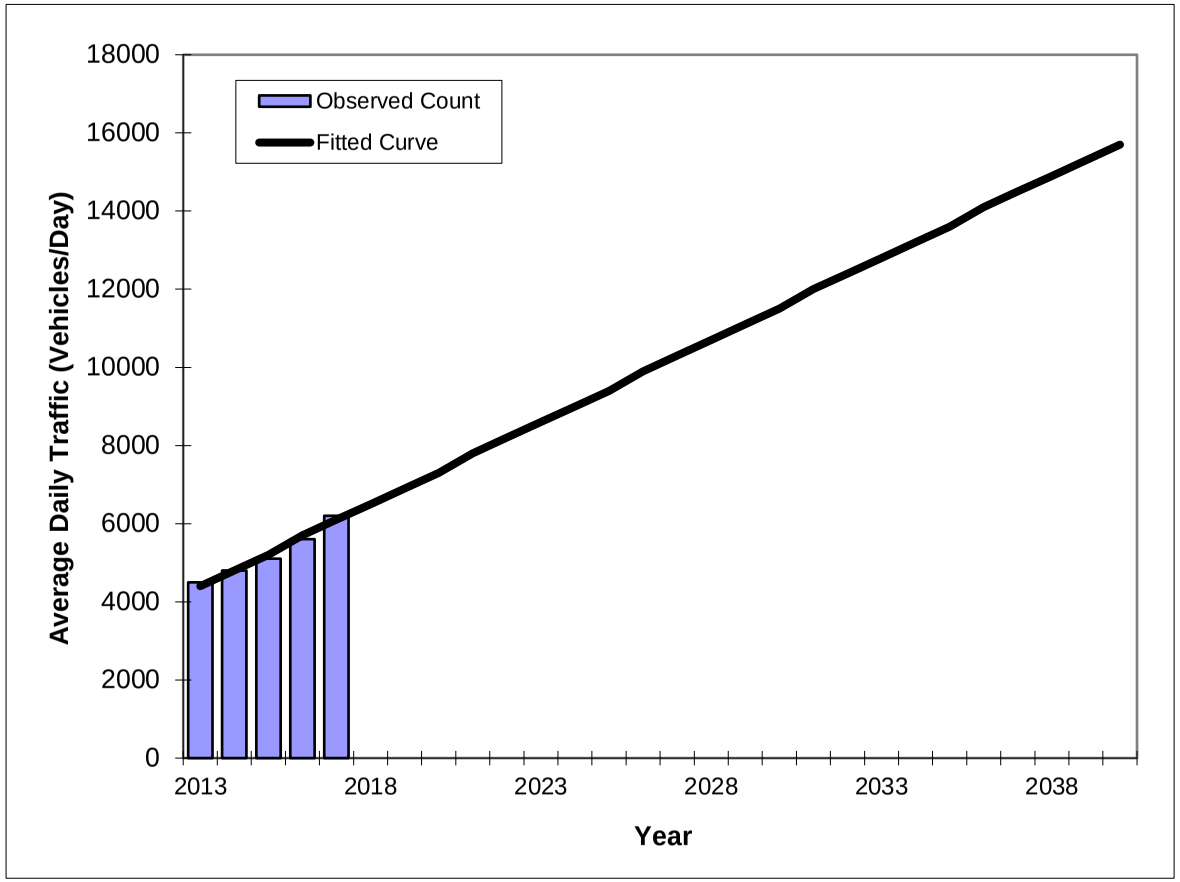
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	6150 C	N 6150	0	9.00	99.90	16.20
2016	5600 C	N 5600	0	9.00	99.90	16.60
2015	5050 C	N 5050	0	9.00	59.60	16.00
2014	4750 C	N 4750		9.00		15.20
2013	4500 C	N 4500	0	9.00		15.60
2012	4700 E	N 4700	0	9.00	99.90	14.80

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

FL. Turnpike -- NB off Ramp to US 27

County:	LAKE
Station #:	97
Highway:	FL. Turnpike



Year	Traffic (ADT/AADT) Count*	Trend**
2013	4500	4400
2014	4800	4800
2015	5100	5200
2016	5600	5700
2017	6200	6100
2024 Opening Year Trend		
2024	N/A	9000
2030 Mid-Year Trend		
2030	N/A	11500
2040 Design Year Trend		
2040	N/A	15700
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	420
Trend R-squared:	97.4%
Trend Annual Historic Growth Rate:	9.66%
Trend Growth Rate (2017 to Design Year):	6.84%
Printed:	8-Feb-19

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 11 - LAKE

SITE: 0363 - ON SR-25 (US-27), 0.133 MI SE OF SR 19 (RVL)

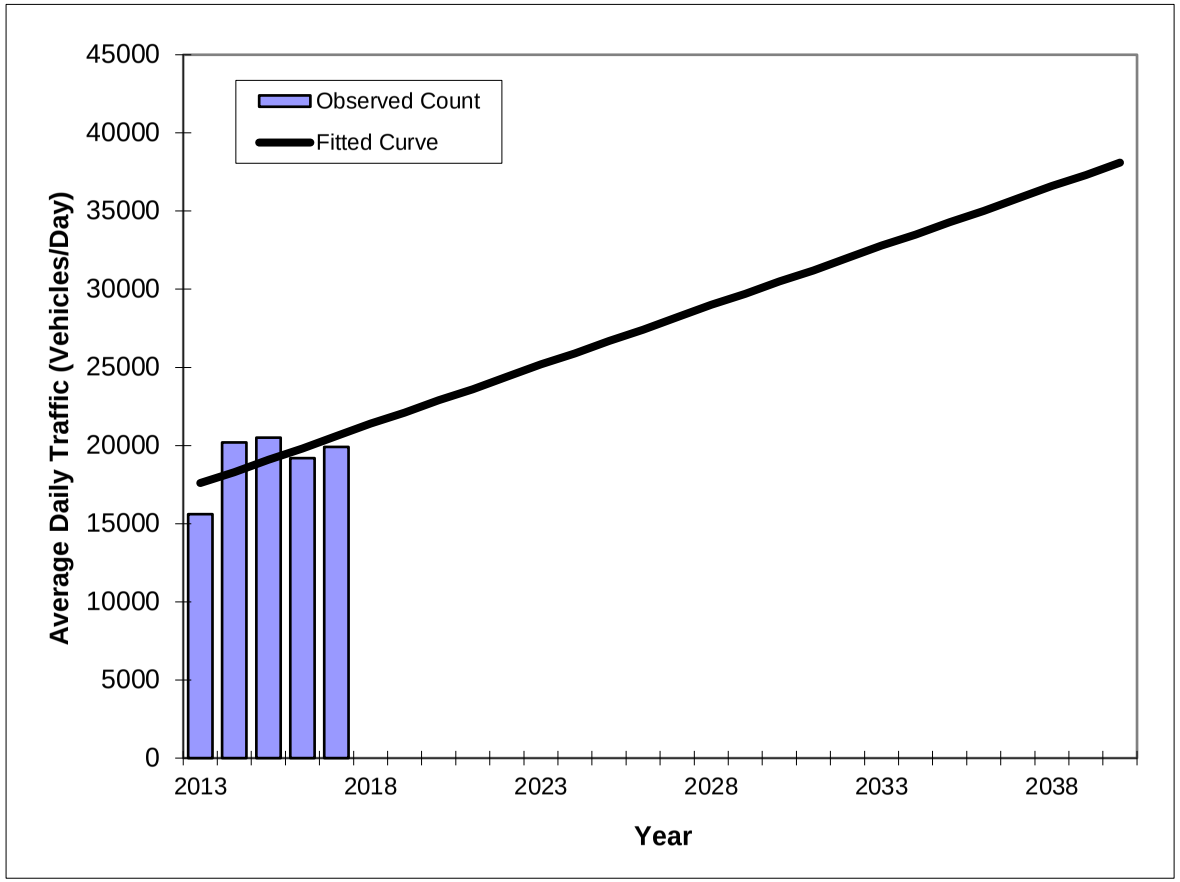
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	19900 F	N 10000	S 9900	9.00	54.20	16.50
2016	19200 C	N 9700	S 9500	9.00	53.90	8.80
2015	20500 C	N 10000	S 10500	9.00	54.60	10.10
2014	20200 C	N 10500	S 9700	9.00	54.50	9.90
2013	15600 C	N 7000	S 8600	9.00	54.70	10.30
2012	16100 C	N 8300	S 7800	9.00	55.10	10.40
2011	16100 C	N 8100	S 8000	9.00	54.20	10.00
2010	16700 C	N 8500	S 8200	9.86	54.75	11.50
2009	16100 C	N 8200	S 7900	9.96	54.94	12.40
2008	17200 C	N 8800	S 8400	10.42	55.39	12.50
2007	19300 C	N 10000	S 9300	10.24	59.56	10.30
2006	20500 C	N 10500	S 10000	10.23	59.48	13.60
2005	23500 C	N 11500	S 12000	10.30	57.70	11.40
2004	18800 C	N 9500	S 9300	10.10	57.60	15.40
2003	16800 C	N 8500	S 8300	9.80	55.30	15.50
2002	16600 C	N 8600	S 8000	10.10	57.30	15.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

