TRANSPORTATION ANALYSIS

US 19 and Spring Hill Drive - NEC

Prepared for:

Meridien Development LLC

Palm Traffic
Engineering + Planning

Transportation Analysis

US 19 and Spring Hill Drive - NEC

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December 2024

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INTRODUCTION

The purpose of this report is to provide the Transportation Analysis for the proposed development of the property located east of US 19 and north of Spring Hill Drive in Hernando County, Florida, as shown in Figure 1.

PROJECT DESCRIPTION

The property is currently vacant. The proposed project will consist of the following uses:

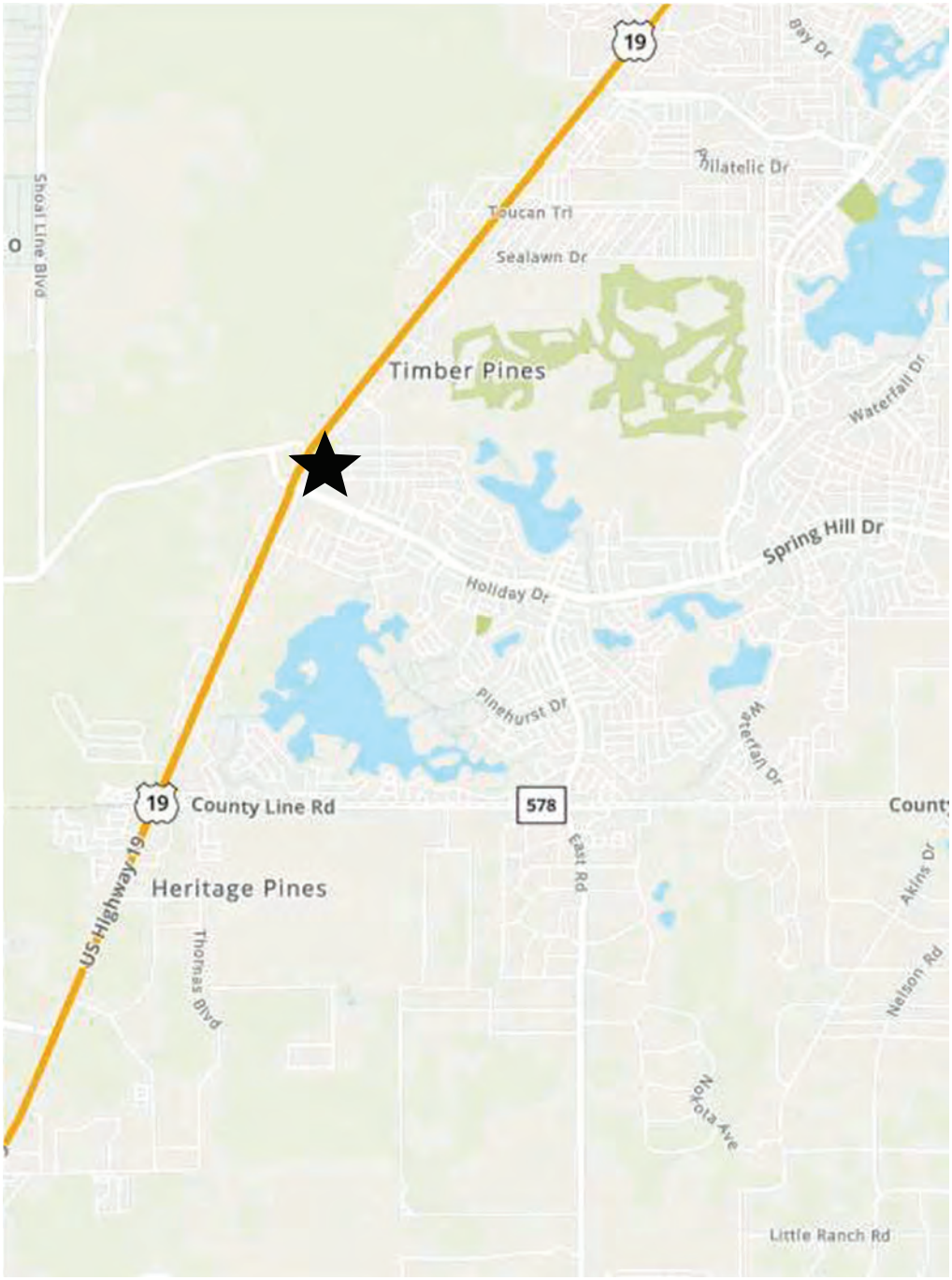
- 3 bay Quick Lube
- 3,000 square foot Coffee Shop with drive-through
- 5,500 square foot Fast Food Restaurant with Drive-Through
- 3,600 square foot Fast Food Restaurant with Drive-Through
- 3,500 square foot Medical Office.

The access for the project are proposed to be as follows.

- One (1) right-in/right-out access to US 19
- One (1) left-in/left-out/right-in/right-out access to US 19
- Connection to the frontage road to the north.

A conceptual site plan is included in the Appendix of this report.

Figure 1. Project Location



ESTIMATED DAILY PROJECT TRAFFIC

The trip rates utilized in this report were obtained from the latest computerized version of OTISS which utilizes the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021, as its database. Based on these trip rates, it is estimated that the proposed project will attract approximately 6,101 daily trip ends, as shown in Table 1.

Studies contained in the ITE Trip Generation, 11th Edition, indicate that a percentage of the project trips already exist on the adjacent roadways - passerby capture. Therefore, the new daily trip ends attracted to the proposed project would be 3,172 trip ends, as shown in Table 1.

ESTIMATED AM PROJECT TRAFFIC

Again, based on data contained in the ITE Trip Generation, 11th Edition, the proposed project would attract approximately 685 trip ends during the AM peak hour with 354 inbound and 331 outbound, as shown in Table 2.

As previously stated, studies contained in the ITE Trip Generation, 11th Edition, indicate that a percentage of the project trips already exist on the adjacent roadways - passerby capture. Therefore, the new AM peak hour trip ends attracted to the proposed project would be 352 trip ends with 184 inbound and 168 outbound, as shown in Table 2.

ESTIMATED PM PROJECT TRAFFIC

Again, based on data contained in the ITE Trip Generation, 11th Edition, the proposed project would attract approximately 444 trip ends during the PM peak hour with 227 inbound and 217 outbound, as shown in Table 3.

As previously stated, studies contained in the ITE Trip Generation, 11th Edition, indicate that a percentage of the projects trips already exist on the adjacent roadways - passerby capture. Therefore, the new PM peak hour trip ends attracted to the proposed project would be 215 trip ends with 109 inbound and 106 outbound, as shown in Table 3.

Table 1. Estimated Daily Project Traffic

Land Use	ITE LUC	Size	Daily Trip Ends (1)	Passerby Capture (1)	New Daily Trip Ends
Quick Lube	941	3 Bays	120	0	120
Coffee Shop w/ DT	937	3,000 SF	1,601	801	800
Fast Food Restaurant w DT	934	5,500 SF	2,571	1,286	1,285
Fast Food Restaurant w DT	934	3,600 SF	1,683	842	841
Medical Office	720	3,500 SF	126	0	126
		Total	6,101	2,929	3,172

(1) Source: ITE Trip Generation, 11th Edition, 2021.

Table 2. AM Peak Hour Project Traffic

Land Use	ITE LUC	Size	AM Peak Hour Trip Ends (1)			Passerby Capture (1)			New AM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total
Quick Lube	941	3 Bays	6	3	9	0	0	0	6	3	9
Coffee Shop w/ DT	937	3,000 SF	132	126	258	66	63	129	66	63	129
Fast Food Restaurant w DT	934	5,500 SF	125	120	245	63	60	123	62	60	122
Fast Food Restaurant w DT	934	3,600 SF	82	79	161	41	40	81	41	39	80
Medical Office	720	3,500 SF	9	3	12	0	0	0	9	3	12
		Total	354	331	685	170	163	333	184	168	352

(1) Source: ITE Trip Generation, 11th Edition, 2021.

Table 3. PM Peak Hour Project Traffic

Land Use	ITE LUC	Size	PM Peak Hour Trip Ends (1)			Passerby Capture (1)			New PM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total
Quick Lube	941	3 Bays	8	7	15	0	0	0	8	7	15
Coffee Shop w/ DT	937	3,000 SF	59	58	117	32	32	64	27	26	53
Fast Food Restaurant w DT	934	5,500 SF	95	87	182	52	48	100	43	39	82
Fast Food Restaurant w DT	934	3,600 SF	62	57	119	34	31	65	28	26	54
Medical Office	720	3,500 SF	3	8	11	0	0	0	3	8	11
		Total	227	217	444	118	111	229	109	106	215

(1) Source: ITE Trip Generation, 11th Edition, 2021.

PROJECT TRIP DISTRIBUTION/ASSIGNMENT

The following distribution of the new AM and PM peak hour trip ends was based on the existing traffic and development patterns with hand assignment to the local network:

- 25% to and from the north (via US 19 and Trenton Avenue)
- 25% to and from the south (via US 19)
- 40% to and from the east (via Spring Hill Drive and Trenton Avenue)
- 10% to and from the west (via Osowaw Boulevard).

Table 4 shows the distribution of the new AM and PM peak hour project trip ends. Figure 2 and Figure 3 illustrate the AM and PM peak hour trip ends, respectively.

BUDGETED IMPROVEMENTS

According to the FDOT Work Program and the Hernando County Capital Improvement Program, there are no capacity adding projects budgeted within the vicinity of the project.

Table 4. Estimated New Peak Hour Project Traffic Distribution

Time	North (25%)		South (25%)		East (40%)		West (10%)		Total	
Period	In	Out	In	Out	In	Out	In	Out	In	Out
AM	46	42	46	42	74	67	18	17	184	168
PM	27	26	27	27	44	42	11	11	109	106

Figure 2. Project Traffic – AM Peak Hour

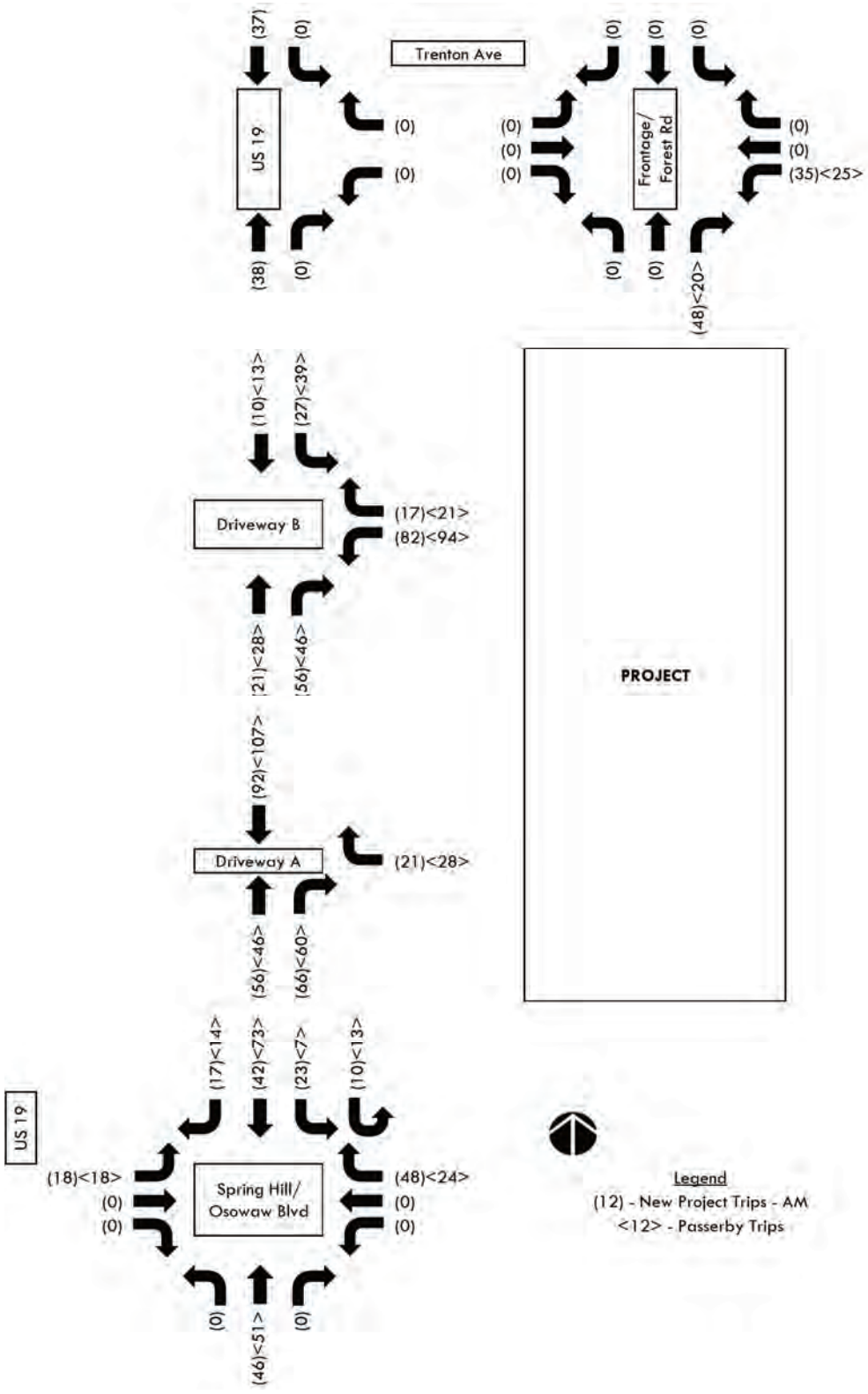
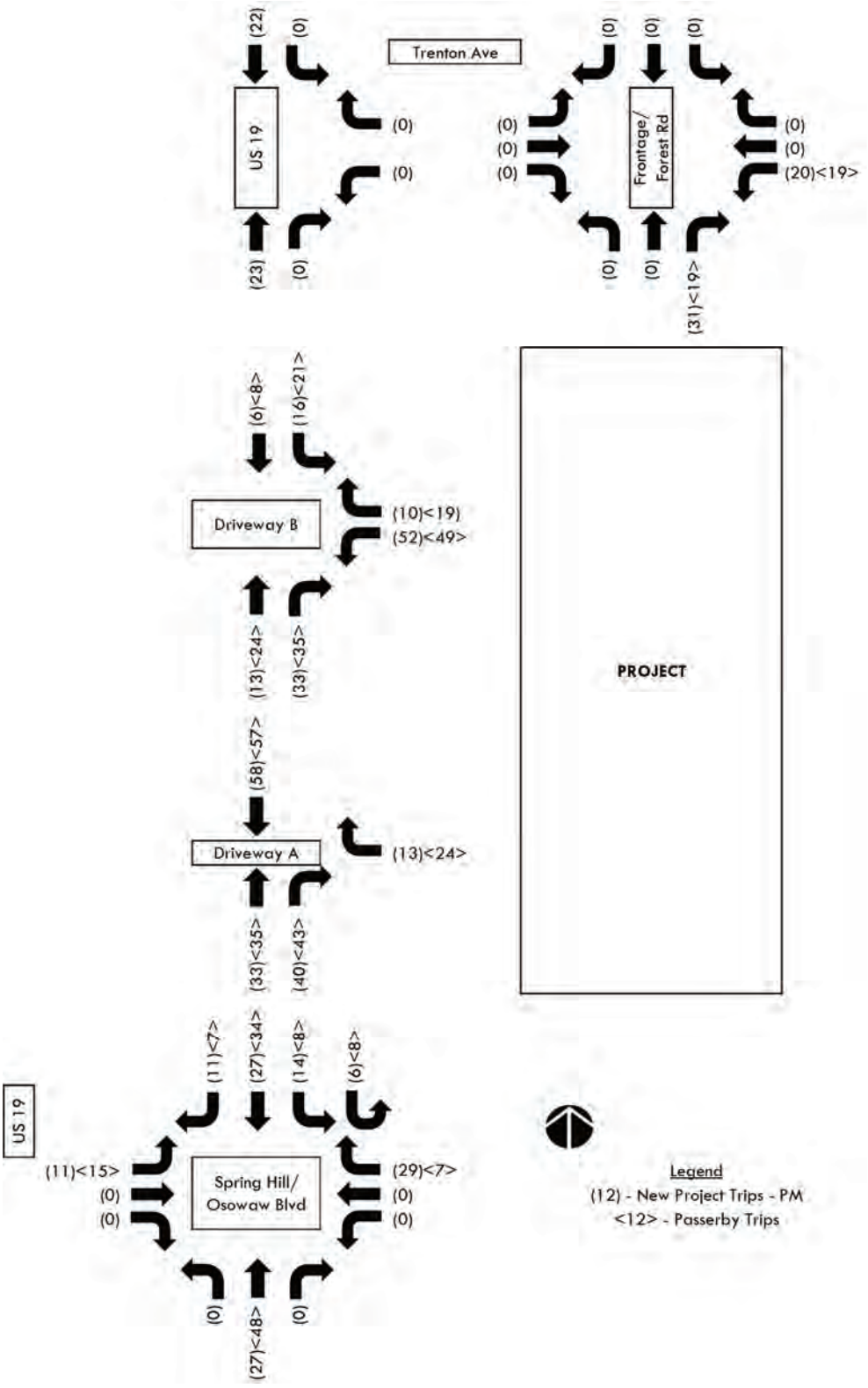


Figure 3. Project Traffic – PM Peak Hour



STUDY AREA

The study area for this analysis was determined to include all major road network facilities in which the peak hour project traffic consumes 4.5 percent or more of the adopted level of service capacity of the roadway. Table 5 shows the Study Area Determination for the project. As shown in the table, the project traffic does not consume more than 4.5 percent of the peak hour capacity on any of the adjacent links. Therefore, only the adjacent links will be included in the study area:

- US 19 from Spring Hill Drive to Trenton Avenue.

ADJACENT ROADWAYS

As stated previously, the site is located east of US 19 and north of Spring Hill Drive. US 19 is a six-lane divided roadway. Spring Hill Drive is a four (4) lane divided roadway. Pinehurst Drive is a two (2) lane undivided roadway. According to the FDOT Work Program and Hernando County Capital Improvement Plan, there are no other programmed capacity improvements in the vicinity of the project.

BUILDOUT

It is anticipated the project will have a 2026 buildout date.

Table 5. Study Area Determination

Roadway	From	To	Lanes	Peak Hour Two-Way Capacity (1)	Percent Project Traffic	New PM Peak Hour Project Traffic	Percent Consumed
US 19	Applegate Dr	Spring Hill Dr	6LD	5,390	21%	45	0.8%
	Spring Hill Dr	Trenton Ave	6LD	5,390	25%	54	1.0%
Spring Hill Dr	Kenlake Ave	US 19	4LD	3,222	20%	43	1.3%
Osowaw Blvd	US 19	Tarpon Blvd	2LU	1,197	10%	22	1.8%
Trenton Ave	US 19	Piedmont Dr	2LU	1,197	24%	51	4.3%

(1) Source: FDOT Generalized Level of Service Tables.
Local 4LD: 3,580 x 0.90 = 3,222
Local 2LU: 1,330 x 0.90 = 1,197

BACKGROUND TRAFFIC

The following methodology was utilized to estimate the existing volumes within the study area:

1. PALM TRAFFIC conducted AM (7:00 – 9:00) and PM (4:00 – 6:00) peak hour turning movement counts on Thursday, November 14, 2024, at the following intersections:

    - US 19 and Spring Hill Drive/Osowaw Boulevard
    - US 19 and Tarpon Boulevard
    - US 19 and Trenton Avenue (Thursday, July 17, 2025, PSCF – 1.09)
    - Trenton Avenue and Frontage Road/Forest Road (Thursday, July 17, 2025, PSCF - 1.09).

    Figure 4 illustrates the existing traffic for the AM and PM peak hours.

2. The turning movement counts were adjusted to the peak season based on the FDOT Peak Season Adjustment Factors for Hernando County of 1.03. Figure 5 illustrates the peak season traffic for the AM and PM peak hours.

3. Based on FDOT historical traffic counts on US 19 in the area, there has been little to no growth over the past 10 years. To be conservative, an annual growth rate of 1.0 percent per year was used to determine the background traffic in the buildout year of 2026. Figure 6 illustrates the background traffic. Figure 7 and Figure 8 illustrate the AM and PM background plus project traffic, respectively.

Figure 4. Existing Traffic

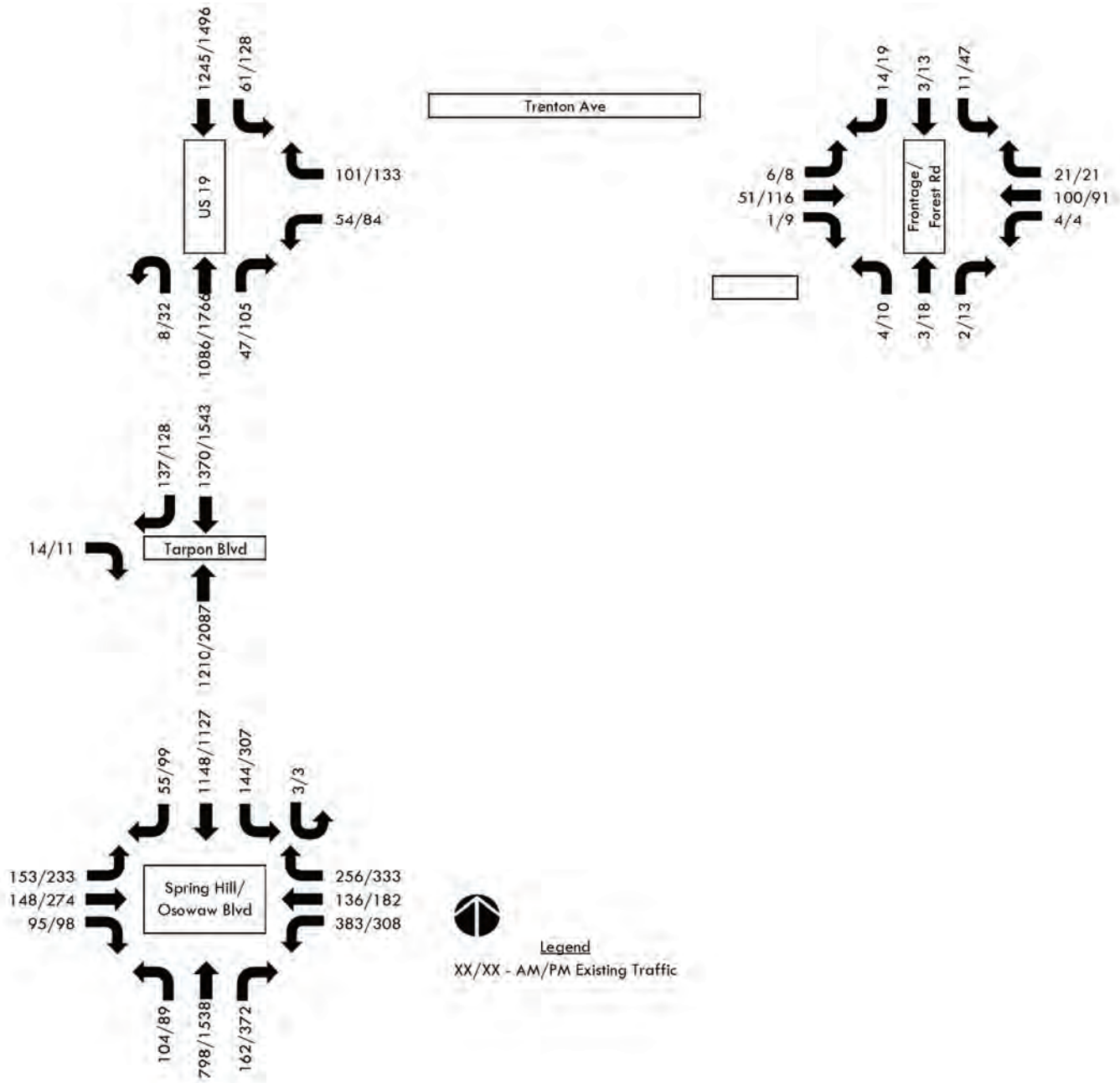


Figure 5. Peak Season Traffic

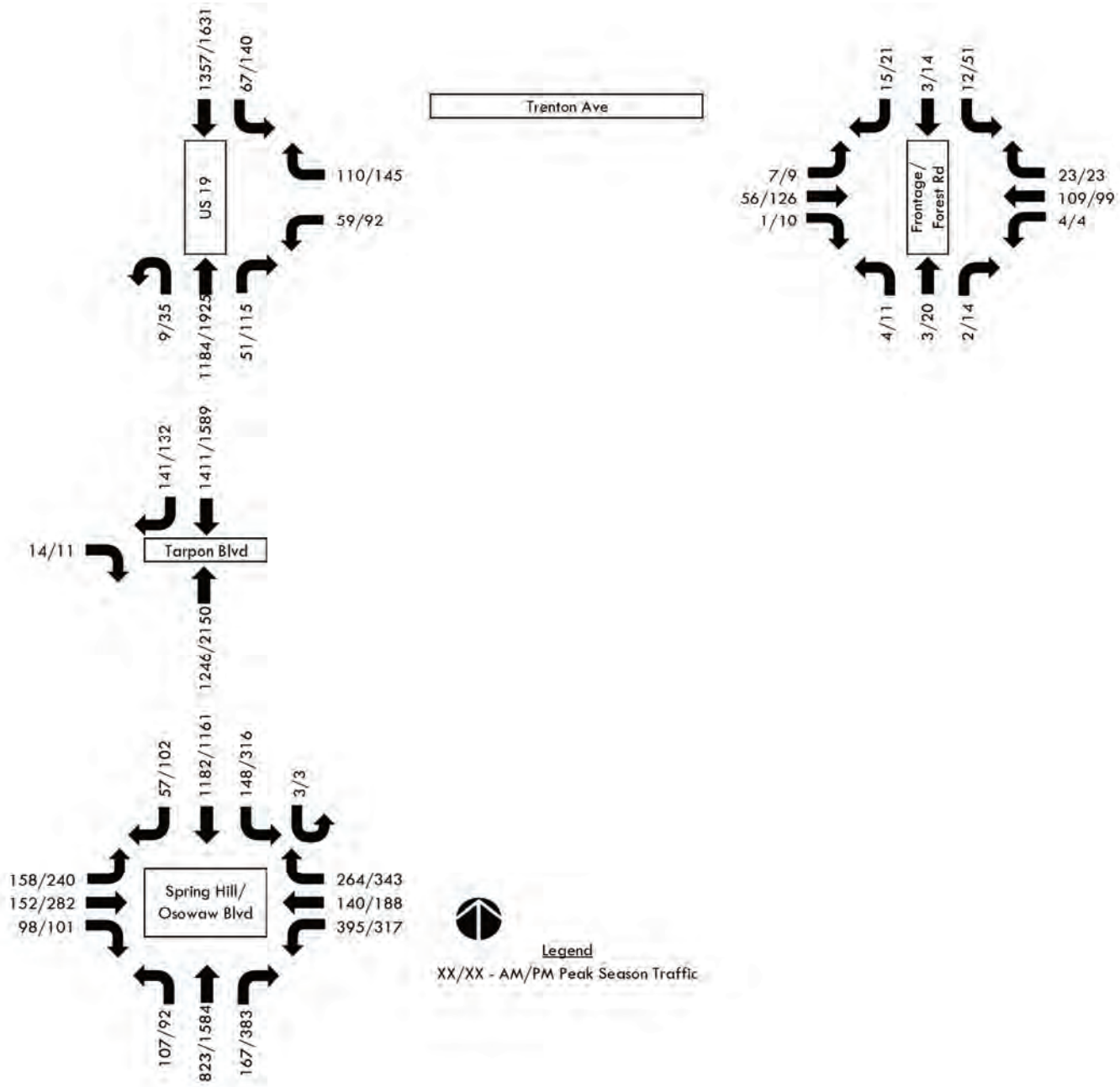


Figure 6. Background Traffic

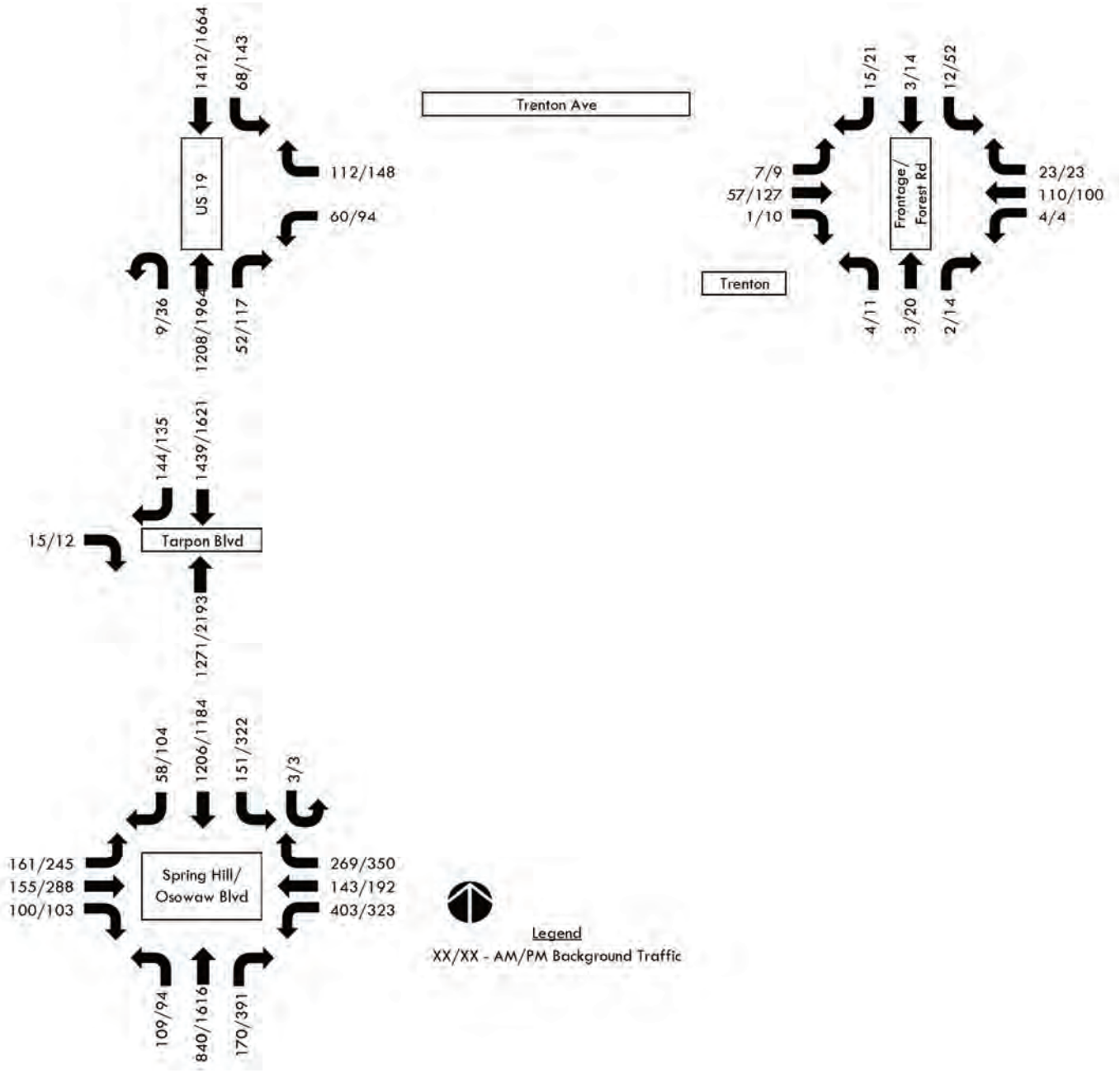


Figure 7. Background Plus Project Traffic – AM Peak Hour

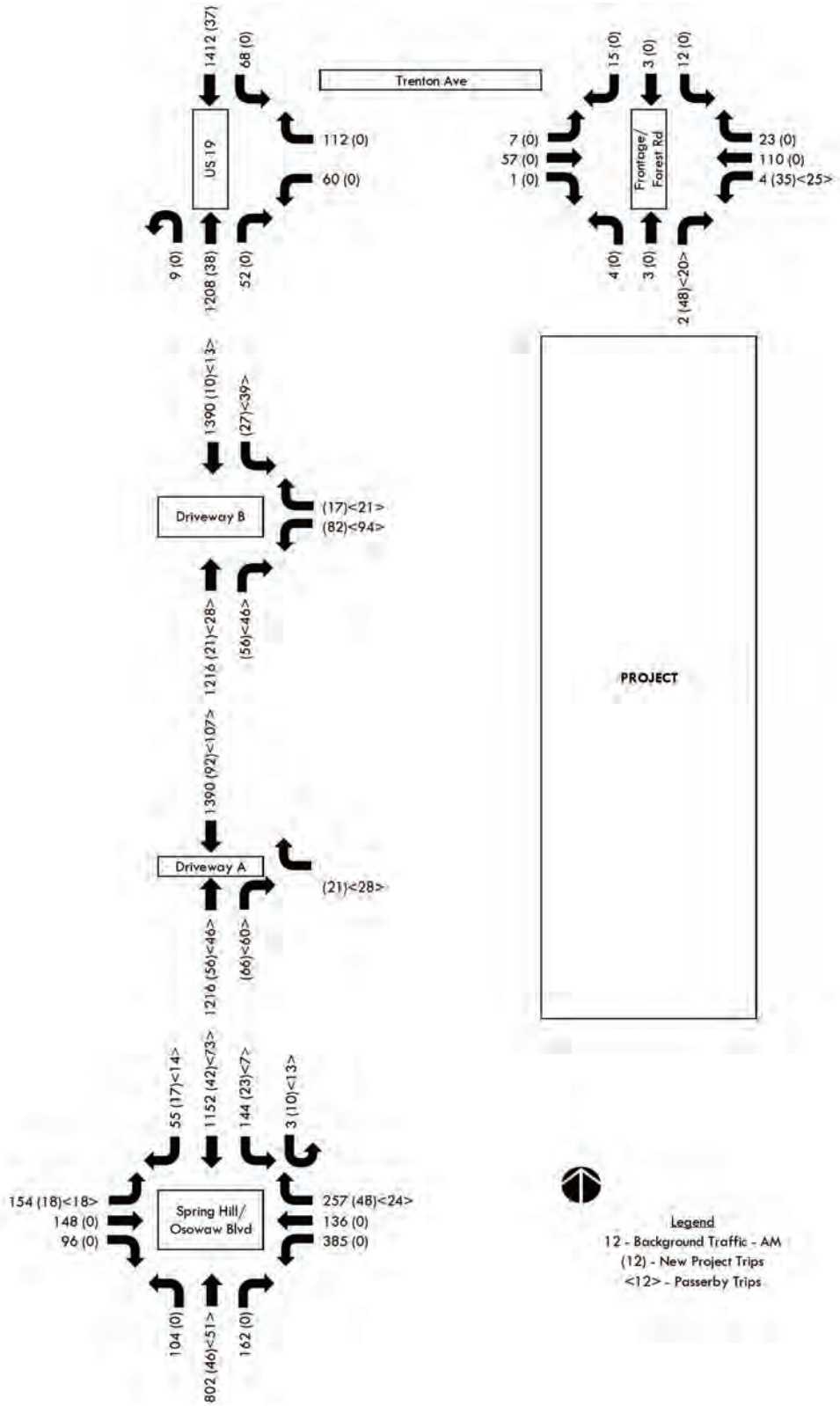
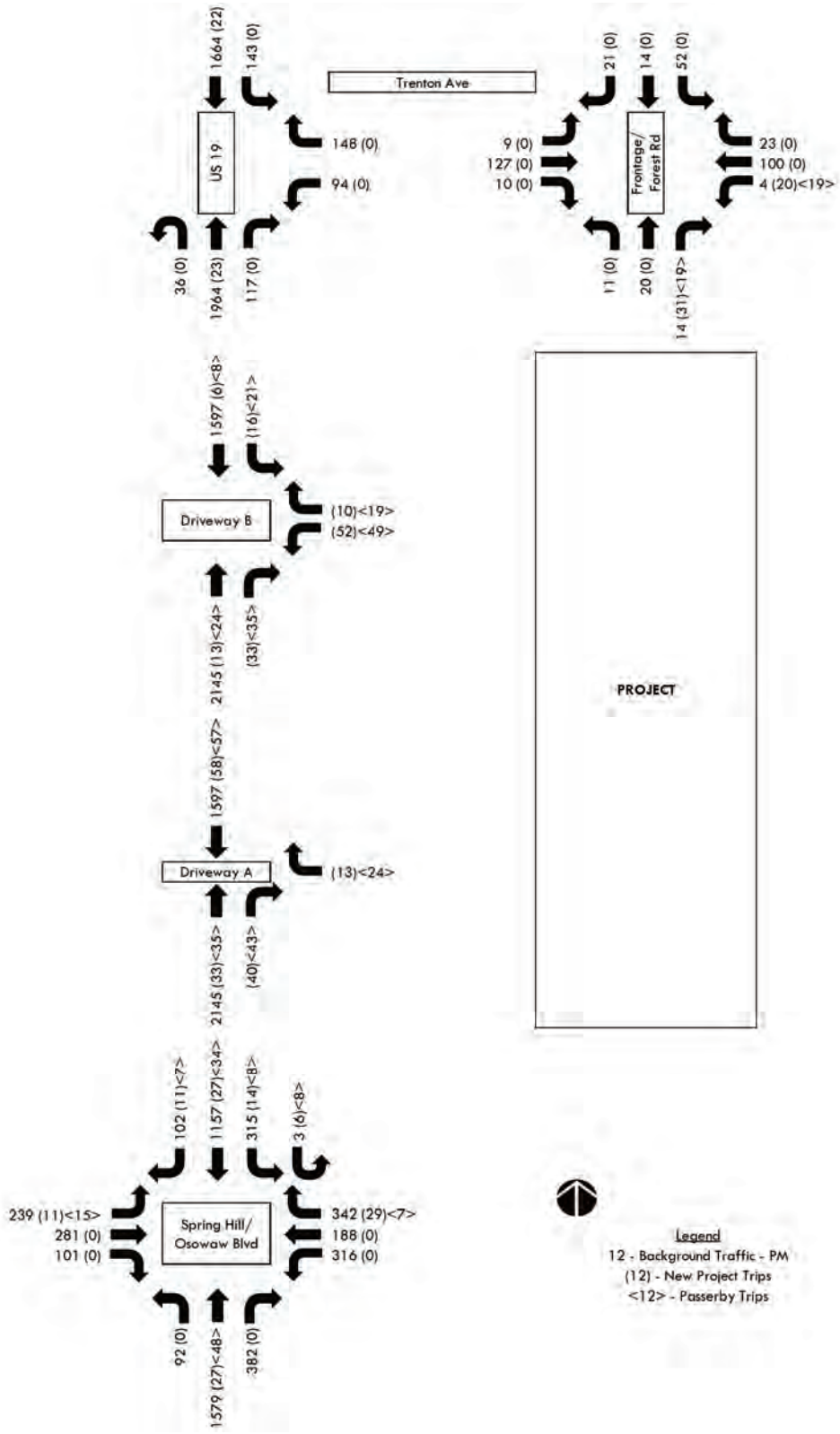