US 27 -- 0.133 MI SE of S19

County:	LAKE
Station #:	363
Highway:	US 27



Year	Traffic (ADT/AADT) Count*	Trend**
2013	15600	17600
2014	20200	18300
2015	20500	19100
2016	19200	19800
2017	19900	20600
2024 Opening Year Trend		
2024	N/A	25900
2030 Mid-Year Trend		
2030	N/A	30500
2040 Design Year Trend		
2040	N/A	38100
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	760
Trend R-squared:	35.9%
Trend Annual Historic Growth Rate:	4.26%
Trend Growth Rate (2017 to Design Year):	3.69%
Printed:	8-Feb-19

Straight Line Growth Option

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 11 - LAKE

SITE: 8090 - NUMBER TWO RD, 500 FT W OF PALM AVE - OFF SYSTEM

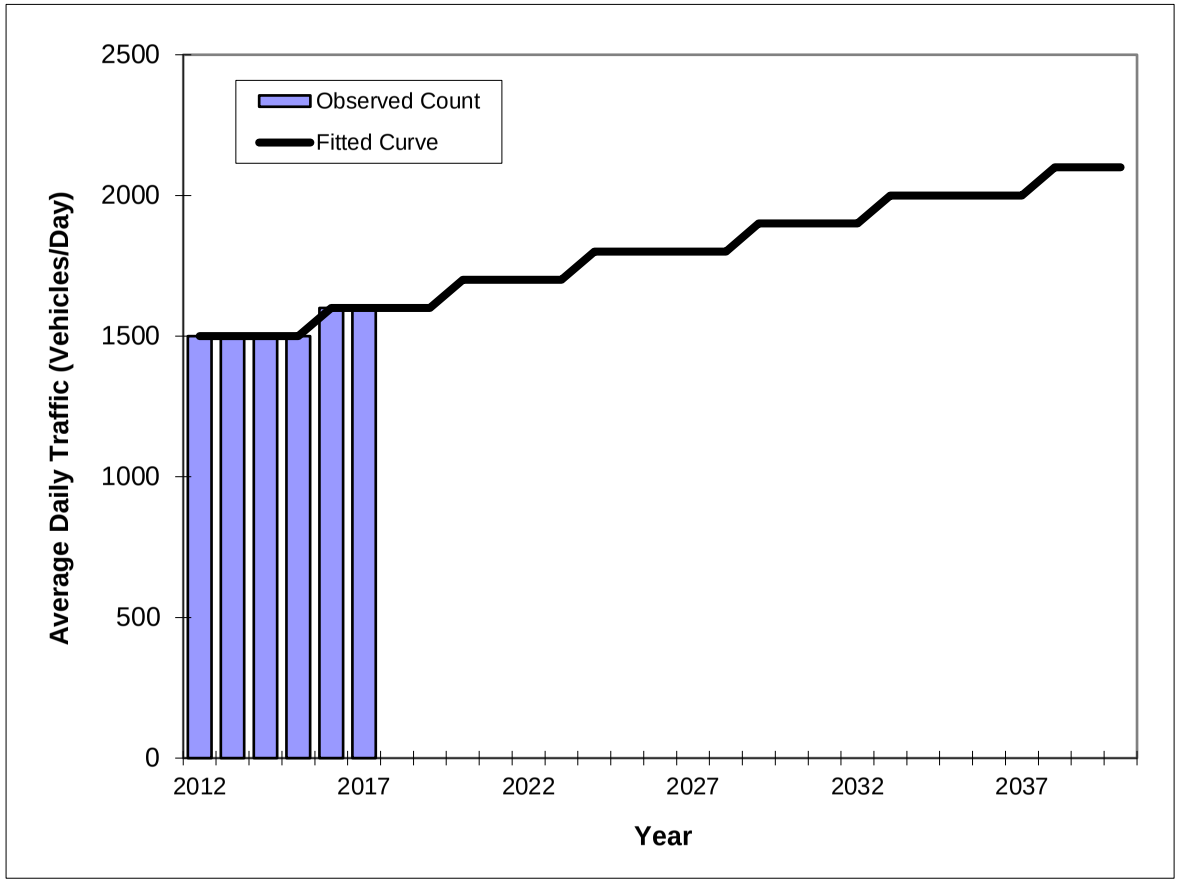
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2017	1250 C	E 650	W 600	9.00	54.20	10.70
2016	1600 R	E 800	W 800	9.00	53.90	12.60
2015	1500 T	E 750	W 750	9.00	54.60	12.60
2014	1500 S	E 750	W 750	9.00	54.50	11.30
2013	1500 F	E 750	W 750	9.50	54.70	10.90
2012	1500 C	E 750	W 750	9.50	55.10	11.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

TRAFFIC TRENDS

Central ave -- West of SR 19

County:	LAKE
Station #:	255
Highway:	Central ave



Year	Traffic (ADT/AADT) Count*	Trend**
2012	1500	1500
2013	1500	1500
2014	1500	1500
2015	1500	1500
2016	1600	1600
2017	1600	1600
2024 Opening Year Trend		
2024	N/A	1800
2030 Mid-Year Trend		
2030	N/A	1900
2040 Design Year Trend		
2040	N/A	2100
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	23
Trend R-squared:	68.6%
Trend Annual Historic Growth Rate:	1.33%
Trend Growth Rate (2017 to Design Year):	1.36%
Printed:	6-Feb-19