Figure 8. Background Plus Project Traffic – PM Peak Hour



INTERSECTION ANALYSIS

Intersection analysis was conducted for the AM and PM peak hours at the following intersections:

- US 19 and Osowaw Boulevard/Spring Hill Drive
- US 19 and Tarpon Boulevard/Driveway B
- US 19 and Trenton Avenue
- Trenton Avenue and Frontage Road.

The analysis was based on SYNCHRO with the proposed project traffic. Table 6 summarizes the signalized intersection analysis results. The results are also described in the following paragraphs:

US 19 and Osowaw Boulevard/Spring Hill Drive

Signalized intersection analysis indicates that all the individual movements should operate with a volume to capacity (v/c) ratio less than 1.0 during the AM and PM peak hours with background plus project traffic.

US 19 and Tarpon Boulevard/Driveway B

The intersection is unsignalized. Unsignalized intersection analysis indicates that all movements should operate with a v/c ratio less than 1.0 during the background plus project traffic during the AM and PM peak hours.

US 19 and Trenton Avenue

Signalized intersection analysis indicates that all the individual movements should operate with a volume to capacity (v/c) ratio less than 1.0 during the AM and PM peak hours with background plus project traffic.

Trenton Avenue and Frontage Road

The intersection is unsignalized. Unsignalized intersection analysis indicates that all movements should operate with a v/c ratio less than 1.0 during the background plus project traffic during the AM and PM peak hours.

Table 6. Estimated Intersection Volume to Capacity

Intersection	Movement	AM Peak Hour Traffic Background Plus Project Traffic			PM Peak Hour Traffic Background Plus Project Traffic		
		Left	Through	Right	Left	Through	Right
US 19 and Spring Hill Drive	EB	0.61	0.50	0.29	0.74	0.73	0.32
	WB	0.81	0.59	0.64	0.76	0.82	0.69
	NB	0.70	0.43	0.21	0.73	0.89	0.47
	SB	0.61	0.60	0.12	0.82	0.58	0.16
US 19 and Driveway B	WB	0.93	-	0.04	0.99	-	0.04
	NB	-	*	*	-	*	*
	SB	0.12	*	-	0.12	*	*
US 19 and Trenton Avenue	WB	0.45	-	0.51	0.63	-	0.56
	NB	0.14	0.40	0.05	0.40	0.65	0.12
	SB	0.52	0.40	-	0.73	0.49	-
Trenton Avenue and Frontage Road	EB	0.01	*	*	0.01	*	*
	WB	0.05	*	*	0.03	*	*
	NB	0.09	0.09	0.09	0.14	0.14	0.14
	SB	0.05	0.05	0.05	0.17	0.17	0.17

* Free flow

ACCESS ANALYSIS

The recommendations included in this report are based on a field review of the site, the proposed site plan and the Transportation Analysis. The methodology utilized to determine the need for a right and left turn lanes was based on the FDOT Multimodal Access Management Guidebook 2023. The access recommendations are summarized in Table 7 and described in the following paragraph:

US 19 and Driveway A

The proposed project driveway has right-in/right-out access to US 19. Based on the estimated traffic, a northbound right turn lane is warranted. Based on FDOT Design Manual 212-1, the design speed and the background plus project traffic, the turn lane should be 405 feet, which includes a 50-foot taper.

US 19 and Driveway B

This intersection has left-in/left-out/right-in/right-out access to US 19. Based on the estimated project traffic, a northbound right turn lane and a southbound left turn lane are warranted. Based on FDOT Design Manual 212-1, the design speed and the background plus project traffic, the northbound right turn lane should be 405 feet and the southbound left turn lane should be 455 feet. Both include a 50-foot taper.

Table 7. Access Recommendations

Intersection	Movement	Peak Hour Volume (1)	Turn Lane Warranted?	Queue Storage (2)	Deceleration Length (3)	Required Length
US 19 and Driveway A	NBR	126/83	Y	0'	405'	405'
US 19 and Driveway B	NBR	102/68	Y	0'	405'	405'
	SBL	66/37	Y	50'	405'	455'

(1) See Figures 7 and 8, Background Plus Project Traffic, from the report.

(2) Based on Synchro 95th percentile queue or a minimum of 50 feet for left turn lanes.

(3) Based on FDOT Design Manual 212-1 and a design speed of 60 mph on US 19.

GENERALIZED LINK ANALYSIS

A generalized link analysis was conducted for those roadways within the area of influence for the following traffic conditions:

- Peak Season Traffic
- Background Traffic
- Background Plus Project Traffic

Table 8 presents the results of the analysis for the general link analysis. According to the results shown in the table, there currently is excess capacity along US 19 during the peak season and background conditions. With the project traffic added to the background traffic, it is estimated that the roadway segments within the vicinity of the project would continue to operate at an acceptable level of service.

Table 8. Generalized Link Analysis

Roadway	From	To	LOS Standard	Lanes	Peak Hour Capacity (1)	Peak Season Traffic (2)	Background Traffic (3)	Project Traffic (4)	Background Plus Project Traffic	Available Capacity
US 19	Spring Hill Dr	Project	D	6LD	4,870	3,749	3,824	131	3,955	915
	Project	Trenton Ave	D	6LD	4,870	3,871	3,949	32	3,981	889

(1) Source: FDOT Generalized Service Volume Tables.

(2) See Figure 5, Peak Season Traffic, of this report.

(2) See Figure 6, Background Traffic, of this report.

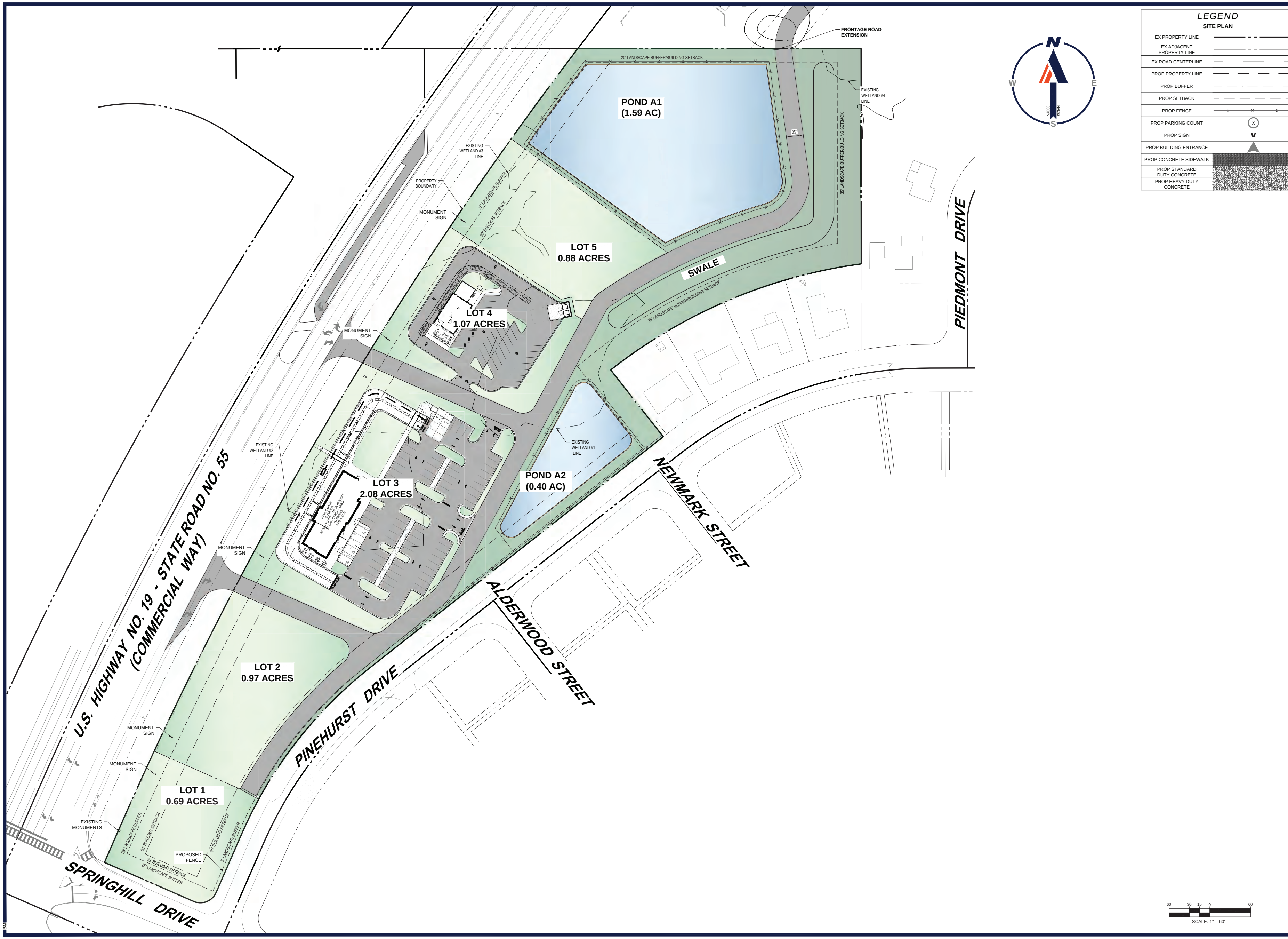
(3) See Figure 2, Project Traffic, of this report.

(4) See Figure 8, Background Plus Project Traffic, of this report.

APPENDIX

APPENDIX

CONCEPTUAL SITE PLAN



BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

FOR CONCEPT PURPOSES ONLY

THIS DRAWING IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: -FLA240096.00-0A
DRAWN BY: ~ AH/BM ~
CHECKED BY: ~ KM ~
DATE: 09/10/2025
CAD I.D.: P-EXHBA-SIT

PROJECT:

EXHIBIT

FOR

MERIDIEN DEVELOPMENT, LLC

PROPOSED DEVELOPMENT

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SHEET TITLE:

EXHIBIT PLAN

SHEET NUMBER:

1 OF 1

ORG. DATE - 07/24/2025

APPENDIX

TRIP GENERATION

PERIOD SETTING

Analysis Name :	Daily		
Project Name :	US 19 and Spring Hill Dr - 2024	**No :**	
Date:	11/27/2024	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)	Servicing Positions	3(0)	Weekday	Average 40	60(1) 50%	60(1) 50%	120(1)
937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	3(0)	Weekday	Average 533.57	801 50%	800 50%	1601
934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	5.5	Weekday	Average 467.48	1286 50%	1285 50%	2571
934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)	1000 Sq. Ft. GFA	3.6	Weekday	Average 467.48	842 50%	841 50%	1683
720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)	1000 Sq. Ft. GFA	3.5	Weekday	Average 36	63 50%	63 50%	126

(0) indicates size out of range.
(1) indicates small sample size, use carefully.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
941 - Quick Lubrication Vehicle Shop	0 %	60	0 %	60
937 - Coffee/Donut Shop with Drive-Through Window	0 %	801	0 %	800
934 - Fast-Food Restaurant with Drive-Through Window	0 %	1286	0 %	1285
934 - Fast-Food Restaurant with Drive-Through Window - 1	0 %	842	0 %	841
720 - Medical-Dental Office Building	0 %	63	0 %	63

INTERNAL TRIPS

941 - Quick Lubrication Vehicle Shop

Exit	60	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	801
Entry	60	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	800

937 - Coffee/Donut Shop with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit	60	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	1286
Entry	60	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	1285

934 - Fast-Food Restaurant with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit	60	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	842
Entry	60	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	841

934 - Fast-Food Restaurant with Drive-Through Window - 1

941 - Quick Lubrication Vehicle Shop

Exit	60	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	63
Entry	60	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	63

720 - Medical-Dental Office Building

937 - Coffee/Donut Shop with Drive-Through Window

Exit	800	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	1286
Entry	801	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	1285

934 - Fast-Food Restaurant with Drive-Through Window

937 - Coffee/Donut Shop with Drive-Through Window

Exit	800	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	842
Entry	801	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	841

934 - Fast-Food Restaurant with Drive-Through Window - 1

937 - Coffee/Donut Shop with Drive-Through Window

Exit	800	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	63
Entry	801	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	63

720 - Medical-Dental Office Building

934 - Fast-Food Restaurant with Drive-Through Window

Exit	1285	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	842
Entry	1286	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	841

934 - Fast-Food Restaurant with Drive-Through Window - 1

934 - Fast-Food Restaurant with Drive-Through Window

720 - Medical-Dental Office Building

Exit	1285	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 63
Entry	1286	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 63

934 - Fast-Food Restaurant with Drive-Through Window - 1 **720 - Medical-Dental Office Building**

Exit	841	Demand Exit:	0 % (0)	Balanced: 0	Demand Entry:	0 % (0)	**Entry** 63
Entry	842	Demand Entry:	0 % (0)	Balanced: 0	Demand Exit:	0 % (0)	**Exit** 63

941 - Quick Lubrication Vehicle Shop

	Total Trips	**Internal Trips**					**External Trips**
		937 - Coffee/Donut Shop with Drive-Through Window	**934 - Fast-Food Restaurant with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window - 1**	**720 - Medical-Dental Office Building**	**Total**	
Entry	60 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	60 (100%)
Exit	60 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	60 (100%)
Total	120 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	120 (100%)

937 - Coffee/Donut Shop with Drive-Through Window

	Total Trips	**Internal Trips**					**External Trips**
		941 - Quick Lubrication Vehicle Shop	**934 - Fast-Food Restaurant with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window - 1**	**720 - Medical-Dental Office Building**	**Total**	
Entry	801 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	801 (100%)
Exit	800 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	800 (100%)
Total	1601 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1601 (100%)

934 - Fast-Food Restaurant with Drive-Through Window

	Total Trips	**Internal Trips**					**External Trips**
		941 - Quick Lubrication Vehicle Shop	**937 - Coffee/Donut Shop with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window - 1**	**720 - Medical-Dental Office Building**	**Total**	
Entry	1286 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1286 (100%)
Exit	1285 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1285 (100%)
Total	2571 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2571 (100%)

934 - Fast-Food Restaurant with Drive-Through Window - 1

	Total Trips	**Internal Trips**					**External Trips**
		941 - Quick Lubrication Vehicle Shop	**937 - Coffee/Donut Shop with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window**	**720 - Medical-Dental Office Building**	**Total**	
Entry	842 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	842 (100%)

Exit	841 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	841 (100%)
Total	1683 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1683 (100%)

720 - Medical-Dental Office Building

	Total Trips	**Internal Trips**					**External Trips**
		941 - Quick Lubrication Vehicle Shop	**937 - Coffee/Donut Shop with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window**	**934 - Fast-Food Restaurant with Drive-Through Window - 1**	**Total**	
Entry	63 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	63 (100%)
Exit	63 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	63 (100%)
Total	126 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	126 (100%)

EXTERNAL TRIPS

Land Use	**External Trips**	**Pass-by%**	**Pass-by Trips**	**Non-pass-by Trips**
941 - Quick Lubrication Vehicle Shop	120	0	0	120
937 - Coffee/Donut Shop with Drive-Through Window	1601	50	801	800
934 - Fast-Food Restaurant with Drive-Through Window	2571	50	1286	1285
934 - Fast-Food Restaurant with Drive-Through Window - 1	1683	50	842	841
720 - Medical-Dental Office Building	126	0	0	126

ITE DEVIATION DETAILS

Weekday

Landuse No deviations from ITE.

Methods No deviations from ITE.

Weekday

External Trips

941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	3052
Total Exiting	3049
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	1464
Total Exiting Pass-by Reduction	1465
Total Entering Non-Pass-by Trips	1588
Total Exiting Non-Pass-by Trips	1584

PERIOD SETTING

Analysis Name :	AM Peak Hour		
Project Name :	US 19 and Spring Hill Dr - 2024	**No :**	
Date:	11/27/2024	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)	Servicing Positions	3(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 3	6(1) 67%	3(1) 33%	9(1)
937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	3	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 85.88	132 51%	126 49%	258
934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	5.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 44.61	125 51%	120 49%	245
934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)	1000 Sq. Ft. GFA	3.6	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 44.61	82 51%	79 49%	161
720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)	1000 Sq. Ft. GFA	3.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) Ln(T) = 0.9Ln(X) +1.34	9 75%	3 25%	12

(0) indicates size out of range.
(1) indicates small sample size, use carefully.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
941 - Quick Lubrication Vehicle Shop	0 %	6	0 %	3
937 - Coffee/Donut Shop with Drive-Through Window	0 %	132	0 %	126

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
934 - Fast-Food Restaurant with Drive-Through Window	0 %	125	0 %	120
934 - Fast-Food Restaurant with Drive-Through Window - 1	0 %	82	0 %	79
720 - Medical-Dental Office Building	0 %	9	0 %	3

INTERNAL TRIPS

941 - Quick Lubrication Vehicle Shop

Exit 3 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 132

Entry 6 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 126

937 - Coffee/Donut Shop with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit 3 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 125

Entry 6 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 120

934 - Fast-Food Restaurant with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit 3 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 82

Entry 6 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 79

934 - Fast-Food Restaurant with Drive-Through Window - 1

941 - Quick Lubrication Vehicle Shop

Exit 3 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 9

Entry 6 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 3

720 - Medical-Dental Office Building

937 - Coffee/Donut Shop with Drive-Through Window

Exit 126 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 125

Entry 132 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 120

934 - Fast-Food Restaurant with Drive-Through Window

937 - Coffee/Donut Shop with Drive-Through Window

Exit 126 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 82

Entry 132 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 79

934 - Fast-Food Restaurant with Drive-Through Window - 1

937 - Coffee/Donut Shop with Drive-Through Window

Exit 126 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 9

720 - Medical-Dental Office Building

Entry	132	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	3

934 - Fast-Food Restaurant with Drive-Through Window

934 - Fast-Food Restaurant with Drive-Through Window - 1

Exit	120	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	82
Entry	125	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	79

934 - Fast-Food Restaurant with Drive-Through Window

720 - Medical-Dental Office Building

Exit	120	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	9
Entry	125	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	3

934 - Fast-Food Restaurant with Drive-Through Window - 1

720 - Medical-Dental Office Building

Exit	79	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	9
Entry	82	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	3

941 - Quick Lubrication Vehicle Shop

	Total Trips	Internal Trips					External Trips
		937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Exit	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Total	9 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (100%)

937 - Coffee/Donut Shop with Drive-Through Window

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	132 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	132 (100%)
Exit	126 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	126 (100%)
Total	258 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	258 (100%)

934 - Fast-Food Restaurant with Drive-Through Window

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	125 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	125 (100%)
Exit	120 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	120 (100%)

Total	245 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	245 (100%)

934 - Fast-Food Restaurant with Drive-Through Window - 1

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	720 - Medical-Dental Office Building	Total	
Entry	82 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	82 (100%)
Exit	79 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	79 (100%)
Total	161 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	161 (100%)

720 - Medical-Dental Office Building

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	Total	
Entry	9 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (100%)
Exit	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Total	12 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	12 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
941 - Quick Lubrication Vehicle Shop	9	0	0	9
937 - Coffee/Donut Shop with Drive-Through Window	258	50	129	129
934 - Fast-Food Restaurant with Drive-Through Window	245	50	123	122
934 - Fast-Food Restaurant with Drive-Through Window - 1	161	50	81	80
720 - Medical-Dental Office Building	12	0	0	12

ITE DEVIATION DETAILS

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

Landuse No deviations from ITE.

Methods No deviations from ITE.

External Trips 941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)

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

ITE does not recommend a particular pass-by% for this case.

937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	354
Total Exiting	331
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	169
Total Exiting Pass-by Reduction	164
Total Entering Non-Pass-by Trips	185
Total Exiting Non-Pass-by Trips	167

PERIOD SETTING

Analysis Name :	PM Peak Hour		
Project Name :	US 19 and Spring Hill Dr - 2024	**No :**	
Date:	11/27/2024	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)	Servicing Positions	3	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 4.85	8 53%	7 47%	15
937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	3	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 38.99	59 50%	58 50%	117
934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)	1000 Sq. Ft. GFA	5.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 33.03	95 52%	87 48%	182
934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)	1000 Sq. Ft. GFA	3.6	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 33.03	62 52%	57 48%	119
720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)	1000 Sq. Ft. GFA	3.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 4.07 (X)+-3.17	3 27%	8 73%	11

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
941 - Quick Lubrication Vehicle Shop	0 %	8	0 %	7
937 - Coffee/Donut Shop with Drive-Through Window	0 %	59	0 %	58
934 - Fast-Food Restaurant with Drive-Through Window	0 %	95	0 %	87

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
934 - Fast-Food Restaurant with Drive-Through Window - 1	0 %	62	0 %	57
720 - Medical-Dental Office Building	0 %	3	0 %	8

INTERNAL TRIPS

941 - Quick Lubrication Vehicle Shop

Exit 7 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 59

Entry 8 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 58

937 - Coffee/Donut Shop with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit 7 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 95

Entry 8 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 87

934 - Fast-Food Restaurant with Drive-Through Window

941 - Quick Lubrication Vehicle Shop

Exit 7 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 62

Entry 8 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 57

934 - Fast-Food Restaurant with Drive-Through Window - 1

941 - Quick Lubrication Vehicle Shop

Exit 7 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 3

Entry 8 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 8

720 - Medical-Dental Office Building

937 - Coffee/Donut Shop with Drive-Through Window

Exit 58 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 95

Entry 59 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 87

934 - Fast-Food Restaurant with Drive-Through Window

937 - Coffee/Donut Shop with Drive-Through Window

Exit 58 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 62

Entry 59 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 57

934 - Fast-Food Restaurant with Drive-Through Window - 1

937 - Coffee/Donut Shop with Drive-Through Window

Exit 58 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 3

Entry 59 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 8

720 - Medical-Dental Office Building

934 - Fast-Food Restaurant with Drive-Through Window

Exit	87	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 62
Entry	95	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 57

934 - Fast-Food Restaurant with Drive-Through Window - 1

934 - Fast-Food Restaurant with Drive-Through Window

Exit	87	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 3
Entry	95	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 8

720 - Medical-Dental Office Building

934 - Fast-Food Restaurant with Drive-Through Window - 1

Exit	57	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 3
Entry	62	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 8

720 - Medical-Dental Office Building

941 - Quick Lubrication Vehicle Shop

	Total Trips	Internal Trips					External Trips
		937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	8 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Exit	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Total	15 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	15 (100%)

937 - Coffee/Donut Shop with Drive-Through Window

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	59 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	59 (100%)
Exit	58 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	58 (100%)
Total	117 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	117 (100%)

934 - Fast-Food Restaurant with Drive-Through Window

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	720 - Medical-Dental Office Building	Total	
Entry	95 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	95 (100%)
Exit	87 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	87 (100%)
Total	182 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	182 (100%)

934 - Fast-Food Restaurant with Drive-Through Window - 1

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	720 - Medical-Dental Office Building	Total	
Entry	62 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	62 (100%)
Exit	57 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	57 (100%)
Total	119 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	119 (100%)

720 - Medical-Dental Office Building

	Total Trips	Internal Trips					External Trips
		941 - Quick Lubrication Vehicle Shop	937 - Coffee/Donut Shop with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window	934 - Fast-Food Restaurant with Drive-Through Window - 1	Total	
Entry	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Exit	8 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Total	11 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
941 - Quick Lubrication Vehicle Shop	15	0	0	15
937 - Coffee/Donut Shop with Drive-Through Window	117	55	64	53
934 - Fast-Food Restaurant with Drive-Through Window	182	55	100	82
934 - Fast-Food Restaurant with Drive-Through Window - 1	119	55	65	54
720 - Medical-Dental Office Building	11	0	0	11

ITE DEVIATION DETAILS

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

Landuse — No deviations from ITE.

Methods — No deviations from ITE.

External Trips — 941 - Quick Lubrication Vehicle Shop (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

937 - Coffee/Donut Shop with Drive-Through Window (General Urban/Suburban)

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

ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

934 - Fast-Food Restaurant with Drive-Through Window - 1 (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

720 - Medical-Dental Office Building - Stand-Alone (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	227
Total Exiting	217
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	118
Total Exiting Pass-by Reduction	111
Total Entering Non-Pass-by Trips	109
Total Exiting Non-Pass-by Trips	106

APPENDIX

ITE PASSERBY RATES

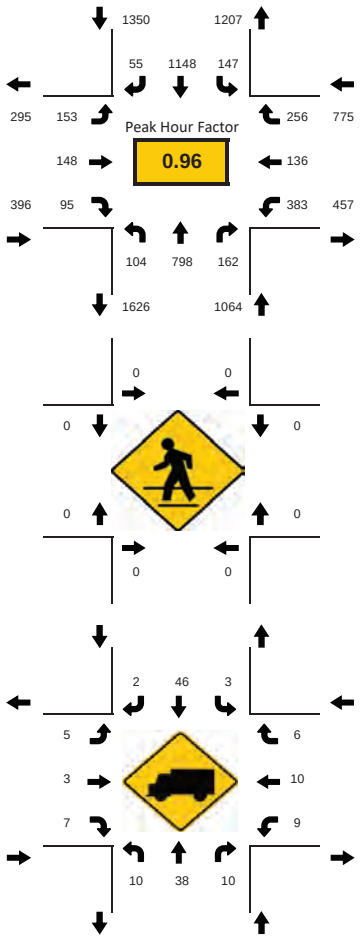
APPENDIX

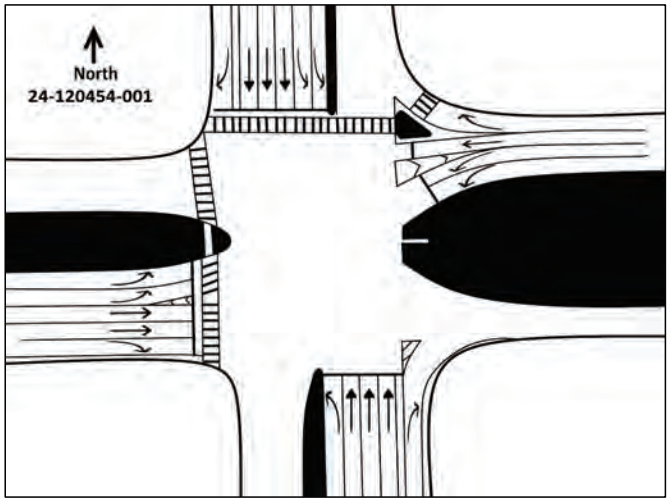
TURNING MOVEMENT COUNTS

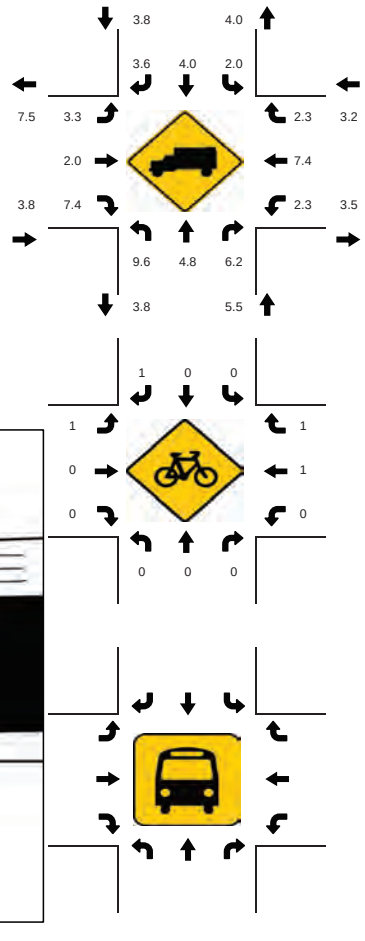
LOCATION: Commercial Way/US 19 & Spring Hill Dr/Osowaw Blvd
CITY/STATE: Spring Hill, FL

PROJECT ID: 24-120454-001
DATE: Thu, Nov 14, 2024

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:30 AM - 07:45 AM





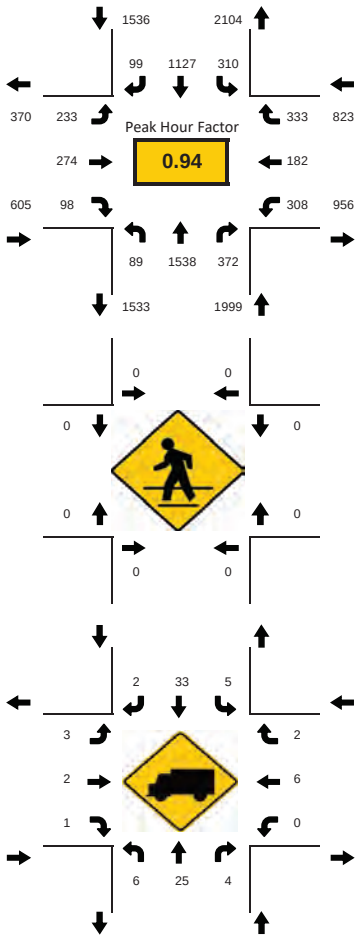


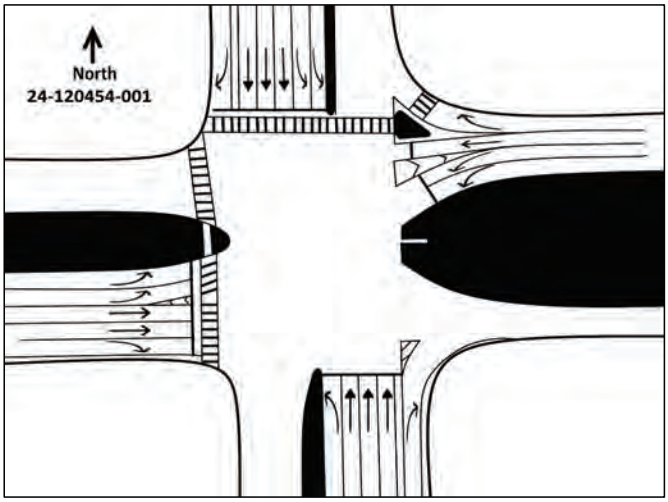
15-Min Count Period Beginning At	Commercial Way/US 19 Northbound					Commercial Way/US 19 Southbound					Spring Hill Dr/Osowaw Blvd Eastbound					Spring Hill Dr/Osowaw Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	4	123	31	0		29	274	8	0		20	22	16	0		92	12	37	0		668	3320
7:15 AM	9	191	26	0		32	290	5	1		17	29	14	1		117	27	36	0		795	3533
7:30 AM	28	210	41	0		34	332	11	0		15	29	25	0		116	29	64	0		934	3585
7:45 AM	23	215	48	0		35	302	8	2		41	23	15	0		104	38	69	0		923	3510
8:00 AM	33	191	37	0		35	244	18	1		60	55	25	0		83	41	58	0		881	3535
8:15 AM	19	182	36	1		40	270	18	0		37	41	30	0		80	28	65	0		847	2654
8:30 AM	27	208	52	0		47	258	23	2		32	24	16	0		83	27	60	0		859	1807
8:45 AM	13	235	44	0		67	299	18	0		37	29	16	1		86	34	69	0		948	948
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	132	860	192	4		160	1328	72	8		240	220	120	0		464	164	276	0		**4240**	
Heavy Trucks	24	56	12	0		4	76	4	0		12	8	12	0		16	16	12	0		**252**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	4	0		4	0	0	0		0	4	4	0		**16**	
Buses																						
Stopped Buses																						

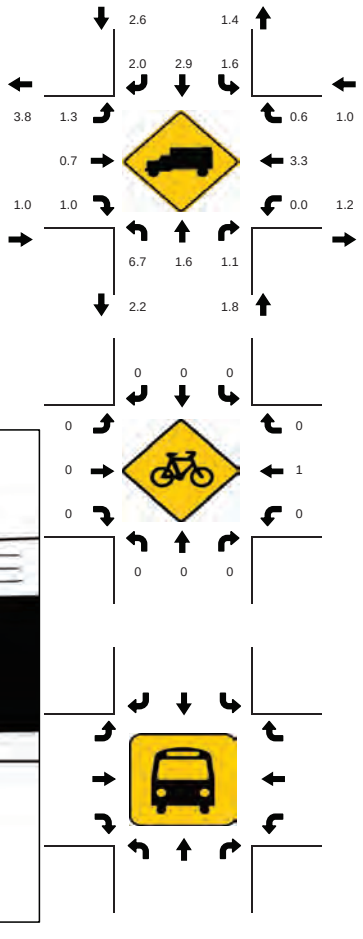
LOCATION: Commercial Way/US 19 & Spring Hill Dr/Osowaw Blvd
CITY/STATE: Spring Hill, FL