Straight Line Growth Option

Appendix I

HCM Worksheets – Projected Conditions & Intersection volume Projection

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	335	124	172	479	413	295
Future Volume (veh/h)	335	124	172	479	413	295
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	1737	1811	1767	1811	1752	1589
Adj Flow Rate, veh/h	385	143	198	0	475	339
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	6	9	6	10	21
Cap, veh/h	717	1152	682		379	306
Arrive On Green	0.19	0.64	0.39	0.00	0.23	0.23
Sat Flow, veh/h	1654	1811	1767	1535	1668	1346
Grp Volume(v), veh/h	385	143	198	0	475	339
Grp Sat Flow(s),veh/h/ln	1654	1811	1767	1535	1668	1346
Q Serve(g_s), s	12.4	3.1	7.8	0.0	22.7	22.7
Cycle Q Clear(g_c), s	12.4	3.1	7.8	0.0	22.7	22.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	717	1152	682		379	306
V/C Ratio(X)	0.54	0.12	0.29		1.25	1.11
Avail Cap(c_a), veh/h	717	1152	682		379	306
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	11.6	7.2	21.2	0.0	38.7	38.7
Incr Delay (d2), s/veh	2.9	0.2	1.1	0.0	134.4	84.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	1.1	3.3	0.0	22.9	14.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.5	7.4	22.3	0.0	173.0	122.7
LnGrp LOS	B	A	C		F	F
Approach Vol, veh/h		528	198	A	814	
Approach Delay, s/veh		12.6	22.3		152.1	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.0	45.0		30.0		70.0
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	14.4	9.8		24.7		5.1
Green Ext Time (p_c), s	0.5	1.1		0.0		0.7

Intersection Summary	
HCM 6th Ctrl Delay	87.6
HCM 6th LOS	F

Notes

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

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	335	124	172	479	413	295
Future Volume (veh/h)	335	124	172	479	413	295
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	1737	1811	1767	1811	1752	1589
Adj Flow Rate, veh/h	385	143	198	0	475	339
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	6	9	6	10	21
Cap, veh/h	540	880	382		629	508
Arrive On Green	0.20	0.49	0.22	0.00	0.38	0.38
Sat Flow, veh/h	1654	1811	1767	1535	1668	1346
Grp Volume(v), veh/h	385	143	198	0	475	339
Grp Sat Flow(s),veh/h/ln	1654	1811	1767	1535	1668	1346
Q Serve(g_s), s	17.0	4.4	9.9	0.0	24.8	21.0
Cycle Q Clear(g_c), s	17.0	4.4	9.9	0.0	24.8	21.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	540	880	382		629	508
V/C Ratio(X)	0.71	0.16	0.52		0.76	0.67
Avail Cap(c_a), veh/h	540	880	382		629	508
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	21.5	14.3	34.6	0.0	27.1	25.9
Incr Delay (d2), s/veh	7.8	0.4	5.0	0.0	8.2	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	1.8	4.7	0.0	10.6	7.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.3	14.7	39.6	0.0	35.3	32.8
LnGrp LOS	C	B	D		D	C
Approach Vol, veh/h		528	198	A	814	
Approach Delay, s/veh		25.3	39.6		34.3	
Approach LOS		C	D		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.0	28.0		45.0		55.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	20.5	21.6		37.7		48.6
Max Q Clear Time (g_c+I1), s	19.0	11.9		26.8		6.4
Green Ext Time (p_c), s	0.2	0.7		2.2		0.7

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	74	9	60	11	9	8	32	522	19	22	448	37
Future Vol, veh/h	74	9	60	11	9	8	32	522	19	22	448	37
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	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	86	10	70	13	10	9	37	607	22	26	521	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1297	1298	543	1327	1308	618	564	0	0	629	0	0
Stage 1	595	595	-	692	692	-	-	-	-	-	-	-
Stage 2	702	703	-	635	616	-	-	-	-	-	-	-
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	132	140	540	132	159	489	851	-	-	787	-	-
Stage 1	474	446	-	434	445	-	-	-	-	-	-	-
Stage 2	413	397	-	467	482	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	112	124	540	98	141	489	851	-	-	787	-	-
Mov Cap-2 Maneuver	112	124	-	98	141	-	-	-	-	-	-	-
Stage 1	442	425	-	405	415	-	-	-	-	-	-	-
Stage 2	368	370	-	378	459	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	119.9	36.6	0.5	0.4
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	169	146	787	-	-
HCM Lane V/C Ratio	0.044	-	-	0.984	0.223	0.033	-	-
HCM Control Delay (s)	9.4	0	-	119.9	36.6	9.7	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	7.7	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	36	3	21	7	4	23	21	559	14	9	514	2
Future Vol, veh/h	36	3	21	7	4	23	21	559	14	9	514	2
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	-	-	0	-	-	-	250	-	250	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	3	23	8	4	25	23	601	15	10	553	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1236	1222	601	1242	1236	554	555	0	0	616	0	0
Stage 1	647	647	-	574	574	-	-	-	-	-	-	-
Stage 2	589	575	-	668	662	-	-	-	-	-	-	-
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	153	180	500	152	176	532	1015	-	-	964	-	-
Stage 1	460	467	-	504	503	-	-	-	-	-	-	-
Stage 2	494	503	-	448	459	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	140	174	500	140	170	532	1015	-	-	964	-	-
Mov Cap-2 Maneuver	140	174	-	140	170	-	-	-	-	-	-	-
Stage 1	449	456	-	492	498	-	-	-	-	-	-	-
Stage 2	462	498	-	415	448	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	30.8	19.1	0.3	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	NBLn2	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1015	-	-	142	500	291	964	-	-
HCM Lane V/C Ratio	0.022	-	-	0.295	0.045	0.126	0.01	-	-
HCM Control Delay (s)	8.6	-	-	40.6	12.5	19.1	8.8	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.1	0.4	0	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	55	21	663	611	21
Future Vol, veh/h	47	55	21	663	611	21
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	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	8	10	2
Mvmt Flow	55	65	25	780	719	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1562	732	744	0	-	0
Stage 1	732	-	-	-	-	-
Stage 2	830	-	-	-	-	-
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	123	421	864	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	421	864	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.7	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	864	-	192	-	-
HCM Lane V/C Ratio	0.029	-	0.625	-	-
HCM Control Delay (s)	9.3	0	50.7	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	3.6	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	21	663	611	21
Future Vol, veh/h	60	70	21	663	611	21
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	145	400	-	-	350
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	8	10	2
Mvmt Flow	71	82	25	780	719	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1549	719	744	0	-	0
Stage 1	719	-	-	-	-	-
Stage 2	830	-	-	-	-	-
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	125	428	864	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	428	864	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	469	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	864	-	259	428	-	-
HCM Lane V/C Ratio	0.029	-	0.273	0.192	-	-
HCM Control Delay (s)	9.3	-	24	15.4	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	0.7	-	-

Intersection	
Int Delay, s/veh	24.7

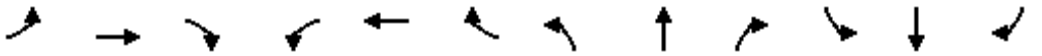
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	105	553	106	143	640
Future Vol, veh/h	111	105	553	106	143	640
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	225	-	385	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	114	108	570	109	147	660