PROJECT ID: 24-120454-001
DATE: Thu, Nov 14, 2024

Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 05:15 PM - 05:30 PM





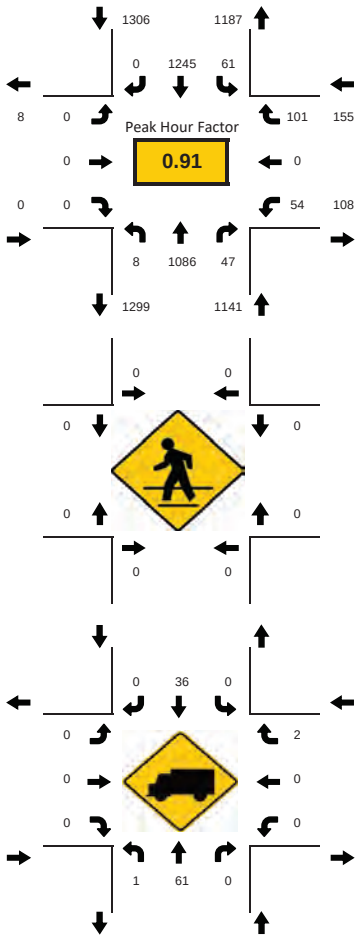


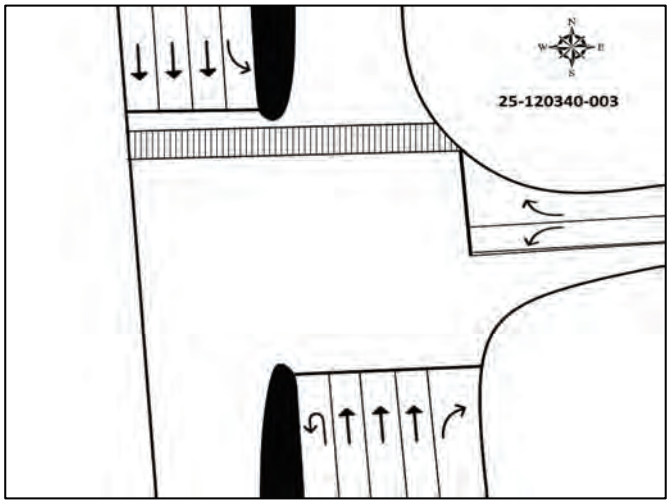
15-Min Count Period Beginning At	Commercial Way/US 19 Northbound					Commercial Way/US 19 Southbound					Spring Hill Dr/Osowaw Blvd Eastbound					Spring Hill Dr/Osowaw Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	18	284	82	0		81	278	41	0		76	89	24	0		76	54	76	0		1179	4720
4:15 PM	29	402	117	0		45	250	19	3		68	46	16	0		87	31	73	0		1186	4835
4:30 PM	17	363	96	1		79	284	23	0		60	68	26	0		65	52	93	0		1227	4963
4:45 PM	22	318	76	0		68	255	23	0		73	74	23	0		75	40	80	1		1128	4850
5:00 PM	31	429	83	0		76	299	32	3		54	69	25	0		78	33	82	0		1294	4728
5:15 PM	18	428	117	0		84	289	21	0		45	63	24	1		89	57	78	0		1314	3434
5:30 PM	23	310	86	0		53	233	28	1		63	81	30	0		83	55	67	1		1114	2120
5:45 PM	19	322	70	0		56	236	27	0		47	56	22	0		48	36	67	0		1006	1006
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	124	1716	468	4		336	1196	128	12		292	296	104	4		356	228	372	4		**5640**	
Heavy Trucks	16	36	8	0		12	44	4	0		8	4	4	0		0	12	4	0		**152**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	4	0	0		**4**	
Buses																						
Stopped Buses																						

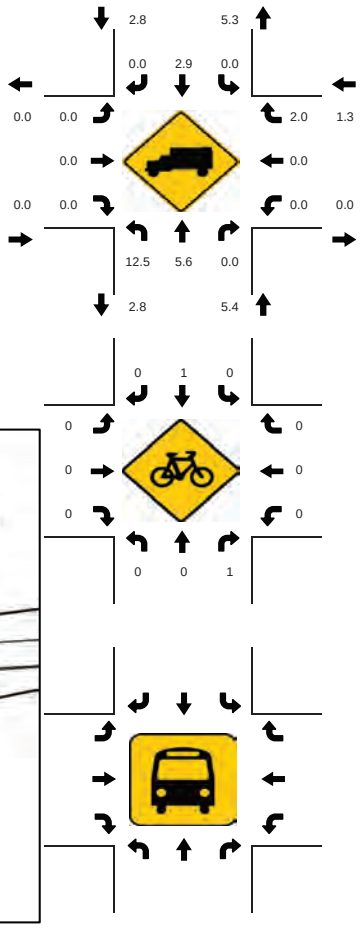
LOCATION: Commercial Way/US 19 & Trenton Ave
CITY/STATE: Spring Hill, FL

PROJECT ID: 25-120340-003
DATE: Thu, Jul 17, 2025

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:45 AM - 08:00 AM





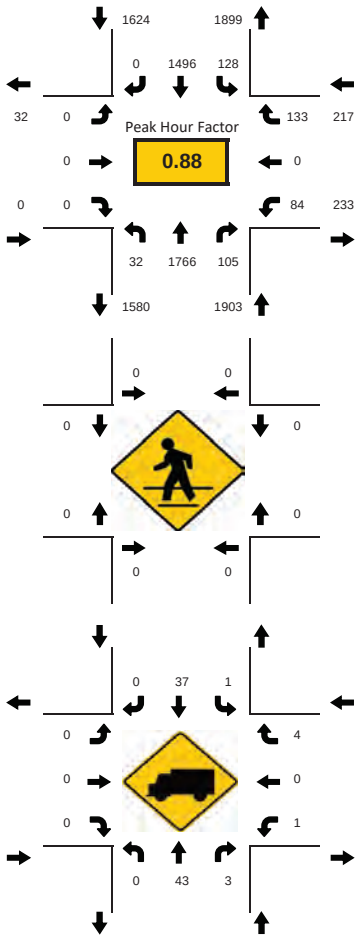


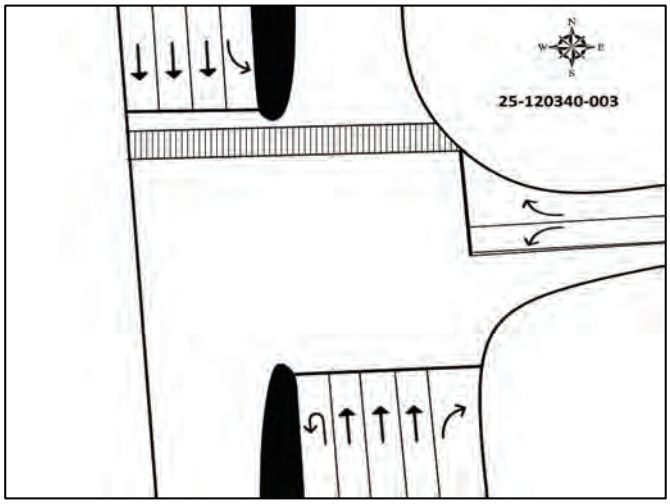
15-Min Count Period Beginning At	Commercial Way/US 19 Northbound					Commercial Way/US 19 Southbound					Trenton Ave Eastbound					Trenton Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	178	3	2		6	282	0	0		0	0	0	0		5	0	17	0		493	2440
7:15 AM	0	192	7	1		10	328	0	0		0	0	0	0		9	0	22	0		569	2552
7:30 AM	0	286	9	4		14	307	0	0		0	0	0	0		12	0	28	0		660	2602
7:45 AM	0	282	11	2		19	359	0	0		0	0	0	0		19	0	26	0		718	2553
8:00 AM	0	259	9	2		14	280	0	0		0	0	0	0		18	0	23	0		605	2516
8:15 AM	0	259	18	0		14	299	0	0		0	0	0	0		5	0	24	0		619	1911
8:30 AM	0	258	17	1		20	263	0	0		0	0	0	0		19	0	33	0		611	1292
8:45 AM	0	307	13	4		17	295	0	0		0	0	0	0		17	0	28	0		681	681
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	1144	72	16		76	1436	0	0		0	0	0	0		76	0	112	0		**2932**	
Heavy Trucks	0	80	0	4		0	60	0	0		0	0	0	0		0	0	4	0		**144**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	4	0		0	4	0	0		0	0	0	0		0	0	0	0		**8**	
Buses																						
Stopped Buses																						

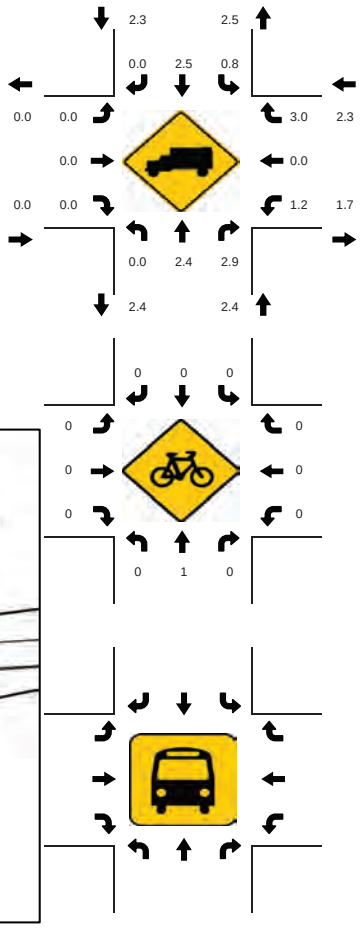
LOCATION: Commercial Way/US 19 & Trenton Ave
CITY/STATE: Spring Hill, FL

PROJECT ID: 25-120340-003
DATE: Thu, Jul 17, 2025

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:30 PM - 04:45 PM



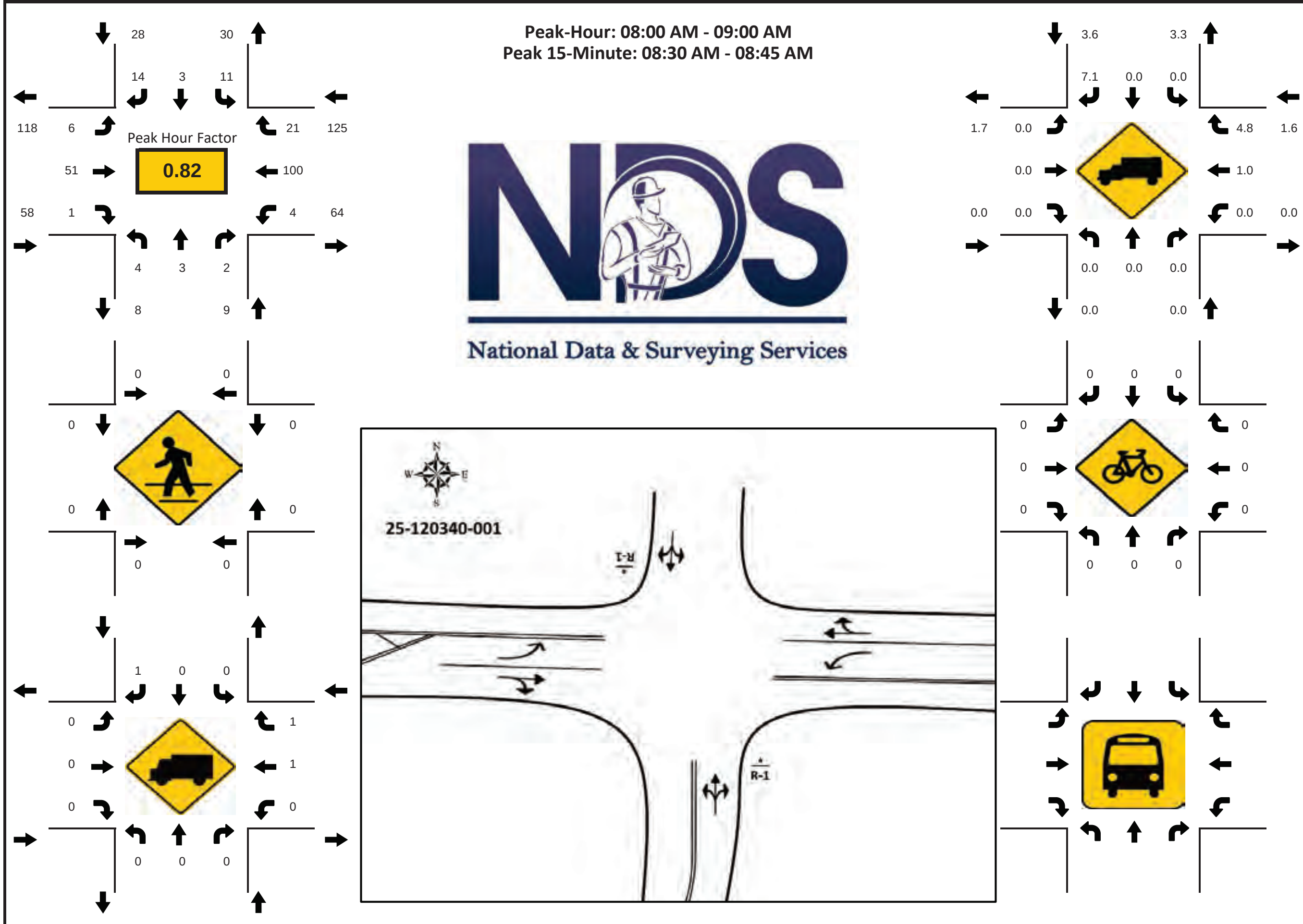




15-Min Count Period Beginning At	Commercial Way/US 19 Northbound					Commercial Way/US 19 Southbound					Trenton Ave Eastbound					Trenton Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	433	26	11		26	407	0	0		0	0	0	0		20	0	34	0		957	3744
4:15 PM	0	431	26	10		35	305	0	1		0	0	0	0		20	0	29	0		857	3574
4:30 PM	0	479	25	7		31	467	0	0		0	0	0	0		23	0	34	0		1066	3639
4:45 PM	0	423	28	4		33	317	0	2		0	0	0	0		21	0	36	0		864	3352
5:00 PM	0	395	16	6		29	295	0	1		0	0	0	0		22	0	23	0		787	3286
5:15 PM	0	467	21	8		33	344	0	0		0	0	0	0		18	0	31	0		922	2499
5:30 PM	0	423	22	3		22	267	0	0		0	0	0	0		19	0	23	0		779	1577
5:45 PM	0	407	24	1		29	283	0	0		0	0	0	0		20	0	34	0		798	798
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**						
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Total**	
All Vehicles	0	1916	112	44		140	1868	0	8		0	0	0	0		92	0	144	0		**4324**	
Heavy Trucks	0	56	8	0		4	44	0	0		0	0	0	0		4	0	12	0		**128**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	4	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**4**	
Buses																						
Stopped Buses																						

LOCATION: Frontage Rd/Forest Rd & Trenton Ave **PROJECT ID:** 25-120340-001
CITY/STATE: Spring Hill, FL **DATE:** Thu, Jul 17, 2025

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:30 AM - 08:45 AM

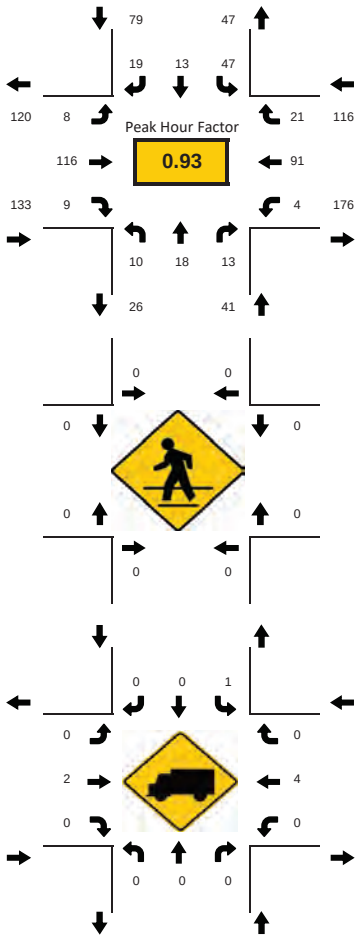


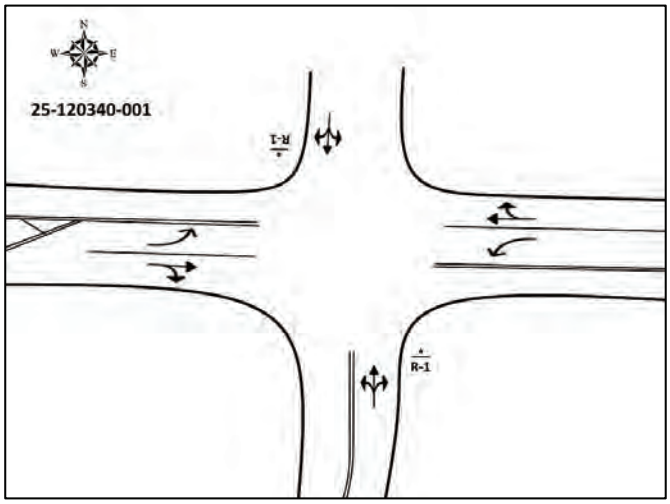
15-Min Count Period Beginning At	Frontage Rd/Forest Rd Northbound					Frontage Rd/Forest Rd Southbound					Trenton Ave Eastbound					Trenton Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	0	0	0		2	0	0	0		0	6	0	0		0	18	1	0		27	171
7:15 AM	0	1	0	0		3	0	4	0		1	7	0	0		2	19	3	0		40	188
7:30 AM	0	0	0	0		5	0	3	0		0	10	0	0		0	24	4	0		46	195
7:45 AM	3	2	0	0		3	1	5	0		0	11	1	0		0	25	7	0		58	216
8:00 AM	1	1	0	0		0	0	3	0		0	11	0	0		1	20	7	0		44	220
8:15 AM	1	0	2	0		4	1	0	0		0	10	0	0		3	25	1	0		47	176
8:30 AM	2	1	0	0		4	1	7	0		2	15	0	0		0	32	3	0		67	129
8:45 AM	0	1	0	0		3	1	4	0		4	15	1	0		0	23	10	0		62	62
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	8	4	8	0		16	4	28	0		16	60	4	0		12	128	40	0		328	
Heavy Trucks	0	0	0	0		0	0	4	0		0	0	0	0		0	4	4	0		12	
Pedestrians		0					0					0					0				0	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Buses																						
Stopped Buses																						