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1524	570	0	0	679	0
Stage 1	570	-	-	-	-	-
Stage 2	954	-	-	-	-	-
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	~ 108	497	-	-	881	-
Stage 1	501	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 80	497	-	-	881	-
Mov Cap-2 Maneuver	~ 80	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	238	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	183	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	80	497	881	-
HCM Lane V/C Ratio	-	-	1.43	0.218	0.167	-
HCM Control Delay (s)	-	-	$ 342.7	14.2	9.9	0
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	9	0.8	0.6	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	968	36	52	1033	154	83	280	175	152	111	198
Future Volume (veh/h)	271	968	36	52	1033	154	83	280	175	152	111	198
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1841	1648	1826	1841	1722	1870	1870	1870	1841	1870	1841
Adj Flow Rate, veh/h	291	1041	0	56	1111	0	89	301	0	163	119	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	4	17	5	4	12	2	2	2	4	2	4
Cap, veh/h	271	1062		275	1062		106	271		386	715	
Arrive On Green	0.16	0.30	0.00	0.16	0.30	0.00	0.20	0.20	0.00	0.13	0.38	0.00
Sat Flow, veh/h	1711	3497	1397	1739	3497	1459	368	1330	1585	1753	1870	1560
Grp Volume(v), veh/h	291	1041	0	56	1111	0	390	0	0	163	119	0
Grp Sat Flow(s),veh/h/ln	1711	1749	1397	1739	1749	1459	1698	0	1585	1753	1870	1560
Q Serve(g_s), s	22.2	41.3	0.0	3.9	42.5	0.0	27.2	0.0	0.0	9.3	5.9	0.0
Cycle Q Clear(g_c), s	22.2	41.3	0.0	3.9	42.5	0.0	28.5	0.0	0.0	9.3	5.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.23		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1062		275	1062		377	0		386	715	
V/C Ratio(X)	1.07	0.98		0.20	1.05		1.03	0.00		0.42	0.17	
Avail Cap(c_a), veh/h	271	1062		275	1062		377	0		386	715	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.9	48.3	0.0	51.3	48.7	0.0	56.9	0.0	0.0	32.6	28.5	0.0
Incr Delay (d2), s/veh	75.3	23.3	0.0	1.7	40.6	0.0	55.4	0.0	0.0	3.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	20.5	0.0	1.8	23.6	0.0	19.3	0.0	0.0	4.3	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.2	71.7	0.0	53.0	89.3	0.0	112.3	0.0	0.0	36.0	29.0	0.0
LnGrp LOS	F	E		D	F		F	A		D	C	
Approach Vol, veh/h		1332	A		1167	A		390	A		282	A
Approach Delay, s/veh		85.3			87.6			112.3			33.0	
Approach LOS		F			F			F			C	

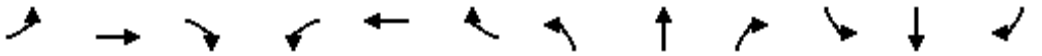
Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	50.0		60.0	30.0	50.0	25.0	35.0
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5
Max Green Setting (Gmax), s	* 22	42.5		28.5	22.1	42.5	18.5	28.5
Max Q Clear Time (g_c+I1), s	24.2	44.5		7.9	5.9	43.3	11.3	30.5
Green Ext Time (p_c), s	0.0	0.0		0.5	0.1	0.0	0.2	0.0

Intersection Summary		
HCM 6th Ctrl Delay		84.8
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	968	36	52	1033	154	83	280	175	152	111	198
Future Volume (veh/h)	271	968	36	52	1033	154	83	280	175	152	111	198
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1841	1648	1826	1841	1722	1870	1870	1870	1841	1870	1841
Adj Flow Rate, veh/h	291	1041	0	56	1111	0	89	301	0	163	119	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	4	17	5	4	12	2	2	2	4	2	4
Cap, veh/h	296	1481		128	1137		121	329		279	648	
Arrive On Green	0.17	0.42	0.00	0.07	0.32	0.00	0.25	0.25	0.00	0.05	0.35	0.00
Sat Flow, veh/h	1711	3497	1397	1739	3497	1459	363	1337	1585	1753	1870	1560
Grp Volume(v), veh/h	291	1041	0	56	1111	0	390	0	0	163	119	0
Grp Sat Flow(s),veh/h/ln	1711	1749	1397	1739	1749	1459	1700	0	1585	1753	1870	1560
Q Serve(g_s), s	23.7	34.2	0.0	4.3	44.0	0.0	29.4	0.0	0.0	7.5	6.2	0.0
Cycle Q Clear(g_c), s	23.7	34.2	0.0	4.3	44.0	0.0	31.4	0.0	0.0	7.5	6.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.23		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	1481		128	1137		451	0		279	648	
V/C Ratio(X)	0.98	0.70		0.44	0.98		0.87	0.00		0.58	0.18	
Avail Cap(c_a), veh/h	296	1481		128	1137		451	0		279	648	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.7	33.1	0.0	62.1	46.7	0.0	51.5	0.0	0.0	37.1	31.9	0.0
Incr Delay (d2), s/veh	48.5	2.8	0.0	10.5	21.8	0.0	19.5	0.0	0.0	8.7	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.2	0.0	2.2	21.5	0.0	15.7	0.0	0.0	1.5	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.2	35.9	0.0	72.6	68.5	0.0	71.0	0.0	0.0	45.8	32.6	0.0
LnGrp LOS	F	D		E	E		E	A		D	C	
Approach Vol, veh/h		1332	A		1167	A		390	A		282	A
Approach Delay, s/veh		51.3			68.7			71.0			40.2	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	53.0		55.0	18.2	66.8	14.0	41.0
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5
Max Green Setting (Gmax), s	* 24	45.5		48.5	10.3	59.3	7.5	34.5
Max Q Clear Time (g_c+I1), s	25.7	46.0		8.2	6.3	36.2	9.5	33.4
Green Ext Time (p_c), s	0.0	0.0		0.6	0.0	6.8	0.0	0.3

Intersection Summary		
HCM 6th Ctrl Delay		59.1
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	173	1145	1051	153	59	189
Future Vol, veh/h	173	1145	1051	153	59	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Free
Storage Length	320	-	-	480	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	4	5	2	6
Mvmt Flow	178	1180	1084	158	61	195

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	1084	0	-	0	2030	-			
Stage 1	-	-	-	-	1084	-			
Stage 2	-	-	-	-	946	-			
Critical Hdwy	4.16	-	-	-	6.84	-			
Critical Hdwy Stg 1	-	-	-	-	5.84	-			
Critical Hdwy Stg 2	-	-	-	-	5.84	-			
Follow-up Hdwy	2.23	-	-	-	3.52	-			
Pot Cap-1 Maneuver	633	-	-	0	~ 50	0			
Stage 1	-	-	-	0	286	0			
Stage 2	-	-	-	0	338	0			
Platoon blocked, %		-	-						
Mov Cap-1 Maneuver	633	-	-	-	~ 36	-			
Mov Cap-2 Maneuver	-	-	-	-	168	-			
Stage 1	-	-	-	-	206	-			
Stage 2	-	-	-	-	338	-			

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	38.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	633	-	-	168	-
HCM Lane V/C Ratio	0.282	-	-	0.362	-
HCM Control Delay (s)	12.9	-	-	38.1	0
HCM Lane LOS	B	-	-	E	A
HCM 95th %tile Q(veh)	1.2	-	-	1.5	-

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

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	6	32	46	17	96
Future Vol, veh/h	48	6	32	46	17	96
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	52	7	35	50	18	104

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	176	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	120	-
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	-	-	1545	-	814	1011
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1545	-	795	1011
Mov Cap-2 Maneuver	-	-	-	-	795	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	971	-	-	1545	-
HCM Lane V/C Ratio	0.126	-	-	0.023	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	60	19	704	572	19
Future Vol, veh/h	54	60	19	704	572	19
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	400	-	-	350
Veh in Median Storage, #	1	-	-	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	59	65	21	765	622	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1429	622	643	0	-	0
Stage 1	622	-	-	-	-	-
Stage 2	807	-	-	-	-	-
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	149	487	942	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	146	487	942	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	942	-	284	487	-	-
HCM Lane V/C Ratio	0.022	-	0.207	0.134	-	-
HCM Control Delay (s)	8.9	-	20.9	13.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	0.5	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	5	37	113	0
Future Vol, veh/h	0	17	5	37	113	0
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	0	18	5	40	123	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	43	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	-	968	1051
Stage 1	0	-	-	-	998	-
Stage 2	0	-	-	-	1005	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	968	1051
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	968
HCM Lane V/C Ratio	-	-	-	0.127
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.4

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	347	152	147	449	577	490
Future Volume (veh/h)	347	152	147	449	577	490
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	1737	1811	1767	1811	1752	1589
Adj Flow Rate, veh/h	399	175	169	0	663	563
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	6	9	6	10	21
Cap, veh/h	741	1152	682		379	306
Arrive On Green	0.19	0.64	0.39	0.00	0.23	0.23
Sat Flow, veh/h	1654	1811	1767	1535	1668	1346
Grp Volume(v), veh/h	399	175	169	0	663	563
Grp Sat Flow(s),veh/h/ln	1654	1811	1767	1535	1668	1346
Q Serve(g_s), s	13.0	3.9	6.5	0.0	22.7	22.7
Cycle Q Clear(g_c), s	13.0	3.9	6.5	0.0	22.7	22.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	741	1152	682		379	306
V/C Ratio(X)	0.54	0.15	0.25		1.75	1.84
Avail Cap(c_a), veh/h	741	1152	682		379	306
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	11.6	7.3	20.8	0.0	38.7	38.7
Incr Delay (d2), s/veh	2.8	0.3	0.9	0.0	348.5	391.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.4	2.8	0.0	45.4	40.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.4	7.6	21.7	0.0	387.2	430.0
LnGrp LOS	B	A	C		F	F
Approach Vol, veh/h		574	169	A	1226	
Approach Delay, s/veh		12.3	21.7		406.9	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.0	45.0		30.0		70.0
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	15.0	8.5		24.7		5.9
Green Ext Time (p_c), s	0.5	0.9		0.0		0.9

Intersection Summary	
HCM 6th Ctrl Delay	258.8
HCM 6th LOS	F

Notes

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

HCM 6th Signalized Intersection Summary
1: SR 19 & CR 48

02/19/2019

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (veh/h)	347	152	147	449	577	490
Future Volume (veh/h)	347	152	147	449	577	490
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	1737	1811	1767	1811	1752	1589
Adj Flow Rate, veh/h	399	175	169	0	663	563
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	6	9	6	10	21
Cap, veh/h	454	753	346		746	602
Arrive On Green	0.16	0.42	0.20	0.00	0.45	0.45
Sat Flow, veh/h	1654	1811	1767	1535	1668	1346
Grp Volume(v), veh/h	399	175	169	0	663	563
Grp Sat Flow(s),veh/h/ln	1654	1811	1767	1535	1668	1346
Q Serve(g_s), s	15.5	6.2	8.5	0.0	36.5	39.7
Cycle Q Clear(g_c), s	15.5	6.2	8.5	0.0	36.5	39.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	454	753	346		746	602
V/C Ratio(X)	0.88	0.23	0.49		0.89	0.94
Avail Cap(c_a), veh/h	454	753	346		746	602
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	29.4	18.9	35.7	0.0	25.4	26.3
Incr Delay (d2), s/veh	20.9	0.7	4.9	0.0	14.9	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	2.6	4.1	0.0	16.1	15.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.3	19.6	40.6	0.0	40.3	50.1
LnGrp LOS	D	B	D		D	D
Approach Vol, veh/h		574	169	A	1226	
Approach Delay, s/veh		40.9	40.6		44.8	
Approach LOS		D	D		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.0	26.0		52.0		48.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	15.5	19.6		44.7		41.6
Max Q Clear Time (g_c+I1), s	17.5	10.5		41.7		8.2
Green Ext Time (p_c), s	0.0	0.5		1.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	34.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	70	11	46	13	11	10	66	517	12	15	594	85
Future Vol, veh/h	70	11	46	13	11	10	66	517	12	15	594	85
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	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	81	13	53	15	13	12	77	601	14	17	691	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1550	1544	741	1570	1586	608	790	0	0	615	0	0
Stage 1	775	775	-	762	762	-	-	-	-	-	-	-
Stage 2	775	769	-	808	824	-	-	-	-	-	-	-
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	88	98	416	90	108	496	691	-	-	798	-	-
Stage 1	376	366	-	397	414	-	-	-	-	-	-	-
Stage 2	376	369	-	375	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 65	78	416	58	86	496	691	-	-	798	-	-
Mov Cap-2 Maneuver	~ 65	78	-	58	86	-	-	-	-	-	-	-
Stage 1	312	352	-	330	344	-	-	-	-	-	-	-
Stage 2	293	306	-	303	372	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 365.2	72	1.2	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	691	-	-	96	91	798	-	-
HCM Lane V/C Ratio	0.111	-	-	1.538	0.434	0.022	-	-
HCM Control Delay (s)	10.9	0	-	$ 365.2	72	9.6	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	11.3	1.8	0.1	-	-

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

Intersection	
Int Delay, s/veh	1.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	14	2	14	3	4	12	12	577	16	20	634	2
Future Vol, veh/h	14	2	14	3	4	12	12	577	16	20	634	2
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	-	-	0	-	-	-	250	-	250	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	2	15	3	4	13	13	620	17	22	682	2