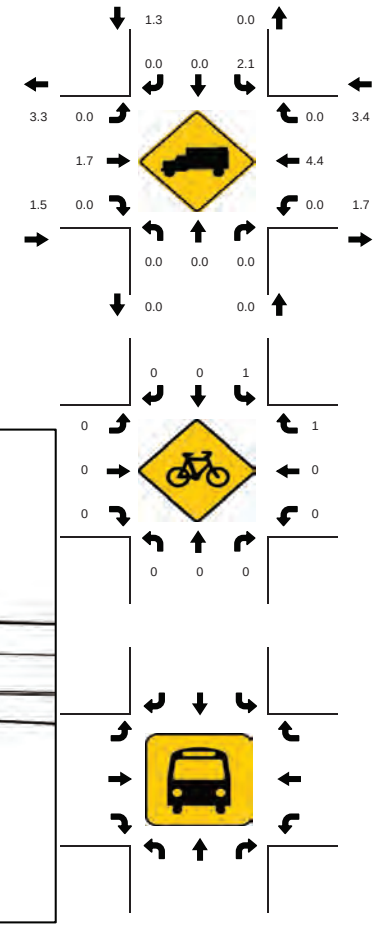
LOCATION: Frontage Rd/Forest Rd & Trenton Ave
CITY/STATE: Spring Hill, FL

PROJECT ID: 25-120340-001
DATE: Thu, Jul 17, 2025

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:30 PM - 04:45 PM







15-Min Count Period Beginning At	Frontage Rd/Forest Rd Northbound					Frontage Rd/Forest Rd Southbound					Trenton Ave Eastbound					Trenton Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	2	4	1	0		14	3	5	0		3	28	1	0		0	20	3	0		84	369
4:15 PM	3	5	6	0		9	4	3	0		0	28	3	0		2	25	6	0		94	350
4:30 PM	2	6	1	0		14	4	9	0		0	28	3	0		2	25	5	0		99	349
4:45 PM	3	3	5	0		10	2	2	0		5	32	2	0		0	21	7	0		92	324
5:00 PM	4	3	4	0		7	1	3	0		2	27	0	0		1	10	3	0		65	318
5:15 PM	2	4	8	0		5	2	7	0		3	27	1	0		5	21	8	0		93	253
5:30 PM	1	4	3	0		5	2	5	0		0	21	2	0		2	22	7	0		74	160
5:45 PM	0	3	1	0		14	0	3	0		1	21	1	0		4	32	6	0		86	86
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	12	24	24	0		56	16	36	0		20	128	12	0		8	100	28	0		**464**	
Heavy Trucks	0	0	0	0		4	0	0	0		0	4	0	0		0	12	0	0		**20**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		4	0	0	0		0	0	0	0		0	0	4	0		**8**	
Buses																						
Stopped Buses																						

APPENDIX

FDOT PEAK SEASON ADJUSTMENT FACTORS

2023 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 0800 HERNANDO COUNTYWIDE

MOCF: 0.96

WEEK	DATES	SF	PSCF
1	01/01/2023 - 01/07/2023	1.00	1.04
2	01/08/2023 - 01/14/2023	1.01	1.05
3	01/15/2023 - 01/21/2023	1.01	1.05
4	01/22/2023 - 01/28/2023	1.00	1.04
5	01/29/2023 - 02/04/2023	0.99	1.03
* 6	02/05/2023 - 02/11/2023	0.98	1.02
* 7	02/12/2023 - 02/18/2023	0.97	1.01
* 8	02/19/2023 - 02/25/2023	0.96	1.00
* 9	02/26/2023 - 03/04/2023	0.95	0.99
*10	03/05/2023 - 03/11/2023	0.94	0.98
*11	03/12/2023 - 03/18/2023	0.93	0.97
*12	03/19/2023 - 03/25/2023	0.94	0.98
*13	03/26/2023 - 04/01/2023	0.95	0.99
*14	04/02/2023 - 04/08/2023	0.96	1.00
*15	04/09/2023 - 04/15/2023	0.97	1.01
*16	04/16/2023 - 04/22/2023	0.97	1.01
*17	04/23/2023 - 04/29/2023	0.98	1.02
*18	04/30/2023 - 05/06/2023	0.99	1.03
19	05/07/2023 - 05/13/2023	0.99	1.03
20	05/14/2023 - 05/20/2023	1.00	1.04
21	05/21/2023 - 05/27/2023	1.01	1.05
22	05/28/2023 - 06/03/2023	1.02	1.06
23	06/04/2023 - 06/10/2023	1.04	1.08
24	06/11/2023 - 06/17/2023	1.05	1.09
25	06/18/2023 - 06/24/2023	1.05	1.09
26	06/25/2023 - 07/01/2023	1.05	1.09
27	07/02/2023 - 07/08/2023	1.05	1.09
28	07/09/2023 - 07/15/2023	1.05	1.09
29	07/16/2023 - 07/22/2023	1.05	1.09
30	07/23/2023 - 07/29/2023	1.05	1.09
31	07/30/2023 - 08/05/2023	1.06	1.10
32	08/06/2023 - 08/12/2023	1.06	1.10
33	08/13/2023 - 08/19/2023	1.06	1.10
34	08/20/2023 - 08/26/2023	1.05	1.09
35	08/27/2023 - 09/02/2023	1.04	1.08
36	09/03/2023 - 09/09/2023	1.04	1.08
37	09/10/2023 - 09/16/2023	1.03	1.07
38	09/17/2023 - 09/23/2023	1.02	1.06
39	09/24/2023 - 09/30/2023	1.01	1.05
40	10/01/2023 - 10/07/2023	1.01	1.05
41	10/08/2023 - 10/14/2023	1.00	1.04
42	10/15/2023 - 10/21/2023	1.00	1.04
43	10/22/2023 - 10/28/2023	0.99	1.03
44	10/29/2023 - 11/04/2023	0.99	1.03
45	11/05/2023 - 11/11/2023	0.99	1.03
46	11/12/2023 - 11/18/2023	0.99	1.03
47	11/19/2023 - 11/25/2023	0.99	1.03
48	11/26/2023 - 12/02/2023	0.99	1.03
49	12/03/2023 - 12/09/2023	0.99	1.03
50	12/10/2023 - 12/16/2023	1.00	1.04
51	12/17/2023 - 12/23/2023	1.00	1.04
52	12/24/2023 - 12/30/2023	1.01	1.05
53	12/31/2023 - 12/31/2023	1.01	1.05

* PEAK SEASON

2024 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 0800 HERNANDO COUNTYWIDE

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2024 - 01/06/2024	0.97	1.00
2	01/07/2024 - 01/13/2024	1.01	1.04
3	01/14/2024 - 01/20/2024	1.05	1.08
4	01/21/2024 - 01/27/2024	1.04	1.07
5	01/28/2024 - 02/03/2024	1.02	1.05
6	02/04/2024 - 02/10/2024	1.00	1.03
7	02/11/2024 - 02/17/2024	0.99	1.02
* 8	02/18/2024 - 02/24/2024	0.98	1.01
* 9	02/25/2024 - 03/02/2024	0.97	1.00
*10	03/03/2024 - 03/09/2024	0.96	0.99
*11	03/10/2024 - 03/16/2024	0.96	0.99
*12	03/17/2024 - 03/23/2024	0.96	0.99
*13	03/24/2024 - 03/30/2024	0.96	0.99
*14	03/31/2024 - 04/06/2024	0.96	0.99
*15	04/07/2024 - 04/13/2024	0.96	0.99
*16	04/14/2024 - 04/20/2024	0.96	0.99
*17	04/21/2024 - 04/27/2024	0.97	1.00
*18	04/28/2024 - 05/04/2024	0.98	1.01
*19	05/05/2024 - 05/11/2024	0.99	1.02
*20	05/12/2024 - 05/18/2024	0.99	1.02
21	05/19/2024 - 05/25/2024	1.01	1.04
22	05/26/2024 - 06/01/2024	1.02	1.05
23	06/02/2024 - 06/08/2024	1.03	1.06
24	06/09/2024 - 06/15/2024	1.04	1.07
25	06/16/2024 - 06/22/2024	1.04	1.07
26	06/23/2024 - 06/29/2024	1.05	1.08
27	06/30/2024 - 07/06/2024	1.05	1.08
28	07/07/2024 - 07/13/2024	1.06	1.09
29	07/14/2024 - 07/20/2024	1.06	1.09
30	07/21/2024 - 07/27/2024	1.06	1.09
31	07/28/2024 - 08/03/2024	1.05	1.08
32	08/04/2024 - 08/10/2024	1.05	1.08
33	08/11/2024 - 08/17/2024	1.04	1.07
34	08/18/2024 - 08/24/2024	1.04	1.07
35	08/25/2024 - 08/31/2024	1.05	1.08
36	09/01/2024 - 09/07/2024	1.05	1.08
37	09/08/2024 - 09/14/2024	1.06	1.09
38	09/15/2024 - 09/21/2024	1.06	1.09
39	09/22/2024 - 09/28/2024	1.04	1.07
40	09/29/2024 - 10/05/2024	1.01	1.04
41	10/06/2024 - 10/12/2024	0.98	1.01
42	10/13/2024 - 10/19/2024	0.95	0.98
43	10/20/2024 - 10/26/2024	0.96	0.99
44	10/27/2024 - 11/02/2024	0.97	1.00
45	11/03/2024 - 11/09/2024	0.97	1.00
46	11/10/2024 - 11/16/2024	0.98	1.01
47	11/17/2024 - 11/23/2024	0.98	1.01
48	11/24/2024 - 11/30/2024	0.98	1.01
49	12/01/2024 - 12/07/2024	0.98	1.01
50	12/08/2024 - 12/14/2024	0.97	1.00
51	12/15/2024 - 12/21/2024	0.97	1.00
52	12/22/2024 - 12/28/2024	1.01	1.04
53	12/29/2024 - 12/31/2024	1.05	1.08

* PEAK SEASON

APPENDIX

FDOT HISTORICAL COUNTS

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 08 - HERNANDO

SITE: 0036 - SR 55/US 19, N OF SPRING HILL DRIVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2023	41000 C	N 21000	S 20000	9.00	54.80	7.30
2022	46000 C	N 22000	S 24000	9.00	54.50	4.10
2021	45000 C	N 23000	S 22000	9.00	54.20	4.10
2020	45500 C	N 23000	S 22500	9.00	54.30	4.10
2019	43000 C	N 22000	S 21000	9.00	54.30	3.50
2018	43000 C	N 22000	S 21000	9.00	54.40	3.40
2017	46000 F	N 23000	S 23000	9.00	55.60	3.90
2016	43000 C	N 21500	S 21500	9.00	54.80	3.90
2015	41000 C	N 20500	S 20500	9.00	55.00	3.90
2014	39500 C	N 20000	S 19500	9.00	56.00	3.70
2013	39500 C	N 20000	S 19500	9.00	57.90	3.80
2012	40500 F	N 21000	S 19500	9.00	55.00	3.50
2011	40500 C	N 21000	S 19500	9.00	55.00	3.50
2010	39000 C	N 20000	S 19000	9.74	54.68	3.30
2009	39000 C	N 20000	S 19000	9.60	55.47	3.30
2008	35000 C	N 17500	S 17500	9.72	54.99	3.90

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

APPENDIX

SIGNAL TIMINGS

Hernando County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

2 - Commercial Wy @ Spring Hill Dr - 192.168.150.243 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	20	5	10	5	20	5	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	50	0	35	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	4.0	3.0	3.5	4.0	4.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	60	15	35	35	35	15	35	0	0	0	0	0	0	0	0
Max2	15	50	15	20	15	50	15	20	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.6	5.6	4.5	4.5	5.6	5.6	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.6	2.6	3.5	3.5	2.6	2.6	3.5	3.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	30	30	30	30	30	30	30	30	30	30	30	30	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hernando County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

2 - Commercial Wy @ Spring Hill Dr - 192.168.150.243 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	120	Std (COS)	9	Offsets In	Seconds
Offset Value	91s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	2		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 1)	20	50	22	28	24	46	28	22	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	140	Std (COS)	10	Offsets In	Seconds
Offset Value	55s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	20	65	25	30	30	55	30	25	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	140s	140s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	140	Std (COS)	82	Offsets In	Seconds
Offset Value	59s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	20	67	25	28	28	59	28	25	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	140s	140s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Seconds
Cycle	110	Std (COS)	12	Offsets In	Seconds
Offset Value	55s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	4		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 4)	20	48	20	22	20	48	20	22	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	110s	110s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 5

Split Pattern	5	TS2 (Pat-Off)	1-2	Splits In	Seconds
Cycle	140	Std (COS)	154	Offsets In	Seconds
Offset Value	55s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 5)	25	58	27	30	30	53	32	25	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	140s	140s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 6

Split Pattern	6	TS2 (Pat-Off)	1-3	Splits In	Seconds
Cycle	120	Std (COS)	81	Offsets In	Seconds
Offset Value	91s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	2		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 6)	20	50	22	28	24	46	28	22	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time		X				X										
Omit Phase													X	X	X	X
Special Funciton Outputs																

Time of Day Plan

Designed By:	*AHB*
Date:	*03/31/23*
Checked By:	*ZCP*
Date:	*03/31/23*

Arterial: SR 55 (US 19)
Section: 08020000
From: Applegate Dr/Pepper St
To: Northcliffe Blvd/Frontage Rd

ALL SEASON PLAN

Day	Time	Pattern	Cycle Length
Monday Thru Friday	0000 - 0600	99	FREE
	0600 - 0900	1	140
	0900 - 1500	2	150
	1500 - 1830	3	160
	1830 - 2100	4	140
	2100 - 2400	99	FREE
Saturday & Sunday	0000 - 0900	99	FREE
	0900 - 2100	5	150
	2100 - 2400	99	FREE

Designed By:	*AHB*
Date:	*03/31/23*
Checked By:	*ZCP*
Date:	*03/31/23*

Location Details			
Section:	*08020000*	Mile Post:	*2.553*
Major Street:	*SR 55 (US 19)*	Orientation:	*North-South*
Minor Street:	*Trenton Ave*	Orientation:	*East-West*
Sig ID:	*6-3*	System ID:	*08020*

Controller Timings (seconds)

Movement # (Controller Phase Ø)	1	2		4	5	6			Notes
Direction	*NBL*	*SB*		*WB*	*SBL*	*NB*			
Turn Type	*Prot*	*Prot*		*Prot*	*Prot*	*Prot*			
Min Green	*5*	*20*		*10*	*5*	*20*			
Ext	*3.0*	*4.0*		*3.0*	*3.0*	*4.0*			
Yellow	*5.5*	*5.5*		*3.7*	*5.5*	*5.5*			
All Red	*2.0*	*2.0*		*3.5*	*2.0*	*2.0*			
Max I	*35*	*60*		*35*	*35*	*60*			
Max II	*15*	*50*		*15*	*15*	*50*			
Walk				*7*					
Flashing Don't Walk				*32*					
Detector Memory									
Det. Cross Switch.									
Dual Entry		*ON*				*ON*			
Vehicle Recall		*MIN*				*MIN*			
CNA		*ON*				*ON*			
Rest in Walk									

Coordination Timings (seconds)

Pattern	C/O/S	Cycle Length	Splits								Offset	Sequence	Coord Ø
1	-	*140*	*20*	*90*		*30*	*20*	*90*			*106*	*4*	*2 & 6*
2	-	*150*	*20*	*90*		*40*	*30*	*80*			*51*	*4*	*2 & 6*
3	-	*160*	*20*	*105*		*35*	*35*	*90*			*73*	*4*	*2 & 6*
4	-	*140*	*20*	*90*		*30*	*20*	*90*			*106*	*4*	*2 & 6*
5	-	*150*	*20*	*90*		*40*	*30*	*80*			*51*	*4*	*2 & 6*

Offset Reference Point
Lead

Notes:
1) Use 'Inhibit Max' during coordination.
2) Use Floating Force Offs.
3) Max recall Ø2 and Ø6 during coordination.
4) Controller Brand: Econolite ASC/3-2100
5) Use ped time: Off
6) Transition Mode : Smooth (12%)

SOP 10 (Sequence 1)

Ring - 1	1	2	4
Ring - 2	5	6	

SOP 10 (Sequence 4)

Ring - 1	1	2	4
Ring - 2	6	5	

APPENDIX

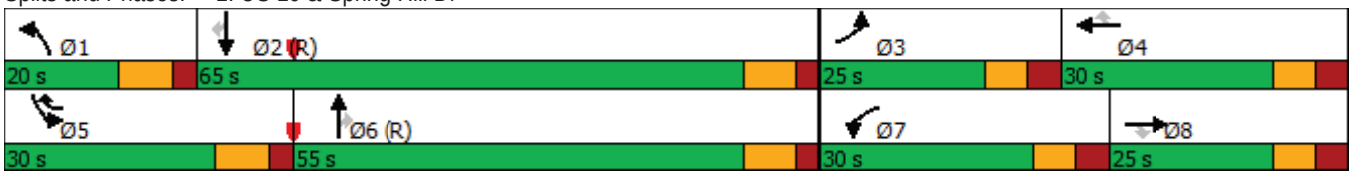
INTERSECTION ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	148	96	385	136	329	104	899	162	199	1267	86
Future Volume (vph)	190	148	96	385	136	329	104	899	162	199	1267	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		150	0		0	500		550	350		545
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			40			55			55	
Link Distance (ft)		1000			300			1000			1180	
Travel Time (s)		22.7			5.1			12.4			14.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	7%	2%	7%	2%	10%	5%	6%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	14.0	18.0	18.0	14.0	18.0	14.0	14.0	28.2	28.2	14.0	28.2	28.2
Total Split (s)	25.0	25.0	25.0	30.0	30.0	30.0	20.0	55.0	55.0	30.0	65.0	65.0
Total Split (%)	17.9%	17.9%	17.9%	21.4%	21.4%	21.4%	14.3%	39.3%	39.3%	21.4%	46.4%	46.4%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.2	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	13.4	12.2	12.2	20.2	19.1	41.0	13.3	61.2	61.2	13.9	61.8	61.8
Actuated g/C Ratio	0.10	0.09	0.09	0.14	0.14	0.29	0.10	0.44	0.44	0.10	0.44	0.44
v/c Ratio	0.61	0.50	0.29	0.81	0.59	0.64	0.70	0.43	0.21	0.61	0.60	0.12
Control Delay	68.6	66.1	2.2	71.2	66.9	34.7	83.9	29.3	1.5	64.6	33.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	66.1	2.2	71.2	66.9	34.7	83.9	29.3	1.5	64.6	33.8	4.3
LOS	E	E	A	E	E	C	F	C	A	E	C	A
Approach Delay		53.1			56.4			30.3			36.1	
Approach LOS		D			E			C			D	