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1382	1374	620	1390	1390	683	684	0	0	637	0	0
Stage 1	646	646	-	727	727	-	-	-	-	-	-	-
Stage 2	736	728	-	663	663	-	-	-	-	-	-	-
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	121	145	488	120	142	449	909	-	-	947	-	-
Stage 1	460	467	-	415	429	-	-	-	-	-	-	-
Stage 2	411	429	-	450	459	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	140	488	112	137	449	909	-	-	947	-	-
Mov Cap-2 Maneuver	111	140	-	112	137	-	-	-	-	-	-	-
Stage 1	454	460	-	409	419	-	-	-	-	-	-	-
Stage 2	386	419	-	428	453	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	28.3	22.2	0.2	0.3
HCM LOS	D	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	NBLn2	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	909	-	-	114	488	230	947	-	-
HCM Lane V/C Ratio	0.014	-	-	0.151	0.031	0.089	0.023	-	-
HCM Control Delay (s)	9	-	-	42.1	12.6	22.2	8.9	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	41	71	673	676	68
Future Vol, veh/h	41	41	71	673	676	68
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	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	8	10	2
Mvmt Flow	48	48	84	792	795	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1795	835	875	0	-	0
Stage 1	835	-	-	-	-	-
Stage 2	960	-	-	-	-	-
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	88	368	771	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	71	368	771	-	-	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	343	-	-	-	-	-
Stage 2	372	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	106	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	119	-	-
HCM Lane V/C Ratio	0.108	-	0.811	-	-
HCM Control Delay (s)	10.2	0	106	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	4.8	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	41	71	673	676	68
Future Vol, veh/h	41	41	71	673	676	68
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	145	400	-	-	350
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	8	10	2
Mvmt Flow	48	48	84	792	795	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1755	795	875	0	-	0
Stage 1	795	-	-	-	-	-
Stage 2	960	-	-	-	-	-
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	94	388	771	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	84	388	771	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	372	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.2	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	771	-	213	388	-	-
HCM Lane V/C Ratio	0.108	-	0.226	0.124	-	-
HCM Control Delay (s)	10.2	-	26.8	15.6	-	-
HCM Lane LOS	B	-	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.8	0.4	-	-

Intersection	
Int Delay, s/veh	52.1

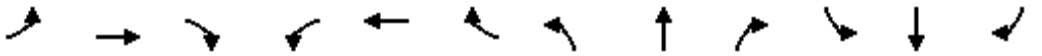
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	116	137	768	114	125	733
Future Vol, veh/h	116	137	768	114	125	733
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	225	-	385	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	120	141	792	118	129	756

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1806	792	0	0	910	0
Stage 1	792	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
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	~ 70	369	-	-	720	-
Stage 1	389	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 48	369	-	-	720	-
Mov Cap-2 Maneuver	~ 48	-	-	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	208	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 405.1	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	48	369	720	-
HCM Lane V/C Ratio	-	-	2.491	0.383	0.179	-
HCM Control Delay (s)	-	-	$ 859.1	20.7	11.1	0
HCM Lane LOS	-	-	F	C	B	A
HCM 95th %tile Q(veh)	-	-	12.5	1.8	0.6	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	974	64	154	938	110	112	114	185	380	277	228
Future Volume (veh/h)	370	974	64	154	938	110	112	114	185	380	277	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1841	1648	1826	1841	1722	1870	1870	1870	1841	1870	1841
Adj Flow Rate, veh/h	398	1047	0	166	1009	0	120	123	0	409	298	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	4	17	5	4	12	2	2	2	4	2	4
Cap, veh/h	271	1062		275	1062		177	142		493	715	
Arrive On Green	0.16	0.30	0.00	0.16	0.30	0.00	0.20	0.20	0.00	0.13	0.38	0.00
Sat Flow, veh/h	1711	3497	1397	1739	3497	1459	679	696	1585	1753	1870	1560
Grp Volume(v), veh/h	398	1047	0	166	1009	0	243	0	0	409	298	0
Grp Sat Flow(s),veh/h/ln	1711	1749	1397	1739	1749	1459	1375	0	1585	1753	1870	1560
Q Serve(g_s), s	22.2	41.7	0.0	12.4	39.5	0.0	23.9	0.0	0.0	18.5	16.4	0.0
Cycle Q Clear(g_c), s	22.2	41.7	0.0	12.4	39.5	0.0	23.9	0.0	0.0	18.5	16.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.49		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1062		275	1062		318	0		493	715	
V/C Ratio(X)	1.47	0.99		0.60	0.95		0.76	0.00		0.83	0.42	
Avail Cap(c_a), veh/h	271	1062		275	1062		318	0		493	715	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.9	48.5	0.0	54.9	47.7	0.0	53.9	0.0	0.0	40.2	31.8	0.0
Incr Delay (d2), s/veh	229.3	24.5	0.0	9.5	18.0	0.0	15.9	0.0	0.0	14.8	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	20.8	0.0	6.0	19.0	0.0	9.6	0.0	0.0	5.9	7.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	288.2	72.9	0.0	64.4	65.7	0.0	69.8	0.0	0.0	55.0	33.6	0.0
LnGrp LOS	F	E		E	E		E	A		E	C	
Approach Vol, veh/h		1445	A		1175	A		243	A		707	A
Approach Delay, s/veh		132.2			65.5			69.8			46.0	
Approach LOS		F			E			E			D	

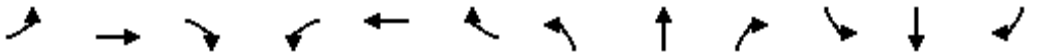
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	50.0		60.0	30.0	50.0	25.0	35.0				
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5				
Max Green Setting (Gmax), s	* 22	42.5		28.5	22.1	42.5	18.5	28.5				
Max Q Clear Time (g_c+I1), s	24.2	41.5		18.4	14.4	43.7	20.5	25.9				
Green Ext Time (p_c), s	0.0	0.6		1.1	0.2	0.0	0.0	0.3				

Intersection Summary			
HCM 6th Ctrl Delay		89.0	
HCM 6th LOS		F	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	974	64	154	938	110	112	114	185	380	277	228
Future Volume (veh/h)	370	974	64	154	938	110	112	114	185	380	277	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1841	1648	1826	1841	1722	1870	1870	1870	1841	1870	1841
Adj Flow Rate, veh/h	398	1047	0	166	1009	0	120	123	0	409	298	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	4	17	5	4	12	2	2	2	4	2	4
Cap, veh/h	345	1289		199	987		162	127		465	675	
Arrive On Green	0.20	0.37	0.00	0.11	0.28	0.00	0.18	0.18	0.00	0.13	0.36	0.00
Sat Flow, veh/h	1711	3497	1397	1739	3497	1459	679	696	1585	1753	1870	1560
Grp Volume(v), veh/h	398	1047	0	166	1009	0	243	0	0	409	298	0
Grp Sat Flow(s),veh/h/ln	1711	1749	1397	1739	1749	1459	1375	0	1585	1753	1870	1560
Q Serve(g_s), s	28.2	37.8	0.0	13.1	39.5	0.0	24.6	0.0	0.0	18.5	17.0	0.0
Cycle Q Clear(g_c), s	28.2	37.8	0.0	13.1	39.5	0.0	24.6	0.0	0.0	18.5	17.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.49		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	1289		199	987		289	0		465	675	
V/C Ratio(X)	1.15	0.81		0.84	1.02		0.84	0.00		0.88	0.44	
Avail Cap(c_a), veh/h	345	1289		199	987		289	0		465	675	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	39.8	0.0	60.7	50.3	0.0	56.9	0.0	0.0	43.1	34.0	0.0
Incr Delay (d2), s/veh	97.6	5.7	0.0	32.1	34.5	0.0	24.6	0.0	0.0	20.5	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.0	16.4	0.0	7.3	21.1	0.0	10.4	0.0	0.0	7.2	8.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	153.5	45.5	0.0	92.8	84.7	0.0	81.5	0.0	0.0	63.7	36.1	0.0
LnGrp LOS	F	D		F	F		F	A		E	D	
Approach Vol, veh/h		1445	A		1175	A		243	A		707	A
Approach Delay, s/veh		75.2			85.9			81.5			52.1	
Approach LOS		E			F			F			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	47.0		57.0	23.9	59.1	25.0	32.0
Change Period (Y+Rc), s	* 7.8	7.5		6.5	7.9	7.5	6.5	6.5
Max Green Setting (Gmax), s	* 28	39.5		50.5	16.0	51.6	18.5	25.5
Max Q Clear Time (g_c+I1), s	30.2	41.5		19.0	15.1	39.8	20.5	26.6
Green Ext Time (p_c), s	0.0	0.0		1.8	0.0	5.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		74.6
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	226	1165	1048	238	62	111
Future Vol, veh/h	226	1165	1048	238	62	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Free
Storage Length	320	-	-	480	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	4	5	2	6
Mvmt Flow	233	1201	1080	245	64	114

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1080	0	-	0	2147	-
Stage 1	-	-	-	-	1080	-
Stage 2	-	-	-	-	1067	-
Critical Hdwy	4.16	-	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.23	-	-	-	3.52	-
Pot Cap-1 Maneuver	636	-	-	0	~ 41	0
Stage 1	-	-	-	0	287	0
Stage 2	-	-	-	0	292	0
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	636	-	-	-	~ 26	-
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	292	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	47.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	636	-	-	146	-
HCM Lane V/C Ratio	0.366	-	-	0.438	-
HCM Control Delay (s)	13.9	-	-	47.6	0
HCM Lane LOS	B	-	-	E	A
HCM 95th %tile Q(veh)	1.7	-	-	2	-

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

Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	19	105	57	11	62
Future Vol, veh/h	54	19	105	57	11	62
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	59	21	114	62	12	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	360	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	290	-
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	-	-	1518	-	639	993
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	759	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1518	-	589	993
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	900	-	-	1518	-
HCM Lane V/C Ratio	0.088	-	-	0.075	-
HCM Control Delay (s)	9.4	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	39	67	640	705	60
Future Vol, veh/h	34	39	67	640	705	60
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	400	-	-	350
Veh in Median Storage, #	1	-	-	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	37	42	73	696	766	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1608	766	831	0	-	0
Stage 1	766	-	-	-	-	-
Stage 2	842	-	-	-	-	-
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	115	403	801	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	403	801	-	-	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	417	-	-	-	-	-
Stage 2	423	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	801	-	240	403	-	-
HCM Lane V/C Ratio	0.091	-	0.154	0.105	-	-
HCM Control Delay (s)	9.9	-	22.7	15	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	18	121	73	0
Future Vol, veh/h	0	9	18	121	73	0
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	0	10	20	132	79	0

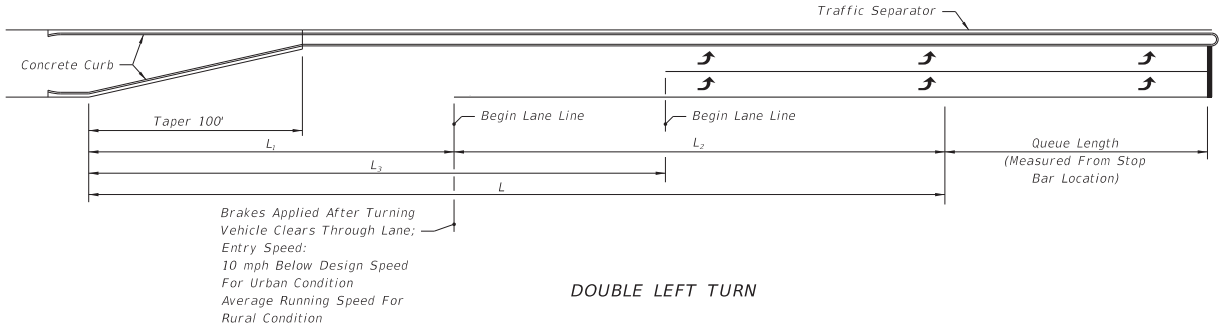
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	96	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	-	903	973
Stage 1	0	-	-	-	937	-
Stage 2	0	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	903	973
Mov Cap-2 Maneuver	-	-	-	-	903	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	1013	-

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

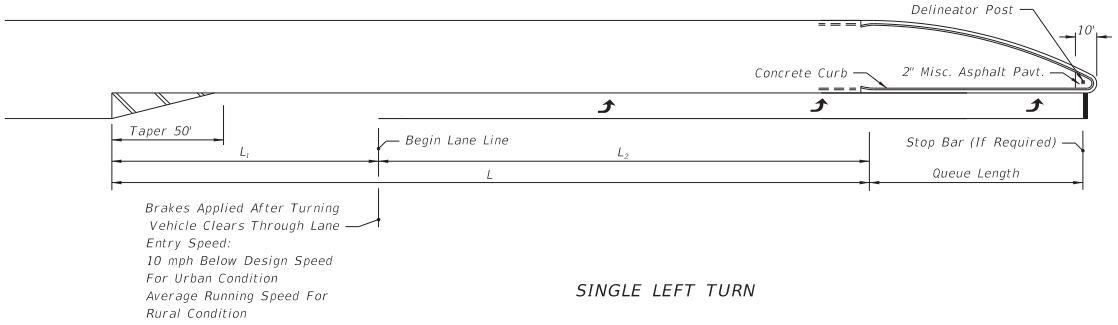
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	903
HCM Lane V/C Ratio	-	-	-	0.088
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.3

Appendix J
FDOT Design Manual Exhibit FDM 212.1

MEDIAN TURN LANES
MINIMUM DECELERATION LENGTHS



DOUBLE LEFT TURN



SINGLE LEFT TURN

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_3 (ft.)	Brake To Stop Distance L_2 (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L_3 (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
01/01/2018

Appendix K
NCHRP Report 457

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

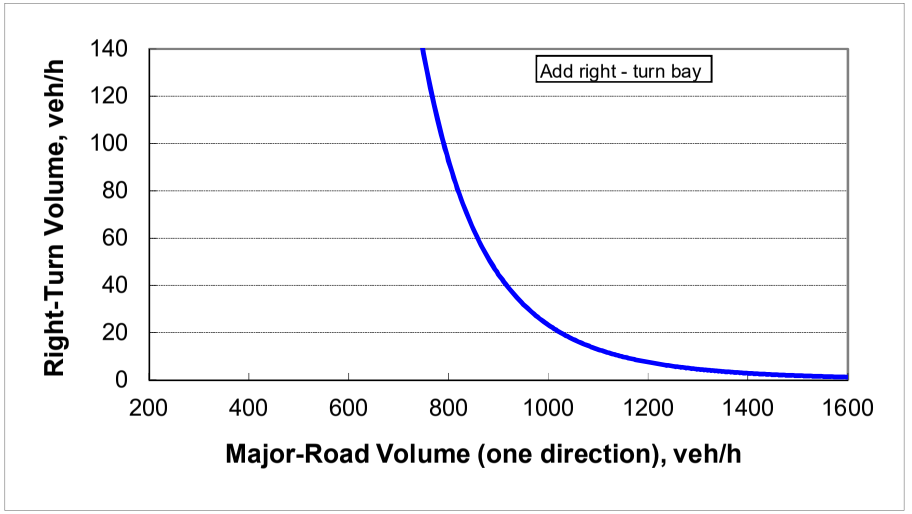
INPUT

Roadway geometry:	2-lane roadw ay

Variable	Value
Major-road speed, mph:	25
Major-road volume (one direction), veh/h:	73
Right-turn volume, veh/h:	19