Intersection Summary

Area Type:	Other	
Cycle Length: 140		
Actuated Cycle Length: 140		
Offset: 55 (39%), Referenced to phase 2:SBT and 6:NBT, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.81		
Intersection Signal Delay: 40.6		Intersection LOS: D
Intersection Capacity Utilization 76.6%		ICU Level of Service D
Analysis Period (min) 15		

Splits and Phases: 1: US 19 & Spring Hill Dr



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	176	38	1265	102	66	1413
Future Volume (Veh/h)	176	38	1265	102	66	1413
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	183	40	1318	106	69	1472
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			Raised			Raised
Median storage veh)			1			1
Upstream signal (ft)			1180			
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1947	439			1424	
vC1, stage 1 conf vol	1318					
vC2, stage 2 conf vol	629					
vCu, unblocked vol	1626	0			1038	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	7	96			88	
cM capacity (veh/h)	198	963			591	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	183	40	439	439	439	106	69	491	491	491
Volume Left	183	0	0	0	0	0	69	0	0	0
Volume Right	0	40	0	0	0	106	0	0	0	0
cSH	198	963	1700	1700	1700	1700	591	1700	1700	1700
Volume to Capacity	0.93	0.04	0.26	0.26	0.26	0.06	0.12	0.29	0.29	0.29
Queue Length 95th (ft)	185	3	0	0	0	0	10	0	0	0
Control Delay (s)	95.2	8.9	0.0	0.0	0.0	0.0	11.9	0.0	0.0	0.0
Lane LOS	F	A					B			
Approach Delay (s)	79.8		0.0				0.5			
Approach LOS	F									

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	60	112	9	1246	52	68	1449
Future Volume (vph)	60	112	9	1246	52	68	1449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	0%			0%			0%
Storage Length (ft)	110	0	320		475	295	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	25		25			25	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	30			55			55
Link Distance (ft)	515			2130			1000
Travel Time (s)	11.7			26.4			12.4
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	12%	6%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	4		1	6		5	2
Permitted Phases		4			6		
Detector Phase	4	4	1	6	6	5	2
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	20.0	20.0	5.0	20.0
Minimum Split (s)	17.2	17.2	12.5	27.5	27.5	12.5	27.5
Total Split (s)	30.0	30.0	20.0	90.0	90.0	20.0	90.0
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	14.3%	64.3%
Yellow Time (s)	3.7	3.7	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.5	7.5	7.5	7.5	7.5
Lead/Lag			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	11.4	11.4	6.5	98.0	98.0	11.2	110.7
Actuated g/C Ratio	0.08	0.08	0.05	0.70	0.70	0.08	0.79
v/c Ratio	0.45	0.51	0.14	0.40	0.05	0.52	0.40
Control Delay	71.0	17.2	71.0	7.4	2.0	74.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.0	17.2	71.0	7.4	2.0	74.5	5.5
LOS	E	B	E	A	A	E	A
Approach Delay	35.9			7.7			8.6
Approach LOS	D			A			A

Intersection Summary

Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 106 (76%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 59.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: US 19 & Trenton Ave

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	57	1	64	110	23	4	3	70	12	3	15
Future Vol, veh/h	7	57	1	64	110	23	4	3	70	12	3	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	140	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5	2	2	2	2	2	7
Mvmt Flow	8	62	1	70	120	25	4	3	76	13	3	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	63	0	0	361	364	63	391	352	133
Stage 1	-	-	-	-	-	-	79	79	-	273	273	-
Stage 2	-	-	-	-	-	-	282	285	-	118	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.363
Pot Cap-1 Maneuver	1437	-	-	1540	-	-	595	564	1002	568	573	903
Stage 1	-	-	-	-	-	-	930	829	-	733	684	-
Stage 2	-	-	-	-	-	-	725	676	-	887	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1437	-	-	1540	-	-	559	535	1002	502	544	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	559	535	-	502	544	-
Stage 1	-	-	-	-	-	-	924	824	-	729	653	-
Stage 2	-	-	-	-	-	-	676	646	-	812	824	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	2.4	9.2	10.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	932	1437	-	-	1540	-	-	652
HCM Lane V/C Ratio	0.09	0.005	-	-	0.045	-	-	0.05
HCM Control Delay (s)	9.2	7.5	-	-	7.4	-	-	10.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	281	101	316	188	378	92	1654	382	354	1218	120
Future Volume (vph)	265	281	101	316	188	378	92	1654	382	354	1218	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		150	0		0	500		550	350		545
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			40			55			55	
Link Distance (ft)		1000			300			1000			1180	
Travel Time (s)		22.7			5.1			12.4			14.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	7%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	14.0	18.0	18.0	14.0	18.0	14.0	14.0	28.2	28.2	14.0	28.2	28.2
Total Split (s)	25.0	25.0	25.0	28.0	28.0	28.0	20.0	59.0	59.0	28.0	67.0	67.0
Total Split (%)	17.9%	17.9%	17.9%	20.0%	20.0%	20.0%	14.3%	42.1%	42.1%	20.0%	47.9%	47.9%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.2	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.6	16.2	16.2	18.0	18.6	45.3	11.1	54.7	54.7	18.7	62.3	62.3
Actuated g/C Ratio	0.11	0.12	0.12	0.13	0.13	0.32	0.08	0.39	0.39	0.13	0.44	0.44
v/c Ratio	0.74	0.73	0.32	0.76	0.82	0.69	0.73	0.89	0.47	0.82	0.58	0.16
Control Delay	72.2	70.9	3.3	70.7	84.4	36.6	92.5	46.9	4.7	74.1	31.0	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	70.9	3.3	70.7	84.4	36.6	92.5	46.9	4.7	74.1	31.0	1.8
LOS	E	E	A	E	F	D	F	D	A	E	C	A
Approach Delay		60.9			59.0			41.3			37.9	
Approach LOS		E			E			D			D	

Intersection Summary

Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 59 (42%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 45.5		Intersection LOS: D	
Intersection Capacity Utilization 86.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: US 19 & Spring Hill Dr

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	101	29	2182	68	37	1611
Future Volume (Veh/h)	101	29	2182	68	37	1611
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	107	31	2321	72	39	1714
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			Raised			Raised
Median storage veh)			1			1
Upstream signal (ft)			1180			
pX, platoon unblocked	0.68	0.68			0.68	
vC, conflicting volume	2970	774			2393	
vC1, stage 1 conf vol	2321					
vC2, stage 2 conf vol	649					
vCu, unblocked vol	2253	0			1405	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	1	96			88	
cM capacity (veh/h)	108	738			328	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	107	31	774	774	774	72	39	571	571	571
Volume Left	107	0	0	0	0	0	39	0	0	0
Volume Right	0	31	0	0	0	72	0	0	0	0
cSH	108	738	1700	1700	1700	1700	328	1700	1700	1700
Volume to Capacity	0.99	0.04	0.46	0.46	0.46	0.04	0.12	0.34	0.34	0.34
Queue Length 95th (ft)	157	3	0	0	0	0	10	0	0	0
Control Delay (s)	157.7	10.1	0.0	0.0	0.0	0.0	17.4	0.0	0.0	0.0
Lane LOS	F	B					C			
Approach Delay (s)	124.6		0.0				0.4			
Approach LOS	F									

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	94	148	36	1987	117	143	1686
Future Volume (vph)	94	148	36	1987	117	143	1686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	0%			0%			0%
Storage Length (ft)	110	0	320		475	295	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	25		25			25	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	30			55			55
Link Distance (ft)	515			2130			1000
Travel Time (s)	11.7			26.4			12.4
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	4		1	6		5	2
Permitted Phases		4			6		
Detector Phase	4	4	1	6	6	5	2
Switch Phase							
Minimum Initial (s)	10.0	10.0	4.0	20.0	20.0	5.0	20.0
Minimum Split (s)	17.2	17.2	11.5	27.5	27.5	12.5	27.5
Total Split (s)	35.0	35.0	20.0	90.0	90.0	35.0	105.0
Total Split (%)	21.9%	21.9%	12.5%	56.3%	56.3%	21.9%	65.6%
Yellow Time (s)	3.7	3.7	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.5	7.5	7.5	7.5	7.5
Lead/Lag			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	14.7	14.7	8.9	103.8	103.8	19.3	116.8
Actuated g/C Ratio	0.09	0.09	0.06	0.65	0.65	0.12	0.73
v/c Ratio	0.63	0.56	0.40	0.65	0.12	0.73	0.49
Control Delay	86.3	16.3	83.9	19.5	2.4	86.7	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	16.3	83.9	19.5	2.4	86.7	10.7
LOS	F	B	F	B	A	F	B
Approach Delay	43.4			19.6			16.7
Approach LOS	D			B			B

Intersection Summary

Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Offset: 73 (46%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 19.7		Intersection LOS: B	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: US 19 & Trenton Ave

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	127	10	43	100	23	11	20	64	52	14	21
Future Vol, veh/h	9	127	10	43	100	23	11	20	64	52	14	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	140	-	-	-	-	-	-	-	-
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	4	2	2	2	2	2	2	2
Mvmt Flow	10	137	11	46	108	25	12	22	69	56	15	23

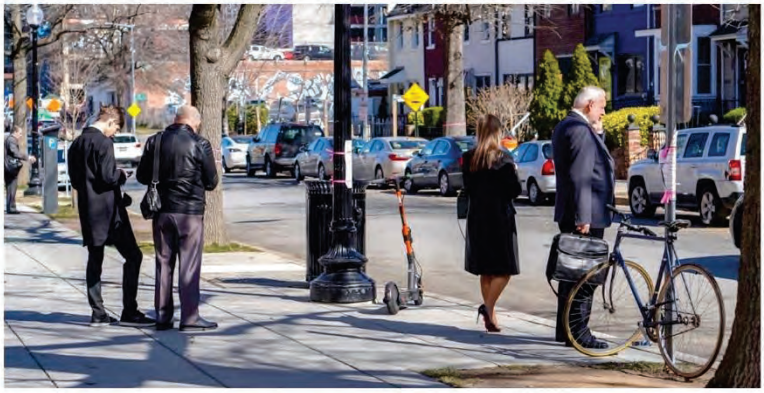
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	148	0	0	395	388	143	421	381	121
Stage 1	-	-	-	-	-	-	163	163	-	213	213	-
Stage 2	-	-	-	-	-	-	232	225	-	208	168	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1452	-	-	1434	-	-	565	547	905	543	552	930
Stage 1	-	-	-	-	-	-	839	763	-	789	726	-
Stage 2	-	-	-	-	-	-	771	718	-	794	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1452	-	-	1434	-	-	523	526	905	472	530	930
Mov Cap-2 Maneuver	-	-	-	-	-	-	523	526	-	472	530	-
Stage 1	-	-	-	-	-	-	833	758	-	783	703	-
Stage 2	-	-	-	-	-	-	713	695	-	708	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2	10.7	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	732	1452	-	-	1434	-	-	547
HCM Lane V/C Ratio	0.14	0.007	-	-	0.032	-	-	0.171
HCM Control Delay (s)	10.7	7.5	-	-	7.6	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.6

APPENDIX

TURN LANE WARRANTS



Multimodal Access Management Guidebook

October 2023

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
SYSTEMS IMPLEMENTATION OFFICE
605 Suwannee Street, MS 19 • Tallahassee, FL 32399
www.fdot.gov/planning

Chapter 6: Turn Lanes and U-Turns

6.1 Overview

For driveways, medians, and median openings, the placement and design of turn lanes and U-turns are critical to avoid potential traffic safety issues. For example, a median opening placed across a left-turn lane at an intersection could create conditions leading to a vehicular crash (See ***Figure 27*** or ***Figure 28***). Locating these roadway openings is discussed in greater detail in ***Chapter 2: Roadway Openings***. This chapter will instead focus on where to locate and design turn lanes and U-turns and how they relate to driveways, medians, and median openings.

6.2 Exclusive Right-Turn Lanes

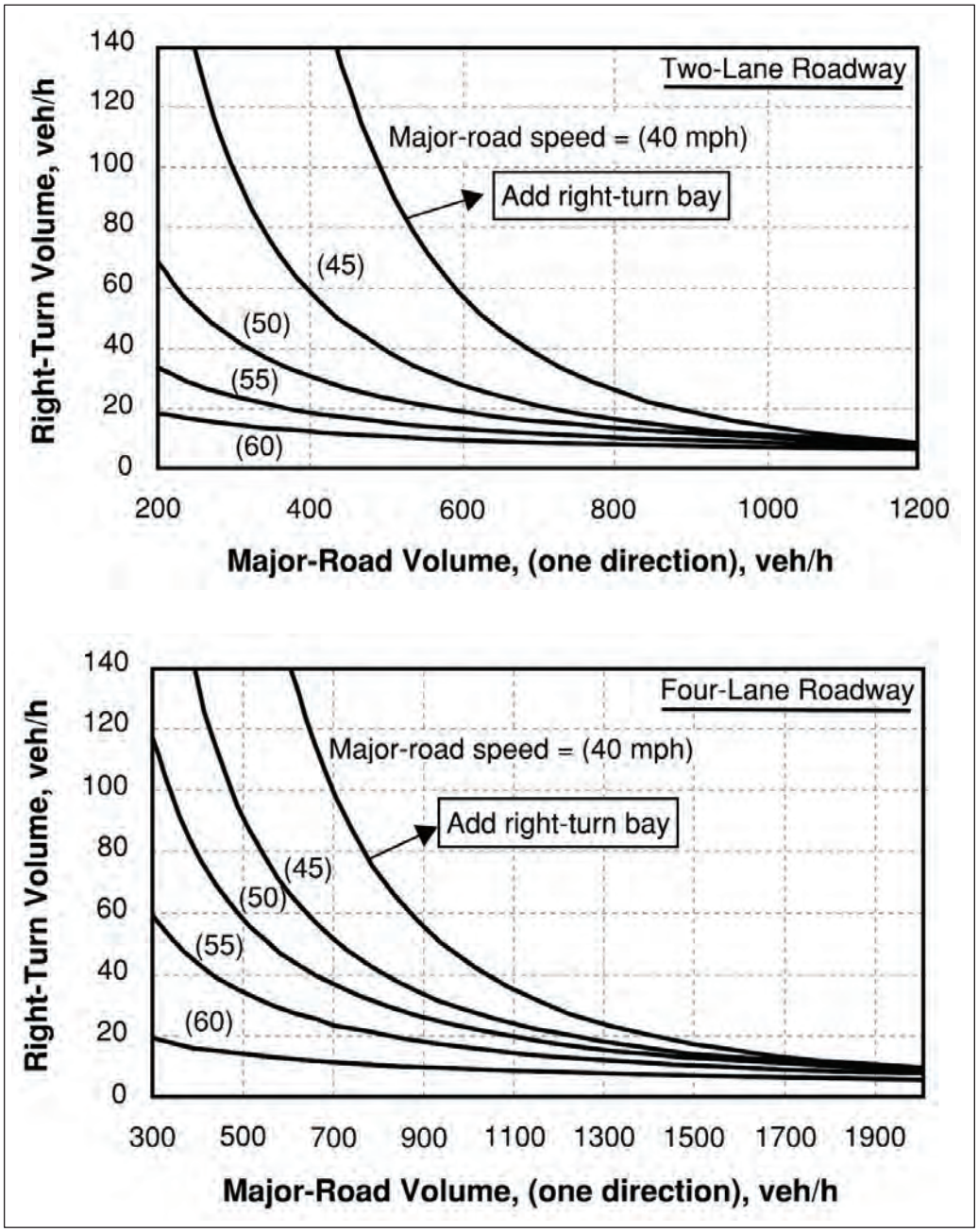
At driveways and intersections, an exclusive right-turn lane separates vehicles that are slowing or stopped to turn from the major road through traffic lanes. This separation minimizes turn-related collisions and eliminates unnecessary delay to through vehicles. Exclusive right-turn lanes are useful where a combination of high roadway speeds, and high right-turn volumes into a driveway are expected. Congestion on the roadway may also be a good reason to use an exclusive right-turn lane. If properly built, they remove the turning vehicle from the through lanes, thereby decreasing the operational and safety impact of right turning vehicles on the through traffic.

It is also important to consider potential pedestrian conflicts since the addition of a right-turn lane increases the crossing distance, time, and exposure for pedestrians. A well-designed right-turn lane can help to reduce pedestrian conflicts by slowing vehicle speeds, increasing pedestrian visibility, and reducing pedestrian exposure with a pedestrian refuge area.

6.2.1 When to Consider Exclusive Right-Turn Lanes

There are instances when adding an exclusive right-turn lane for unsignalized driveways and intersections is beneficial to traffic operations and safety. ***Figure 74*** provides guidance for two-lane and four-lane roadways based on the speed limit of the major roadway, major roadway approach volume, and how many right turns occur per hour. These recommendations are based primarily on the research done in *NCHRP Report 457, Evaluating Intersection Improvements: An Engineering Study Guide, Chapter 2 – Add a Right-Turn Bay on the Major Road*.

Figure 74 | Recommended Guidelines for Exclusive Right-Turn Lanes to Unsignalized Driveway/Intersection



Source: NCHRP Report 457, TDOT Highway System Access Manual

Here are some additional situations when adding an exclusive right-turn lane may be required:

- Facilities having a high volume of buses, trucks, or trailers (2 or 3 per hour), including:
  - Trucking facilities (or other locations that have a high volume of large vehicle traffic such as water ports, train stations, etc.)
  - Recreational facilities attracting boats, trailers, and other large recreation vehicles
  - Transit facilities
  - School driveways to drop-off and pick-up areas
- Poor internal site design of a driveway facility causing potential backups in the through lanes
- Heavier than normal peak flows on the main roadway
- Very high operating speeds (such as 55 mph or above) and in rural locations where turns are not expected by through drivers
- Highways with curves or hills where sight distance is impacted
- Gated entrances
- Crash experience, especially rear end collisions
- Intersections or driveways just after signalized intersections where acceleration or driver expectancy would make a separate right-turn lane desirable
- Severe skewed angle of intersection requiring right-turn vehicle to slow greatly

6.2.2 When Not to Consider Exclusive Right-Turn Lanes

- Dense or built-out corridors with limited space
- Right-turn lane that would negatively impact pedestrians or bicyclists
- Vehicular movements from driveways or median openings that cross the right-turn lane resulting in multiple threat crashes
- Context classifications C2T, C4, C5, or C6

6.2.3 Exclusive Right-Turn Lane Design

For information on exclusive right-turn lane design, refer to *FDM 212 - Intersections* and *Standard Plans, Index 711-001*. The FDM states that “Right-turn lane tapers and lengths are identical to left-turn lanes under stop control conditions. Right-turn lane tapers and lengths are site-specific for free-flow or yield conditions.” Sheet 11 of Standard Plans, Index 711-001 provides requirements for clearance distance, brake to stop distance and deceleration distance by design speed for both curbed and uncurbed roadways. ***Section 3.1.2: Median Opening Failures*** provides discussion on the various parameters used in turn lane design such as decision distance, stopping distance, etc.

6.2.4 Important Considerations

Right-Turn Channelization

Where right-turn exiting channelization is used, be careful to provide a traffic entry angle that is easy for the exiting driver to negotiate while trying to enter traffic. ***Figure 75*** illustrates how driver head turn angles between 120°-125° (Tighter Angle) are more comfortable than the 145°-150° (Wide Angle) associated with more traditional designs. The tighter angle also encourages drivers to slow down, which provides more time for a thorough scan for conflicts.

Figure 77 | Raised Crosswalk at Channelized Right Turn

Source: City of Los Angeles Supplemental Street Design Guide

6.3 Exclusive Left-Turn Lanes

While some principles for right-turn lanes apply to left-turn lanes, there are inherent differences between them.

6.3.1 When Exclusive Left-Turn Lanes are Beneficial

There are several situations when a left-turn lane should be built on the roadway. For example, if on a multilane roadway and there is a median opening that is serving a driveway, there should be a left-turn lane to allow for vehicles to move safely out the way of the through traffic. Exclusive left-turn lanes should be considered at any location serving the public, especially on curves and where speeds are in excess of 45 mph. The *AASHTO Green Book* contains guidance on this issue. However, the guidelines were developed based on delay rather than crash avoidance. Safety is the main reason behind exclusive left-turn lanes.

6.3.2 When to Consider Exclusive Left-Turn Lanes at Unsignalized Intersections and Driveways

Left-turn lane warrants at unsignalized intersections and driveways were included in *NCHRP Report 745, Left-Turn Accommodations at Unsignalized Intersections*. The recommended left-turn lane warrants are provided for the following roadway facilities.

- Rural, two-lane highways (***Figure 78***)
- Rural, four-lane highways (***Figure 79***)
- Urban and suburban roadways (***Figure 80***)

Alternatively, the left-turn warrants based on *NCHRP Report 457*, (See ***Figure 81***) can be used if it is found to be more appropriate and reasonable for a local condition. Engineering judgment should be used when deciding between the NCHRP 745, and NCHRP 457 guidelines.

Figure 78 | Left-Turn Lane Warrants for Two-Lane Rural Roadways (Unsignalized)

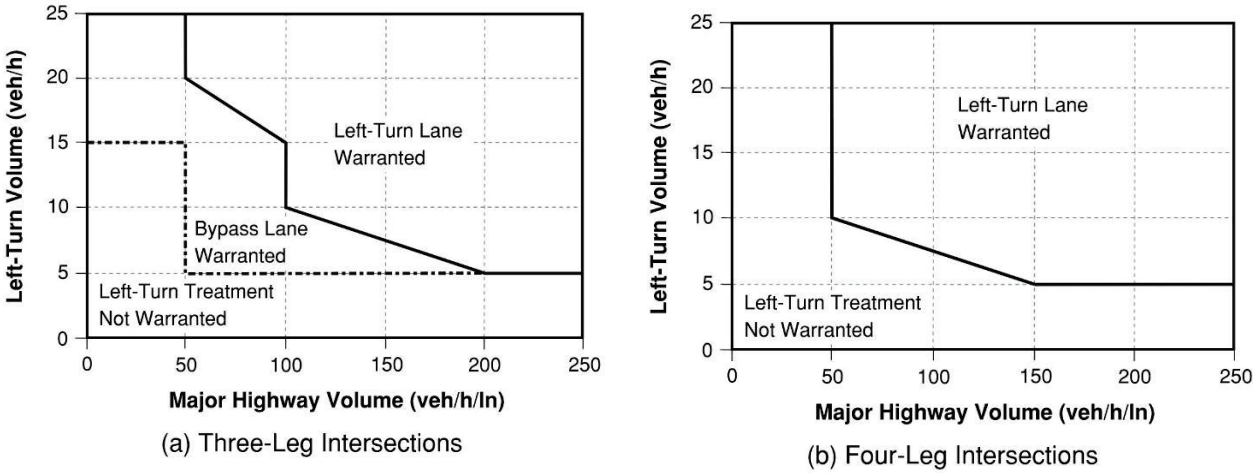


Figure 79 | Left-Turn Lane Warrants for Four-Lane Rural Roadways (Unsignalized)

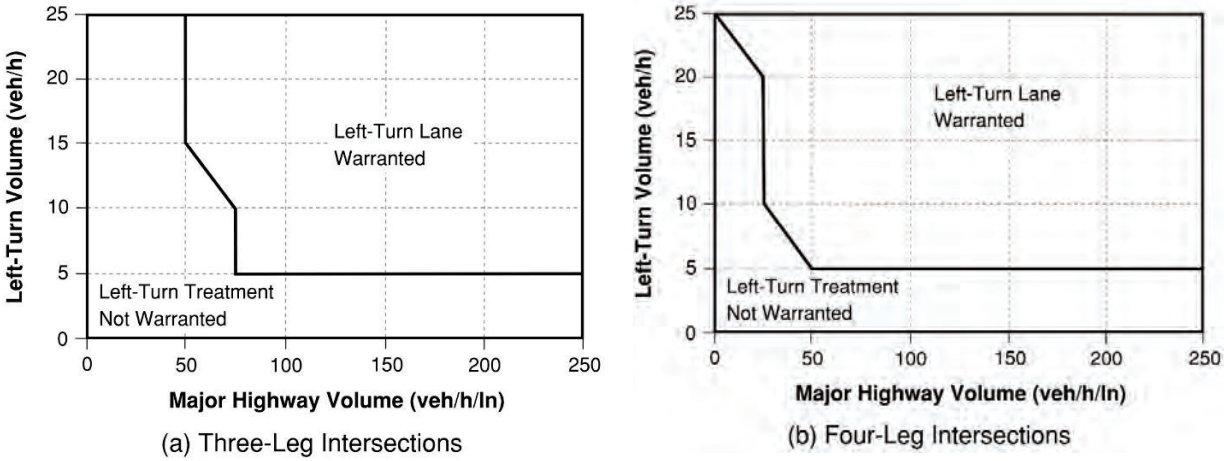
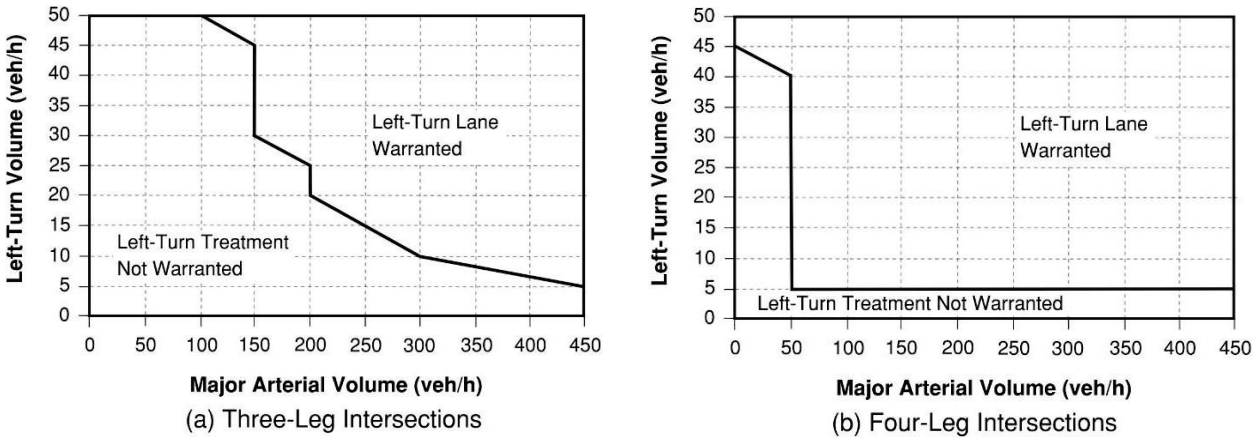
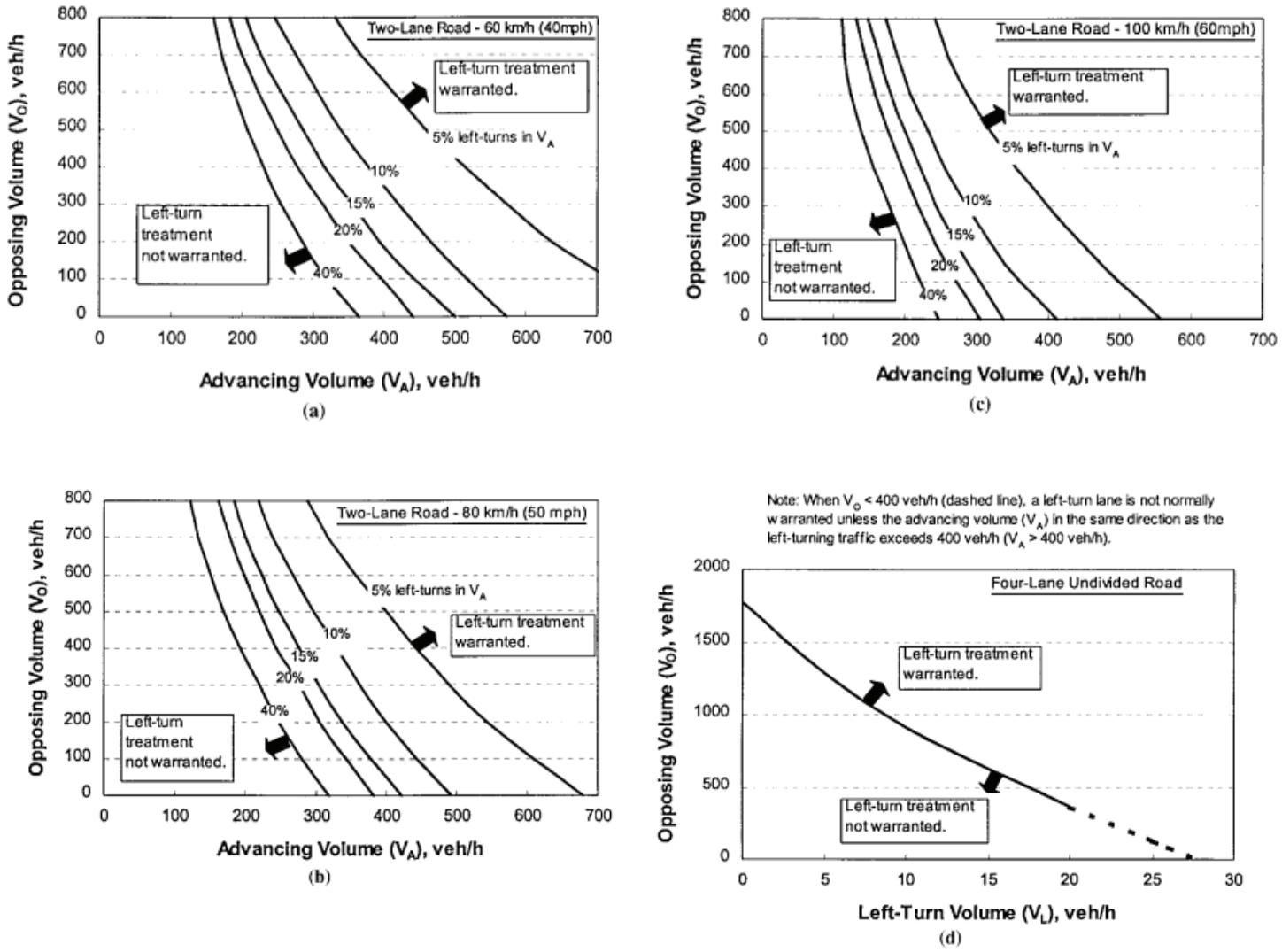


Figure 80 | Left-Turn Lane Warrants for Urban and Suburban Arterials



Source: NCHRP Report 745

Figure 81 | Left-Turn Lane Warrants (Unsignalized Intersections) – Alternate Method

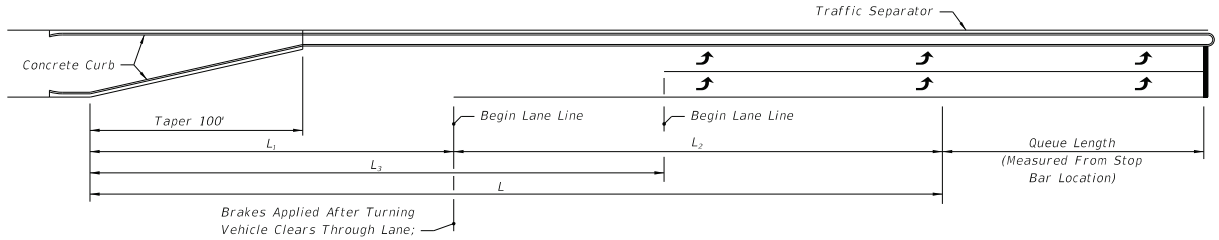


Source: NCHRP Report 457

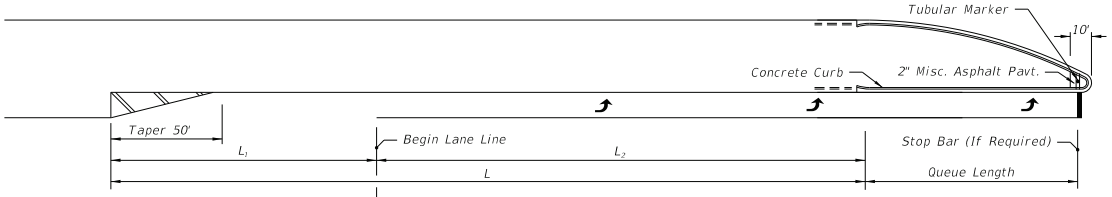
APPENDIX

FDOT DESIGN MANUAL 212-1

MEDIAN TURN LANES
MINIMUM DECELERATION LENGTHS



DOUBLE LEFT TURN



SINGLE LEFT TURN

MEDIAN TURN LANES					
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.)
25	15	70	25	95	90
30	20	70	50	120	100
35	25	70	75	145	110
40	30	80	75	155	120
45	35	85	100	185	135
50	44	105	185	290	160
55	48	125	225	350	195
60	52	145	260	405	230
65	55	170	290	460	270
70	58	200	325	525	300

NOTE:

1) For C3 Context Classification roadways with Design Speeds of 50 mph, the following values may be used under constrained conditions:
   - Entry Speed of 40 mph
   - Brake to stop distance (L_2) of 135 ft.
   - Total deceleration distance (L) of 240 ft.

2) For RRR Projects with Design Speeds of 50 mph and Entry Speeds of 40 mph, existing brake to stop distances (L_2) of 135 ft. and total deceleration distances (L) of 240 ft. may be retained.

NOT TO SCALE

EXHIBIT 212-1
01/01/2024

APPENDIX

FDOT GENERALIZED SERVICE VOLUME TABLES

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

(C3C-Suburban Commercial)

Peak Hour Directional

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

Peak Hour Two-Way

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

AADT

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

(C3R-Suburban Residential)

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

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

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

Adjustment Factors

The peak hour directional service volumes should be adjust by multiplying by 1.2 for one-way facilities
The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided Roadway with an Exclusive Left Turn Lane(s): Multiply by 1.05
2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80
Exclusive right turn lane(s): Multiply by 1.05
Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95
Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75
Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.
* Cannot be achieved using table input value defaults.
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

Input Parameters

Roadway Characteristics

	C3C	C3R
Number of Lanes (one direction)	1-4	1-3
Posted Speed (mph)	45	45
Facility Length (miles)	3.98	2.57

Traffic Characteristics

	C3C		C3R	
Planning Analysis Hour Factor (K)	0.09		0.09	
Directional Distribution Factor (D)	0.55		0.55	
Peak Hour Factor (PHF)	0.95		0.92	
Base Saturation Flow Rate	1,950		1,950	
Heavy Vehicle Percent (%)	4		4	
Lane Width	12		12	
Median Type	Non Restrictive (1 lane)	Restrictive (2,3,4 lanes)	Non Restrictive (1 lane)	Restrictive (2,3 lanes)
Roadway Edge Type	Curbed		Flush	
On-Street Parking	None		None	

Control Characteristics

	C3C		C3R
Cycle Length	160		190
Major Street Through g/c	0.5 (1,2,3 lanes)	0.45 (4 lanes)	0.5
Yellow Change Interval	5.1		5.1
Red Change Interval	2		2
Number of Signals	10		5