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	252375343
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

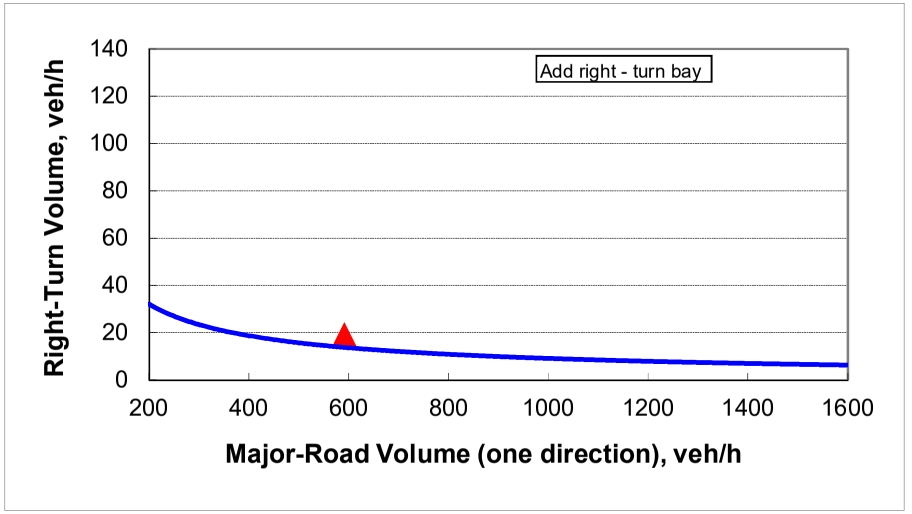
INPUT

Roadway geometry:	2-lane roadw ay

Variable	Value
Major-road speed, mph:	55
Major-road volume (one direction), veh/h:	591
Right-turn volume, veh/h:	19

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	14
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	



Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

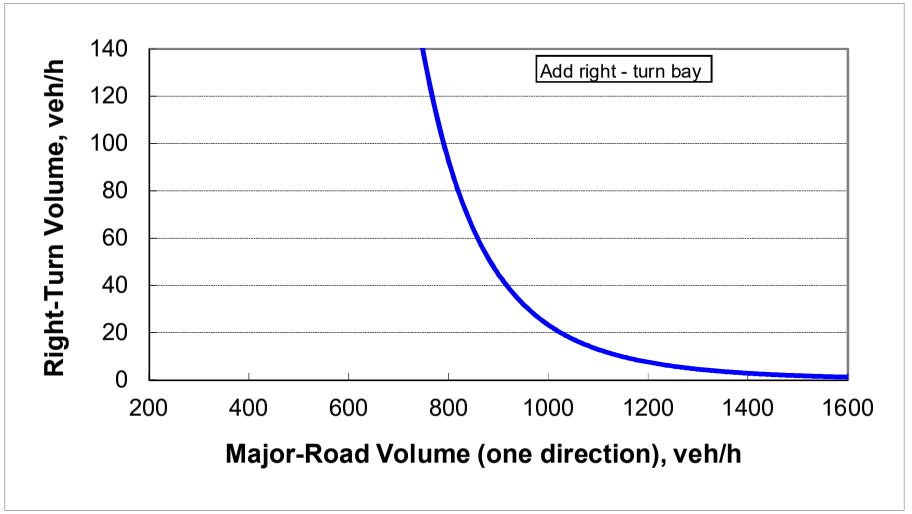
INPUT

Roadway geometry:	2-lane roadw ay

Variable	Value
Major-road speed, mph:	25
Major-road volume (one direction), veh/h:	42
Right-turn volume, veh/h:	37

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	7724432679
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

Access 1 Left Turn Lane
Warrant at Number 2 Rd

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

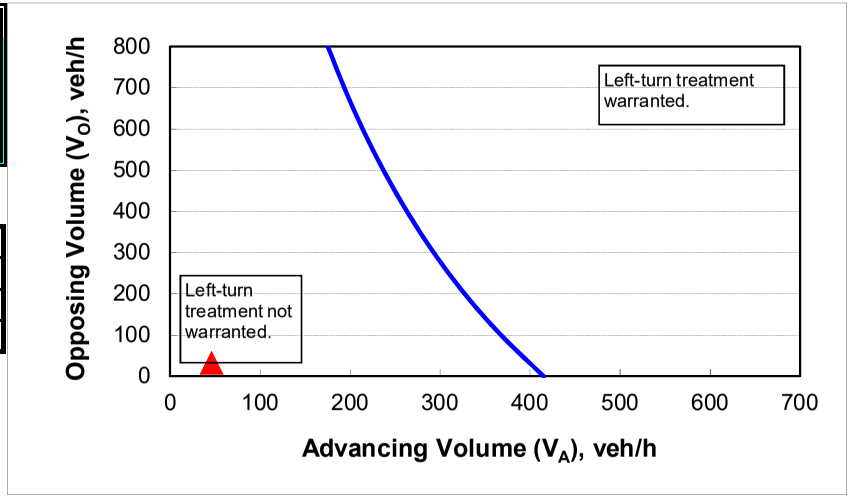
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	41%
Advancing volume (V_A), veh/h:	46
Opposing volume (V_O), veh/h:	32

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	399
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

Access 2 Left Turn Lane
Warrant at SR 19

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

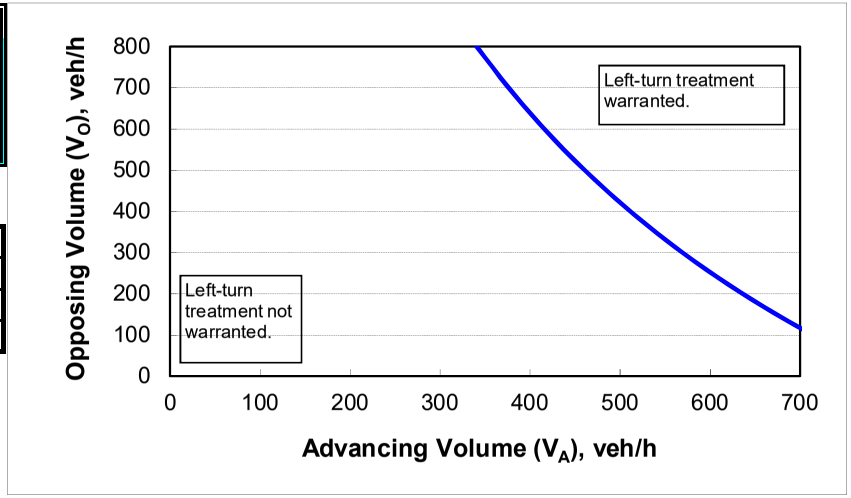
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	3%
Advancing volume (V_A), veh/h:	723
Opposing volume (V_O), veh/h:	572

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	428
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide