Interchange Operational Analysis Report

I-275 at US 41 Interchange
Manatee County, Florida
FPID: 449720-1-52-01

PREPARED FOR

FLORIDA DEPARTMENT OF TRANSPORTATION

DISTRICT ONE

March 2022

Interchange Operational Analysis Report (IOAR)

I-275 at US 41 IOAR

Manatee County, Florida

FPID # 449720-1-52-01

Florida Department of Transportation

Determination of Safety, Operational and Engineering Acceptability

Acceptance of this document indicates successful completion of the review and determination of safety, operational and engineering acceptability of the Interchange Access Request. Approval of the access request is contingent upon compliance with applicable Federal requirements, specifically the National Environmental Policy Act (NEPA) or Department's Project Development and Environment (PD&E) Procedures. Completion of the NEPA/PD&E process is considered approval of the project location design concept described in the environmental document.

Requestor	Kyle Purvis, E.I. Systems Planning Administrator, District One	Date
Interchange Review Coordinator	Joshua A. Jester, E.I. District Interchange Review Coordinator, District One	Date
Systems Management Administrator	Jenna Bowman, P.E. Systems Implementation Office – Central Office	Date
State Chief Engineer	Will Watts, P.E. Central Office	Date

SYSTEMS IMPLEMENTATION OFFICE

QUALITY CONTROL CERTIFICATION FOR INTERCHANGE ACCESS REQUEST SUBMITTAL

Submittal Date: 3/1/2022

FM Number: 449720-1-52-01

Project Title: I-275 at US 41 Interchange Operational Analysis Report (IOAR)

District: One

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Document Type: ☐ MLOU ☐ IJR ☐ IMR ☒ IOAR ☐ OTHER

Status of Document (Only complete documents will be submitted for review; however, depending on the complexity of the project, interim reviews may be submitted as agreed upon in the MLOU)

Quality Control (QC) Statement

This document has been prepared following FDOT Procedure Topic No. 525-030-160 (New or Modified Interchanges) and complies with the FHWA two policy requirements. Appropriate District level quality control reviews have been conducted and all comments and issues have been resolved to their satisfaction. A record of all comments and responses provided during QC review is available in the project file or Electronic Review Comments (ERC) system.

Requestor_____ Date: _____

Kyle Purvis, E.I.

IRC _____

Joshua A. Jester, E.I. Date: _____

Executive Summary

The Florida Department of Transportation (FDOT) District One requests the FDOT Systems Implementation Office approval of an Interchange Operational Analysis Report (IOAR) for the improvement of the Interstate 275 (I-275) interchange at US 41 in Manatee County. This IOAR has been developed in accordance with FDOT Policy No. 000-525-015: Approval of New or Modified Access to Limited Access Highways on the State Highway System (SHS), FDOT Procedure No. 525-030-160: Approval of New or Modified interchange access to limited facilities on SHS, the Interchange Access Request User's Guide (2020), the Interchange Access Request User's Guide Safety Analysis Guidance (2020) and the FDOT's 2019 Project Traffic Forecasting Handbook (Procedure No. 525-030-120).

Purpose and Need

I-275, a major facility that runs predominantly north/south, is part of the Federal Highway System (National Highway System) and Interstate System. Within the State of Florida, I-275 is an integral part of the Florida's Strategic Intermodal System (SIS), providing for high-speed and high-volume traffic movements within the state. I-275 is a major route for freight and through traffic, while also providing connectivity among Hillsborough, Pinellas, and Manatee counties. As such, this interstate plays a critical role in both the regional and state-wide economy and in emergency evacuation plans. US 41 is a major north-south United States highway that traverses from Miami, Florida to the Upper Peninsula of Michigan. US 41 is the designated SIS highway connector, providing a direct connection between Port Manatee, I-275 and I-75. A substantial amount of truck traffic from Port Manatee utilizes this interchange to access I-75 and subsequently the rest of the state.

A Traffic Signal Warrant Analysis for the I-275 southbound ramp termini intersection with US 41 was completed in March 2020 using traffic counts collected on February 11, 2020, before traffic patterns were altered by the COVID 19 pandemic. The Signal Warrant Analysis concluded that the intersection meets warrants 1A and 2 based on traffic volumes. The study also documented that a major source of the eastbound vehicle delay is the high percentage of southbound left turning trucks, which require more storage space within the median opening and larger gaps in conflicting northbound traffic. Due to the delay time and number of queued southbound trucks, some eastbound left turning vehicles were observed to "give up" and turn right (southbound) from the left turn lane. Based on the results and recommendations from the study, the intersection has been added to the list of approved traffic signal locations by the District.

A traffic signal is being proposed at the intersection of the I-275 southbound ramp termini intersection with US 41 to ensure an orderly flow of traffic, provide an opportunity for vehicles to cross the intersection, and prevent excessive delay. The traffic signal will improve safety by reducing the number of conflicts between

vehicles entering the intersection from different directions. The traffic signal will also provide efficient interstate access/egress for freight traffic destined to Port Manatee. Other improvements include replacing the span wire mounted traffic signals at the northbound ramp termini intersection with mast arm mounted traffic signals, and installation of special emphasis crosswalks and pedestrian features at both ramp terminal intersections.

Compliance with FHWA General Requirements

The Federal Highway Administration (FHWA) Interchange Access Policy was checked to assure that the adequate level of service is provided in terms of safety and mobility. The FHWA's Policy on Access to the Interstate System provides the requirements for the justification and documentation necessary to substantiate any proposed changes in access to the Interstate System. This policy also facilitates decision-making regarding proposed changes in access to the Interstate System in a manner that considers and is consistent with the vision, goals, and long-range transportation plans of a metropolitan area, region, and State. All new or modified points of access must be approved by FHWA and developed in accordance with federal laws and regulations (as specified in 23 U.S.C. 109 and 111, 23 C.F.R. 625.4, and 49 C.F.R. 1.48(b)(1)). The following documents the adherence of the proposed I-275 at US 41 improvements to FHWA's two Policy Points:

FHWA Policy Point 1

An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (Title 23, Code of Federal Regulations (CFR), paragraphs 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

Satisfaction of FHWA Policy Point 1

The operational analysis documented in this IOAR included the I-275 ramp merge/diverge areas, the I-275 at US 41 ramp terminal intersections, and the US 41 arterial. The analysis demonstrates that the intersection of US 41 at the I-275 SB Ramps intersection is anticipated to experience excessive delays and to operate at LOS F during the design year 2034 under the no build condition. Moreover, the 95th percentile queue in the left-turn from the off-ramp is anticipated to extend beyond the available off-ramp storage and will likely spill into the I-275 main line. The proposed improvement to install a traffic signal at the US 41 at I-275 SB Ramps intersection provides significant benefits to the operations of the interchange by managing the queues at the off ramp and by improving the progression of traffic along US 41.

In addition, providing a traffic signal at the US 41 at I-275 SB Ramps intersection will control movements through the intersection and reduce the potential angle and left-turn conflicts which occur at higher frequencies at stop-control intersections. An added benefit from the proposed improvements is that converting the traffic signal at the US 41 at I-275 NB Ramps intersection from the span-wire mounted signal to a mast-arm mounted signal is expected to produce annual crash reductions (roughly 1 FI crash and 1 PDO crash every ten years). Lastly, the proposed improvements include the installation of crosswalks and pedestrian features at both ramp termini intersections. Currently, there are no crosswalks, warning signage, or pavement markings identifying pedestrian crossings on US 41 and the interchange ramps. The proposed crosswalks and signage will help address these needs. Additionally, pedestrian crossings of US 41 and the interchange ramps will be accounted for in the signal phasing at both ramp terminals. These improvements will increase pedestrian mobility and safety in the interchange area.

In conclusion, the operational and safety analysis has demonstrated that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility, the adjacent interchanges, or on the local street network based on both the current and the planned future traffic projections.

FHWA Policy Point 2

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The

report should describe whether future provision of a full interchange is precluded by the proposed design.

Satisfaction of FHWA Policy Point 2

The existing I-275 at US 41 interchange is a diamond interchange that connects to a public road (US 41) and provides for all traffic movements. The recommended I-275 at US 41 interchange improvements maintain the diamond interchange configuration and continue to provide for all traffic movements to and from US 41. The proposed access connects to a public road only and will provide for all traffic movements. Therefore, the Build Alternative is recommended for implementation at the I-275 at US 41 interchange.

Recommendation

It is recommended that the Build Alternative be constructed to improve the safety and operational conditions at the I-275 at US 41 interchange for vehicles, pedestrians, and bicyclists. It is also recommended that the intersections of US 41 at the I-275 SB Ramps and US 41 at 73rd Street/69th Street be continuously monitored for improvements to ensure that there are no detrimental impacts to the interchange. Lastly, it is recommended that the District continues to evaluate ultimate improvements for the I-275 freeway segment between I-75 and US 41 in the northbound direction.

Table of Contents

List of Tables

List of Figures

Appendices

1 General Project Information

1.1 Introduction

The Florida Department of Transportation (FDOT) District 1 has prepared an Interchange Operational Analysis Report (IOAR) for the proposed signalization of the southern intersection at the I-275 and US 41 interchange located in Manatee County, Florida. A Methodology Statement was prepared in July 2021, prior to the commencement of this study. The Methodology Statement (revised in December 2021) is included in **Appendix A**. **Figure 1** shows the project location.

1.2 Purpose and Need

I-275, a major facility that runs predominantly north/south, is part of the Federal Highway System (National Highway System) and Interstate System. Within the State of Florida, I-275 is an integral part of the Florida's Strategic Intermodal System (SIS), providing for high-speed and high-volume traffic movements within the state. I-275 is a major route for freight and through traffic, while also providing connectivity among Hillsborough, Pinellas, and Manatee counties. As such, this interstate plays a critical role in both the regional and state-wide economy and in emergency evacuation plans. US 41 is a major north-south United States highway that traverses from Miami, Florida to the Upper Peninsula of Michigan. US 41 is the designated SIS highway connector, providing a direct connection between Port Manatee, I-275 and I-75. A substantial amount of truck traffic from Port Manatee utilizes this interchange to access I-75 and subsequently the rest of the state.

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wire mounted traffic signals at the northbound ramp termini intersection with mast arm mounted traffic signals, and installation of special emphasis crosswalks and pedestrian features at both ramp terminal intersections.

1.3 Analysis Years

Traffic operations were analyzed for the following years:

- Existing Year: 2021
- Opening Year: 2024
- Design Year: 2034

1.4 Area of Influence

The FDOT defines Area of Influence (AOI) in the FDOT Interchange Access Request User's Guide as the area that is anticipated to experience significant changes in traffic operating characteristics as the result of the access proposal. The AOI shall reflect current and anticipated operational and safety concerns associated with the access request. The area of influence is shown in **Figure 2**. The following describes the AOI along I-275 and the cross streets:

Along cross streets: The study intersections within the AOI are as follows:

- US 41 at I-275 SB ramp terminal intersection
- US 41 at I-275 NB ramp terminal intersection
- US 41 at 73rd Street/69th Street E

Along I-275: The study ramps and freeway segments within the AOI are as follows:

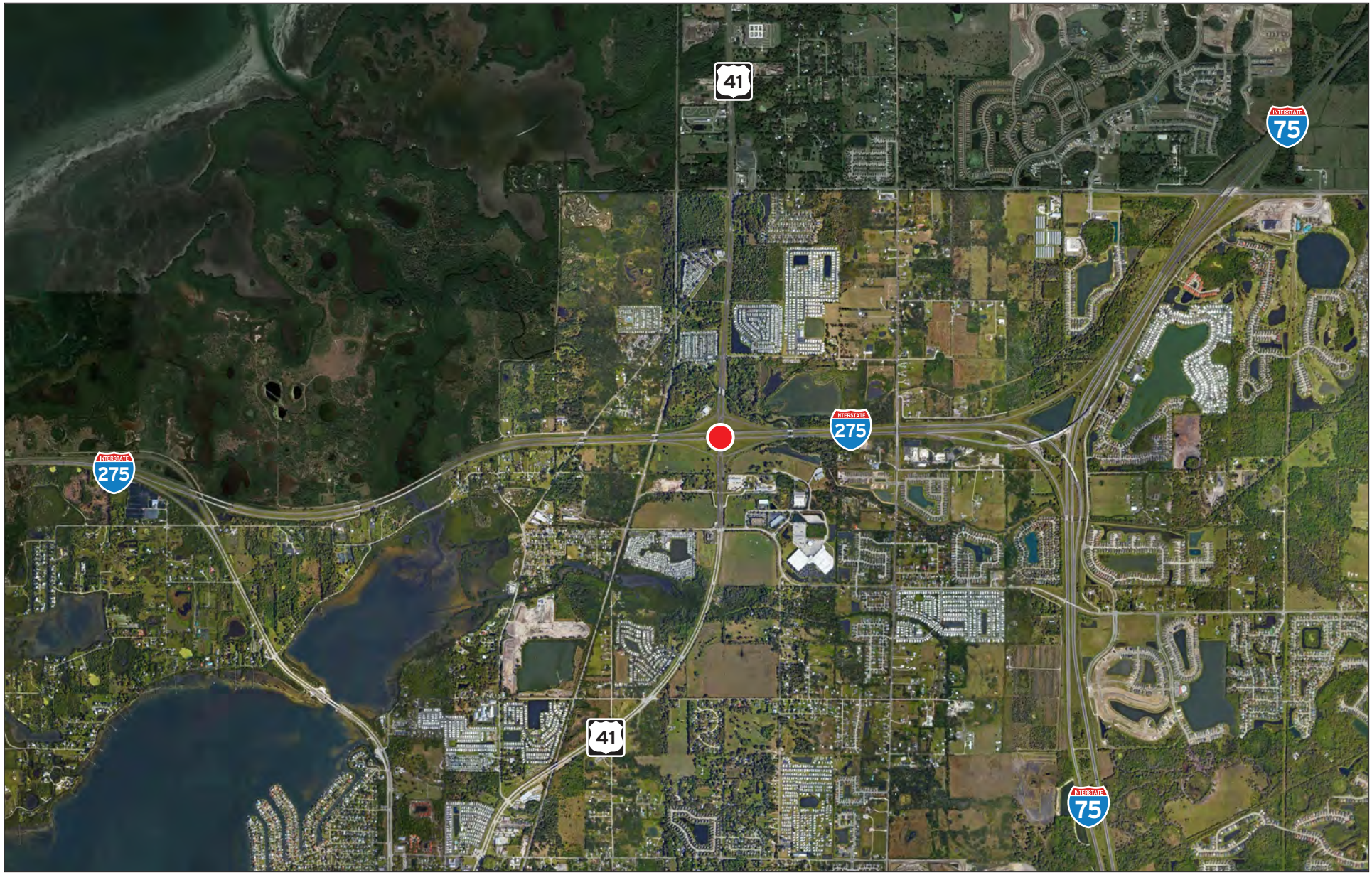
- I-275 SB on-ramp from US 41
- I-275 NB off-ramp to US 41
- I-275 NB on-ramp from US 41
- I-275 SB off-ramp to US 41
- I-275 freeway merge/diverge areas from/to the I-75 ramps
- I-275 freeway segment east of US 41
- I-275 freeway segment west of US 41

1.5 Level of Service (LOS) Targets

LOS Target Policy by means of Topic No. (000-525-006) indicates that the automobile mode level of service targets for the State Highway System during peak travel hours are "D" in urbanized areas and "C" outside urbanized areas. The Level of Service performance targets for each roadway classification, including freeway mainline, ramps, ramp terminal intersections and the crossroad beyond the interchange ramp terminal intersections are identified below.

- I-275 - Mainline and Ramps – LOS D
- US 41 – Segment and Intersections – LOS D

Aerial Source: Google Earth Pro



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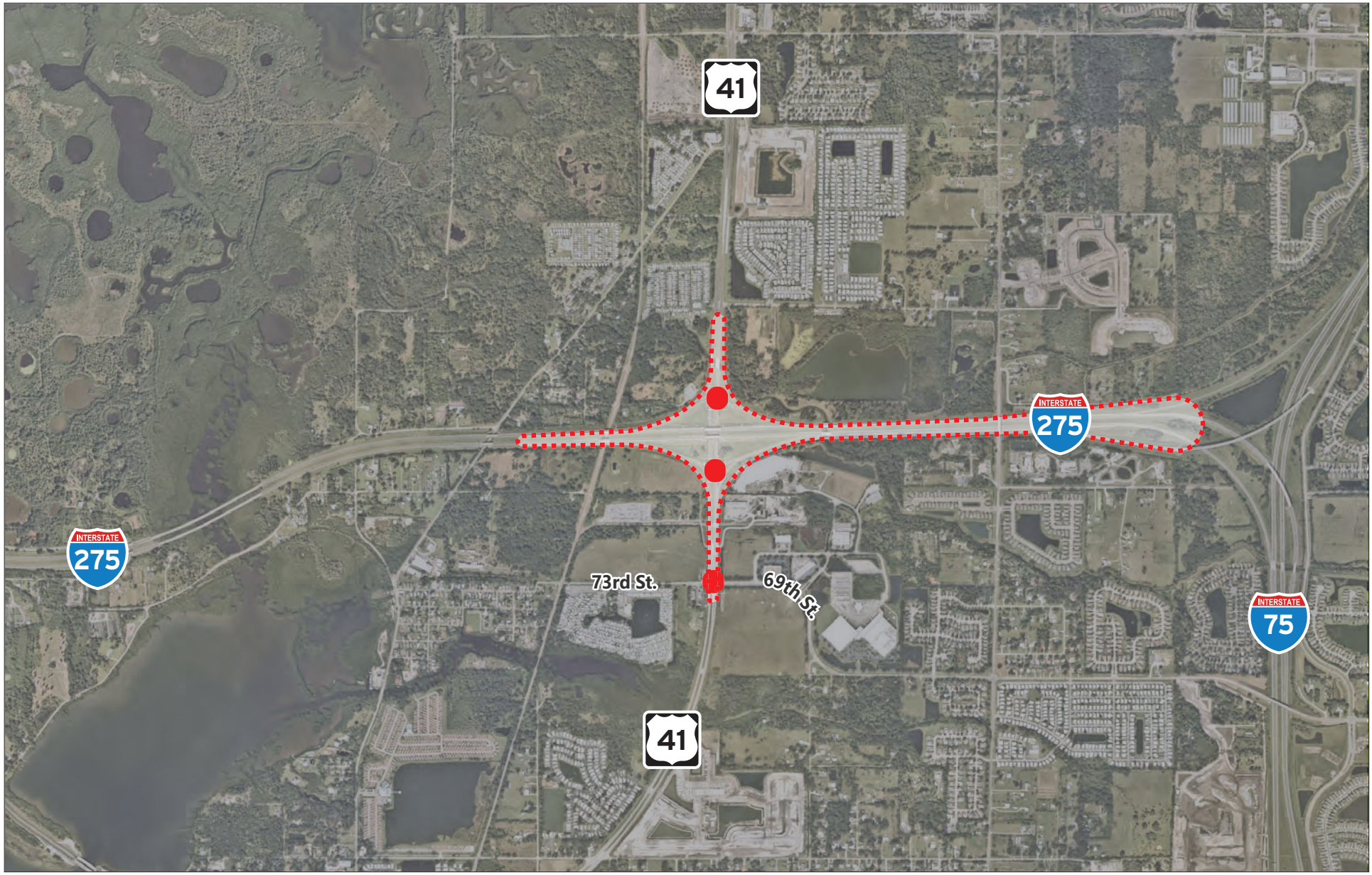
I-275 at US 41

FDOT

Figure 1

Project Location Map
Manatee County, Florida

Aerial Source: Google Earth Pro



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Area of Influence

Study Intersection

FDOT

Figure 2

Area of Influence

2 Data Collection

2.1 Traffic Data

Forty-eight (48) hour roadway volume and two-hour intersection turning movement counts during the A.M. peak period (7:00 AM to 9:00 AM) and two-hour intersection turning movement counts during the P.M. peak period (4:00 PM to 6:00 PM) were collected between September 8 and September 9, 2021, along US 41, the I-275 interchange ramps, 73rd Street, 69th Street and the study area intersections. In addition, twenty-four (24) hour roadway volume counts along I-275 were collected on July 7, 2021, by FDOT District One Systems Planning Office. Data collection locations are illustrated in **Figure 3**. Raw tube count and intersection turning movement counts are included in **Appendix B**.

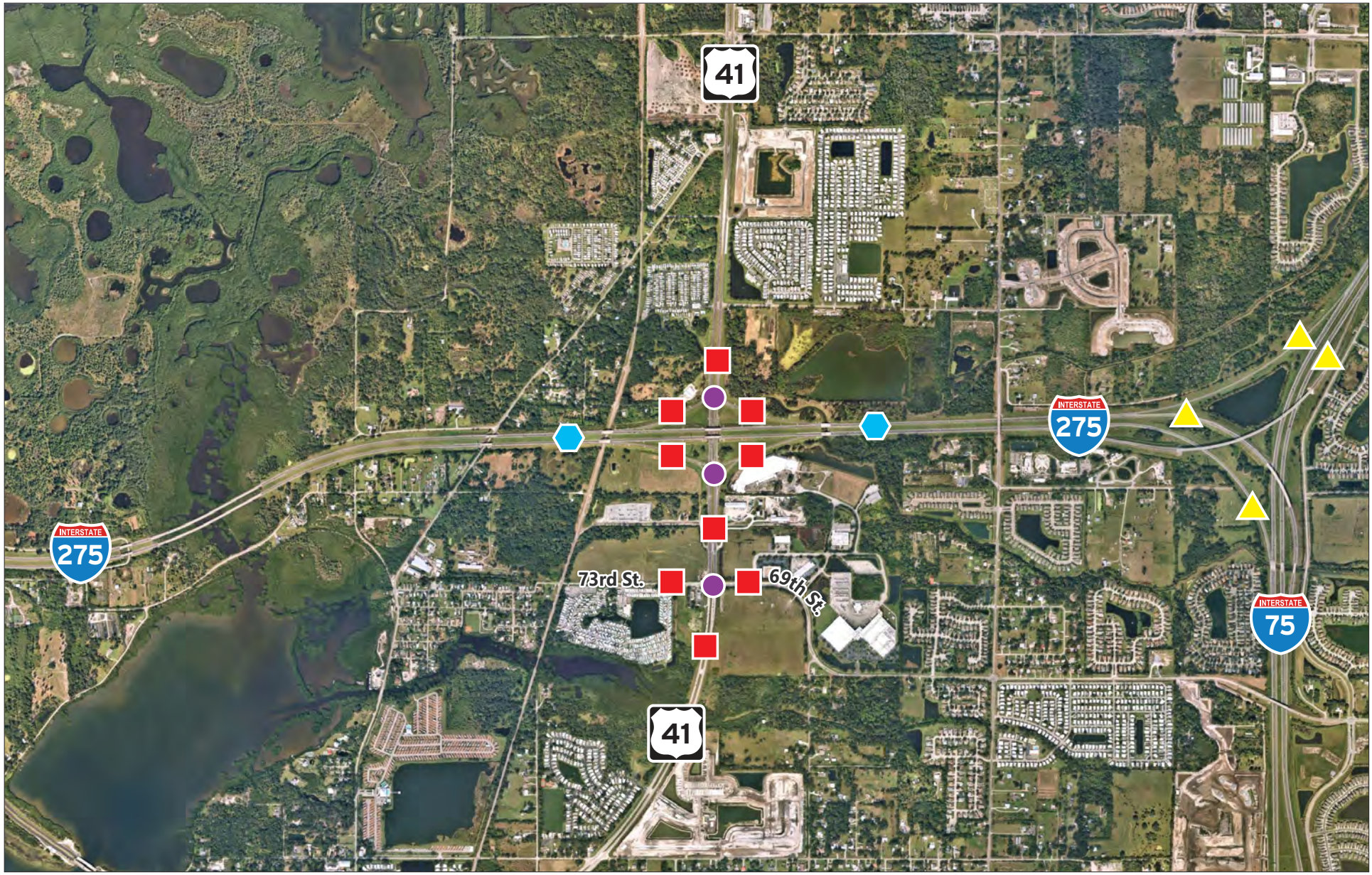
2.1 Previous Studies

The following summarizes a review of the previous studies conducted in the interchange area.

2.1.1 Traffic Signal Warrant Analysis - US 41 (SR 45) at I-275 Southbound Off-Ramp

In March 2020, a Traffic Signal Warrant Analysis was conducted at the intersection of US 41 (SR 45) and the I-275 SB Off-Ramp. The Signal Warrant Analysis concluded that the intersection meets warrants 1A and 2 based on traffic volumes. The study also documented that a major source of the eastbound vehicle delay is the high percentage of southbound left turning trucks, which require more storage space within the median opening and larger gaps in conflicting northbound traffic. Due to the delay time and number of queued southbound trucks, some eastbound left turning vehicles were observed to “give up” and turn right (southbound) from the left turn lane. Based on the results and recommendations from the study, the intersection has been added to the list of approved traffic signal locations by the District. The Traffic Signal Warrant Analysis is included in **Appendix C**.

Aerial Source: Nearmap



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- 48 Hour Roadway Volume Count
- 4 Hour Intersection Turning Movement Count
- 24 Hour Roadway Volume Count
- FDOT Count Station (2020 FTO)

FDOT

Figure 3

Count Locations

3 Existing Conditions

3.1 Existing Roadway Characteristics

The roadway segment characteristics, including road names, area type, roadway type, FDOT access classification, number of lanes, and posted speed limit, were reviewed using Straight Line Diagrams (SLDs), field evaluations, aerial photography, and the Florida Traffic Online (FTO) Database. **Table 1** summarizes existing characteristics for the roadways in the study area. The SLDs are included in **Appendix D**.

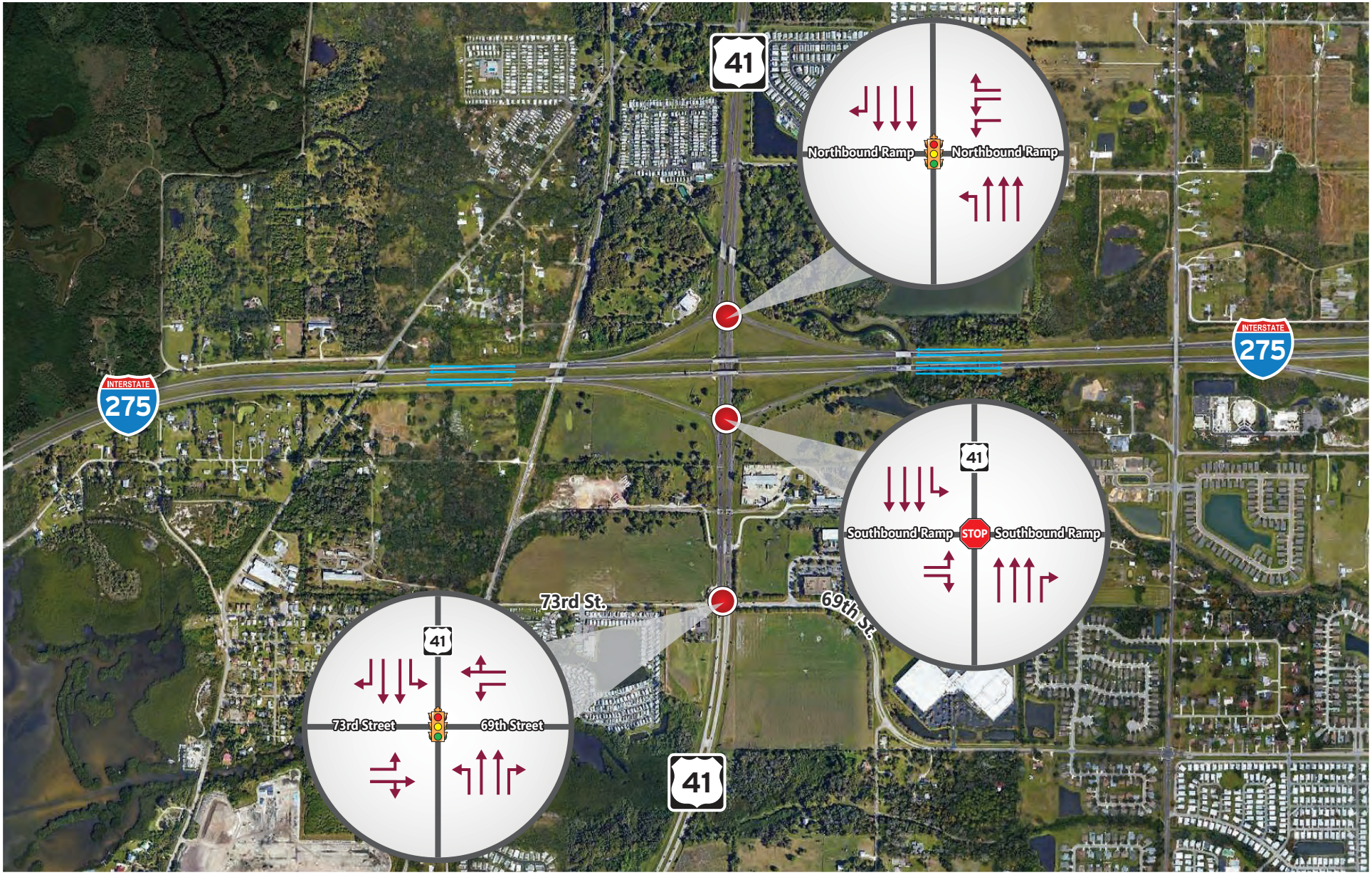
The I-275/SR 45 (US 41) interchange is a full diamond interchange with single lane on and off ramps. The northbound ramp termini intersection is signalized, and the southbound ramp termini intersection is stop controlled. I-275 is a four-lane freeway and US 41 is a six-lane lane divided urban principal arterial other that runs under I-275. There is an auxiliary lane along I-275 east of US 41 between US 41 and I-75. I-275 has a 70 mile per hour speed limit, and US 41 has a 60 mile per hour speed limit.

The existing intersection lane configurations at each of the study intersections are illustrated in **Figure 4**.

Table 1: Existing Roadway Characteristics

	Roadway Segment					
	US 41	I-275	NB I-275 Off Ramp to US 41	NB I-275 On Ramp from US 41	SB I-275 Off Ramp to US 41	SB I-275 On Ramp from US 41
FDOT Roadway ID	13030000	13175000	13175303	13175305	13175306	13175304
Location (Milepost)	4.789 - 5.561	1.344 - 5.107	0 - 0.256	0 - 0.257	0 - 0.270	0 - 0.226
Functional Classification	Urban Principle Arterial Other	Urban Principle Arterial Interstate	Ramp	Ramp	Ramp	Ramp
SIS Designation	SIS - Connector	SIS - Corridor	SIS	SIS	SIS	SIS
Speed Limit	60 mph	70 mph	-	-	-	-
Lane Width	12'	12'	15'	15'	15'	15'
Shoulder Width	10'	9'	4'	4'	4'	4'
Median	42'	90'	-	-	-	-
FDOT Access Classification	3	1	-	-	-	-
Curb and Gutter	None	None	None	None	None	None
Sidewalks	None	None	None	None	None	None
Bike Lanes	Present	None	None	None	None	None
Street Lighting	None	None	None	None	None	None
Surrounding Land Uses	Vacant Mixed-Use, Light Industrial, Ag Land	Vacant Mixed-Use, Residential	Vacant Mixed-Use	Vacant Mixed-Use, Residential, Warehousing	Vacant Mixed-Use	Vacant Mixed-Use

Aerial Source: Google Earth Pro



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Lane Geometry

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Figure 4

Existing Lane Configurations

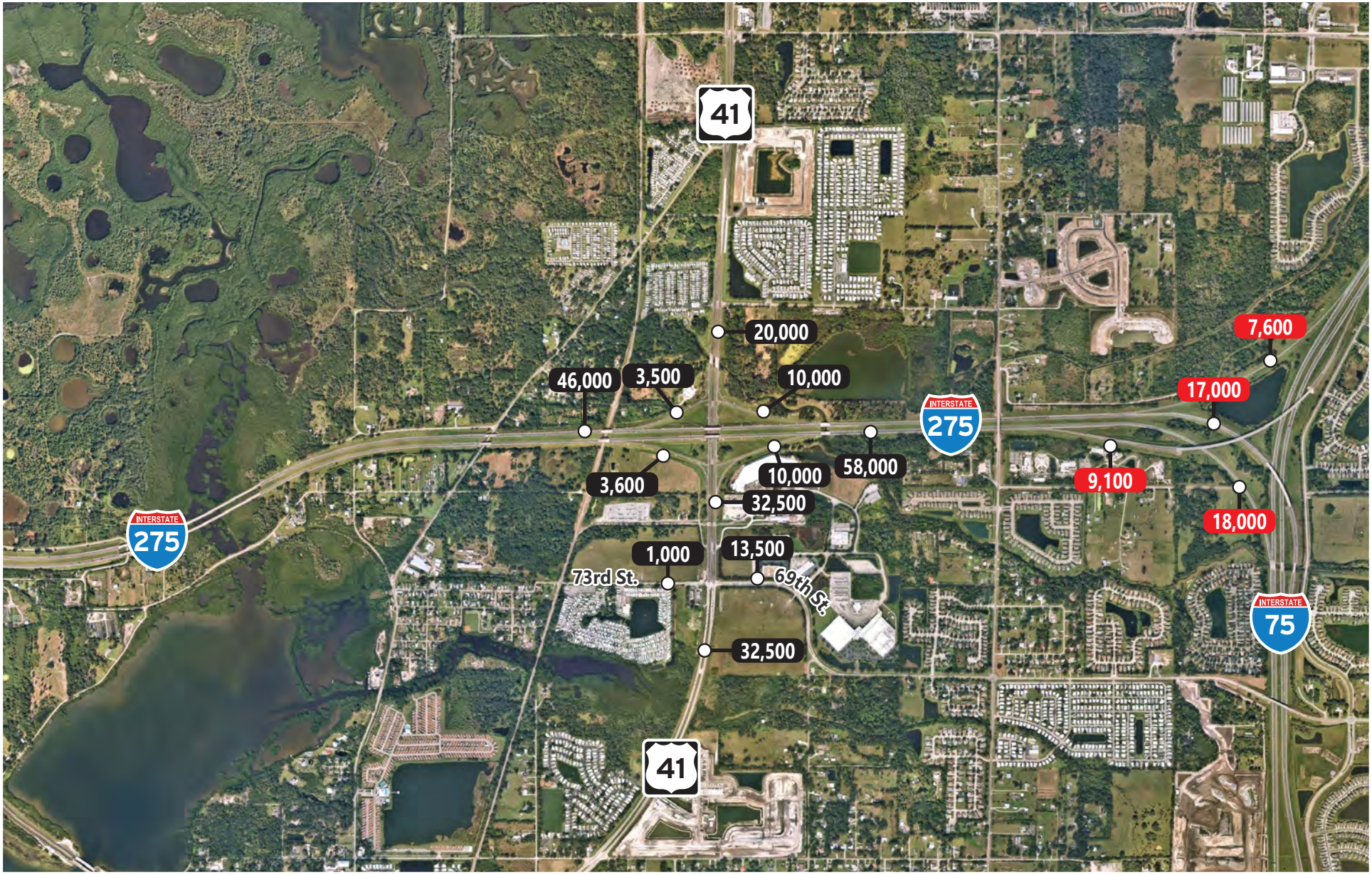
3.2 Existing Traffic Characteristics

The collected turning movement counts and volume counts were adjusted using seasonal adjustment factors obtained from the 2019 FTO to estimate 2021 average turning movement volumes and Annual Average Daily Traffic (AADTs). Axle conversion factors obtained from the 2019 FTO database were applied to the volume counts along I-275, US 41, 73rd Street, and 69th Street. The AADTs for all roadway segments (with the exception of the segments on I-275) were calculated using the roadway volume counts collected on September 9, 2021, to be consistent with the date in which the intersection turning movement counts were collected. It is to be noted that seasonal and axle adjustment factors from the 2020 FTO were not used in this analysis due to the abnormal traffic conditions resulting from the COVID 19 pandemic during the year 2020. Seasonal factors and axle correction factors are included in **Appendix E**. The 2021 AADTs are summarized in **Table 2**. The 2021 AADTs within the study area are shown in **Figure 5**. The seasonally adjusted balanced intersection turning movement volumes used in the existing conditions analysis are illustrated in **Figure 6**.

Table 2: Existing AADTs

Roadway / Segment	Count Date	Source / Type	ADT	Axle Adj.	Seasonal Adj.	Adjusted AADT
Mainline (I-275)						
West of US 41	7/7/2021	Synopsis Report	43,439	0.96	1.06	46,000
East of US 41	7/7/2021	Synopsis Report	55,185	0.96	1.06	58,000
US 41						
North of I-275	9/8 - 9/9/2021	48-Hour Volume	19,186	0.97	1.08	20,000
South of I-275	9/8 - 9/9/2021	48-Hour Volume	31,120	0.97	1.08	32,500
South of 73rd Street	9/8 - 9/9/2021	48-Hour Volume	30,829	0.97	1.08	32,500
73rd Street/69th Street						
West of US 41 (73rd Street)	9/8 - 9/9/2021	48-Hour Volume	987	0.97	1.08	1,000
East of US 41 (69th Street)	9/8 - 9/9/2021	48-Hour Volume	13,100	0.97	1.08	13,500
Ramps (I-275 at US 41)						
I-275 NB Off Ramp	9/8 - 9/9/2021	48-Hour Volume	9,733	0.95	1.10	10,000
I-275 NB On Ramp	9/8 - 9/9/2021	48-Hour Volume	3,338	0.95	1.10	3,500
I-275 SB Off Ramp	9/8 - 9/9/2021	48-Hour Volume	3,416	0.95	1.10	3,600
I-275 SB On Ramp	9/8 - 9/9/2021	48-Hour Volume	9,740	0.95	1.10	10,000
Ramps (I-275 at I-75)						
I-275 NB On Ramp from I-75 NB	2020	FTO	17,000	--	--	17,000
I-275 NB On Ramp from I-75 SB	2020	FTO	7,600	--	--	7,600
I-275 SB Off Ramp to I-75 NB	2020	FTO	9,100	--	--	9,100
I-275 SB Off Ramp to I-75 SB	2020	FTO	18,000	--	--	18,000

Aerial Source: Nearmap



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XXXX 2021 AADT

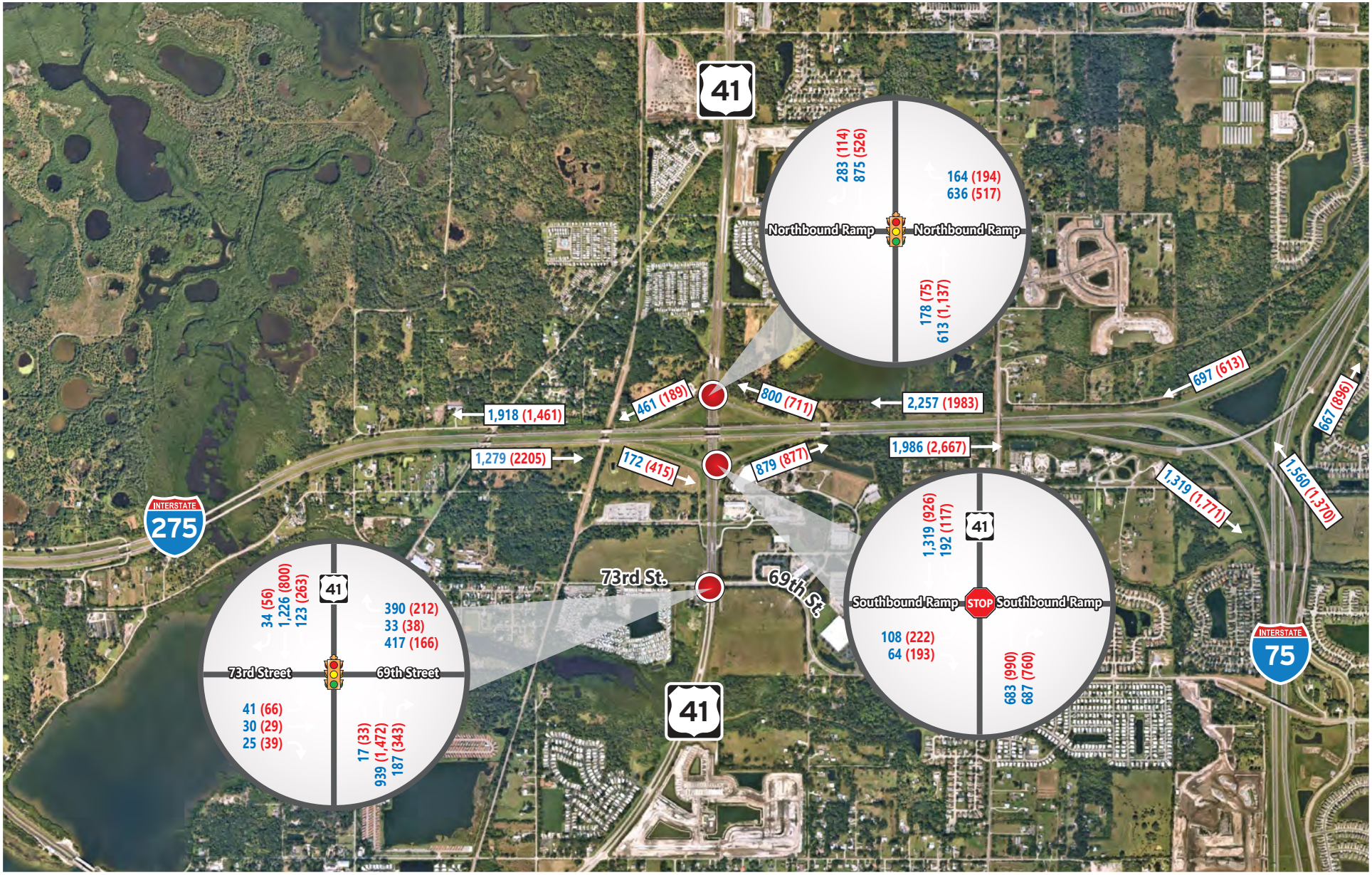
XXXX 2020 AADT

FDOT

Figure 5

Existing AADTs

Aerial Source: Nearmap



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AM (PM) Peak Hour Traffic Volumes

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Figure 6

2021 Peak Hour Turning Movement Volumes

3.3 Existing Year Traffic Analysis

LOS is a qualitative measure of how efficient a roadway or intersection operates. LOS A represents the highest traffic flow quality, while LOS E represents traffic flow at capacity. LOS F represents forced flow congested conditions. LOS B, C, and D represent a gradual degradation in traffic flow quality before reaching capacity.

The following section summarizes the existing (2021) weekday AM and PM peak hour intersection operations. Intersections were analyzed using Highway Capacity Manual (HCM) 6th Edition methodologies, as implemented in Synchro 11 software. Ramp merge, diverge, and weaving segments were analyzed using HCM 6th Edition methodologies, as implemented in Highway Capacity Software (HCS), Version 7.

3.3.1 Existing Year 2021 Ramp and Mainline Analysis

As described previously in Section 1.4, the I-275/US 41 interchange ramps and the freeway segments east and west of US 41 were included in the area of influence and were evaluated as part of the peak hour operational analysis. A weaving segment exists in the southbound direction east of the interchange between the I-275/US 41 and I-275/I-275 interchanges.

Even though I-275 runs east-west within the AOI, I-275 is considered to be a facility that runs north-south and will be referenced as a facility running north-south throughout this report.

The AM and PM peak hour operational results (density and LOS) are summarized in **Table 3**. All analysis segments (basic, diverge, merge, and weaving) operate at LOS C or better during both peak hours. Detailed HCS analysis output reports are included in **Appendix F**.

Table 3: Year 2021 Freeway Facilities LOS Analysis Summary

Freeway Segment	Segment Type	AM		PM	
		Density	LOS	Density	LOS
I-275 Southbound					
West of US 41	Basic	10.6	A	18.0	B
I-275 SB Off Ramp to US 41	Diverge	12.9	B	22.2	C
I-275 Between US 41 Ramps	Basic	9.1	A	14.6	B
I-275 SB On Ramp from US 41 to Off Ramp to I-75	Weaving	12.9	B	17.9	B
I-275 Northbound					
I-275 NB from I-75 NB	Basic	12.3	B	11.5	B
I-275 NB On Ramp from I-75 SB	Merge	20.1	C	17.4	B
East of US 41	Basic	18.7	C	16.2	B
I-275 NB Off Ramp to US 41	Diverge	23.4	C	20.3	C
I-275 Between US 41 Ramps	Basic	12.0	B	10.4	A
I-275 NB On Ramp from US 41	Merge	18.2	B	13.6	B
West of US 41	Basic	15.8	B	11.9	B

A ramp capacity analysis was conducted for the study ramp segments and is shown in **Table 4**. Ramp capacities for 1-lane ramps from Exhibit 14-12 of the HCM (6th Edition) were adjusted for ramp truck percentage and peak hour factor and used in the capacity analysis. Under the existing year 2021 conditions, all the ramp segments have demand (volume) over capacity ratios of less than 0.50.

Table 4: Year 2021 Ramp Capacity Analysis Summary

Ramps	Ramp Volume		V/C Ratio			
	AM	PM	Lanes	Capacity (vph)	AM	PM
I-275 NB Off-Ramp to US 41	800	711	1	1,825	0.44	0.39
I-275 SB On-Ramp from US 41	879	877	1	1,825	0.48	0.48
I-275 NB On-Ramp from US 41	461	189	1	1,825	0.25	0.10
I-275 SB Off-Ramp to US 41	172	415	1	1,825	0.09	0.23

Notes:
1. Ramp capacity from HCM Exhibit 14-12 is adjusted for truck percentage and peak hour factor. A truck percentage of 8.2% and PHF of 0.95 are used.

3.3.2 Existing Year 2021 Intersection Analysis

The intersection analysis was performed for the year 2021 AM and PM peak hours using existing intersection geometry at the two (2) signalized and one (1) unsignalized intersections.

A summary of the LOS analysis for the study intersections is included in **Table 5**. As shown in **Table 5**, the signalized intersection of US 41 at I-275 NB Ramps operates acceptably, within the adopted FDOT LOS target, during the year 2021 AM & PM peak hour conditions. At the unsignalized intersection of US 41 at I-275 SB Ramps, the US 41 SB left-turn onto I-275 SB operates acceptably but the I-275 SB off-ramp left-turn onto US 41 NB operates over capacity at LOS F during both the AM and PM peak hours. The reported queue for the left-turn movement from the off-ramp is 12 vehicles and 22 vehicles during the AM and PM peak hours, respectively. The signalized intersection of US 41 at 73rd Street operates acceptably during the AM peak hour, except for the NB and SB left turn movements, which operate at LOS E. The intersection operates near capacity at LOS E during the PM peak hour, with the NB and SB left movements operating at LOS E, as well as the NB through movement operating at LOS F. Storage lengths will be exceeded for this intersection in the AM peak period within the WB left movement and during the PM peak period within the EB left movement. The reported 95th percentile queue for the US 41 SB through lanes is 25 vehicles (approximately 625 feet) during the AM peak hour while the queue is 45 vehicles (approximately 1,125 feet) on the US 41 NB through lanes during the PM peak hour. The base year 2021 AM and PM peak hour Synchro intersection analysis outputs along with the signal timing data are included in **Appendix G**.

Table 5: Existing Year 2021 Intersection LOS Analysis Summary

Study Intersection	Control Type	Movement	FDOT LOS Target	AM Peak Hour					PM Peak Hour				
				Delay (s)	LOS	95th Percentile Queue		Available Storage	Delay (s)	LOS	95th Percentile Queue		Available Storage
						Vehicles	Feet				Vehicles	Feet	
US 41 at I-275 NB Ramps	Signalized	WBL	D	30.3	C	10	250	1,015	28.6	C	7	175	1,015
		WBR	D	0.0	A	0	0	280	0.0	A	0	0	280
		NBL	D	15.8	B	16	400	590	11.4	B	1	25	590
		NBT	D	9.2	A	9	225	-	9.1	A	4	100	-
		SBT	D	21.3	C	21	525	-	15.6	B	3	75	-
		SBR	D	0.0	A	0	0	435	0.0	A	0	0	435
		OVERALL	**D**	**20.1**	**C**	**-**	**-**	-	**15.2**	**B**	**-**	**-**	-
US 41 at I-275 SB Ramps	Stop	EBL	D	>300.0	F	12	300	985	>300.0	F	22	550	985
		EBR	D	18.7	C	1	25	225	20.0	C	2	50	225
		NBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		NBR	D	0.0	A	0	0	880	0.0	A	0	0	880
		SBL	D	16.4	C	2	50	595	20.2	C	2	50	595
		SBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		OVERALL	**D**	**16.4/>300**	**C/F**	**-**	**-**	-	**20.2/>300**	**C/F**	**-**	**-**	-
US 41 at 73rd Street/69th Street	Signalized	EBL	D	50.2	D	2	50	130	54.0	D	4	100	130
		EBT	D	0.0	A	0	0	-	0	A	0	0	-
		EBR	D	24.9	C	2	50	-	35.8	D	3	75	-
		WBL	D	46.7	D	19	475	430	44.6	D	8	200	430
		WBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		WBR	D	39.3	D	18	450	-	43.6	D	11	275	-
		NBL	D	74.2	E	1	25	420	68.4	E	2	50	420
		NBT	D	42.9	D	20	500	-	111.5	F	45	1125	-
		NBR	D	31.4	C	8	200	370	29.9	C	12	300	370
		SBL	D	65.9	E	8	200	670	72.7	E	15	375	670
		SBT	D	40.9	D	25	625	-	16.8	B	10	250	-
		SBR	D	21.4	C	1	25	-	12.9	B	1	25	-
		OVERALL	**D**	**42.2**	**D**	**-**	**-**	**-**	**66.6**	**E**	**-**	**-**	**-**

Notes:
1. HCM 6 based outputs are presented in this table for both the signalized and unsignalized intersections
2. Overall intersection delay and LOS results are reported for the signalized intersections
3. At unsignalized intersections, the worst major street/minor street results (delay and LOS) are reported
4. Results shown in red exceed the adopted LOS target
5. Queue length in feet is calculated under the assumption that each vehicle has a length of 25 feet

Field Observations

A field review was conducted on November 2, 2021, during the AM and PM peak hours. A summary of the operational observations are as follows:

US 41 at I-275 NB Ramps

Overall, little to no queuing was observed at the US 41 at I-275 NB ramps. Traffic is controlled by a traffic signal and queues often cleared within a cycle during both the AM and PM peak hours.

US 41 at I-275 SB Ramps

- Because of the wide median opening at the intersection, left-turning vehicles on the I-275 SB off-ramp were observed to make two-stage crossing during both the AM and PM peak hours. At times the gaps were evident as no US 41 NB traffic was coming, left-tuning vehicles from the off-ramp can make the turn in one stage.
- The maximum queue observed on the off-ramp during the AM peak hour was 5 vehicles with some vehicles slowing down. The queue did not block the right-turning vehicles and did not extend to the I-275 SB mainline. During the PM peak hour, a maximum queue of 19 vehicles was observed (approximately 400 feet). At times the queue extends beyond the channelized right-turn lane and blocks the right turn movement vehicles however the queue did not extend to the I-275 SB mainline.
- There are heavy truck movements along the US 41 corridor during both the AM and PM peak hours. During the AM peak hour, the vehicle queue on US 41 SB left-turn lane onto I-275 SB was observed to spill into the through lane a couple of times.
- The left-turning vehicle delays on the off-ramp are long during both the AM and PM peak hour as some motorists may decide to wait for a gap in both the NB and SB directions instead of making the two-stage crossing. Vehicle/truck queues on the US 41 SB left-turn movement waiting for gaps in the US 41 NB direction also contributed to the long delays at the intersection.

US 41 at 73rd Street/69th Street

- The US 41 SB through queue during the AM peak hour was observed to spill back to the at-grade railroad crossing a couple of times due a combination of the signal timings and the fact that three through lanes in the SB direction taper down to two through lanes. The queue did not reach the I-275 SB ramps.

Overall, the operational observations mentioned above are consistent with the results from Synchro analysis using HCM 6 methodology.

4 Development of Design Characteristics

This section presents the design traffic characteristics that were developed for this study. These characteristics are determined based on the procedures outlined in the 2019 FDOT's Project Traffic Forecasting Handbook (PTF). These design traffic characteristics will be used in the development of the future condition design hour volumes (DHVs) at the study intersections and directional design hour volumes (DDHVs) for roadway segments.

4.1 Standard K Factor

The K factor represents the relationship between the travel demand occurring during the peak hour and the average annual daily traffic. The ratio of peak hour to annual average daily traffic factor (K) is used in the FDOT's planning through design phases. Based on the guidance from the FDOT PTF, a Standard K Factor of 9.0% for Freeways, Arterials and Highways within an "Other Urbanized" area type is recommended for the study roadways within the area of influence.

4.2 D Factor

The Directional Distribution (D) is the percentage of the total, two-way design hour traffic traveling in the peak direction. The D Factor is based on the median D value for the highest 200 hours of volumes for each continuous count station. To determine this factor for I-275 and US 41, the measured D factors from the field traffic counts were computed, checked for reasonableness against historical D factors (contained in the FTO) and then adjusted, if necessary, to meet the statewide guidelines (Table 2-2 from the 2019 PTF Handbook). **Table 6** provides the current recommended range of D values from the FDOT Project Traffic Forecasting Handbook for urban freeways and arterials.

Table 6: Recommended Range of D Values

FDOT[1]	Values		
	Low	Average	High
Urban Freeway	50.4%	55.8%	61.2%
Urban Arterial	50.8%	57.9%	67.1%

1) Source: 2019 FDOT Project Traffic Forecasting Handbook, Table 2-2

The measured D values for the study area roadways are shown in **Table 7**. The average of the measured D factors for I-275 and US 41 within the study limits are 58.3% and 60.5%, respectively.

Table 7: Measured D Factors

Roadway / Segment	Count Date	Source / Type	PM Peak Time	Total	NB/EB	SB/WB	Measured D
Mainline (I-275)							
West of US 41	7/7/2021	Synopsis Report	5:00 to 6:00	3,458	2,080	1,378	60.2%
East of US 41	7/7/2021	Synopsis Report	5:00 to 6:00	4,284	2,415	1,869	56.4%
						Average	**58.3%**
US 41							
North of I-275	9/8 - 9/9/2021	48-Hour Volume	5:00 to 6:00	1,486	948	538	63.8%
South of I-275	9/8 - 9/9/2021	48-Hour Volume	5:00 to 6:00	2,414	1,305	1,109	54.1%
South of 73rd Street	9/8 - 9/9/2021	48-Hour Volume	5:00 to 6:00	2,655	1,687	968	63.5%
						Average	**60.5%**

Table 8 illustrates the historical D factors from four (4) sites along I-275 an US 41:

- 130059 – I-275 W of US 41
- 130058 – I-275 E of US 41
- 130006 – US 41 - S of Piney Point Road
- 130007 – US 41 - N of McMullen Creek

The factors were obtained for ten years between 2011 and 2020. The average, minimum and maximum D factors over the five years for I-275 corridor are 55.20%, 54.70% and 55.70%, respectively. In addition, the average, minimum and maximum D factors over the ten years for US 41 corridor are 55.26%, 52.60% and 56.20%, respectively.

Table 8: Historical FTO Data - D Values

Year	US 41			I - 275		
	130006 - US 41 - S of Piney Point Road	130007 - US 41 - N of McMullen Creek	Average	130059 - I-275 W of US 41	130058 - I-275 E of US 41	Average
2020	52.60%	52.60%	52.60%	55.60%	55.60%	55.60%
2019	55.80%	55.80%	55.80%	55.70%	55.70%	55.70%
2018	55.60%	55.60%	55.60%	55.20%	55.20%	55.20%
2017	56.00%	56.00%	56.00%	55.20%	55.20%	55.20%
2016	56.20%	56.20%	56.20%	55.20%	55.20%	55.20%
2015	55.60%	55.60%	55.60%	54.80%	54.80%	54.80%
2014	55.00%	55.00%	55.00%	54.70%	54.70%	54.70%
2013	54.80%	54.80%	54.80%	55.20%	55.20%	55.20%
2012	55.50%	55.50%	55.50%	55.50%	55.50%	55.50%
2011	55.50%	55.50%	55.50%	54.90%	54.90%	54.90%
Average	55.26%	55.26%	55.26%	55.20%	55.20%	55.20%
Minimum	52.60%	52.60%	52.60%	54.70%	54.70%	54.70%
Maximum	56.20%	56.20%	56.20%	55.70%	55.70%	55.70%

4.2.1 I-275 Mainline and Ramps

The average measured D from the 2021 traffic counts is 58.3%, while the average of the historical D factors is 55.2%. Therefore, a D factor of 56.7% (average of the measured and average historical values) is recommended for use in this study.

4.2.2 US 41

The average measured D from the 2021 traffic counts is 60.5%, while the average of the historical D factors is 55.3%. Therefore, a D factor of 57.9% (average of the measured and average historical values) is recommended for use in this study.

4.2.3 Side Streets

For the side streets of 73rd Street and 69th Street, it is recommended that the measured D values from the 2021 turning movement traffic counts be used.

4.3 T & DHT Factors

The daily truck factor (T) represents the percentage composition of medium sized and heavy trucks occurring in the traffic stream for a 24-hour period. The design hour truck (DHT) factor is the percentage of truck traffic during the peak hour and is recommended as one-half of the T factor in the PTF Handbook.

Table 9 contains the historical T factors from the FTO database for the last ten years (2011 to 2020). The average, minimum and maximum T factors over the last ten years for the sites on US 41, I-275 mainline and ramps are shown in the table.

Table 9: Historical FTO Data - Tdaily Values

Year	US 41			I - 275			I - 275 Ramps			
	130006 - US 41 - S of Piney Point Road	130007 - US 41 - N of McMullen Creek	Average	130059 - I-275 W of US 41	130058 - I-275 E of US 41	Average	137101 - I-275 NB Off Ramp to US 41	137103 - I-275 NB On Ramp from US 41	137104 - I-275 SB Off Ramp to US 41	137102 - I-275 SB On Ramp from US 41
2020	12.10%	11.10%	11.60%	7.80%	8.80%	8.30%	11.10%	7.80%	7.80%	11.10%
2019	12.10%	8.30%	10.20%	7.80%	8.80%	8.30%	8.30%	7.80%	7.80%	8.30%
2018	12.10%	8.30%	10.20%	7.50%	8.80%	8.15%	10.20%	8.20%	8.20%	10.20%
2017	11.30%	8.00%	9.65%	6.90%	9.10%	8.00%	9.70%	8.00%	8.00%	9.70%
2016	9.40%	6.90%	8.15%	7.00%	8.10%	7.55%	6.90%	7.60%	7.60%	6.90%
2015	9.40%	7.90%	8.65%	6.80%	7.80%	7.30%	8.70%	7.30%	7.30%	8.70%
2014	13.20%	8.30%	10.75%	6.60%	7.70%	7.15%	10.80%	7.20%	7.20%	10.80%
2013	11.90%	7.90%	9.90%	6.80%	8.00%	7.40%	9.90%	7.40%	7.40%	9.90%
2012	12.60%	9.80%	11.20%	6.80%	7.70%	7.25%	11.20%	7.30%	7.30%	11.20%
2011	11.00%	7.00%	9.00%	6.30%	7.60%	6.95%	9.00%	6.90%	6.90%	9.00%
Average	11.51%	8.35%	9.93%	7.03%	8.24%	7.64%	9.58%	7.55%	7.55%	9.58%
Minimum	9.40%	6.90%	8.15%	6.30%	7.60%	6.95%	6.90%	6.90%	6.90%	6.90%
Maximum	13.20%	11.10%	11.60%	7.80%	9.10%	8.30%	11.20%	8.20%	8.20%	11.20%

4.3.1 I-275 Mainline and Ramps

A daily truck percentage of 8.2% (average of the historical values) and a DHT of 4.1% is recommended for the I-275 mainline within the area of Influence. Daily truck percentages of 9.6% and 7.6% (average of the historical values) are recommended for the I-275 NB Off & SB On Ramps and the I-275 NB On & SB Off Ramps, respectively. A DHT of 4.8% is recommended for the I-275 NB Off & SB On Ramps, and a DHT of 3.8% is recommended for the I-275 NB On & SB Off Ramps.

4.3.2 US 41

A daily truck percentage of 11.5% (average of the historical values) and a DHT of 5.8% is recommended for the US 41 within the area of Influence.

4.3.3 Side Streets

For the side streets of 73rd Street and 69th Street, it is recommended that the measured DHT values from the 2021 turning movement traffic counts be used.

4.4 Recommended Design Traffic Characteristics

Based on the aforementioned discussion, the following **Table 10** provides a summary of the recommended design traffic characteristics for this study.

Table 10: Recommended Design Traffic Characteristics

Roadway / Segment	Recommended Design Characteristics			
	K Factor	D Factor	T Factor	DHT Factor
Mainline Characteristics				
I-275	9.0%	56.7%	8.2%	4.1%
US 41	9.0%	57.9%	11.5%	5.8%
I-275 NB Off & SB On Ramps	9.0%	56.7%	9.6%	4.8%
I-275 NB On & SB Off Ramps	9.0%	56.7%	7.6%	3.8%
Side Street Characteristics				
All side streets	9.00%	TMC	-	TMC

5 Future Traffic Forecasts

The development of traffic projections for the study corridors requires the examination of historical growth, proposed development levels along and adjacent to the corridor, and a basic understanding of local traffic circulation patterns and travel characteristics of the corridor. The key to accurately predicting future traffic is selecting a growth rate that properly accounts for all these factors.

This section summarizes the sources that were examined to determine a proper growth rate, before presenting the growth rate which was selected to forecast the future traffic conditions for each of the study alternatives. The following sources were examined and are presented in subsequent subsections:

1. **Travel Demand Model:** The latest adopted District One Regional Planning Model (D1RPM) version 2.0.
2. **Historical Traffic Trends Analysis:** Historical traffic trends analysis based on a least squares regression analysis using traffic data from the 2019 Florida Traffic Online.
3. **Population Projections:** Population estimates from The Bureau of Economic and Business Research (BEBR), Florida Population Studies, Bulletin 189.

5.1 Design Period

The following design period was used to provide the future traffic forecasts for the study corridor:

- Opening Year - 2024
- Design Year – 2034

5.2 Study Alternatives

This study evaluates one (1) No-Build Alternative and one (1) Build Alternative for the I-275 at US 41 interchange. The No-Build Alternative assumes no changes to the interchange. The Build Alternative includes a new traffic signal at the intersection of the I-275 southbound ramp termini at US 41. Other improvements include replacing the span wire mounted traffic signals at the northbound ramp termini intersection with mast arm mounted traffic signals, and installation of special emphasis crosswalks and pedestrian features at both ramp terminal intersections.

5.3 Travel Demand Model

The D1RPM is the appropriate travel-forecasting tool for generating a single 24-hour daily demand volume set that reflects future travel demand during a typical weekday in the predefined project subarea based on FSUTMS-Cube Framework Phase II – Model Calibration Standards. First, the base year model (year 2015) was validated to meet all the applicable performance criteria. Then, the calibration adjustments were carried forward to the 2045 scenario. The travel demand modeling technical memorandum developed in support of this study can be found in **Appendix H.**

5.3.1 Growth Rates based on the Travel Demand Model

The model output files for the base year 2015 and horizon year 2045 were reviewed for this study. **Table 11** shows the annual growth rates calculated using: 1) the base year 2015 and horizon year 2045 model volumes and, 2) the existing year 2021 AADTs and the horizon year 2045 model volumes. Based on a review of the growth rates obtained from the two methodologies, it is noted that the annual growth rates obtained from the existing AADT and the 2045 model volumes yield more conservative projections along the interchange ramps. Therefore, the annual growth rates developed using the existing AADT and the 2045 model volumes will be carried forward for further consideration.

Table 11: Model Growth Rate Summary

Roadway / Segment	Existing AADT	Traffic Count Date	D1RPM v2.0			
			2015 ADDT	2045 ADDT	Growth Rate	
					Base Year Model to Horizon Year Model	Existing AADT to Horizon Year Model
Mainline (I-275)						
West of US 41	46,000	2021	40,500	58,500	1.5%	1.1%
East of US 41	58,000	2021	55,000	74,000	1.2%	1.1%
Crossroad (US 41)						
North of I-275	20,000	2021	18,000	40,500	4.2%	4.3%
South of I-275	32,500	2021	26,000	43,000	2.2%	1.3%
South of 73rd Street	32,500	2021	19,000	32,500	2.4%	0.0%
73rd Street / 69th Street						
West of US 41	1,000	2021	900	1,300	1.5%	1.3%
East of US 41	13,500	2021	10,500	13,000	0.8%	-0.2%
Ramps (I-275 at US 41)						
NB Off & SB On Ramps	20,000	2021	23,000	30,000	1.0%	2.1%
NB On & SB Off Ramps	7,100	2021	8,600	14,000	2.1%	4.0%
Ramps (I-275 at I-75)						
SB Off to I-75 SB and NB On from I-75 NB	35,000	2020	36,000	48,000	1.1%	1.5%
SB Off to I-75 NB and NB On from I-75 SB	16,700	2020	19,000	26,500	1.3%	2.3%

5.4 Historical Traffic Trends

Based on the historical count information obtained from the FTO database, trends analyses were performed for the following FDOT count stations using historical AADTs from 2011 to 2020:

- 130006 - US 41 South of Piney Point Road
- 130007 - US 41 South of 73rd Street East
- 130058 - I-275 East of US 41
- 130059 - I-275 West of US 41
- 134017 - 69th Street East of US 41
- 134242 - 73rd Street West of US 41
- 137042 - I-275 Southbound Ramp to I-75 Southbound
- 137043 - I-275 Southbound Ramp to I-75 Northbound
- 137101 - I-275 Southbound Off Ramp
- 137102 - I-275 Northbound On Ramp
- 137103 - I-275 Southbound On Ramp
- 137104 - I-275 Northbound Off Ramp

The following **Table 12** summarizes the results of the trends analysis for the study roadways.

Table 12: Historical Traffic Trends Summary

Roadway / Segment	Historical Trends	
	Growth Rate	Trend R-squared
Mainline (I-275)		
West of US 41	2.8%	97.8%
East of US 41	3.2%	99.7%
Crossroad (US 41)		
North of I-275	5.6%	96.8%
South of I-275	3.0%	90.6%
South of 73rd Street	3.0%	90.6%
73rd Street / 69th Street		
West of US 41	0.9%	26.0%
East of US 41	3.1%	92.8%
Ramps (I-275 at US 41)		
NB Off & SB On Ramps	4.1%/4.1%	82.0%/87.4%
NB On & SB Off Ramps	4.3%/4.3%	85.4%/79.9%
Ramps (I-275 at I-75)		
SB Off to I-75 SB and NB On from I-75 NB	2.5%/1.7%	82.3%/83.8%
SB Off to I-75 NB and NB On from I-75 SB	5.6%/4.1%	95.6%/94.9%

As illustrated in **Table 12**, the study roadways show a large distribution of different R-squared values. R-squared values measures the goodness-of-fit of a model to the existing data points, which in turn, demonstrates the confidence in future model forecasts. All the sites (with exception of site 134242 - 73rd Street west of US 41) had acceptable R-square values of 75% or higher. The trends analysis sheets are provided in **Appendix I.**

5.5 Population Estimates

Low, medium, and high population projections for Manatee County were obtained from the latest BEBR publication (Bulletin 189). **Table 13** shows the annual growth rates derived from the population estimates for the year 2045.

Table 13: Population Analysis Summary (Manatee County)

Manatee County	Population Analysis		Growth Rate (2020-2045)
	2020	2045	
Low Population Estimate	398,503	449,200	0.51%
Medium Population Estimate	398,503	544,400	1.46%
High Population Estimate	398,503	653,700	2.56%

Population projections from BEBR are provided in **Appendix J.**

5.6 Traffic Forecasting Methodology

The growth rates obtained from the trends analysis, the travel demand model, and the population estimates were compared to determine an appropriate growth rate for future traffic forecasts. After a careful comparison of the growth rates obtained from each methodology, it was determined that the traffic projections provided by the travel demand model are the most reliable since the model projections consider major planned developments anticipated to influence the transportation patterns along the I-275 and US 41 corridors, as well as all the planned and programmed roadway improvements within the vicinity of the study.

5.6.1 Design Year 2034 Traffic Forecasts

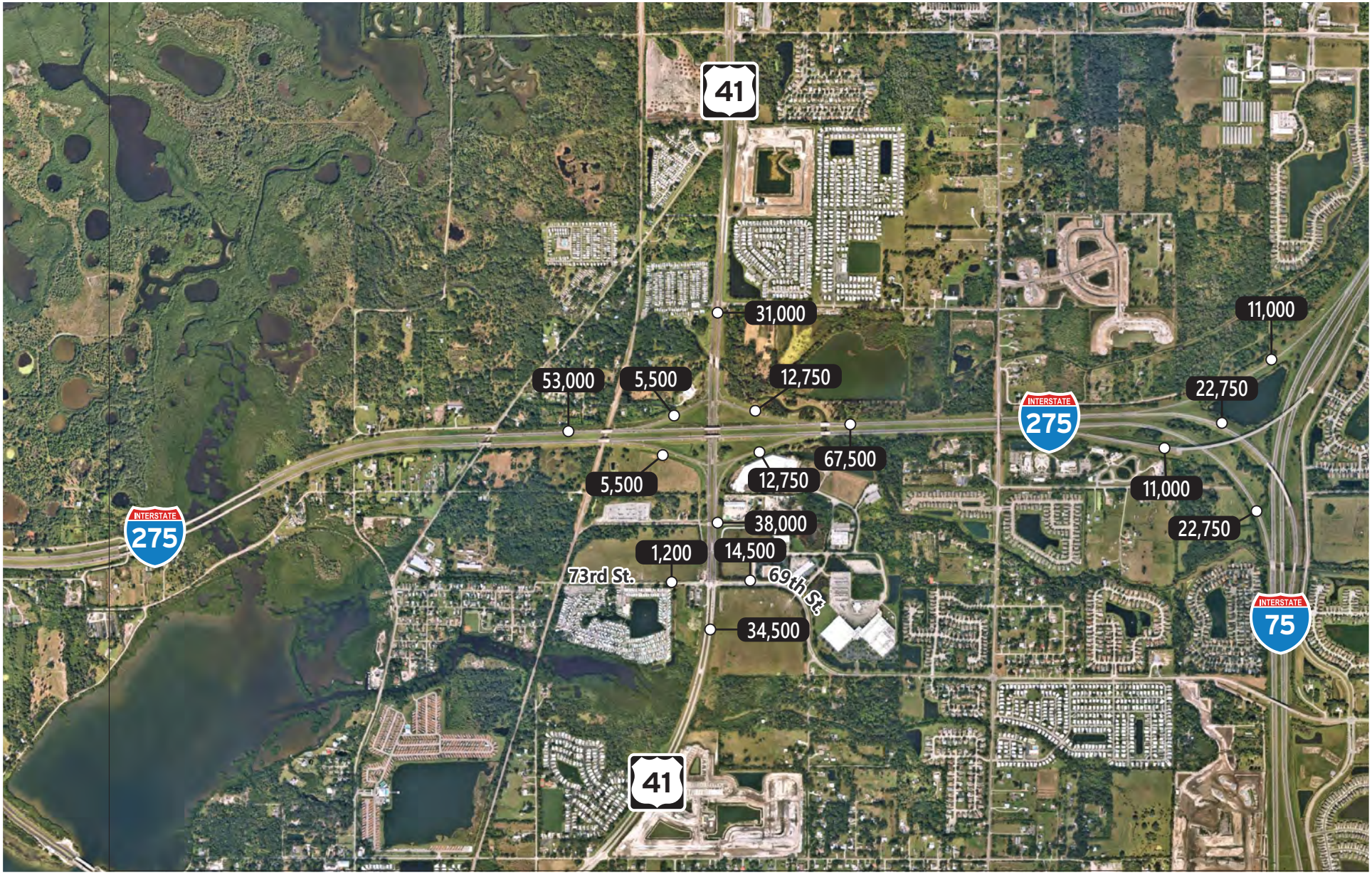
Due to the nature of the recommended improvements, it is not anticipated that there will be a significant difference between the no build and build forecasts. As such, only one set of future forecasts was developed for the no build and build alternatives. Based on the discussion included in the previous sections, the year 2034 AADT forecasts were developed using annual growth rates obtained from the travel demand model. The low BEBR population projection annual growth rate of 0.5% was applied to roadway segments where the travel demand model growth rate was lower than the low BEBR population projection growth rate. The year 2034 AADT forecasts are shown in **Table 14** and **Figure 7**.

Table 14: Future Year 2034 AADTs

Roadway / Segment	Existing AADT	Traffic Count Date	Forecast Source	Growth Rate	YR 2034 AADT
Mainline (I-275)					
West of US 41	46,000	2021	Model	1.1%	53,000
East of US 41	58,000	2021	Balanced	1.3%	67,500
Crossroad (US 41)					
North of I-275	20,000	2021	Model	4.3%	31,000
South of I-275	32,500	2021	Model	1.3%	38,000
South of 73rd Street	32,500	2021	BEBR Low	0.5%	34,500
73rd Street / 69th Street					
West of US 41	1,000	2021	Model	1.3%	1,200
East of US 41	13,500	2021	BEBR Low	0.5%	14,500
Ramps (I-275 at US 41)					
NB Off & SB On Ramps[1]	20,000	2021	Model	2.1%	25,500
NB On & SB Off Ramps[1]	7,100	2021	Model	4.0%	11,000
Ramps (I-275 at I-75)					
SB Off to I-75 SB and NB On from I-75 NB [1]	35,000	2020	Balanced	2.1%	45,500
SB Off to I-75 NB and NB On from I-75 SB [1]	16,700	2020	Balanced	2.3%	22,000

1. ***Volumes for reciprocal ramps were combined when developing traffic forecasts and then divided evenly to ensure that AADT volumes on reciprocal ramps were equal***

Aerial Source: Nearmap



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N.T.S.

XXXX AADT

FDOT

Figure 7

Future Year 2034 AADTs

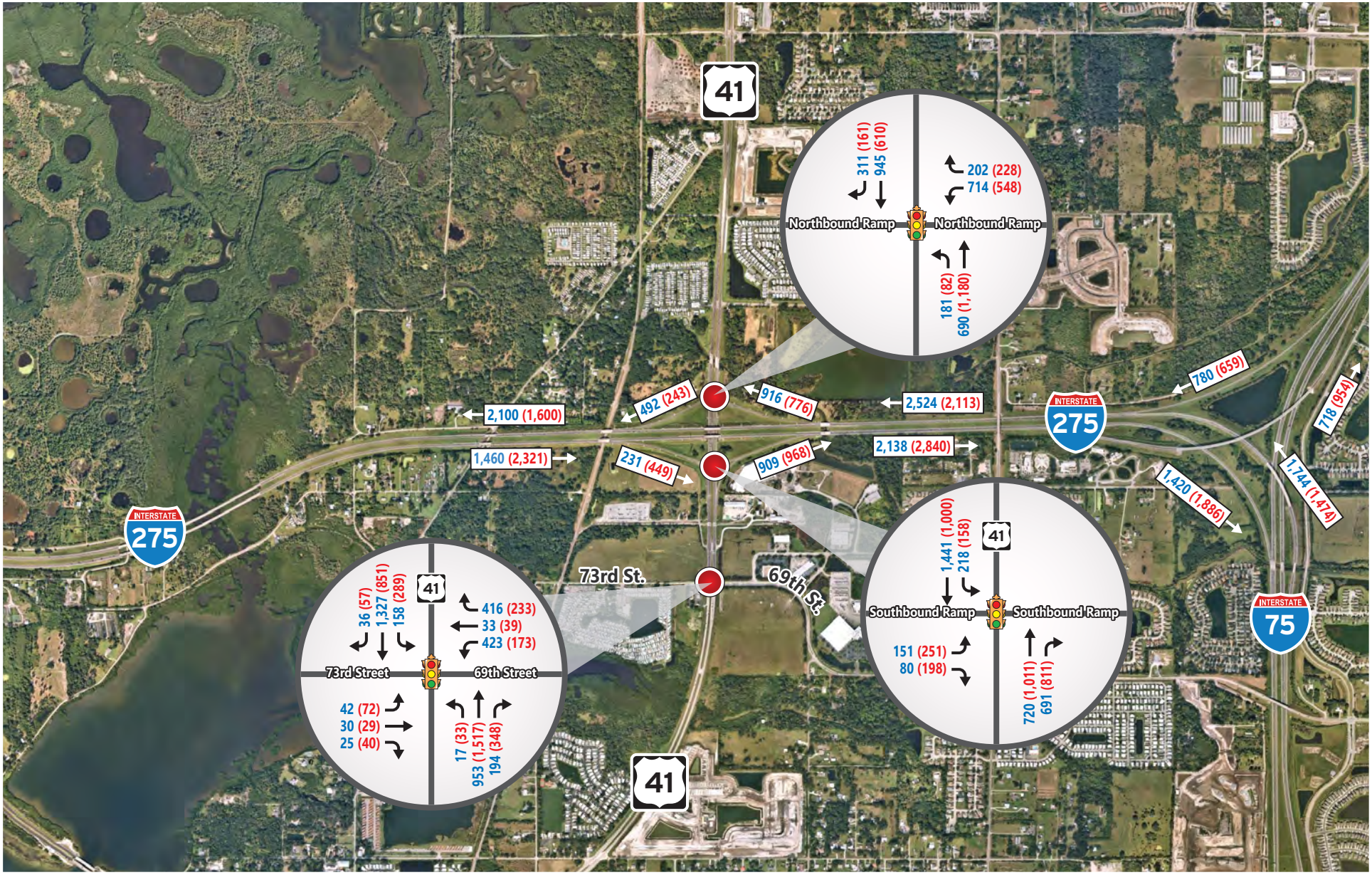
5.7 Intersection Directional Design Hour Volumes

The existing and future year AADTs along with the recommended traffic characteristics were used to develop the design hour volumes (DHVs) for both the AM and PM design hours at the intersections for the year 2034 design year. The DHV's for the intersections were developed using the TURNS5 spreadsheet, which balances AADTs and calculates DHVs based on recommended K and D factors used as input into the program.

The estimated DDHVs for the AM and PM design hours from TURNS5 were assessed to ensure a reasonable balance of approach and departure volumes for adjacent intersections, to make sure that the year 2034 design hour volumes are higher than the existing peak hour volumes, and to verify that the resulting DDHVs closely represent the recommended Standard K and D factors. These adjustments are necessary because accepting an estimated volume that is unrealistically large may lead to over design and accepting an estimated volume that is too small may result in an inadequate design. The TURNS5 input and output sheets and applicable balancing sheets are included in **Appendix K**. The opening year 2024 AM and PM intersection DDHVs were estimated by interpolation from the existing year 2021 DDHVs and the design year 2034 DDHVs.

The opening year 2024 AM and PM intersection DDHVs are shown in **Figure 8.** The future design year 2034 AM and PM intersection DDHVs are shown in **Figure 9.**

Aerial Source: Nearmap



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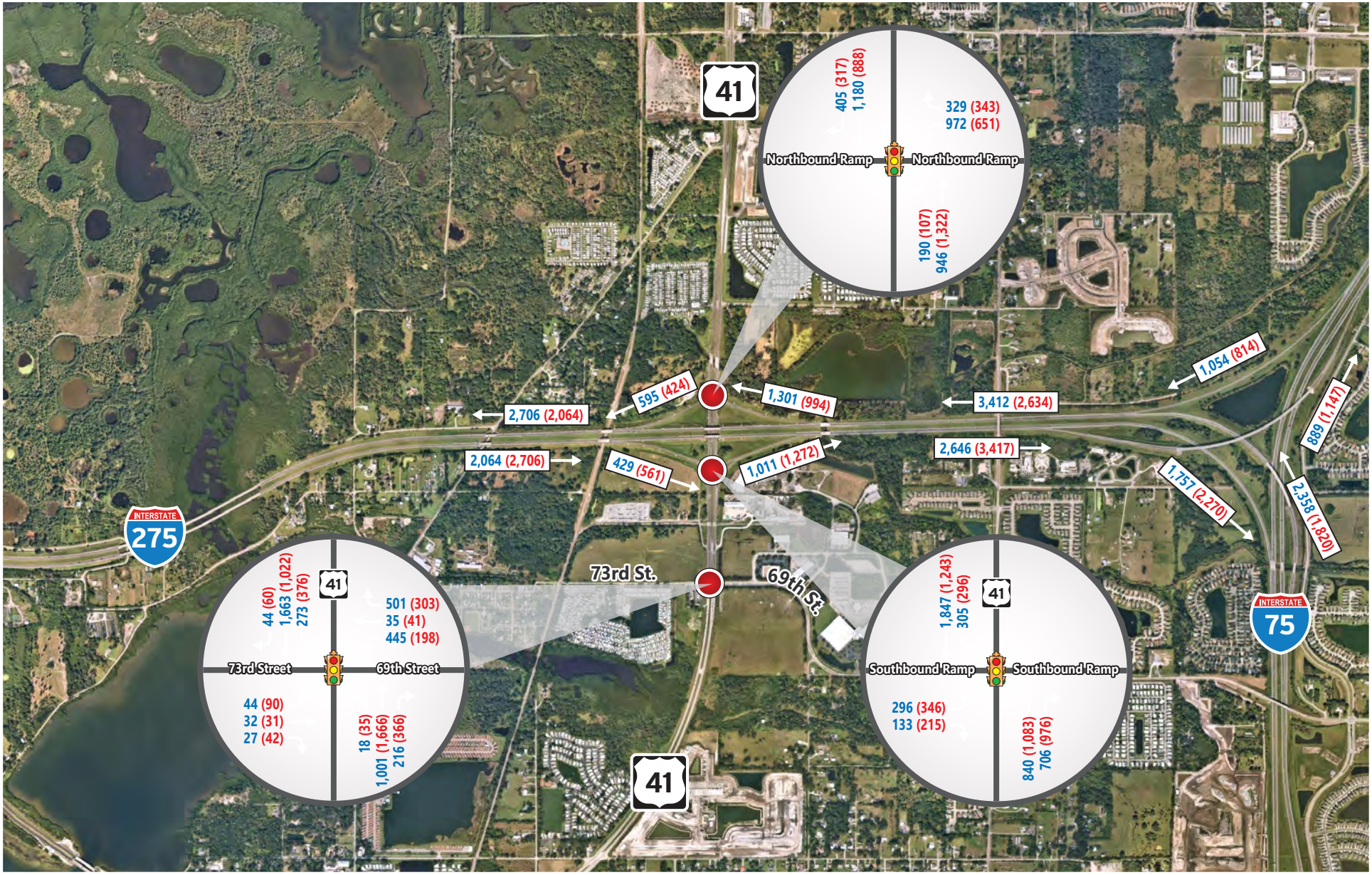
AM (PM) Peak Hour Traffic Volumes

FDOT

Figure 8

Opening Year 2024 Turning Movement Volumes

Aerial Source: Nearmap



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AM (PM) Peak Hour Traffic Volumes

FDOT

Figure 9

Design Year 2034 Turning Movement Volumes

6 Future No-Build Operational Analysis

The following summarizes the future No-Build AM and PM peak hour traffic operations for the opening and design years. No geometric and/or traffic control changes were made to the existing ramp terminal intersections or the intersection of US 41 at 73rd Street/69th Street. However, based on coordination with the District's Traffic Operations Office, the analysis assumed the traffic signal timings at the northbound ramps and at the 73rd Street/69th Street intersections will be optimized.

6.1 Opening Year 2024 No-Build Ramp & Mainline Analysis

The Opening Year 2024 No-Build AM and PM peak hour operational results (density and LOS) are summarized in **Table 15**. Similar to existing conditions, all analysis segments (basic, diverge, merge, and weaving) operate at LOS C or better during both peak hours. Detailed analysis output reports are included in **Appendix L**.

Table 15: Opening Year 2024 No-Build Freeway Facilities LOS Analysis Summary

Freeway Segment	Segment Type	AM		PM	
		Density	LOS	Density	LOS
I-275 Southbound					
West of US 41	Basic	12.1	B	19.0	C
I-275 SB Off Ramp to US 41	Diverge	14.7	B	23.4	C
I-275 Between US 41 Ramps	Basic	10.1	A	15.3	B
I-275 SB On Ramp from US 41 to Off Ramp to I-75	Weaving	14.1	B	19.3	B
I-275 Northbound					
I-275 NB from I-75 NB	Basic	13.7	B	12.4	B
I-275 NB On Ramp from I-75 SB	Merge	22.8	C	18.8	B
East of US 41	Basic	21.1	C	17.4	B
I-275 NB Off Ramp to US 41	Diverge	26.3	C	21.9	C
I-275 Between US 41 Ramps	Basic	13.3	B	11.1	B
I-275 NB On Ramp from US 41	Merge	20.0	C	14.9	B
West of US 41	Basic	17.3	B	13.1	B

A ramp capacity analysis was conducted for the study ramp segments as shown in **Table 16**. Ramp capacities for 1-lane ramps from Exhibit 14-12 of the HCM (6th Edition) were adjusted for ramp truck percentage and peak hour factor and used in the capacity analysis. Under the opening year 2024 No-Build conditions, all the ramp segments have demand (volume) over capacity ratios of less than 0.54.

Table 16: Opening Year 2024 No-Build Ramp Capacity Analysis Summary

Ramps	Ramp Volume		V/C Ratio			
	AM	PM	Lanes	Capacity (vph)	AM	PM
1-275 NB Off-Ramp to US 41	916	776	1	1,825	0.50	0.43
1-275 SB On-Ramp from US 41	909	969	1	1,825	0.50	0.53
1-275 NB On-Ramp from US 41	492	243	1	1,825	0.27	0.13
1-275 SB Off-Ramp to US 41	231	449	1	1,825	0.13	0.25

Notes:
1. Ramp capacity from HCM Exhibit 14-12 is adjusted for truck percentage and peak hour factor. A truck percentage of 8.2% and PHF of 0.95 are used.

6.2 Opening Year 2024 No-Build Intersection Analysis

A summary of the LOS analysis for the study intersections is included in **Table 17**. As shown in **Table 17**, under the Opening Year 2024 No-Build conditions, the signalized intersection of US 41 at I-275 NB Ramps will continue to operate at acceptable conditions, within the adopted FDOT LOS target, during both the AM & PM peak hour conditions.

At the unsignalized intersection of US 41 at I-275 SB Ramps, the US 41 SB left-turn onto the I-275 SB on ramp will continue operate acceptably while the I-275 SB off-ramp left-turn onto US 41 NB will continue to operate over capacity at LOS F during both the AM and PM peak hours. The reported 95th percentile queue for the left-turn from the off-ramp will increase to 19 vehicles (approximately 475 feet) during the AM peak hour and 29 vehicles (approximately 725 feet) during the PM peak hour.

The signalized intersection of US 41 at 73rd Street/69th Street will continue to operate acceptably during the AM peak hour, with the exception of the EB left, WB left, and WB right movements which operate at LOS E and the NB left and SB left movements which operate at LOS F. The intersection is anticipated to operate near capacity at LOS E during the PM peak hour, with the EB left movement operating at LOS E and the NB left, NB through, and SB left movements operating at LOS F. Storage lengths will be exceeded during the AM peak period within the WB left movement. The reported 95th percentile queue for the US 41 SB through lanes is 29 vehicles (approximately 725 feet) during the AM peak hour while the queue remains the same with 44 vehicles (approximately 1,100 feet) on the US 41 NB through lanes during the PM peak hour. The Opening Year 2024 No-Build and PM peak hour Synchro intersection analysis outputs are included in **Appendix M.**

Table 17: Opening Year 2024 No-Build Intersection LOS Analysis Summary

Study Intersection	Control Type	Movement	FDOT LOS Target	AM Peak Hour					PM Peak Hour				
				Delay (s)	LOS	95th Percentile Queue		Available Storage	Delay (s)	LOS	95th Percentile Queue		Available Storage
						Vehicles	Feet				Vehicles	Feet	
US 41 at I-275 NB Ramps	Signalized	WBL	D	30.3	C	11	275	1,015	28.7	C	8	200	1,015
		WBR	D	0.0	A	0	0	280	0.0	A	0	0	280
		NBL	D	18.1	B	4	100	590	12.1	B	1	25	590
		NBT	D	10.5	B	3	75	-	9.7	A	5	125	-
		SBT	D	23.7	C	8	200	-	16.6	B	4	100	-
		SBR	D	0.0	A	0	0	435	0.0	A	0	0	435
		OVERALL	**D**	**21.6**	**C**	**-**	**-**	-	**15.8**	**B**	**-**	**-**	-
US 41 at I-275 SB Ramps	Stop	EBL	D	>300.0	F	19	475	985	>300.0	F	29	725	985
		EBR	D	21.8	C	1	25	225	22.1	C	3	75	225
		NBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		NBR	D	0.0	A	0	0	880	0.0	A	0	0	880
		SBL	D	18.4	C	2	50	595	24.3	C	3	75	595
		SBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		OVERALL	**D**	**18.4/>300.0**	**C/F**	**-**	**-**	-	**24.3/>300.0**	**C/F**	**-**	**-**	-
US 41 at 73rd Street/69th Street	Signalized	EBL	D	67.4	E	3	75	130	63.5	E	5	125	130
		EBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		EBR	D	31.0	C	2	50	-	40.0	D	3	75	-
		WBL	D	65.6	E	25	625	430	50.0	D	10	250	430
		WBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		WBR	D	56.2	E	24	600	-	49.2	D	14	350	-
		NBL	D	86.5	F	1	25	420	82.0	F	3	75	420
		NBT	D	43.8	D	22	550	-	86.9	F	44	1100	-
		NBR	D	33.7	C	9	225	370	30.1	C	13	325	370
		SBL	D	96.0	F	12	300	670	164.1	F	25	625	670
		SBT	D	39.4	D	29	725	-	18.6	B	12	300	-
		SBR	D	21.1	C	1	25	-	14.1	B	2	50	-
		OVERALL	**D**	**48.1**	**D**	**-**	**-**	**-**	**64.8**	**E**	**-**	**-**	**-**

Notes:

1. HCM 6 based outputs are presented in this table for both the signalized and unsignalized intersections

2. Overall intersection delay and LOS results are reported for the signalized intersections

3. At unsignalized intersections, the worst major street/minor street results (delay and LOS) are reported

4. Results shown in red exceed the adopted LOS target

5. Queue length in feet is calculated under the assumption that each vehicle has a length of 25 feet

6.3 Design Year 2034 No-Build Ramp and Mainline Analysis

The Design Year 2034 No-Build AM and PM peak hour operational results (density and LOS) are summarized in **Table 18**. All analysis segments (ramps and weaving segments) operate at LOS D or better during both peak hours, with exception of the I-275 diverge area at the US 41 northbound off ramp. It is to be noted that this freeway segment is currently being evaluated for ultimate improvements as part of the I-75 SW Connect North Corridor Master Plan. Detailed analysis output reports are included in **Appendix N**.

Table 18: Design Year 2034 No-Build Freeway Facilities LOS Analysis Summary

Freeway Segment	Segment Type	AM		PM	
		Density	LOS	Density	LOS
I-275 Southbound					
West of US 41	Basic	17.1	B	22.6	C
I-275 SB Off Ramp to US 41	Diverge	21.0	C	27.4	D
I-275 Between US 41 Ramps	Basic	13.5	B	17.5	B
I-275 SB On Ramp from US 41 to Off Ramp to I-75	Weaving	18.0	B	24.3	C
I-275 Northbound					
I-275 NB from I-75 NB	Basic	18.8	C	15.3	B
I-275 NB On Ramp from I-75 SB	Merge	33.0	D	23.6	C
East of US 41	Basic	31.3	D	21.9	C
I-275 NB Off Ramp to US 41	Diverge	36.4	E	27.3	D
I-275 Between US 41 Ramps	Basic	17.4	B	13.4	B
I-275 NB On Ramp from US 41	Merge	26.2	C	19.4	C
West of US 41	Basic	22.8	C	16.9	B

A ramp capacity analysis was conducted for the study ramp segments as shown in **Table 19**. Ramp capacities for 1-lane ramps from Exhibit 14-12 of the HCM (6th Edition) were adjusted for ramp truck percentage and peak hour factor and used in the capacity analysis. Under the opening year 2034 No-Build conditions, all the ramp segments have demand (volume) over capacity ratios of less than 0.72.

Table 19: Design Year 2034 No-Build Ramp Capacity Analysis Summary

Ramps	Ramp Volume		V/C Ratio			
	AM	PM	Lanes	Capacity (vph)	AM	PM
1-275 NB Off-Ramp to US 41	1,301	994	1	1,825	0.71	0.54
1-275 SB On-Ramp from US 41	1,011	1,272	1	1,825	0.55	0.70
1-275 NB On-Ramp from US 41	595	424	1	1,825	0.33	0.23
1-275 SB Off-Ramp to US 41	429	561	1	1,825	0.24	0.31

Notes:
1. Ramp capacity from HCM Exhibit 14-12 is adjusted for truck percentage and peak hour factor. A truck percentage of 8.2% and PHF of 0.95 are used.

6.4 Design Year 2034 No-Build Intersection Analysis

A summary of the LOS analysis for the study intersections is included in **Table 20**. As shown in **Table 20**, under the Design Year 2034 No-Build conditions, the signalized intersection of US 41 at I-275 NB Ramps will continue to operate at acceptable conditions, within the adopted FDOT LOS target, during both the AM & PM peak hour conditions.

At the unsignalized intersection of US 41 at I-275 SB Ramps, the US 41 SB left-turn onto the I-275 SB on ramp will continue to operate acceptably during the AM peak but will be over capacity at LOS F during the PM peak hour. The I-275 SB off-ramp left-turn onto US 41 NB will continue to operate over capacity at LOS F during both the AM and PM peak hours, and the right-turn will operate at LOS E for the AM peak hour. The reported 95th percentile queue for the left-turn from the off-ramp will increase to 42 vehicles (approximately 1,050 feet) and 49 vehicles (approximately 1,225 feet) during the AM and PM peak hours, respectively. The queues in both the AM and PM Peak hour are anticipated to extend beyond the available off-ramp storage of 985 ft (length of the ramp (1,810 ft) – taper (210 ft) – deceleration distance (615 ft))and will likely spill into the I-275 main line.

With the projected increase in traffic volumes, the signalized intersection of US 41 at 73rd Street/69th Street will operate over capacity at LOS F during both the AM and PM peak hours. The EB left, WB left, WB right, NB left, SB left, and SB through movements will operate at LOS F during the AM peak hours, while the NB left, NB through, and SB left movements will operate at LOS F for the PM peak hours and EB left will operate at LOS E for PM peak hours. Storage lengths will be exceeded during the AM peak period within the EB left, WB left, and SB left movements and during the PM peak period within the EB left, NB right, and SB left movements. The reported queue for the US 41 SB through lanes is 45 vehicles (approximately 1,125 feet) during the AM peak hour while the queue is 73 vehicles (approximately 1,800 feet) on the US 41 NB through lanes during the PM peak hour. The Design Year 2034 No-Build and PM peak hour Synchro intersection analysis outputs are included in **Appendix O**.

Table 20: Design Year 2034 No-Build Intersection LOS Analysis Summary

Study Intersection	Control Type	Movement	FDOT LOS Target	AM Peak Hour					PM Peak Hour				
				Delay (s)	LOS	95th Percentile Queue		Available Storage	Delay (s)	LOS	95th Percentile Queue		Available Storage
						Vehicles	Feet				Vehicles	Feet	
US 41 at I-275 NB Ramps	Signalized	WBL	D	37.1	D	18	450	1,015	28.9	C	9	225	1,015
		WBR	D	0.0	A	0	0	280	0.0	A	0	0	280
		NBL	D	30.9	C	6	150	590	15.0	B	2	50	590
		NBT	D	16.0	B	8	200	-	11.6	B	7	175	-
		SBT	D	34.7	C	14	350	-	20.0	C	7	175	-
		SBR	D	0.0	A	0	0	435	0.0	A	0	0	435
		OVERALL	**D**	**29.8**	**C**	**-**	**-**	-	**18.0**	**B**	**-**	**-**	-
US 41 at I-275 SB Ramps	Stop	EBL	D	>300.0	F	42	1050	985	>300.0	F	49	1225	985
		EBR	D	48.6	E	4	100	225	34.2	D	5	125	225
		NBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		NBR	D	0.0	A	0	0	880	0.0	A	0	0	880
		SBL	D	34.7	D	6	150	595	81.5	F	10	250	595
		SBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		OVERALL	**D**	**34.7/>300.0**	**D/F**	**-**	**-**	-	**81.5/>300.0**	**F/F**	**-**	**-**	-
US 41 at 73rd Street/69th Street	Signalized	EBL	D	182.1	F	6	150	130	68.7	E	7	175	130
		EBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		EBR	D	34.3	C	3	75	-	36.9	D	4	100	-
		WBL	D	97.5	F	31	775	430	47.0	D	11	275	430
		WBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		WBR	D	117.3	F	39	975	-	49.8	D	18	450	-
		NBL	D	89.3	F	2	50	420	92.2	F	3	75	420
		NBT	D	43.1	D	23	575	-	188.9	F	72	1800	-
		NBR	D	33.1	C	10	250	370	38.8	D	17	425	370
		SBL	D	297.3	F	31	775	670	334.1	F	44	1100	670
		SBT	D	65.8	F	45	1125	-	26.6	C	19	475	-
		SBR	D	19.7	B	2	50	-	18.5	B	2	50	-
		OVERALL	**D**	**83.6**	**F**	**-**	**-**	**-**	**123.3**	**F**	**-**	**-**	**-**

Notes:
1. HCM 6 based outputs are presented in this table for both the signalized and unsignalized intersections
2. Overall intersection delay and LOS results are reported for the signalized intersections
3. At unsignalized intersections, the worst major street/minor street results (delay and LOS) are reported
4. Results shown in red exceed the adopted LOS target
5. Queue length in feet is calculated under the assumption that each vehicle has a length of 25 feet`

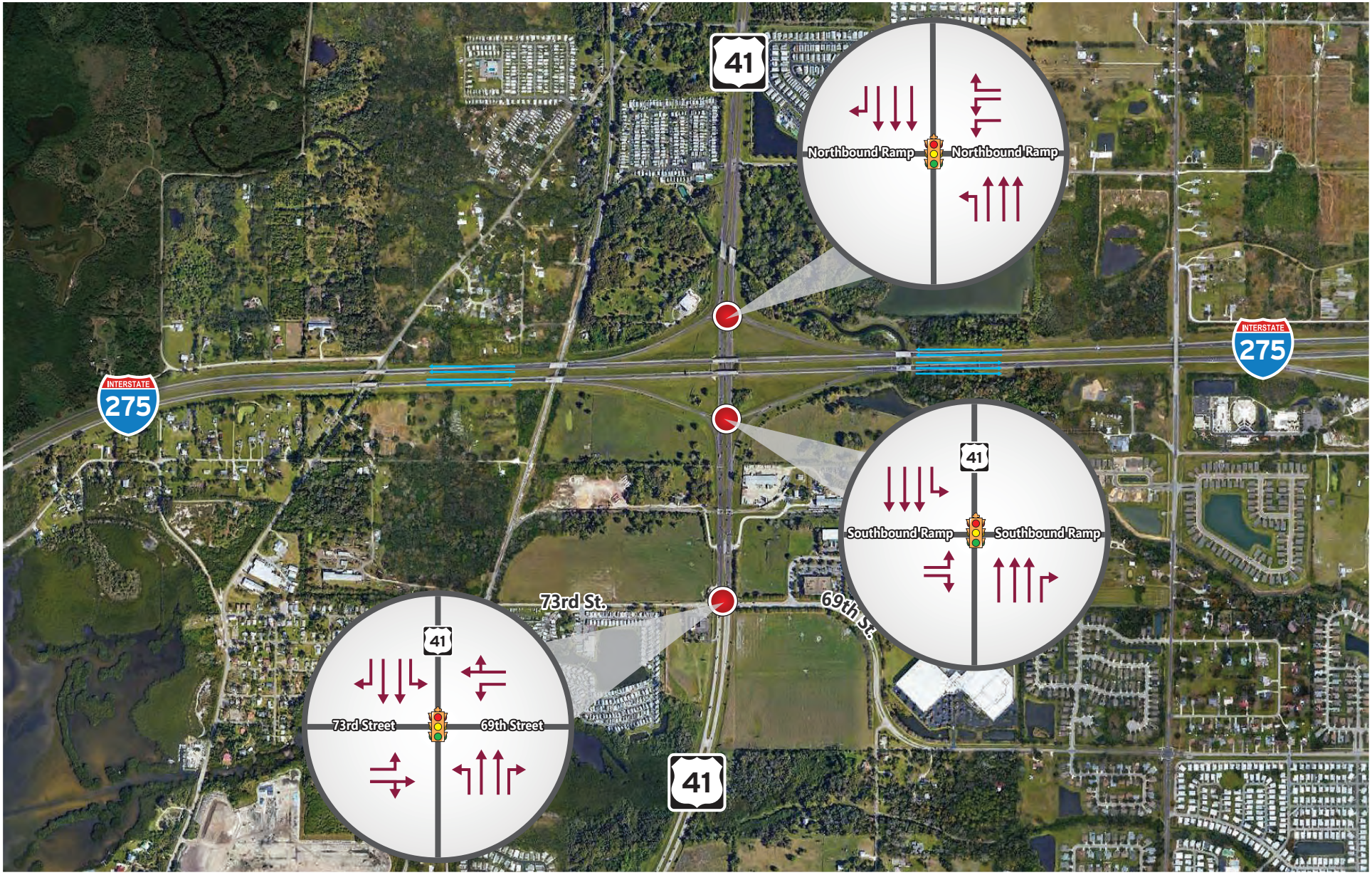
7 Future Build Operational Analysis

The scope of this IOAR is to evaluate the potential impacts to I-275 with the installation of a traffic signal at the SB ramp terminal intersection. Other improvements included as part of the Build Alternative involve replacing the span wire mounted traffic signals at the northbound ramp termini intersection with mast arm mounted traffic signals, and installation of special emphasis crosswalks and pedestrian features at both ramp terminal intersections. The future Build Alternative lane geometry and traffic controls are displayed in **Figure 10**.

Based on coordination with the District's Traffic Operations Office, a 4-section FYA is proposed for the US 41 left-turns, consistent with the current 4-section FYA at the I-275 NB ramps intersection. The current protected/permissive phase at the I-275 NB ramps operates efficient with gaps in the opposing traffic, therefore, the analysis assumed that the US 41 SB left-turn onto I-275 SB ramp will operate as protected/permissive during the Opening Year 2024. As traffic increases in the Design Year 2034, the analysis assumed that the left-turn will run as protected only. The proposed signal will be coordinated with the signal at I-275 NB ramps and at 73rd Street/69th Street to provide progressive along the corridor.

The following sections summarize the future Build AM and PM peak hour traffic operations for the opening and design years.

Aerial Source: Google Earth Pro



N

N.T.S.

Lane Geometry

FDOT

Figure 10

Future (Lane) Configuration/Traffic Control

7.1 Opening Year 2024 Build Ramp and Mainline Analysis

The freeway operations and ramp capacity analysis conducted in HCS does not vary between the No-Build and Build Alternatives as the changes to the study intersections do not impact the ramp, ramp merge/diverge or I-275 mainline operations. Opening Year 2024 ramp and mainline analysis results are summarized in **Section 6.1**.

7.2 Opening Year 2024 Build Intersection Analysis

A summary of the LOS analysis for the study intersections is included in **Table 21**. As shown in **Table 21**, under the Opening Year 2024 Build conditions, the signalized intersection of US 41 at I-275 NB Ramps will continue to operate acceptably, within the adopted FDOT LOS target, during both the AM & PM peak hour conditions, with the exception of the WB left movement, which will operate at LOS E during both the AM and PM Peak hours. As mentioned before, under the build alternative, the NB left turn movements at the traffic signal were analyzed as protected only and therefore the intersection is shown to operate with higher delay compared to the no build condition.

The proposed signalized intersection of US 41 at I-275 SB Ramps will operate at LOS B and LOS C during the AM and PM peak hours, respectively. The EB left movement for this intersection will operate at LOS E during the AM and PM peak hour periods.

The signalized intersection of US 41 at 73rd Street/69th Street will continue to operate acceptably during the AM peak hour but is anticipated to operate near capacity at LOS E during the PM peak hour. The EB left and WB right movements operate at LOS E, while the WB left, NB left, and SB left movements operate at LOS F for the AM peak hours. The EB left, WB left, WB right, and NB through movements operate at LOS E and the NB left and SB left movements operate at LOS F during the PM peak hours. Storage lengths for this intersection are exceeded during the AM peak period within the WB left movement and during the PM peak period within the SB left movement. The reported 95th percentile queue for the US 41 SB through lanes is 29 vehicles (approximately 725 feet) during the AM peak hour while the queue is 42 vehicles (approximately 1,050 feet) on the US 41 NB through lanes during the PM peak hour. The Opening Year 2024 Build and PM peak hour Synchro intersection analysis outputs are included in **Appendix P**.

Table 21: Opening Year 2024 Build Intersection LOS Analysis Summary

Study Intersection	Control Type	Movement	FDOT LOS Target	AM Peak Hour					PM Peak Hour				
				Delay (s)	LOS	95th Percentile Queue		Available Storage	Delay (s)	LOS	95th Percentile Queue		Available Storage
						Vehicles	Feet				Vehicles	Feet	
US 41 at I-275 NB Ramps	Signalized	WBL	D	60.6	E	20	500	1,015	63.0	E	16	400	1,015
		WBR	D	0.0	A	0	0	280	0.0	A	0	0	280
		NBL	D	15.7	B	5	125	590	10.9	A	2	50	590
		NBT	D	0.2	A	0	0	-	0.3	A	0	0	-
		SBT	D	22.6	C	11	275	-	13.8	B	6	150	-
		SBR	D	0.0	A	0	0	435	0.0	A	0	0	435
		OVERALL	**D**	**26.7**	**C**	**-**	**-**	-	**18.2**	**B**	**-**	**-**	-
US 41 at I-275 SB Ramps	Signalized	EBL	D	77.1	E	11	275	985	74.2	E	16	400	985
		EBR	D	0.0	A	0	0	225	0.0	A	0	0	225
		NBT	D	10.2	B	6	150	-	15.1	B	10	250	-
		NBR	D	0.0	A	0	0	880	0.0	A	0	0	880
		SBL	D	7.2	A	4	100	595	11.8	B	3	75	595
		SBT	D	14.6	B	16	400	-	26.1	C	17	425	-
		OVERALL	**D**	**16.4**	**B**	**-**	**-**	-	**25.6**	**C**	**-**	**-**	-
US 41 at 73rd Street/69th Street	Signalized	EBL	D	79.9	E	3	75	130	71.7	E	5	125	130
		EBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		EBR	D	34.9	C	3	75	-	44.9	D	4	100	-
		WBL	D	84.1	F	28	700	430	56.1	E	11	275	430
		WBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		WBR	D	70.1	E	27	675	-	55.5	E	15	375	-
		NBL	D	90.7	F	2	50	420	94.4	F	3	75	420
		NBT	D	41.8	D	22	550	-	61.6	E	41	1025	-
		NBR	D	32.7	C	9	225	370	30.3	C	14	350	370
		SBL	D	81.9	F	11	275	670	227.9	F	29	725	670
		SBT	D	36.2	D	28	700	-	19.2	B	13	325	-
		SBR	D	19.7	B	1	25	-	14.3	B	2	50	-
		OVERALL	**D**	**49.7**	**D**	**-**	**-**	**-**	**60.6**	**E**	**-**	**-**	**-**

Notes:
1. HCM 6 based outputs are presented in this table for both the signalized and unsignalized intersections
2. Overall intersection delay and LOS results are reported for the signalized intersections
3. At unsignalized intersections, the worst major street/minor street results (delay and LOS) are reported
4. Results shown in red exceed the adopted LOS target
5. Queue length in feet is calculated under the assumption that each vehicle has a length of 25 feet

7.3 Design Year 2034 No-Build Ramp and Mainline Analysis

The freeway operations and ramp capacity analysis conducted in HCS does not vary between the No-Build and Build Alternatives as the changes to the study intersections do not impact the ramp, ramp merge/diverge or I-275 mainline operations. Design Year 2034 ramp and mainline Analysis results are summarized in **Section 6.3**.

7.4 Design Year 2034 Build Intersection Analysis

A summary of the LOS analysis for the study intersections is included in **Table 22**. As shown in **Table 22**, under the Design Year 2034 Build conditions, the signalized intersection of US 41 at I-275 NB Ramps will continue to operate acceptably, within the adopted FDOT LOS target, during both the AM & PM peak hour conditions. The WB left movement will operate at LOS E during both the AM & PM peak hour conditions, while the NB left movement will operate at LOS F during the AM peak and LOS E during the PM peak hours. It should be noted that the NB left movement is anticipated to operate with a v/c ratio lower than 1.0 and the anticipated 95th percentile queue during the AM peak hour (approximately 325 feet) can be accommodated in the left turn lane storage of 590 feet . As mentioned before, under the build alternative, the NB left turn movements at the traffic signal were analyzed as a protected only condition and therefore the intersection is shown to operate with higher delay compared to the no build condition.

The proposed signalized intersection of US 41 at I-275 SB Ramps will operate at LOS D during both the AM and PM peak hours, with the EB left movement operating at LOS E and F during the AM & PM peak hours respectively, and the SB left movement operating at LOS F during both the AM & PM peak hour periods. It should be noted that all movements at this intersection are anticipated to operate with v/c ratios lower than 1.0. In addition, the anticipated 95th percentile queue for the SBL turn movement (approximately 500 feet) can be accommodated in the left turn lane storage of 595 feet, while the 95th percentile queue for the EBL turn movement (approximately 575 feet) can be accommodated in the off-ramp storage of 985 ft (length of the ramp (1,810 ft) – taper (210 ft) – deceleration distance (615 ft)). It is important to note that the proposed traffic signal provides a significant improvement to the operations of the intersection compared to the no build condition, in which the EBL turn movement is anticipated have a delay of over 300 sec/veh and a 95th percentile queue of approximately 1,225 feet which will have on an adverse impact on the operations of the I-275 mainline.

With the projected increase in traffic volumes, the signalized intersection of US 41 at 73rd Street/69th Street will operate at LOS E and LOS F during the AM and PM peak hours, respectively. The EB left, WB left, WB right, NB left, SB left, and SB through movements will operate at LOS F and the NB through movement will operate at LOS E during the AM peak hours. The NB left, NB through, and SB left movements will operate at LOS F and the EB left movement will operate at LOS E during the PM peak hours. Storage lengths will be exceeded during the AM peak period within the EB left and WB left movements, and during the PM peak period within the EB left, NB right, and SB left movements. The reported 95th

percentile queue for the US 41 SB through lanes is 45 vehicles (approximately 1,125 feet) during the AM peak hour while the queue is 71 vehicles (approximately 1,775 feet) on the US 41 NB through lanes during the PM peak hour. It is to be noted that the intersection of US 41 at 73rd Street/69th Street is anticipated to operate at adverse conditions under both the No Build and Build conditions.

At this time, there is no funding allocated for the construction of additional improvements beyond the ones that are being evaluated as part of this IOAR. However, as demonstrated above, the installation of a traffic signal at the US 41 at I-275 SB Ramps intersection provides significant benefits to the operations of the interchange by managing the queues at the off ramp and by improving the progression of traffic along US 41. The District will continue to monitor the operational performance of this interchange and the intersection of US 41 at 73rd Street/69th Street to ensure that there are no detrimental impacts to the I-275 mainline. The Design Year 2034 Build and PM peak hour Synchro intersection analysis outputs are included in **Appendix Q**.

Table 22: Design Year 2034 Build Intersection LOS Analysis Summary

Study Intersection	Control Type	Movement	FDOT LOS Target	AM Peak Hour					PM Peak Hour				
				Delay (s)	LOS	95th Percentile Queue		Available Storage	Delay (s)	LOS	95th Percentile Queue		Available Storage
						Vehicles	Feet				Vehicles	Feet	
US 41 at I-275 NB Ramps	Signalized	WBL	D	59.0	E	27	675	1,015	61.5	E	19	475	1,015
		WBR	D	0.0	A	0	0	280	0.0	A	0	0	280
		NBL	D	92.5	F	13	325	590	75.6	E	7	175	590
		NBT	D	18.0	B	9	225	-	0.3	A	0	0	-
		SBT	D	41.5	D	18	450	-	21.4	C	10	250	-
		SBR	D	0.0	A	0	0	435	0.0	A	0	0	435
		OVERALL	**D**	**42.8**	**D**	**-**	**-**	**-**	**22.7**	**C**	**-**	**-**	**-**
US 41 at I-275 SB Ramps	Signalized	EBL	D	74.7	E	19	475	985	85.8	F	23	575	985
		EBR	D	0.0	A	0	0	225	0.0	A	0	0	225
		NBT	D	30.7	C	12	300	-	36.4	D	16	400	-
		NBR	D	0.0	A	0	0	880	0.0	A	0	0	880
		SBL	D	84.9	F	19	475	595	92.5	F	20	500	595
		SBT	D	38.3	D	29	725	-	33.1	C	21	525	-
		OVERALL	**D**	**44.0**	**D**	**-**	**-**	**-**	**46.4**	**D**	**-**	**-**	**-**
US 41 at 73rd Street/69th Street	Signalized	EBL	D	189.4	F	6	150	130	71.8	E	7	175	130
		EBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		EBR	D	35.4	D	3	75	-	38.2	D	4	100	-
		WBL	D	103.6	F	32	800	430	48.6	D	11	275	430
		WBT	D	0.0	A	0	0	-	0.0	A	0	0	-
		WBR	D	124.7	F	40	1000	-	51.6	D	18	450	-
		NBL	D	90.8	F	2	50	420	95.0	F	3	75	420
		NBT	D	61.2	E	27	675	-	174.6	F	71	1775	-
		NBR	D	41.8	D	11	275	370	40.2	D	17	425	370
		SBL	D	99.7	F	20	500	670	358.7	F	45	1125	670
		SBT	D	61.4	F	45	1125	-	27.4	C	19	475	-
		SBR	D	19.5	B	2	50	-	18.7	B	2	50	-
		OVERALL	**D**	**75.7**	**E**	**-**	**-**	**-**	**120.5**	**F**	**-**	**-**	**-**

Notes:
1. HCM 6 based outputs are presented in this table for both the signalized and unsignalized intersections
2. Overall intersection delay and LOS results are reported for the signalized intersections
3. At unsignalized intersections, the worst major street/minor street results (delay and LOS) are reported
4. Results shown in red exceed the adopted LOS target
5. Queue length in feet is calculated under the assumption that each vehicle has a length of 25 fee

8 Safety Analysis

A safety analysis was conducted using guidance described in the FDOT Interchange Access Request User's Guide Safety Analysis Guidance document published in November 2020. The objective of this analysis was to evaluate the safety of the study alternatives based on geometric, traffic control, and other changes. The safety analysis explained herein follows the guidance of the User Guide as well as the Highway Safety Manual (HSM). The safety analysis was based on the following methodology:

1. Define existing conditions based on common crash types, severities, locations, patterns, contributing factors, and rates.
2. Predict future safety performance and estimate the expected change in safety performance given the proposed alternatives.

8.1 Existing Conditions

Crash data within the influence area were obtained from the FDOT Crash Analysis Reporting System (CARS). These were supplemented with additional crashes identified using Signal4 (S4). Per guidance, the safety analysis should include the most recent five years of closed crash data. However, 2020 was disregarded due to abnormal travel conditions (and thus potentially abnormal safety performance) related to the COVID-19 pandemic. As such, this safety analysis uses crash data from 2015 through 2019. **Table 23** summarizes the crash data for this period by KABCO severity category. The year with the highest crash total was 2015 with 72 crashes, while 2016 had the fewest at 52. The average crash frequency for this study period was 62.6 crashes per year. Of the 313 crashes during the period, 3 resulted in fatalities, 44 resulted in a suspected serious injury, and a total of 149 resulted in a fatality or injury (FI). The crash reports were reviewed to identify the cause of the three fatal crashes that occurred withing the AOI. A description of the fatal crashes is found below:

- On October 9, 2015, at approximately 12:05 PM, a motorcyclist was traveling eastbound on I-275 approaching the ramp at I-75 southbound. The motorist failed to negotiate the right curve and as a result ran off the roadway onto the left shoulder. The motorist continued southeasterly and collider with the guardrail. The driver was pronounced dead at the scene.
- On December 6, 2016, at 10:37 PM, a vehicle was traveling northbound on US 41 in the center lane just north of 73rd street. The vehicle drifted across the right lane in a northeast direction before striking a railroad support pole just off the shoulder of the road. The driver was pronounced dead at the scene and was later determined to be under the influence of alcohol.
- On December 19, 2020, at 1:38 AM, Vehicle 2 was stopped for a red light and had just started to accelerate after the light switched to green. Vehicle 1's driver failed to slow the vehicle down behind vehicle 2. Vehicle 1 rear ended vehicle two causing

vehicle 2 to run off the road into the median. Vehicle 1 came to a rest in the thru lanes, engulfed in flames, just north of the intersection. The driver of vehicle 1 was pronounced dead at the scene and was later determined to be under the influence of alcohol.

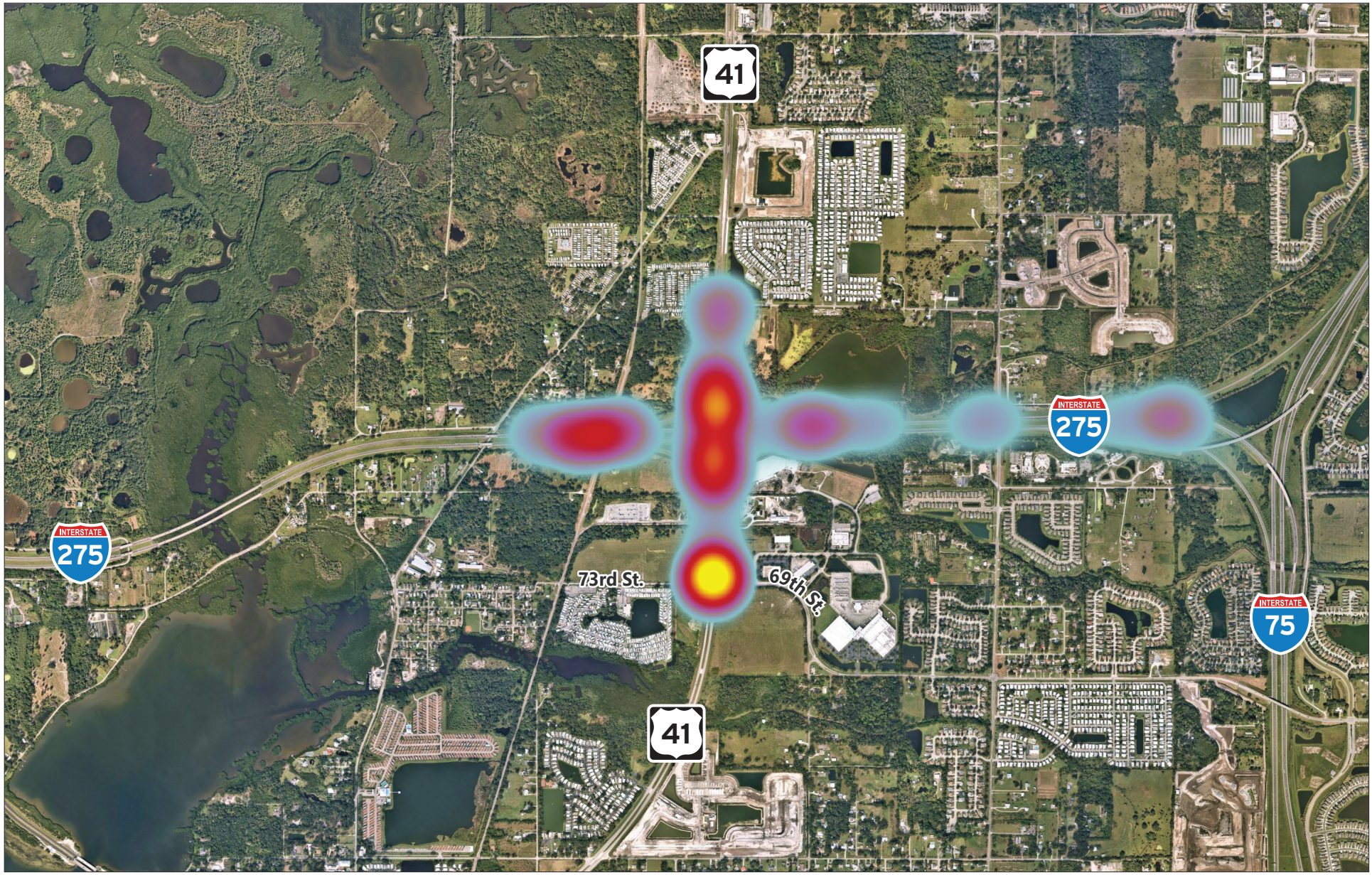
The historical crash data, and analysis are documented in **Appendix R**.

Table 23: Summary of Crash Data in the Influence Area by Year and KABCO Severity

Severity	2019	2018	2017	2016	2015	Total
Fatal (K)	0	0	1	1	1	**3**
Suspected Serious Injury (A)	9	11	6	11	7	**44**
Suspected Minor Injury (B)	10	6	7	3	3	**29**
Possible Injury (C)	10	13	17	11	22	**73**
Property Damage Only (O)	34	35	30	26	39	**164**
Total	**63**	**65**	**61**	**52**	**72**	**313**

The crash data were located in ArcGIS Pro using route and milepost information for crashes from CARS and latitude and longitude for crashes from S4. **Figure 11** is a heatmap showing the distribution of the crashes in the area. The crashes were then divided into their relevant segments of the study area. These were defined using 250' radii around the ramp terminals and intersections and drawing polygons around the ramps and individual segments of I-275 and US 41. **Figure 12** shows the individual segments of the influence area, while **Table 24** shows the distribution of crashes across those sites, as well as a breakdown of crashes by light conditions. Notably, the site with the highest number of crashes (58) is the intersection of US 41 and 73rd Street/69th Street. The ramp terminals, which are being considered for improvements, experienced 34 crashes at the I-275 northbound ramp terminal and 30 crashes at the I-275 southbound ramp terminal. When reviewing crashes by light conditions, nearly 72 percent of crashes in the influence area occurred during daylight conditions.

Aerial Source: Nearmap



N.T.S.

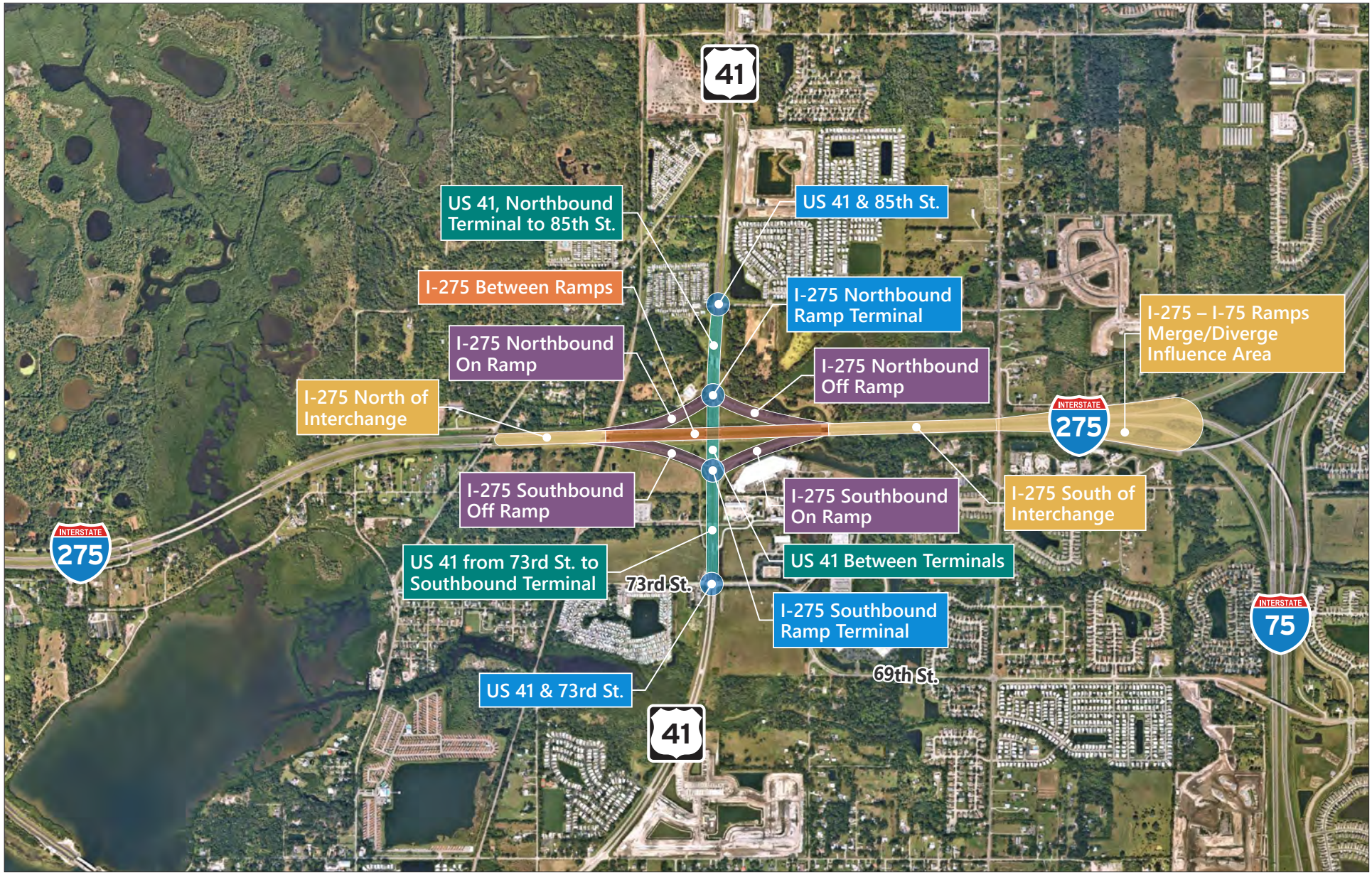
Sparse

Dense

Figure 11

Distribution of Crashes Heatmap

Aerial Source: Nearmap



N.T.S.

- Intersection
- Ramp Segment
- Roadway Segment
- Interstate Segment
- Interstate Segment between Ramps

FDOT

Figure 12

Segmentation for the Safety Analysis

Table 24: Summary of Crashes by Segmentation and Lighting

Segment or Intersection	Total Crashes	FI Crashes	Daylight	Dark – Lighted	Dark – Not Lighted	Dark – Unknown Lighting	Dawn	Dusk
I-275, North of Interchange	37	18	27	3	4	1	1	1
I-275, Between Ramps	46	24	36	5	2	0	2	1
I-275, South of Interchange	23	8	13	7	2	0	0	1
I-275, I-75 Ramps Merge/Diverge Area	34	17	24	5	4	0	0	1
US-41, South of 73rd Street	1	0	1	0	0	0	0	0
US-41, 73rd Street to I-275 SB Ramp Terminal	20	11	14	6	0	0	0	0
US-41, Between Ramp Terminals	7	4	6	1	0	0	0	0
US-41, I-275 NB Ramp Terminal to 85th Street	12	2	10	2	0	0	0	0
I-275 NB Off-Ramp	4	1	3	0	0	0	1	0
I-275 NB On-Ramp	0	0	0	0	0	0	0	0
I-275 SB Off-Ramp	4	0	4	0	0	0	0	0
I-275 SB On-Ramp	3	2	2	0	0	0	1	0
I-275 NB and US-41 Ramp Terminal	34	17	24	7	1	1	0	1
I-275 SB and US-41 Ramp Terminal	30	13	20	4	3	0	1	2
US-41 and 73rd Street/69th Street Intersection	58	19	41	6	6	0	1	4
Total	**313**	**136**	**225**	**46**	**22**	**2**	**7**	**11**

It is also important to review what types of collisions are occurring in the influence area. **Table 25** summarizes the crashes in the study area by site and manner of collision. The most common manner of collision within the study area is "Front to Rear", accounting for 39 percent of the crashes. At the ramp terminals, angle and front to rear collisions are both common crash types. The review of the crash data revealed that two pedestrian crashes occurred within the AOI. The following provides a description of the pedestrian crashes:

- On November 20, 2016, at 2:30 PM, a non-motorist was crossing US 41 from 73rd Street East on the northern crosswalk, a vehicle was traveling eastbound executing a left turn onto US 41. The front right side of the vehicle collided with the non-motorist before the vehicle fled the scene. The non-motorist noted that the pedestrian signal was indicating that it was safe to walk. EMS responded and noted that the non-motorist initially stated that he fell into a ditch but then changed the story to that of being hit by a motor vehicle.
- On November 13, 2017, at 7:52 AM, a non-motorist was walking southbound in the bicycle lane on US 41, a vehicle changed lanes from the inside lane to the right turn lane. The driver failed to observe the pedestrian and struck the non-motorist with the vehicle's right side. The non-motorist was transported by EMS.

Table 25: Summary of Crashes by Segmentation and Manner of Collision

Segment or Intersection	Angle	Front to Front	Front to Rear	Sideswipe, Opposite Direction	Sideswipe, Same Direction	Other – Fixed Object	Other – Pedestrian	Other – Overturn or Rollover	Other – Barrier	Other – Remaining First Harmful Events[1]
I-275, North of Interchange	4	0	16	0	3	0	0	0	7	7
I-275, Between Ramps	4	0	12	1	6	0	0	4	16	3
I-275, South of Interchange	1	0	4	0	7	2	0	3	3	3
275, I-75 Ramps Merge/Diverge Area	0	0	4	0	2	5	0	5	1	17
US-41, South of 73rd Street	0	0	1	0	0	0	0	0	0	0
US-41, 73rd Street to I-275 SB Ramp Terminal	1	0	12	0	2	2	0	0	0	3
US-41, Between Ramp Terminals	2	0	3	0	1	0	0	0	1	0
US-41, I-275 NB Ramp Terminal to 85th Street	3	0	5	0	1	1	0	0	1	1
I-275 NB Off-Ramp	0	0	2	0	1	0	0	0	0	1
I-275 NB On-Ramp	0	0	0	0	0	0	0	0	0	0
I-275 SB Off-Ramp	0	0	2	0	0	0	0	0	1	1
I-275 SB On-Ramp	0	0	1	0	0	0	0	2	0	0
I-275 NB and US-41 Ramp Terminal	11	1	17	0	1	0	1	1	0	2
I-275 SB and US-41 Ramp Terminal	16	0	12	0	0	1	0	0	0	1
US-41 and 73rd Street Intersection	10	3	32	0	4	2	1	1	0	5
Total	**52**	**4**	**123**	**1**	**28**	**13**	**2**	**16**	**30**	**44**

[1] Includes 1 collision with animal, 7 collisions with motor vehicle in transport, 1 not coded, 10 other non-collisions, 6 other non-fixed object collisions, 1 struck by falling or shifting cargo, and 1 unreported for crashes with "Other" or "Not Coded" manner of collision.

Crash rates are used to normalize crash frequency based on exposure calculated using annual average daily traffic (AADT). In this case, the crash rate is calculated as crashes per million vehicle-miles travelled (MVMT) for segments and ramps and crashes per million entering vehicles (MEV) for intersections and ramp terminals. The crash rate formulas are shown below.

$$Segment\ Crash\ Rate = \frac{Total\ Number\ of\ Crashes * 1{,}000{,}000}{AADT * 365 * Number\ of\ Years * Length\ of\ Roadway\ Segment}$$

$$Intersection\ Crash\ Rate = \frac{Total\ Number\ of\ Crashes * 1{,}000{,}000}{Total\ Intersection\ Entering\ AADT * 365 * Number\ of\ Years}$$

Table 26 summarizes the existing crash rates for the segments of I-275, US 41, and the I-275 ramps. For the I-275 segments, the crash rate south of the interchange was the lowest, with just 0.43 crashes per MVMT compared to higher rates of 1.06 and 1.47 crashes per MVMT on the other segments. The segments within the influence area with the highest crash rates are US 41 between the I-275 ramp terminals (1.87 crashes per MVMT), and US 41 between the northbound I-275 ramp terminal and the intersection with 85th street (1.93 crashes per MVMT). Comparison of these rates to FDOT statewide rates shows that two of the I-275 segments are experiencing a higher crash rate than the statewide average, while the other I-275 segment and the US 41 segments are experiencing rates lower than the FDOT statewide average. Unfortunately, FDOT does not provide crash rates for ramps, so those comparisons could not be drawn.

Table 26: Calculation of Crash Rates for Segments and Ramps

Segment or Ramp	Total Crashes	AADT	Segment Length (Miles)	Crashes per Year	Total Crash Rate per MVMT	FDOT Statewide Crash Rate
I-275, North of Interchange	37	46,000	0.3	7.4	1.47	0.99
I-275, Between Ramps	46	39,500	0.6	9.2	1.06	0.99
I-275, South of Interchange	23	58,000	0.5	4.6	0.43	0.99
275, I-75 Ramps Merge/Diverge Area	34	58,000	0.5	6.8	0.64	0.99
US-41, South of 73rd Street	1	32,500	0.05	0.2	0.34	3.79
US-41, 73rd Street to I-275 SB Ramp Terminal	20	32,500	0.25	4	1.35	4.90
US-41, Between Ramp Terminals	7	25,600	0.08	1.4	1.87	4.90
US-41, I-275 NB Ramp Terminal to 85th Street	12	20,000	0.17	2.4	1.93	4.90
I-275 NB Off-Ramp	4	20,000	0.23	0.8	0.48	N/A
I-275 NB On-Ramp	0	7,100	0.2	0	0.00	N/A
I-275 SB Off-Ramp	4	7,100	0.3	0.8	1.03	N/A
I-275 SB On-Ramp	3	20,000	0.25	0.6	0.33	N/A

Similarly, **Table 27** summarizes crashes per MEV for the intersections in the influence area. The ramp terminal intersections are currently experiencing similar crash rates, with the northbound ramp terminal experiencing 0.14 crashes per MEV and the southbound ramp terminal experiencing 0.23 crashes per MEV. FDOT does not report crash rates for ramp terminal intersections, and therefore a statewide comparison is unavailable. The bounding intersection to the south – US 41 and 73rd Street – experiences 0.14 crashes per MEV, a significantly lower rate than the FDOT statewide rate of 0.65 crashes per MEV.

Table 27: Calculation of crash rate for intersections and ramp terminals

Intersection or Ramp Terminal	Total Crashes	US-41 Entering AADT	Crossroad or Ramp Entering AADT	Crashes per Year	Total Crash Rate per MEV	FDOT Crash Rate
I-275 NB and US-41 Ramp Terminal	11	21,700	20,000	2.2	0.14	N/A
I-275 SB and US-41 Ramp Terminal	16	30,600	7,100	3.2	0.23	N/A
US-41 and 73rd Street/69th Street Intersection	10	28,100	10,400	2	0.14	0.65

8.2 Future Safety Analysis

The focus of the future safety analysis is to understand the impact of the traffic volume and other proposed changes in the future on the safety performance of the influence area. For most components of the influence area, the change is simply traffic volume growth. There are three (3) proposed changes for the study area – the conversion of the northbound ramp terminal signal from span wire mounted to mast arm mounted, the conversion from stop-control to signal-control at the southbound ramp terminal, and the installation of crosswalks and pedestrian features. The following sections describe the analysis performed to assess the impact of the proposed changes at the ramp terminals. The analyses focus on the opening year 2024 and the design year 2034.

8.2.1 I-275 Northbound Ramps and US 41 Ramp Terminal

The proposed change for the northbound ramp terminal is to change the current span wire-mounted traffic signal to a mast arm-mounted traffic signal. Per research available in the FHWA CMF Clearinghouse, this conversion is expected to result in a 3-percent reduction in all crashes (CMF ID 9404) at a signalized intersection and a 2-percent reduction in FI crashes (CMF ID 9405) at a signalized intersection. Both CMFs are rated three stars on the CMF Clearinghouse. Unfortunately, no similar research is available for ramp terminals. As such, it was assumed that this CMF can apply to the signalized northbound ramp terminal. Relevant CMF Clearinghouse output sheets can be found in **Appendix S**.

The northbound ramp terminal experienced 6.8 total crashes and 3.4 FI crashes during the study period. The CMF can be applied to the No Build crash frequency to determine the potential crash frequency of the Build condition.

Table 28 summarizes the results of this analysis. Converting from the span-wire mounted signal to a mast-arm mounted signal is expected to produce small annual reductions, roughly 1 FI crash and 1 PDO crash every ten years.

Table 28: Summary of CMF Analysis for Northbound Ramp Terminal

Crash Type	All	FI	PDO
Observed Crash Frequency, No Build	6.8	3.4	3.4
CMF	0.97	0.98	N/A
Observed Crash Frequency, Build	6.6	3.3	3.3
Expected Annual Crash Reduction	0.2	0.1	0.1

Based on the CMF, the proposed change is expected to provide a small safety improvement to the intersection by improving the visibility of the traffic signals.

8.2.2 I-275 Southbound Ramps and US 41 Ramp Terminal

The proposed treatment for the I-275 southbound ramp terminal with US 41 is a conversion from minor stop-control to signalization. Unfortunately, there is no CMF in the Clearinghouse for conversion of stop-control to signal for a ramp terminal. In addition, this ramp terminal could not be accurately modeled using the HSM Part C Predictive Method in ISATe. First, the HSM model for stop-control ramp terminals only accounts for crossroads with a maximum of four (4) lanes, whereas this site has six (6) lanes. Additionally, the AADT range for the crossroad and ramps for this terminal are significantly outside of the applicable AADT range for the HSM ramp terminal crash prediction models. The maximum applicable crossroad AADT for a stop-control diamond ramp terminal is 18,000 vehicles per day, whereas the crossroad AADT for this terminal are 25,600 vehicles per day for the inside leg and 32,500 vehicles per day for the outside leg. Similarly, the maximum applicable total ramp volume for a stop-control diamond ramp terminal is 10,000 vehicles per day compared to the 13,600 vehicles per day at this ramp terminal. This indicates the model would extrapolate for the No Build condition, which would be an unreliable prediction. The project team performed a prediction knowing the results were extrapolated but found unrealistic results (e.g., the signalized intersection produced an FI crash frequency prediction three-times higher than the unsignalized ramp terminal).

Without a CMF for converting a ramp terminal from stop-control to signal-control and a reliable method to predict crashes at the terminal under the No Build and Build condition, a qualitative discussion of the benefits is warranted. Various resources show that signalizing an intersection is expected to provide safety benefits, particularly for injury crashes. National research found benefits for signalizing an intersection. McGee et al. documented numerous CMFs for signalizing urban intersections in NCHRP Report 491: Crash Experience Warrant for Traffic Signals. **Table 29** summarizes those CMFs. Note the significant reduction expected for all crashes as well as angle crashes, which offset the expected increase in rear end crashes.

Table 29: Summary of Signalization CMFs from NCHRP Report 491

CMF Clearinghouse ID	CMF	Intersection Type	Crash Type	Crash Severity	CMF Clearinghouse Rating
316	0.86	3-Leg	All	FI	4 Stars
317	0.66	3-Leg	Angle	FI	3 Stars
318	1.5	3-Leg	Rear End	FI	3 Stars
319	0.77	4-Leg	All	FI	4 Stars
320	0.33	4-Leg	Angle	FI	5 Stars
321	1.38	4-Leg	Rear End	FI	4 Stars

Based on research summarizing the safety effects of converting stop-control intersections to signalized intersections, it is safe to assume similar effects would be realized when signalizing the I-275 southbound and US 41 ramp terminal. Providing the signal will control movements through the intersection and reduce the potential angle and left-turn conflicts which occur at higher frequencies at stop-control intersections. Table 30 summarizes the potential crash reduction using the 4-leg intersection CMFs (a 4- and 5-stars rating) from **Table 29**. Assuming signalization of the ramp terminal produces a similar safety effect as intersections, FI crashes are expected to be reduced by 0.6 crashes per year, FI angle crashes by 1.2 per year, and FI rear end crashes to increase by 0.2 per year. The small increase in rear end crashes is acceptable given the significant decrease in angle crashes, given the kinetic energy involved in angle crashes is typically much higher than rear end crashes.

Table 30: Summary of CMF Analysis for SB Ramp Terminal Intersection

FI Crash Type	FI, All	FI, Angle	FI, Rear End
Observed FI Crash Frequency, No Build	2.6	1.8	0.6
CMF, FI Crashes	0.77	0.33	1.38
Observed FI Crash Frequency, Build	2.0	0.6	0.8
Expected Annual FI Crash Reduction	0.6	1.2	-0.2

8.2.3 Pedestrian Improvements

The proposed alternative includes the installation of crosswalks and pedestrian features at both ramp termini intersections. Currently, there are no crosswalks, warning signage, or pavement markings identifying pedestrian crossings on US 41 and the interchange ramps. The proposed crosswalks and signage will help address these needs. Additionally, pedestrian crossings of US 41 and the interchange ramps will be accounted for in the signal phasing at both ramp terminals. Finally, all crossings will include ADA-compliant hardware. These improvements will increase pedestrian mobility and safety in the interchange area.

9 CONCEPTUAL FUNDING PLAN & SCHEDULE

The improvements associated with this IOAR will be funded through the Freight Connector Operational "Quick Fix" Program. Following IOAR approval, the improvements will be implemented through a Low-Bid Design-Build contract (FPID: 449720-1-52-01) with a targeted letting date of May 17, 2022.

The total construction cost for this improvement includes costs for pay items and quantities calculated using the FDOT's Long Range Estimating (LRE) System. This estimate is based on conceptual design plans found in **Appendix T.** The total project cost to construct the recommended improvement is estimated to be approximately $2.1 million dollars. There is no right-of-way acquisition needed to construct the recommended improvements.

10 CONCLUSIONS AND RECOMMENDATIONS

Based on the traffic analyses, the Build Alternative is predicted to improve intersection operations, with benefits increasing (relative to the No-Build Alternative) over the life of the project. The Build Alternative also boasts improvements to safety, resulting in a quantitative decrease in the predicted number of crashes (and, therefore, crash costs) between the opening and design years. The request for approval of this revised access point, and the analyses and evaluations that were conducted to support this request, satisfies FHWA's two policy point requirements as discussed below.

10.1 FHWA Policy Point 1

An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (Title 23, Code of Federal Regulations (CFR), paragraphs 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

10.1.1 Satisfaction of FHWA Policy Point 1

The operational analysis documented in this IOAR included the I-275 ramp merge/diverge areas, the I-275 at US 41 ramp terminal intersections, and the US 41 arterial. The analysis demonstrates that the intersection of US 41 at the I-275 SB Ramps intersection is anticipated to experience excessive delays and to operate at LOS F during the design year 2034 under the no build condition. Moreover, the 95th percentile queue in the left-turn from the off-ramp is anticipated to extend beyond the available off-ramp storage and will likely spill into the I-275 main line. The proposed improvement to install a traffic signal at the US 41 at I-275 SB Ramps intersection provides significant benefits to the operations of the interchange by managing the queues at the off ramp and by improving the progression of traffic along US 41.

In addition, providing a traffic signal at the US 41 at I-275 SB Ramps intersection will control movements through the intersection and reduce the potential angle and left-turn conflicts which occur at higher frequencies at stop-control intersections. An added benefit from the proposed improvements is that converting the traffic signal at the US 41 at I-275 NB Ramps intersection from the span-wire mounted signal to a mast-arm mounted signal is expected to produce annual crash reductions (roughly 1 FI crash and 1 PDO crash every ten years). Lastly, the proposed improvements include the installation of crosswalks and pedestrian features at both ramp termini intersections. Currently, there are no crosswalks, warning signage, or pavement markings identifying pedestrian crossings on US 41 and the interchange ramps. The proposed crosswalks and signage will help address these needs. Additionally, pedestrian crossings of US 41 and the interchange ramps will be accounted for in the signal phasing at both ramp terminals. These improvements will increase pedestrian mobility and safety in the interchange area.

In conclusion, the operational and safety analysis has demonstrated that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility, the adjacent interchanges, or on the local street network based on both the current and the planned future traffic projections.

10.2 FHWA Policy Point 2

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.

10.2.1 Satisfaction of FHWA Policy Point 2

The existing I-275 at US 41 interchange is a diamond interchange that connects to a public road (US 41) and provides for all traffic movements. The recommended I-275 at US 41 interchange improvements maintain the diamond interchange configuration and continue to provide for all traffic movements to and from US 41. The proposed access connects to a public road only and will provide for all traffic movements. Therefore, the Build Alternative is recommended for implementation at the I-275 at US 41 interchange.

10.3 Recommendation

It is recommended that the Build Alternative be constructed to improve the safety and operational conditions at the I-275 at US 41 interchange for vehicles, pedestrians, and bicyclists. It is also recommended that the intersections of US 41 at the I-275 SB Ramps and US 41 at 73rd Street/69th Street be continuously monitored for improvements to ensure that there are no detrimental impacts to the interchange. Lastly, it is recommended that the District continues to evaluate ultimate improvements for the I-275 freeway segment between I-75 and US 41 in the northbound direction.

Appendices

Appendix A

Methodology Statement

Methodology Statement

Interchange Operational Analysis Report (IOAR)

I-275 at US 41 Interchange – Operational Improvements

Type of Request:	IOAR	Manatee County, FL
Type of Process:	Programmatic	FDOT, District 1

Revised: March 2022

1. Project Description

A. Introduction

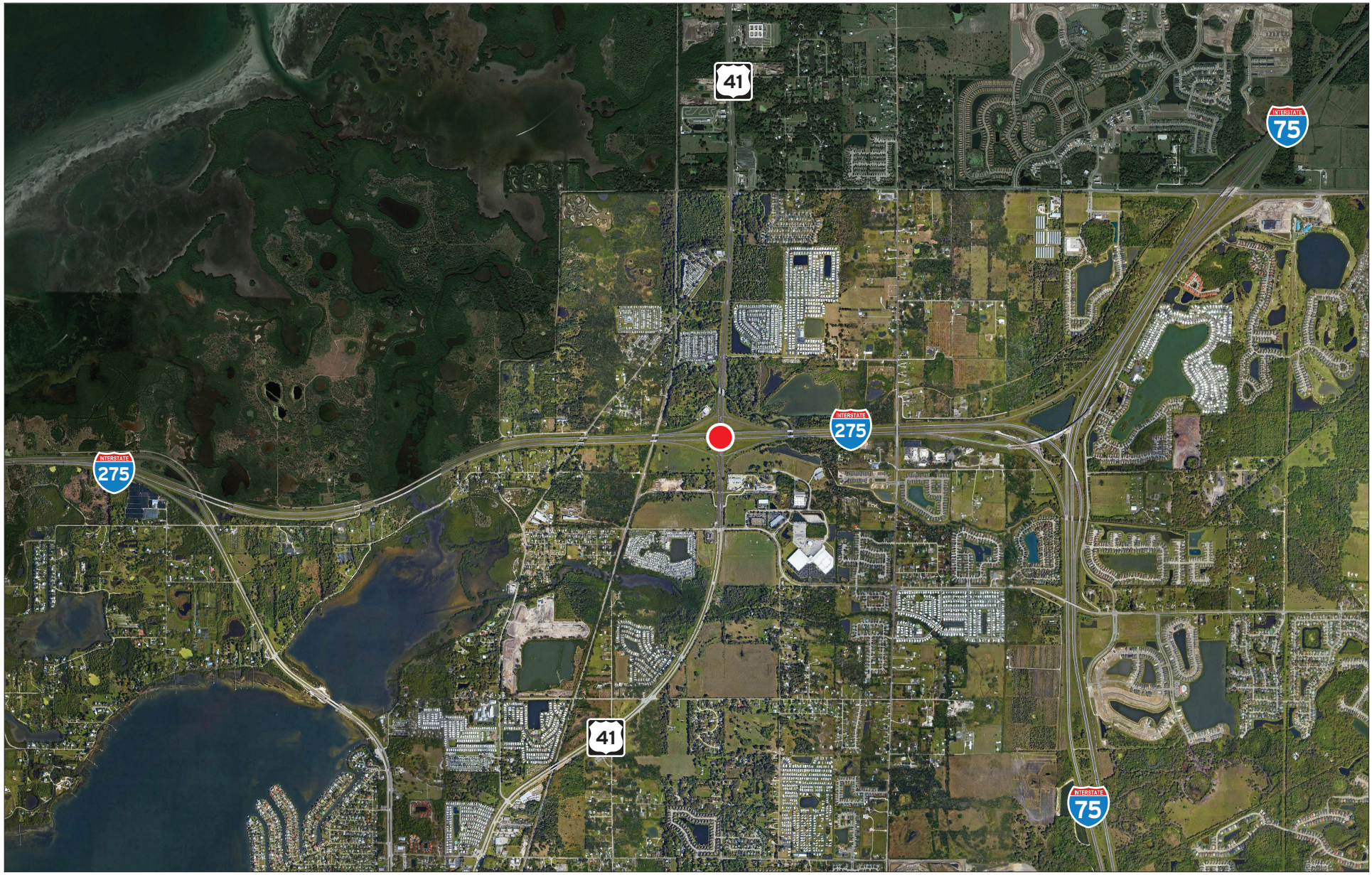
The I-275/US 41 interchange is located within the Manatee County, Florida as shown in **Figure 1**. The I-275/US 41 interchange is a full diamond interchange with single lane ramps at the entrance/exit points along I-275. I-275 is a four-lane limited access facility with a posted speed limit of 70 miles per hour (mph) and US 41 is a six-lane lane divided urban principal arterial other with a posted speed limit of 60 mph that runs under I-275. The northbound ramp termini intersection is signalized while the southbound ramp termini intersection is stop controlled.

A construction project was completed in 2019 to replace the concrete bridge deck on the southbound I-275 ramp to northbound I-75 (Exit 228). A temporary traffic signal was installed on US 41 at the southbound I-275 exit, during a time period from July 30, 2018 to December 15, 2019, to aid the traffic being detoured north on US 41 to SR 674 in Hillsborough County. The Port Manatee Site Utilization & Network Analysis Study, dated April 2019, documented that Port personnel and tenants commented that the temporary signal had been a benefit in traffic operations, as this signal provided dedicated turning access for vehicles approaching US-41, including truck traffic destined for Port Manatee. The study also noted that the temporary signal added an element of increased safety when undertaking the turning movement and recommended the installation of a permanent signal.

A Traffic Signal Warrant Analysis for the I-275 southbound ramp termini intersection with US 41 was completed in March 2020 in accordance to FDOT guidelines per the Manual on Uniform Traffic Studies (MUTS) and the Manual on Uniform Traffic Control Devices (MUTCD). The Signal Warrant Analysis concluded that the intersection meets warrants 1A and 2 based on traffic volumes.

A traffic signal is being proposed at the intersection of the I-275 southbound ramp termini intersection with US 41 to ensure an orderly flow of traffic, provide an opportunity for vehicles to cross the intersection, and prevent excessive delay. The traffic signal will improve safety by reducing the number of conflicts between vehicles entering the intersection from different directions. The traffic signal will also provide efficient interstate access/egress for freight traffic destined to Port Manatee.

Aerial Source: Google Earth Pro



N

N.T.S.

I-275 at US 41

FDOT

Figure 1

Project Location Map

B. Area of Influence

The FDOT defines Area of Influence (AOI) in the FDOT Interchange Access Request User's Guide as the area that is anticipated to experience significant changes in traffic operating characteristics as the result of the access proposal. The AOI shall reflect current and anticipated operational and safety concerns associated with the access request. The following describes the AOI along I-275 and the cross streets:

Along cross streets: The study intersections within the AOI are as follows:

- US 41 at I-275 SB ramp terminal intersection
- US 41 at I-275 NB ramp terminal intersection
- US 41 at 73rd Street/69th Street E

Along I-275: The study ramps and freeway segments within the AOI are as follows:

- I-275 SB on-ramp from US 41
- I-275 NB off-ramp to US 41
- I-275 NB on-ramp from US 41
- I-275 SB off-ramp to US 41
- I-275 freeway merge/diverge areas from/to the I-75 ramps
- I-275 freeway segment east of US 41
- I-275 freeway segment west of US 41

2. Analysis Years

A. Traffic Operational Analysis

- Existing Year 2021
- Opening Year 2024
- Design Year 2034

3. Alternatives

The No-Build and Build Alternatives will be analyzed in the IOAR document to demonstrate improved operations that satisfy LOS targets trough the Design Year of 2034. The alternatives being compared will be as follows:

- No-Build
    - The "do nothing" scenario is used as a baseline where no updates are made to the current configuration.
- Build Alternative

4. Data Collection

Forty-eight (48) hour roadway volume and four-hour intersection turning movement counts collected between September 8 and September 9, 2021 along US 41, the I-275 interchange ramps, 73rd Street, 69th Street and the study area intersections will be used for the analysis. Other counts to be used include twenty-four (24) hour roadway volume counts along I-275 collected on July 7, 2021 by FDOT District One Systems Planning Office

5. Travel Demand Forecasting

A. Selected Travel Demand Model(s)

The District One Regional Planning Model (D1RPM) v2.0 will be used as a base for this analysis.

B. Project Traffic Forecast Development Methodology

Growth rates generated from the travel demand model will be reviewed for reasonableness and will be compared to historical growth rates generated from a historical trend analysis of available counts and population growth rates derived from the Bureau of Economic and Business Research (BEBR) population projections, where applicable.

The developed growth rates will be applied to the existing year 2021 Annual Average Daily Traffic (AADT) to develop design year 2034 AADTs. Design Year design-hour turning movement volumes will be developed for two peak hours (i.e. AM and PM). Standard K and D factors will be applied to the Design Year AADTs to estimate Directional Design Hour Volumes (DDHVs). Future intersection turning movement volumes will be developed using the procedures described in NCHRP 765 (the update to NCHRP 255). This method is consistent with the acceptable tools described in FDOT's Project Traffic Forecasting Handbook (2019).

A spreadsheet created for this project will be used to achieve the balancing of the 2034 design year traffic. The opening year (2024) peak hour volumes will be interpolated from the existing year and design year peak hour volumes.

C. Validation Methodology

The sub area model will be validated by FDOT Systems Planning for the base year 2015 conditions using base year 2015 ZDATA. The advantage of using the base year 2015 for model validation is that it represents the official MPO-approved model and will be refined for the AOI.

The base year 2015 model validation involves reviewing the model network where adjustments will be performed as necessary so that the model traffic projections matches the base year traffic volumes within the sub-area model AOI. AADT volumes from the model will be compared to base year traffic data, traffic volumes from FTO database and any available data from other sources. The results of this evaluation will serve as the basis for determining the necessity and scale of the sub-area model validation. The sub-area validation procedure will meet the requirements of the FSUTMS Model Update Task Force. This procedure is consistent with Section 3.8.2 of 2014 Project Traffic Forecasting Handbook (Figures 3.3 and

3.4) and the FSUTMS-Cube Framework Phase II Model Calibration and Validation Standards dated October 2, 2008.

Following the model validation guidelines, adjustments will be made to the network parameters (facility type, speed, capacity, centroid connectors, etc.) to achieve acceptable validation standards. Any adjustments made to the model network, zonal structure changes, and model parameters will be documented in the IMR and applied to all future year models.

D. Adjustment Procedures

The D1RPM v2.0 will be used to develop the base year (2015) and horizon year (2045) forecasts. Traffic growth rates will be developed based on the results of the travel demand model and will be compared to historical traffic growth rates and projected land use growth rates for reasonableness. Design Year forecast volumes will be developed using approved FDOT forecasting methods.

E. Traffic Factors

Traffic factors will be developed utilizing recommended ranges identified in the Project Traffic Forecasting Handbook and Procedure (525-030-120).

6. Traffic Operational Analysis

A. Traffic Analysis Software Used

Software		System Component					
		Freeway				Crossroad	
Name	Version	Basic Segment	Weaving	Ramp Merge	Ramp Diverge	Arterials	Intersections
HCS/HCM	6th Ed.	☒	☐	☒	☒	☐	☐
Synchro	11.0	☐	☐	☐	☐	☐	☒
Corsim		☐	☐	☐	☐	☐	☐
Vissim		☐	☐	☐	☐	☐	☐
Other		☐	☐	☐	☐	☐	☐

Synchro, Version 11.0, will be used for the evaluation of alternatives and the development of preliminary signal timing plans. Intersection and movement vehicular delays, queues, and Level of Service will be used as Measures of Effectiveness (MOEs). A target LOS of D will be utilized in the study. Highway Capacity Manual (HCM), 6th Edition, results will be generated from Synchro.

Highway Capacity Software (HCS), Version 7, will be used for the analyses of freeway mainline and ramp merge/diverge operations.

7. Anticipated Design Exceptions and Variations

There are no design exceptions or variations anticipated, but any that may arise will be processed in accordance with FHWA and FDOT standards.

8. Conceptual Signing Plan

A conceptual signing plan will be included within the access request.

9. Access Management Plan

The access management plan within the area of influence will not be changed by the proposed improvement to the interchange.

10. FHWA Policy Points

The two FHWA Policy points summarized here, will be addressed in the IOAR:

- FHWA Policy Point #1: An operational and safety analysis has concluded the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility, or on the local street network based on both the current and the planned future traffic projections.
- FHWA Policy Point #2: The proposed access connects to a public road only and will provide for all traffic movements.

Further detail for the two points is outlined in the FDOT Interchange Access Requests User's Guide. These two points serve as the primary decision criteria to be satisfied in justifying the modifications to the access of the interstate system.

Appendix B

Traffic Data Collection

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	73rd St E 69th St E
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	2	174	40	21	318	9
7:15 - 7:30	2	233	39	28	300	7
7:30 - 7:45	6	236	53	33	272	6
7:45 - 8:00	5	166	41	31	245	9
8:00 - 8:15	6	193	42	23	233	5
8:15 - 8:30	7	191	46	22	208	7
8:30 - 8:45	8	195	38	31	229	6
8:45 - 9:00	3	126	32	27	204	9
	39	1,514	331	216	2,009	58

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	9	7	6	113	8	104
7:15 - 7:30	5	4	6	103	7	79
7:30 - 7:45	8	5	7	80	3	95
7:45 - 8:00	15	11	3	83	12	76
8:00 - 8:15	13	6	9	67	9	68
8:15 - 8:30	12	7	4	73	5	61
8:30 - 8:45	8	5	9	56	3	54
8:45 - 9:00	6	4	7	50	3	32
	76	49	51	625	50	569

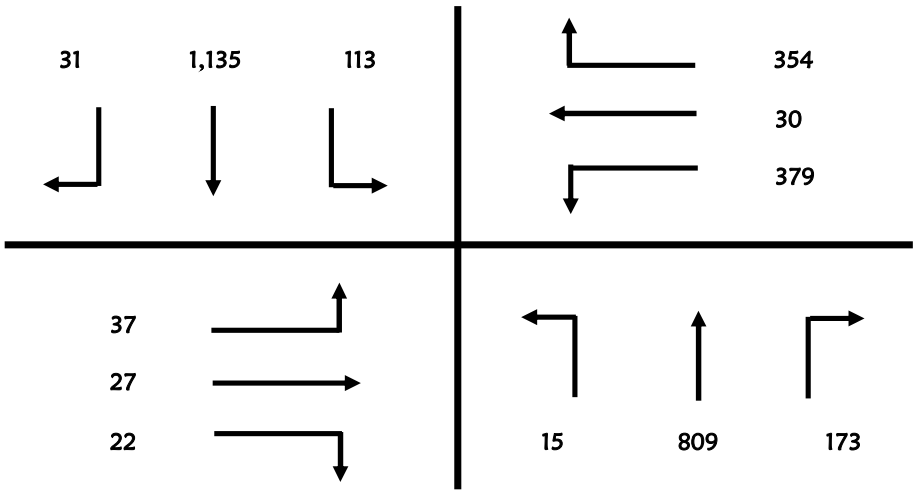
North / South
US 41

East / West
73rd St E 69th St E

Peak Hour
7:00 - 8:00

Peak Hour Factor
0.96

Total Pk Hr Voume
3,125



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	73rd St E 69th St E
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	7	201	67	38	166	14
16:15 - 16:30	3	246	47	42	184	11
16:30 - 16:45	6	227	56	53	167	14
16:45 - 17:00	9	268	59	68	170	12
17:00 - 17:15	5	273	79	63	172	9
17:15 - 17:30	9	285	79	51	191	13
17:30 - 17:45	4	336	69	70	177	18
17:45 - 18:00	12	283	90	59	195	11
	55	2,119	546	444	1,422	102

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	12	7	12	33	11	33
16:15 - 16:30	18	10	14	55	8	27
16:30 - 16:45	10	7	10	55	14	29
16:45 - 17:00	14	12	12	41	8	21
17:00 - 17:15	20	6	7	45	14	23
17:15 - 17:30	18	8	9	46	7	25
17:30 - 17:45	14	6	8	41	8	30
17:45 - 18:00	9	6	12	21	6	29
	115	62	84	337	76	217

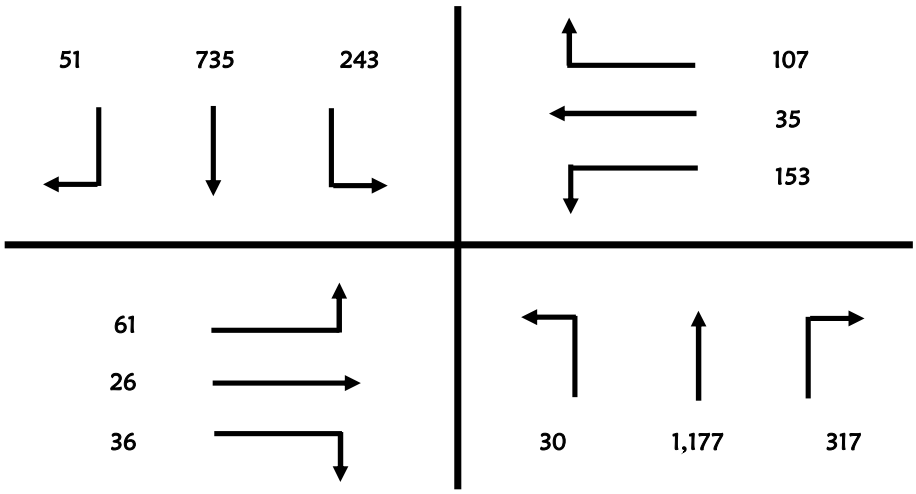
North / South
US 41

East / West
73rd St E 69th St E

Peak Hour
17:00 - 18:00

Peak Hour Factor
0.95

Total Pk Hr Voume
2,971



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	I-275 South Ramps
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	0	153	147	43	323	0
7:15 - 7:30	0	138	188	47	333	0
7:30 - 7:45	0	178	156	47	286	0
7:45 - 8:00	0	163	145	40	262	0
8:00 - 8:15	0	155	140	41	253	0
8:15 - 8:30	0	174	123	44	231	0
8:30 - 8:45	0	148	138	33	219	0
8:45 - 9:00	0	141	86	22	204	0
	0	1,250	1,123	317	2,111	0

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	26	0	12	0	0	0
7:15 - 7:30	25	0	19	0	0	0
7:30 - 7:45	30	0	13	0	0	0
7:45 - 8:00	17	0	14	0	0	0
8:00 - 8:15	17	0	9	0	0	0
8:15 - 8:30	15	0	18	0	0	0
8:30 - 8:45	16	0	17	0	0	0
8:45 - 9:00	28	0	9	0	0	0
	174	0	111	0	0	0

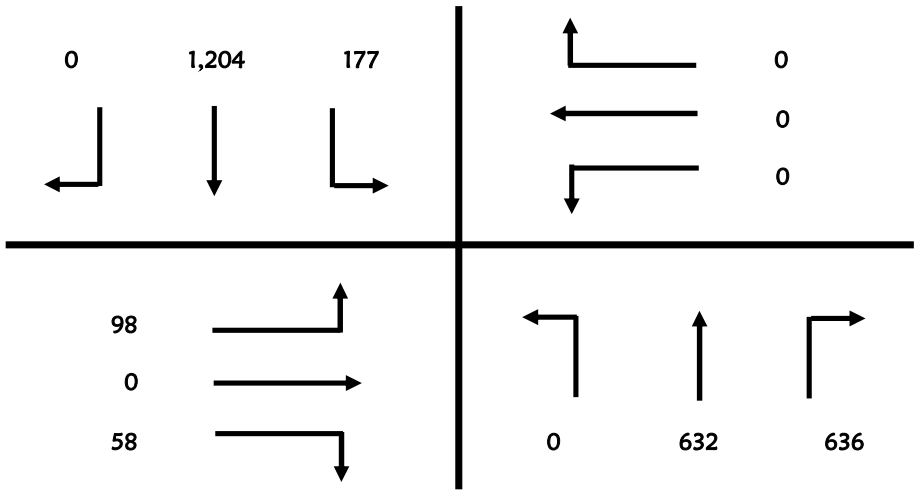
North / South
US 41

East / West
I-275 South Ramps

Peak Hour
7:00 - 8:00

Peak Hour Factor
0.94

Total Pk Hr Voume
2,805



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	I-275 South Ramps
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	0	143	140	29	195	0
16:15 - 16:30	0	180	142	19	197	0
16:30 - 16:45	0	211	161	24	199	0
16:45 - 17:00	0	222	183	34	192	0
17:00 - 17:15	0	228	168	31	199	0
17:15 - 17:30	0	219	190	30	220	0
17:30 - 17:45	0	248	196	31	228	0
17:45 - 18:00	0	221	149	16	210	0
	0	1,672	1,329	214	1,640	0

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	41	0	26	0	0	0
16:15 - 16:30	58	0	53	0	0	0
16:30 - 16:45	51	0	48	0	0	0
16:45 - 17:00	45	0	57	0	0	0
17:00 - 17:15	59	0	41	0	0	0
17:15 - 17:30	42	0	40	0	0	0
17:30 - 17:45	42	0	57	0	0	0
17:45 - 18:00	58	0	37	0	0	0
	396	0	359	0	0	0

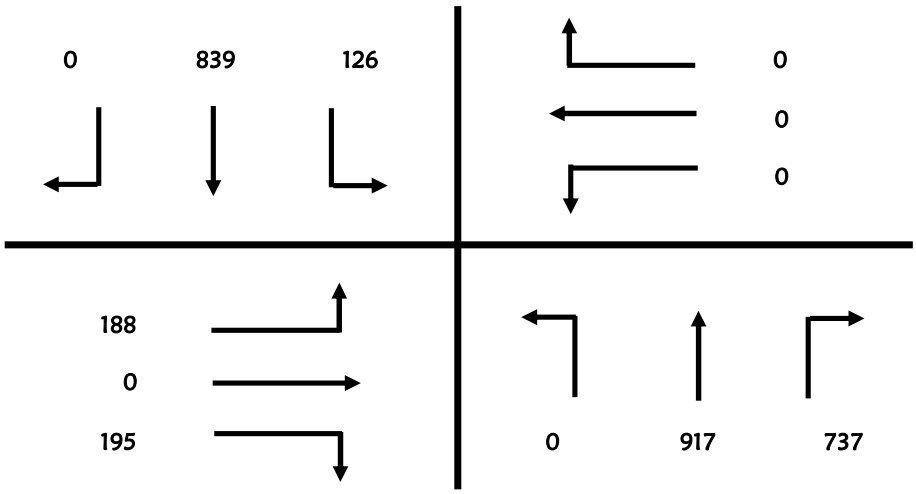
North / South
US 41

East / West
I-275 South Ramps

Peak Hour
16:45 - 17:45

Peak Hour Factor
0.94

Total Pk Hr Voume
3,002



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	I-275 North Ramps
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	46	109	0	0	180	63
7:15 - 7:30	38	112	0	0	195	62
7:30 - 7:45	43	128	0	0	186	60
7:45 - 8:00	34	109	0	0	192	72
8:00 - 8:15	35	130	0	0	181	58
8:15 - 8:30	25	138	0	0	157	36
8:30 - 8:45	30	118	0	0	141	45
8:45 - 9:00	15	94	0	0	115	34
	266	938	0	0	1,347	430

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	0	0	0	133	0	32
7:15 - 7:30	0	0	0	155	0	34
7:30 - 7:45	0	0	0	164	0	32
7:45 - 8:00	0	0	0	126	0	51
8:00 - 8:15	0	0	0	121	0	25
8:15 - 8:30	0	0	0	114	0	28
8:30 - 8:45	0	0	0	125	0	22
8:45 - 9:00	0	0	0	124	0	22
	0	0	0	1,062	0	246

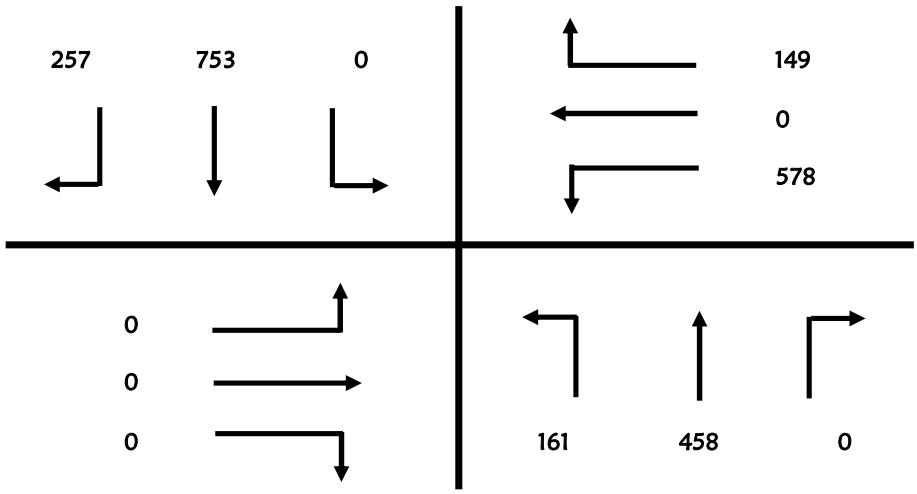
North / South
US 41

East / West
I-275 North Ramps

Peak Hour
7:00 - 8:00

Peak Hour Factor
0.96

Total Pk Hr Voume
2,356



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Manatee	**City**	bradenton
Intersection	US 41	&	I-275 North Ramps
Date	Thursday, September 09, 2021 7:0		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 63551.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	10	148	0	0	106	33
16:15 - 16:30	14	188	0	0	112	24
16:30 - 16:45	18	200	0	0	118	26
16:45 - 17:00	16	203	0	0	125	32
17:00 - 17:15	19	228	0	0	102	14
17:15 - 17:30	16	223	0	0	115	36
17:30 - 17:45	18	227	0	0	121	32
17:45 - 18:00	16	239	0	0	116	23
	127	1,656	0	0	915	220

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	0	0	0	92	0	40
16:15 - 16:30	0	0	0	84	0	47
16:30 - 16:45	0	0	0	105	0	47
16:45 - 17:00	0	0	0	93	0	53
17:00 - 17:15	0	0	0	100	0	45
17:15 - 17:30	0	0	0	117	0	42
17:30 - 17:45	0	0	0	137	0	43
17:45 - 18:00	0	0	0	116	0	46
	0	0	0	844	0	363

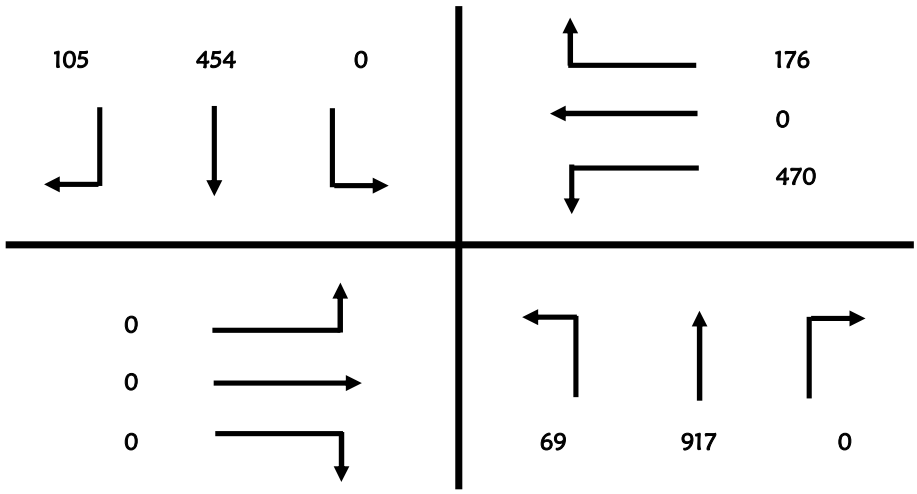
North / South
US 41

East / West
I-275 North Ramps

Peak Hour
17:00 - 18:00

Peak Hour Factor
0.95

Total Pk Hr Voume
2,191



County: 13
Station: 0058
Description: SR 93/I-275, EAST OF SR 45/US 41 & E OF FROG CREEK
Start Date: 07/07/2021
Start Time: 2000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	68	75	88	57	288	84	64	51	47	246	534
0100	56	57	46	25	184	40	34	30	27	131	315
0200	39	37	32	50	158	43	35	37	25	140	298
0300	40	53	41	47	181	34	29	45	50	158	339
0400	43	50	66	71	230	67	90	89	119	365	595
0500	93	140	161	188	582	119	161	201	242	723	1305
0600	275	330	385	358	1348	305	375	413	410	1503	2851
0700	418	432	450	397	1697	487	537	546	480	2050	3747
0800	371	401	412	398	1582	440	447	424	415	1726	3308
0900	370	440	407	417	1634	486	464	415	417	1782	3416
1000	409	391	417	414	1631	399	394	431	411	1635	3266
1100	446	453	373	431	1703	390	423	403	354	1570	3273
1200	385	404	391	400	1580	413	417	431	405	1666	3246
1300	396	387	419	396	1598	416	433	395	419	1663	3261
1400	408	425	429	430	1692	418	449	432	442	1741	3433
1500	449	470	562	567	2048	456	477	481	488	1902	3950
1600	534	568	584	588	2274	495	517	481	468	1961	4235
1700	682	642	566	525	2415	495	460	460	454	1869	4284
1800	510	468	408	386	1772	438	445	403	295	1581	3353
1900	335	256	270	262	1123	316	312	264	265	1157	2280
2000	219	155	177	147	698	177	150	149	173	649	1347
2100	184	128	126	139	577	126	157	110	122	515	1092
2200	111	118	117	72	418	112	109	104	77	402	820
2300	86	92	84	89	351	82	73	62	69	286	637
24-Hour Totals:					27764					27421	55185

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	1697	700	2050	700	3747
P.M.	1630	2496	1530	1981	1630	4400
Daily	1630	2496	700	2050	1630	4400

Generated by SPS 5.0.55P

County: 13
Station: 0059
Description: SR 93/I-275, WEST OF SR 45/US 41
Start Date: 07/07/2021
Start Time: 2000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	53	69	76	58	256	43	33	25	24	125	381
0100	50	43	42	12	147	22	19	12	13	66	213
0200	40	34	29	27	130	19	20	19	27	85	215
0300	15	24	40	32	111	30	27	40	46	143	254
0400	32	41	44	47	164	58	78	88	97	321	485
0500	64	91	90	124	369	132	156	183	207	678	1047
0600	183	227	265	266	941	278	373	353	350	1354	2295
0700	304	288	324	291	1207	430	475	491	413	1809	3016
0800	274	304	318	277	1173	389	381	348	357	1475	2648
0900	303	299	310	314	1226	408	397	363	331	1499	2725
1000	317	287	322	306	1232	337	329	338	339	1343	2575
1100	347	348	286	324	1305	295	336	333	276	1240	2545
1200	273	365	277	306	1221	336	341	304	333	1314	2535
1300	331	328	314	311	1284	329	331	295	316	1271	2555
1400	312	324	365	365	1366	337	356	332	334	1359	2725
1500	393	426	450	431	1700	351	397	382	351	1481	3181
1600	454	474	501	505	1934	396	403	348	333	1480	3414
1700	606	547	485	442	2080	374	335	332	337	1378	3458
1800	416	412	345	359	1532	301	285	256	215	1057	2589
1900	283	207	208	216	914	227	224	194	180	825	1739
2000	171	140	142	123	576	112	111	112	108	443	1019
2100	128	109	97	101	435	94	108	75	87	364	799
2200	87	96	94	59	336	69	66	57	55	247	583
2300	66	60	62	69	257	53	53	41	39	186	443
24-Hour Totals:					21896					21543	43439

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	1207	700	1809	700	3016
P.M.	1630	2159	1530	1532	1630	3549
Daily	1630	2159	700	1809	1630	3549

Generated by SPS 5.0.55P

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 13 - MANATEE

SITE: 7041 - SR 93A/I-75 NB, OFF-RAMP TO SR 93/I-275 X228

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	17000 S	0	0	9.00	99.90	6.30
2019	17500 F	0	0	9.00	99.90	6.40
2018	17000 C	N 17000	0	9.00	99.90	7.90
2017	17500 F	0	0	9.00	99.90	7.90
2016	17000 C	N 17000	0	9.00	99.90	7.90
2015	17500 C	N 17500	0	9.00	99.90	7.10
2014	16500 C	N 16500		9.00	99.90	7.90
2013	16000 C	N 16000	0	9.00	99.90	7.90
2012	15500 C	N 15500	0	9.00	99.90	7.50
2011	15000 C	N 15000	0	9.00	99.90	6.30
2010	15000 S	0	0	9.52	99.99	8.40
2009	15000 F	0	0	9.33	99.99	8.40
2008	15500 C	N 15500	0	9.56	99.99	8.40
2007	16500 S	0	0	9.29	99.99	8.40
2006	16000 F			9.21	99.99	11.80
2005	15500 C	N 15500		9.10	99.90	0.00

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 13 - MANATEE

SITE: 7042 - SR 93A/I-75 SB, ON-RAMP FROM SR 93/I-275 X228

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	18000 S	0	0	8.00	99.90	6.30
2019	18500 F	0	0	8.00	99.90	6.40
2018	18000 C	S 18000	0	9.00	99.90	7.40
2017	19000 F	0	0	9.00	99.90	7.30
2016	18500 C	S 18500	0	9.00	99.90	7.60
2015	17000 F	0	0	9.00	99.90	5.70
2014	16000 C	S 16000		9.00	99.90	6.80
2013	16000 S	0	0	9.00	99.90	7.30
2012	16000 F	0	0	9.00	99.90	5.80
2011	16000 C	S 16000	0	9.00	99.90	6.30
2010	14000 S	0	0	9.52	99.99	8.10
2009	14000 F	0	0	9.33	99.99	8.10
2008	14500 C	S 14500	0	9.56	99.99	8.10
2007	16500 S	0	0	9.29	99.99	8.40
2006	16000 F			9.21	99.99	11.80
2005	15500 C	S 15500		9.10	99.90	0.00

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 13 - MANATEE

SITE: 7043 - SR 93A/I-75 NB, ON-RAMP FROM SR 93/I-275 X228

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	9100 S	0	0	8.00	99.90	6.30
2019	9400 F	0	0	8.00	99.90	6.40
2018	9100 C	N 9100	0	9.00	99.90	7.40
2017	8600 F	0	0	9.00	99.90	7.30
2016	8300 C	N 8300	0	9.00	99.90	7.60
2015	7300 F	0	0	9.00	99.90	5.70
2014	7000 C	N 7000		9.00	99.90	6.80
2013	5700 S	0	0	9.00	99.90	7.30
2012	5600 F	0	0	9.00	99.90	5.80
2011	5600 C	N 5600	0	9.00	99.90	6.30
2010	5000 S	0	0	9.52	99.99	12.10
2009	5100 F	0	0	9.33	99.99	12.10
2008	5200 C	N 5200	0	9.56	99.99	12.10
2007	5900 S	0	0	9.29	99.99	8.40
2006	5700 F			9.21	99.99	11.80
2005	5500 C	N 5500		9.10	99.90	0.00

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 13 - MANATEE

SITE: 7044 - SR 93A/I-75 SB, OFF-RAMP TO SR 93/I-275 X228

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	7600 S	0	0	8.00	99.90	6.30
2019	7900 F	0	0	8.00	99.90	6.40
2018	7700 C	S 7700	0	9.00	99.90	7.40
2017	7300 F	0	0	9.00	99.90	7.30
2016	7000 C	S 7000	0	9.00	99.90	7.60
2015	7000 F	0	0	9.00	99.90	5.70
2014	6700 C	S 6700		9.00	99.90	6.80
2013	5600 S	0	0	9.00	99.90	7.30
2012	5500 F	0	0	9.00	99.90	5.80
2011	5500 C	S 5500	0	9.00	99.90	6.30
2010	5100 S	0	0	9.52	99.99	11.70
2009	5200 F	0	0	9.33	99.99	11.70
2008	5300 C	S 5300	0	9.56	99.99	11.70
2007	6100 S	0	0	9.29	99.99	8.40
2006	5900 F			9.21	99.99	11.80
2005	5700 C	S 5700		9.10	99.90	0.00

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

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : 69th St E east of US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	10	18	4	6	10	27	73	74	90	71	63
30	10	9	14	9	13	11	48	97	88	63	84	72
45	12	12	21	5	9	32	63	78	81	52	72	89
00	9	10	8	18	21	24	77	104	109	67	60	65
Hr Total	**37**	**41**	**61**	**36**	**49**	**77**	**215**	**352**	**352**	**272**	**287**	**289**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	88	79	66	107	104	156	135	66	67	48	30	19
30	84	72	82	103	137	146	73	83	74	43	32	20
45	89	93	109	111	140	163	84	67	69	41	24	10
00	88	81	103	109	162	156	101	71	63	31	17	15
Hr Total	**349**	**325**	**360**	**430**	**543**	**621**	**393**	**287**	**273**	**163**	**103**	**64**

24 Hour Total : 5,979
AM Peak Hour begins : 8:15 AM Peak Volume : 368 AM Peak Hour Factor : 0.84
PM Peak Hour begins : 16:45 PM Peak Volume : 627 PM PeaK Hour Factor : 0.96

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	8	5	7	16	12	30	108	273	163	146	77	117
30	1	2	7	18	27	34	114	292	172	129	79	95
45	1	9	10	26	27	76	186	181	144	108	86	120
00	6	3	16	19	25	60	199	181	88	86	85	92
Hr Total	**16**	**19**	**40**	**79**	**91**	**200**	**607**	**927**	**567**	**469**	**327**	**424**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	97	112	95	96	129	132	66	48	47	50	29	9
30	75	88	95	89	105	95	84	55	45	20	16	11
45	71	92	87	124	149	110	68	48	26	26	13	10
00	79	89	92	111	101	79	69	47	40	8	14	1
Hr Total	**322**	**381**	**369**	**420**	**484**	**416**	**287**	**198**	**158**	**104**	**72**	**31**

24 Hour Total : 7,008
AM Peak Hour begins : 6:30 AM Peak Volume : 950 AM Peak Hour Factor : 0.81
PM Peak Hour begins : 15:45 PM Peak Volume : 494 PM PeaK Hour Factor : 0.83

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	14	15	25	20	18	40	135	346	237	236	148	180
30	11	11	21	27	40	45	162	389	260	192	163	167
45	13	21	31	31	36	108	249	259	225	160	158	209
00	15	13	24	37	46	84	276	285	197	153	145	157
Hr Total	**53**	**60**	**101**	**115**	**140**	**277**	**822**	**1,279**	**919**	**741**	**614**	**713**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	185	191	161	203	233	288	201	114	114	98	59	28
30	159	160	177	192	242	241	157	138	119	63	48	31
45	160	185	196	235	289	273	152	115	95	67	37	20
00	167	170	195	220	263	235	170	118	103	39	31	16
Hr Total	**671**	**706**	**729**	**850**	**1,027**	**1,037**	**680**	**485**	**431**	**267**	**175**	**95**

24 Hour Total : 12,987
AM Peak Hour begins : 7:00 AM Peak Volume : 1,279 AM Peak Hour Factor : 0.82
PM Peak Hour begins : 16:15 PM Peak Volume : 1,082 PM PeaK Hour Factor : 0.94

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : 69th St E east of US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	16	8	10	8	3	10	20	74	86	57	70	84
30	5	4	13	8	13	19	51	82	92	67	78	63
45	11	3	25	16	17	26	56	100	92	66	75	85
00	3	3	10	8	21	27	92	107	76	92	53	95
Hr Total	**35**	**18**	**58**	**40**	**54**	**82**	**219**	**363**	**346**	**282**	**276**	**327**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	103	78	60	137	111	153	123	86	67	47	42	28
30	86	71	83	110	117	140	85	65	86	38	16	22
45	89	80	129	101	134	158	87	59	74	34	27	12
00	83	86	123	129	155	166	93	63	54	47	20	19
Hr Total	**361**	**315**	**395**	**477**	**517**	**617**	**388**	**273**	**281**	**166**	**105**	**81**

24 Hour Total : 6,076
AM Peak Hour begins : 7:30 AM Peak Volume : 385 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:00 PM Peak Volume : 617 PM PeaK Hour Factor : 0.93

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	4	5	10	34	44	103	256	170	125	104	96
30	6	9	8	13	12	48	128	252	169	123	86	99
45	5	5	10	25	29	63	162	219	126	107	82	118
00	2	6	7	19	28	56	225	185	99	86	61	86
Hr Total	**19**	**24**	**30**	**67**	**103**	**211**	**618**	**912**	**564**	**441**	**333**	**399**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	104	106	98	86	111	128	92	54	46	41	32	13
30	86	98	100	91	113	131	80	58	48	18	28	3
45	108	65	113	126	144	110	50	60	40	25	19	7
00	89	79	60	86	108	68	68	40	34	16	16	7
Hr Total	**387**	**348**	**371**	**389**	**476**	**437**	**290**	**212**	**168**	**100**	**95**	**30**

24 Hour Total : 7,024
AM Peak Hour begins : 6:45 AM Peak Volume : 952 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 16:30 PM Peak Volume : 511 PM PeaK Hour Factor : 0.89

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	12	15	18	37	54	123	330	256	182	174	180
30	11	13	21	21	25	67	179	334	261	190	164	162
45	16	8	35	41	46	89	218	319	218	173	157	203
00	5	9	17	27	49	83	317	292	175	178	114	181
Hr Total	**54**	**42**	**88**	**107**	**157**	**293**	**837**	**1,275**	**910**	**723**	**609**	**726**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	207	184	158	223	222	281	215	140	113	88	74	41
30	172	169	183	201	230	271	165	123	134	56	44	25
45	197	145	242	227	278	268	137	119	114	59	46	19
00	172	165	183	215	263	234	161	103	88	63	36	26
Hr Total	**748**	**663**	**766**	**866**	**993**	**1,054**	**678**	**485**	**449**	**266**	**200**	**111**

24 Hour Total : 13,100
AM Peak Hour begins : 6:45 AM Peak Volume : 1,300 AM Peak Hour Factor : 0.97
PM Peak Hour begins : 16:30 PM Peak Volume : 1,093 PM PeaK Hour Factor : 0.97

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : 73rd St E west of US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	1	5	14	8	8	9	6
30	0	0	0	2	2	2	3	12	12	8	6	12
45	0	0	1	0	1	1	10	5	4	8	4	4
00	0	0	0	1	0	3	12	8	6	9	9	8
Hr Total	**0**	**0**	**1**	**3**	**3**	**7**	**30**	**39**	**30**	**33**	**28**	**30**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	9	5	7	13	14	12	7	5	4	7	0	0
30	12	6	6	9	9	5	8	5	5	5	7	0
45	5	10	5	6	6	16	10	7	2	1	2	1
00	8	10	6	12	5	3	4	5	2	0	2	1
Hr Total	**34**	**31**	**24**	**40**	**34**	**36**	**29**	**22**	**13**	**13**	**11**	**2**

24 Hour Total : 493
AM Peak Hour begins : 6:30 AM Peak Volume : 48 AM Peak Hour Factor : 0.86
PM Peak Hour begins : 15:15 PM Peak Volume : 41 PM PeaK Hour Factor : 0.73

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	4	3	3	4	4	7
30	2	0	0	0	2	0	2	6	11	7	4	11
45	0	1	0	0	1	1	2	5	4	1	3	6
00	0	1	0	0	0	1	5	10	4	2	7	9
Hr Total	**2**	**2**	**0**	**0**	**3**	**2**	**13**	**24**	**22**	**14**	**18**	**33**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	7	10	12	7	13	7	8	9	5	5	3	1
30	9	12	12	7	6	6	6	10	8	6	1	0
45	2	6	7	10	6	9	4	8	3	5	0	0
00	6	7	5	4	9	3	2	3	5	3	1	0
Hr Total	**24**	**35**	**36**	**28**	**34**	**25**	**20**	**30**	**21**	**19**	**5**	**1**

24 Hour Total : 411
AM Peak Hour begins : 11:00 AM Peak Volume : 33 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 13:45 PM Peak Volume : 38 PM PeaK Hour Factor : 0.79

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	1	9	17	11	12	13	13
30	2	0	0	2	4	2	5	18	23	15	10	23
45	0	1	1	0	2	2	12	10	8	9	7	10
00	0	1	0	1	0	4	17	18	10	11	16	17
Hr Total	**2**	**2**	**1**	**3**	**6**	**9**	**43**	**63**	**52**	**47**	**46**	**63**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	16	15	19	20	27	19	15	14	9	12	3	1
30	21	18	18	16	15	11	14	15	13	11	8	0
45	7	16	12	16	12	25	14	15	5	6	2	1
00	14	17	11	16	14	6	6	8	7	3	3	1
Hr Total	**58**	**66**	**60**	**68**	**68**	**61**	**49**	**52**	**34**	**32**	**16**	**3**

24 Hour Total : 904
AM Peak Hour begins : 6:30 AM Peak Volume : 64 AM Peak Hour Factor : 0.89
PM Peak Hour begins : 15:15 PM Peak Volume : 75 PM PeaK Hour Factor : 0.69

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : 73rd St E west of US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	0	0	0	1	1	4	14	10	9	8	11
30	0	0	1	0	0	1	4	4	10	11	8	8
45	1	0	1	0	1	2	10	10	7	5	9	7
00	0	0	2	0	0	3	11	14	10	7	8	6
Hr Total	**2**	**0**	**4**	**0**	**2**	**7**	**29**	**42**	**37**	**32**	**33**	**32**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	8	2	6	17	11	7	2	12	2	0	1
30	9	3	9	8	5	8	8	5	4	1	4	1
45	7	10	10	13	7	9	5	3	0	1	1	0
00	12	9	11	20	10	9	11	5	6	3	2	0
Hr Total	**34**	**30**	**32**	**47**	**39**	**37**	**31**	**15**	**22**	**7**	**7**	**2**

24 Hour Total : 523
AM Peak Hour begins : 7:30 AM Peak Volume : 44 AM Peak Hour Factor : 0.79
PM Peak Hour begins : 15:15 PM Peak Volume : 58 PM PeaK Hour Factor : 0.73

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	0	0	0	0	1	2	6	6	4	9	12
30	1	0	2	0	0	1	1	6	4	2	12	10
45	0	0	0	0	2	0	2	6	2	3	4	10
00	0	0	0	0	1	3	6	6	3	7	9	8
Hr Total	**3**	**0**	**2**	**0**	**3**	**5**	**11**	**24**	**15**	**16**	**34**	**40**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	10	6	9	11	12	8	4	7	2	5	0	4
30	10	6	9	14	3	10	6	9	11	2	4	1
45	5	7	11	10	6	8	2	11	6	4	2	1
00	10	9	9	10	11	9	2	8	4	1	1	1
Hr Total	**35**	**28**	**38**	**45**	**32**	**35**	**14**	**35**	**23**	**12**	**7**	**7**

24 Hour Total : 464
AM Peak Hour begins : 10:45 AM Peak Volume : 41 AM Peak Hour Factor : 0.85
PM Peak Hour begins : 15:15 PM Peak Volume : 46 PM PeaK Hour Factor : 0.82

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	0	0	0	1	2	6	20	16	13	17	23
30	1	0	3	0	0	2	5	10	14	13	20	18
45	1	0	1	0	3	2	12	16	9	8	13	17
00	0	0	2	0	1	6	17	20	13	14	17	14
Hr Total	**5**	**0**	**6**	**0**	**5**	**12**	**40**	**66**	**52**	**48**	**67**	**72**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	16	14	11	17	29	19	11	9	14	7	0	5
30	19	9	18	22	8	18	14	14	15	3	8	2
45	12	17	21	23	13	17	7	14	6	5	3	1
00	22	18	20	30	21	18	13	13	10	4	3	1
Hr Total	**69**	**58**	**70**	**92**	**71**	**72**	**45**	**50**	**45**	**19**	**14**	**9**

24 Hour Total : 987
AM Peak Hour begins : 10:45 AM Peak Volume : 75 AM Peak Hour Factor : 0.82
PM Peak Hour begins : 15:15 PM Peak Volume : 104 PM PeaK Hour Factor : 0.87

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : I-275 North Off Ramp at US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : 0:00 AM Peak Volume : 0 AM Peak Hour Factor : #DIV/0!
PM Peak Hour begins : 12:00 PM Peak Volume : 0 PM PeaK Hour Factor : #DIV/0!

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	21	21	22	7	19	30	106	173	173	147	137	125
30	18	11	19	14	16	58	133	188	172	152	131	125
45	14	14	18	13	23	77	213	175	167	120	137	129
00	14	16	11	16	35	78	187	209	186	122	116	133
Hr Total	**67**	**62**	**70**	**50**	**93**	**243**	**639**	**745**	**698**	**541**	**521**	**512**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	124	140	116	135	144	140	158	115	99	61	46	32
30	142	133	146	168	151	177	150	109	75	63	41	26
45	146	158	144	158	184	182	125	74	56	54	41	26
00	137	132	157	179	199	156	111	73	56	47	30	20
Hr Total	**549**	**563**	**563**	**640**	**678**	**655**	**544**	**371**	**286**	**225**	**158**	**104**

24 Hour Total : 9,577
AM Peak Hour begins : 6:30 AM Peak Volume : 761 AM Peak Hour Factor : 0.89
PM Peak Hour begins : 16:30 PM Peak Volume : 700 PM PeaK Hour Factor : 0.88

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	21	21	22	7	19	30	106	173	173	147	137	125
30	18	11	19	14	16	58	133	188	172	152	131	125
45	14	14	18	13	23	77	213	175	167	120	137	129
00	14	16	11	16	35	78	187	209	186	122	116	133
Hr Total	**67**	**62**	**70**	**50**	**93**	**243**	**639**	**745**	**698**	**541**	**521**	**512**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	124	140	116	135	144	140	158	115	99	61	46	32
30	142	133	146	168	151	177	150	109	75	63	41	26
45	146	158	144	158	184	182	125	74	56	54	41	26
00	137	132	157	179	199	156	111	73	56	47	30	20
Hr Total	**549**	**563**	**563**	**640**	**678**	**655**	**544**	**371**	**286**	**225**	**158**	**104**

24 Hour Total : 9,577
AM Peak Hour begins : 6:30 AM Peak Volume : 761 AM Peak Hour Factor : 0.89
PM Peak Hour begins : 16:30 PM Peak Volume : 700 PM PeaK Hour Factor : 0.88

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : I-275 North Off Ramp at US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : 0:00 AM Peak Volume : 0 AM Peak Hour Factor : #DIV/0!
PM Peak Hour begins : 12:00 PM Peak Volume : 0 PM PeaK Hour Factor : #DIV/0!

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	23	14	18	14	18	41	89	179	158	163	142	146
30	12	13	7	18	15	60	148	197	165	137	136	160
45	20	14	23	20	27	71	193	207	160	167	150	148
00	7	9	12	13	32	77	187	187	150	124	145	131
Hr Total	**62**	**50**	**60**	**65**	**92**	**249**	**617**	**770**	**633**	**591**	**573**	**585**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	142	124	143	170	131	149	165	106	95	65	65	21
30	131	114	127	160	152	158	143	84	101	50	47	26
45	132	153	143	133	166	199	172	89	94	40	37	29
00	113	163	180	132	154	168	131	97	74	56	39	23
Hr Total	**518**	**554**	**593**	**595**	**603**	**674**	**611**	**376**	**364**	**211**	**188**	**99**

24 Hour Total : 9,733
AM Peak Hour begins : 6:45 AM Peak Volume : 770 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:15 PM Peak Volume : 690 PM PeaK Hour Factor : 0.87

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	23	14	18	14	18	41	89	179	158	163	142	146
30	12	13	7	18	15	60	148	197	165	137	136	160
45	20	14	23	20	27	71	193	207	160	167	150	148
00	7	9	12	13	32	77	187	187	150	124	145	131
Hr Total	**62**	**50**	**60**	**65**	**92**	**249**	**617**	**770**	**633**	**591**	**573**	**585**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	142	124	143	170	131	149	165	106	95	65	65	21
30	131	114	127	160	152	158	143	84	101	50	47	26
45	132	153	143	133	166	199	172	89	94	40	37	29
00	113	163	180	132	154	168	131	97	74	56	39	23
Hr Total	**518**	**554**	**593**	**595**	**603**	**674**	**611**	**376**	**364**	**211**	**188**	**99**

24 Hour Total : 9,733
AM Peak Hour begins : 6:45 AM Peak Volume : 770 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:15 PM Peak Volume : 690 PM PeaK Hour Factor : 0.87

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : I-275 North On Ramp at US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : 0:00 AM Peak Volume : 0 AM Peak Hour Factor : #DIV/0!
PM Peak Hour begins : 12:00 PM Peak Volume : 0 PM PeaK Hour Factor : #DIV/0!

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	6	3	2	11	26	78	113	93	62	48	45
30	4	1	2	6	11	35	105	109	79	59	44	44
45	1	3	2	9	18	50	115	105	92	67	48	34
00	1	1	2	3	19	40	117	109	63	45	42	30
Hr Total	**7**	**11**	**9**	**20**	**59**	**151**	**415**	**436**	**327**	**233**	**182**	**153**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	39	37	39	58	61	42	42	26	5	8	10	6
30	49	42	37	49	40	50	34	16	6	6	8	10
45	36	28	52	62	50	46	25	17	17	8	6	5
00	32	47	39	40	46	30	27	11	8	8	4	1
Hr Total	**156**	**154**	**167**	**209**	**197**	**168**	**128**	**70**	**36**	**30**	**28**	**22**

24 Hour Total : 3,368
AM Peak Hour begins : 6:30 AM Peak Volume : 454 AM Peak Hour Factor : 0.97
PM Peak Hour begins : 15:15 PM Peak Volume : 212 PM PeaK Hour Factor : 0.86

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	1	6	3	2	11	26	78	113	93	62	48	45
30	4	1	2	6	11	35	105	109	79	59	44	44
45	1	3	2	9	18	50	115	105	92	67	48	34
00	1	1	2	3	19	40	117	109	63	45	42	30
Hr Total	**7**	**11**	**9**	**20**	**59**	**151**	**415**	**436**	**327**	**233**	**182**	**153**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	39	37	39	58	61	42	42	26	5	8	10	6
30	49	42	37	49	40	50	34	16	6	6	8	10
45	36	28	52	62	50	46	25	17	17	8	6	5
00	32	47	39	40	46	30	27	11	8	8	4	1
Hr Total	**156**	**154**	**167**	**209**	**197**	**168**	**128**	**70**	**36**	**30**	**28**	**22**

24 Hour Total : 3,368
AM Peak Hour begins : 6:30 AM Peak Volume : 454 AM Peak Hour Factor : 0.97
PM Peak Hour begins : 15:15 PM Peak Volume : 212 PM PeaK Hour Factor : 0.86

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : I-275 North On Ramp at US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : 0:00 AM Peak Volume : 0 AM Peak Hour Factor : #DIV/0!
PM Peak Hour begins : 12:00 PM Peak Volume : 0 PM PeaK Hour Factor : #DIV/0!

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	3	9	12	24	91	118	97	54	41	47
30	2	1	3	2	10	45	103	98	73	59	47	46
45	2	3	2	9	11	34	108	115	72	56	46	40
00	1	3	6	5	9	38	102	112	52	49	38	48
Hr Total	**5**	**7**	**14**	**25**	**42**	**141**	**404**	**443**	**294**	**218**	**172**	**181**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	47	38	42	50	45	39	45	18	16	4	6	1
30	44	41	45	58	41	46	33	19	13	11	9	6
45	46	35	46	49	46	52	25	16	18	4	8	2
00	49	36	38	55	45	39	27	17	10	3	7	2
Hr Total	**186**	**150**	**171**	**212**	**177**	**176**	**130**	**70**	**57**	**22**	**30**	**11**

24 Hour Total : 3,338
AM Peak Hour begins : 7:00 AM Peak Volume : 443 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 15:00 PM Peak Volume : 212 PM PeaK Hour Factor : 0.91

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	3	9	12	24	91	118	97	54	41	47
30	2	1	3	2	10	45	103	98	73	59	47	46
45	2	3	2	9	11	34	108	115	72	56	46	40
00	1	3	6	5	9	38	102	112	52	49	38	48
Hr Total	**5**	**7**	**14**	**25**	**42**	**141**	**404**	**443**	**294**	**218**	**172**	**181**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	47	38	42	50	45	39	45	18	16	4	6	1
30	44	41	45	58	41	46	33	19	13	11	9	6
45	46	35	46	49	46	52	25	16	18	4	8	2
00	49	36	38	55	45	39	27	17	10	3	7	2
Hr Total	**186**	**150**	**171**	**212**	**177**	**176**	**130**	**70**	**57**	**22**	**30**	**11**

24 Hour Total : 3,338
AM Peak Hour begins : 7:00 AM Peak Volume : 443 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 15:00 PM Peak Volume : 212 PM PeaK Hour Factor : 0.91

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : I-275 South Off Ramp at US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	8	8	4	2	7	7	18	49	32	47	20	22
30	9	2	8	2	4	11	33	60	31	30	33	50
45	5	2	5	7	10	9	31	41	43	31	40	34
00	6	2	6	11	2	16	38	56	48	37	36	43
Hr Total	**28**	**14**	**23**	**22**	**23**	**43**	**120**	**206**	**154**	**145**	**129**	**149**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	36	44	45	63	65	109	106	51	35	26	16	7
30	49	52	50	57	83	107	68	35	45	27	14	9
45	39	27	46	62	115	92	71	47	35	29	23	10
00	37	37	48	82	96	101	56	38	34	19	20	15
Hr Total	**161**	**160**	**189**	**264**	**359**	**409**	**301**	**171**	**149**	**101**	**73**	**41**

24 Hour Total : 3,434
AM Peak Hour begins : 7:00 AM Peak Volume : 206 AM Peak Hour Factor : 0.86
PM Peak Hour begins : 16:30 PM Peak Volume : 427 PM PeaK Hour Factor : 0.93

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : AM Peak Volume : 0 AM Peak Hour Factor :
PM Peak Hour begins : PM Peak Volume : 0 PM PeaK Hour Factor :

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	8	8	4	2	7	7	18	49	32	47	20	22
30	9	2	8	2	4	11	33	60	31	30	33	50
45	5	2	5	7	10	9	31	41	43	31	40	34
00	6	2	6	11	2	16	38	56	48	37	36	43
Hr Total	**28**	**14**	**23**	**22**	**23**	**43**	**120**	**206**	**154**	**145**	**129**	**149**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	36	44	45	63	65	109	106	51	35	26	16	7
30	49	52	50	57	83	107	68	35	45	27	14	9
45	39	27	46	62	115	92	71	47	35	29	23	10
00	37	37	48	82	96	101	56	38	34	19	20	15
Hr Total	**161**	**160**	**189**	**264**	**359**	**409**	**301**	**171**	**149**	**101**	**73**	**41**

24 Hour Total : 3,434
AM Peak Hour begins : 7:00 AM Peak Volume : 206 AM Peak Hour Factor : 0.86
PM Peak Hour begins : 16:30 PM Peak Volume : 427 PM PeaK Hour Factor : 0.93

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : I-275 South Off Ramp at US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	2	6	3	4	7	20	43	28	40	37	34
30	10	4	4	7	6	10	26	46	35	33	34	31
45	12	0	11	4	5	8	36	48	32	37	51	33
00	8	5	5	4	15	20	39	32	42	61	34	30
Hr Total	**39**	**11**	**26**	**18**	**30**	**45**	**121**	**169**	**137**	**171**	**156**	**128**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	32	35	43	67	81	97	91	37	32	17	21	17
30	58	54	32	70	99	87	40	46	36	21	10	19
45	55	52	58	69	97	113	58	44	33	20	13	14
00	33	54	68	72	107	92	57	32	34	20	18	10
Hr Total	**178**	**195**	**201**	**278**	**384**	**389**	**246**	**159**	**135**	**78**	**62**	**60**

24 Hour Total : 3,416
AM Peak Hour begins : 9:45 AM Peak Volume : 183 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 16:45 PM Peak Volume : 404 PM PeaK Hour Factor : 0.89

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : AM Peak Volume : 0 AM Peak Hour Factor :
PM Peak Hour begins : PM Peak Volume : 0 PM PeaK Hour Factor :

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	2	6	3	4	7	20	43	28	40	37	34
30	10	4	4	7	6	10	26	46	35	33	34	31
45	12	0	11	4	5	8	36	48	32	37	51	33
00	8	5	5	4	15	20	39	32	42	61	34	30
Hr Total	**39**	**11**	**26**	**18**	**30**	**45**	**121**	**169**	**137**	**171**	**156**	**128**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	32	35	43	67	81	97	91	37	32	17	21	17
30	58	54	32	70	99	87	40	46	36	21	10	19
45	55	52	58	69	97	113	58	44	33	20	13	14
00	33	54	68	72	107	92	57	32	34	20	18	10
Hr Total	**178**	**195**	**201**	**278**	**384**	**389**	**246**	**159**	**135**	**78**	**62**	**60**

24 Hour Total : 3,416
AM Peak Hour begins : 9:45 AM Peak Volume : 183 AM Peak Hour Factor : 0.75
PM Peak Hour begins : 16:45 PM Peak Volume : 404 PM PeaK Hour Factor : 0.89

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : I-275 South On Ramp at US 41

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	19	13	10	26	23	47	128	200	172	124	147	134
30	12	12	11	27	27	52	166	227	190	140	135	161
45	12	8	16	38	27	74	206	192	147	127	162	149
00	14	12	21	21	40	99	162	171	124	150	114	156
Hr Total	**57**	**45**	**58**	**112**	**117**	**272**	**662**	**790**	**633**	**541**	**558**	**600**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	159	128	144	175	207	204	163	99	59	69	33	39
30	143	151	158	159	189	215	114	95	70	47	42	26
45	132	144	118	197	178	209	106	77	70	29	23	21
00	126	145	147	211	176	164	87	78	76	34	35	14
Hr Total	**560**	**568**	**567**	**742**	**750**	**792**	**470**	**349**	**275**	**179**	**133**	**100**

24 Hour Total : 9,930
AM Peak Hour begins : 6:30 AM Peak Volume : 795 AM Peak Hour Factor : 0.88
PM Peak Hour begins : 15:30 PM Peak Volume : 804 PM PeaK Hour Factor : 0.95

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : AM Peak Volume : 0 AM Peak Hour Factor :
PM Peak Hour begins : PM Peak Volume : 0 PM PeaK Hour Factor :

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	19	13	10	26	23	47	128	200	172	124	147	134
30	12	12	11	27	27	52	166	227	190	140	135	161
45	12	8	16	38	27	74	206	192	147	127	162	149
00	14	12	21	21	40	99	162	171	124	150	114	156
Hr Total	**57**	**45**	**58**	**112**	**117**	**272**	**662**	**790**	**633**	**541**	**558**	**600**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	159	128	144	175	207	204	163	99	59	69	33	39
30	143	151	158	159	189	215	114	95	70	47	42	26
45	132	144	118	197	178	209	106	77	70	29	23	21
00	126	145	147	211	176	164	87	78	76	34	35	14
Hr Total	**560**	**568**	**567**	**742**	**750**	**792**	**470**	**349**	**275**	**179**	**133**	**100**

24 Hour Total : 9,930
AM Peak Hour begins : 6:30 AM Peak Volume : 795 AM Peak Hour Factor : 0.88
PM Peak Hour begins : 15:30 PM Peak Volume : 804 PM PeaK Hour Factor : 0.95

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : I-275 South On Ramp at US 41

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	19	7	11	26	38	50	122	190	169	119	155	122
30	18	10	5	22	21	63	157	212	191	139	149	131
45	13	12	9	16	42	65	180	213	155	131	163	143
00	14	12	12	13	32	101	160	178	118	140	128	122
Hr Total	**64**	**41**	**37**	**77**	**133**	**279**	**619**	**793**	**633**	**529**	**595**	**518**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	145	159	172	193	162	190	155	99	74	67	41	32
30	148	138	146	156	162	195	140	98	81	36	37	20
45	122	152	149	174	164	215	137	69	53	32	31	17
00	149	150	140	142	203	153	116	74	61	32	28	13
Hr Total	**564**	**599**	**607**	**665**	**691**	**753**	**548**	**340**	**269**	**167**	**137**	**82**

24 Hour Total : 9,740
AM Peak Hour begins : 7:00 AM Peak Volume : 793 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 16:45 PM Peak Volume : 803 PM PeaK Hour Factor : 0.93

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
00	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

24 Hour Total : 0
AM Peak Hour begins : AM Peak Volume : 0 AM Peak Hour Factor :
PM Peak Hour begins : PM Peak Volume : 0 PM PeaK Hour Factor :

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	19	7	11	26	38	50	122	190	169	119	155	122
30	18	10	5	22	21	63	157	212	191	139	149	131
45	13	12	9	16	42	65	180	213	155	131	163	143
00	14	12	12	13	32	101	160	178	118	140	128	122
Hr Total	**64**	**41**	**37**	**77**	**133**	**279**	**619**	**793**	**633**	**529**	**595**	**518**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	145	159	172	193	162	190	155	99	74	67	41	32
30	148	138	146	156	162	195	140	98	81	36	37	20
45	122	152	149	174	164	215	137	69	53	32	31	17
00	149	150	140	142	203	153	116	74	61	32	28	13
Hr Total	**564**	**599**	**607**	**665**	**691**	**753**	**548**	**340**	**269**	**167**	**137**	**82**

24 Hour Total : 9,740
AM Peak Hour begins : 7:00 AM Peak Volume : 793 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 16:45 PM Peak Volume : 803 PM PeaK Hour Factor : 0.93

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : US 41 between I-275 and 73rd St E

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	34	25	18	35	33	88	217	308	262	211	209	210
30	21	20	18	30	46	107	207	341	310	244	191	226
45	16	18	31	40	62	140	316	323	272	202	207	191
00	16	24	35	30	54	167	299	275	210	219	192	241
Hr Total	**87**	**87**	**102**	**135**	**195**	**502**	**1,039**	**1,247**	**1,054**	**876**	**799**	**868**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	210	207	207	290	316	358	317	164	127	106	82	51
30	226	234	242	280	352	383	236	166	156	88	73	47
45	193	206	214	309	319	346	206	158	144	64	53	39
00	223	213	236	328	329	294	189	177	122	79	56	38
Hr Total	**852**	**860**	**899**	**1,207**	**1,316**	**1,381**	**948**	**665**	**549**	**337**	**264**	**175**

24 Hour Total : 16,444
AM Peak Hour begins : 6:45 AM Peak Volume : 1,271 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 16:45 PM Peak Volume : 1,416 PM PeaK Hour Factor : 0.92

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	32	37	41	23	25	57	180	364	288	218	235	206
30	22	11	29	22	35	98	218	379	287	249	226	216
45	31	30	33	23	53	129	274	305	270	236	222	233
00	20	15	16	32	54	153	316	342	294	250	194	223
Hr Total	**105**	**93**	**119**	**100**	**167**	**437**	**988**	**1,390**	**1,139**	**953**	**877**	**878**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	207	245	214	233	258	280	252	175	143	93	82	57
30	232	205	254	274	267	305	249	155	131	96	68	47
45	214	213	242	276	272	281	208	131	96	89	58	45
00	226	208	252	256	276	273	188	114	82	65	61	41
Hr Total	**879**	**871**	**962**	**1,039**	**1,073**	**1,139**	**897**	**575**	**452**	**343**	**269**	**190**

24 Hour Total : 15,935
AM Peak Hour begins : 7:00 AM Peak Volume : 1,390 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 16:45 PM Peak Volume : 1,142 PM PeaK Hour Factor : 0.94

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	66	62	59	58	58	145	397	672	550	429	444	416
30	43	31	47	52	81	205	425	720	597	493	417	442
45	47	48	64	63	115	269	590	628	542	438	429	424
00	36	39	51	62	108	320	615	617	504	469	386	464
Hr Total	**192**	**180**	**221**	**235**	**362**	**939**	**2,027**	**2,637**	**2,193**	**1,829**	**1,676**	**1,746**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	417	452	421	523	574	638	569	339	270	199	164	108
30	458	439	496	554	619	688	485	321	287	184	141	94
45	407	419	456	585	591	627	414	289	240	153	111	84
00	449	421	488	584	605	567	377	291	204	144	117	79
Hr Total	**1,731**	**1,731**	**1,861**	**2,246**	**2,389**	**2,520**	**1,845**	**1,240**	**1,001**	**680**	**533**	**365**

24 Hour Total : 32,379
AM Peak Hour begins : 7:00 AM Peak Volume : 2,637 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 16:45 PM Peak Volume : 2,558 PM PeaK Hour Factor : 0.93

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : US 41 between I-275 and 73rd St E

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	26	21	22	32	41	93	207	290	279	216	197	215
30	29	18	18	27	27	122	256	314	312	211	202	198
45	20	29	23	27	67	122	283	334	241	221	214	200
00	25	22	26	31	60	164	282	275	162	182	181	166
Hr Total	**100**	**90**	**89**	**117**	**195**	**501**	**1,028**	**1,213**	**994**	**830**	**794**	**779**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	209	237	215	122	225	318	280	146	146	95	55	38
30	252	251	249	276	257	345	224	163	147	50	60	34
45	234	202	249	262	283	345	238	114	94	57	46	32
00	214	239	126	239	313	297	203	107	94	69	50	28
Hr Total	**909**	**929**	**839**	**899**	**1,078**	**1,305**	**945**	**530**	**481**	**271**	**211**	**132**

24 Hour Total : 15,259
AM Peak Hour begins : 6:45 AM Peak Volume : 1,220 AM Peak Hour Factor : 0.91
PM Peak Hour begins : 16:45 PM Peak Volume : 1,321 PM PeaK Hour Factor : 0.96

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	39	23	29	27	28	61	177	338	283	249	235	212
30	23	16	17	26	41	108	239	381	303	217	225	259
45	33	22	33	35	51	133	270	330	275	256	253	214
00	17	17	27	29	58	120	337	311	242	239	226	223
Hr Total	**112**	**78**	**106**	**117**	**178**	**422**	**1,023**	**1,360**	**1,103**	**961**	**939**	**908**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	245	196	257	267	234	258	221	161	133	97	98	59
30	224	205	205	251	249	269	208	142	150	65	72	59
45	250	224	245	233	254	293	212	140	138	65	67	42
00	195	230	269	231	249	289	177	148	101	82	55	40
Hr Total	**914**	**855**	**976**	**982**	**986**	**1,109**	**818**	**591**	**522**	**309**	**292**	**200**

24 Hour Total : 15,861
AM Peak Hour begins : 6:45 AM Peak Volume : 1,386 AM Peak Hour Factor : 0.91
PM Peak Hour begins : 17:00 PM Peak Volume : 1,109 PM PeaK Hour Factor : 0.95

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	65	44	51	59	69	154	384	628	562	465	432	427
30	52	34	35	53	68	230	495	695	615	428	427	457
45	53	51	56	62	118	255	553	664	516	477	467	414
00	42	39	53	60	118	284	619	586	404	421	407	389
Hr Total	**212**	**168**	**195**	**234**	**373**	**923**	**2,051**	**2,573**	**2,097**	**1,791**	**1,733**	**1,687**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	454	433	472	389	459	576	501	307	279	192	153	97
30	476	456	454	527	506	614	432	305	297	115	132	93
45	484	426	494	495	537	638	450	254	232	122	113	74
00	409	469	395	470	562	586	380	255	195	151	105	68
Hr Total	**1,823**	**1,784**	**1,815**	**1,881**	**2,064**	**2,414**	**1,763**	**1,121**	**1,003**	**580**	**503**	**332**

24 Hour Total : 31,120
AM Peak Hour begins : 6:45 AM Peak Volume : 2,606 AM Peak Hour Factor : 0.94
PM Peak Hour begins : 17:00 PM Peak Volume : 2,414 PM PeaK Hour Factor : 0.95

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : US 41 north of I-275

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	21	5	12	16	35	69	139	136	123	113	118
30	26	10	14	7	21	59	86	138	143	115	104	139
45	11	14	17	10	27	55	131	166	137	103	110	97
00	9	14	17	23	31	69	151	154	141	103	121	122
Hr Total	**68**	**59**	**53**	**52**	**95**	**218**	**437**	**597**	**557**	**444**	**448**	**476**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	136	138	127	180	202	260	213	109	104	52	50	21
30	126	136	148	165	200	225	197	89	114	65	46	31
45	129	124	129	176	221	224	140	106	92	47	48	32
00	152	126	154	189	203	232	156	116	76	53	49	30
Hr Total	**543**	**524**	**558**	**710**	**826**	**941**	**706**	**420**	**386**	**217**	**193**	**114**

24 Hour Total : 9,642
AM Peak Hour begins : 7:30 AM Peak Volume : 599 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:00 PM Peak Volume : 941 PM PeaK Hour Factor : 0.91

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	15	10	11	20	21	49	175	267	222	131	152	155
30	9	4	13	15	29	77	204	250	192	152	131	149
45	17	14	14	22	31	88	247	247	163	166	154	160
00	19	8	9	16	43	105	227	220	165	176	138	112
Hr Total	**60**	**36**	**47**	**73**	**124**	**319**	**853**	**984**	**742**	**625**	**575**	**576**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	139	126	156	158	164	168	139	69	60	30	41	37
30	165	131	141	178	141	156	137	68	51	37	32	24
45	111	128	146	156	131	137	104	68	44	21	22	24
00	153	155	155	137	127	133	96	45	35	20	23	11
Hr Total	**568**	**540**	**598**	**629**	**563**	**594**	**476**	**250**	**190**	**108**	**118**	**96**

24 Hour Total : 9,744
AM Peak Hour begins : 6:30 AM Peak Volume : 991 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 14:45 PM Peak Volume : 647 PM PeaK Hour Factor : 0.91

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	37	31	16	32	37	84	244	406	358	254	265	273
30	35	14	27	22	50	136	290	388	335	267	235	288
45	28	28	31	32	58	143	378	413	300	269	264	257
00	28	22	26	39	74	174	378	374	306	279	259	234
Hr Total	**128**	**95**	**100**	**125**	**219**	**537**	**1,290**	**1,581**	**1,299**	**1,069**	**1,023**	**1,052**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	275	264	283	338	366	428	352	178	164	82	91	58
30	291	267	289	343	341	381	334	157	165	102	78	55
45	240	252	275	332	352	361	244	174	136	68	70	56
00	305	281	309	326	330	365	252	161	111	73	72	41
Hr Total	**1,111**	**1,064**	**1,156**	**1,339**	**1,389**	**1,535**	**1,182**	**670**	**576**	**325**	**311**	**210**

24 Hour Total : 19,386
AM Peak Hour begins : 6:45 AM Peak Volume : 1,585 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 17:00 PM Peak Volume : 1,535 PM PeaK Hour Factor : 0.90

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : US 41 north of I-275

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	16	17	13	9	8	34	86	141	145	136	122	120
30	28	12	10	9	14	59	115	136	155	123	113	118
45	17	16	17	12	29	43	128	165	121	120	130	95
00	18	16	22	19	40	78	147	128	113	118	102	115
Hr Total	**79**	**61**	**62**	**49**	**91**	**214**	**476**	**570**	**534**	**497**	**467**	**448**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	135	140	135	151	153	233	195	120	104	58	45	29
30	147	145	150	210	201	226	164	108	111	36	37	34
45	149	138	147	177	204	242	167	92	89	47	43	29
00	143	132	188	155	213	247	140	93	79	45	36	21
Hr Total	**574**	**555**	**620**	**693**	**771**	**948**	**666**	**413**	**383**	**186**	**161**	**113**

24 Hour Total : 9,631
AM Peak Hour begins : 7:30 AM Peak Volume : 593 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:00 PM Peak Volume : 948 PM PeaK Hour Factor : 0.96

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	8	10	17	26	44	158	254	224	146	177	124
30	11	7	5	11	29	82	209	272	191	152	146	168
45	13	12	13	19	31	82	231	227	184	150	158	118
00	17	9	11	21	37	102	229	239	156	171	129	152
Hr Total	**58**	**36**	**39**	**68**	**123**	**310**	**827**	**992**	**755**	**619**	**610**	**562**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	161	139	163	202	150	133	115	65	71	39	39	43
30	134	116	145	156	124	145	100	66	66	27	34	21
45	137	134	137	122	128	144	94	70	52	22	28	16
00	128	133	133	139	131	116	82	82	33	16	14	11
Hr Total	**560**	**522**	**578**	**619**	**533**	**538**	**391**	**283**	**222**	**104**	**115**	**91**

24 Hour Total : 9,555
AM Peak Hour begins : 7:00 AM Peak Volume : 992 AM Peak Hour Factor : 0.91
PM Peak Hour begins : 14:30 PM Peak Volume : 628 PM PeaK Hour Factor : 0.78

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	33	25	23	26	34	78	244	395	369	282	299	244
30	39	19	15	20	43	141	324	408	346	275	259	286
45	30	28	30	31	60	125	359	392	305	270	288	213
00	35	25	33	40	77	180	376	367	269	289	231	267
Hr Total	**137**	**97**	**101**	**117**	**214**	**524**	**1,303**	**1,562**	**1,289**	**1,116**	**1,077**	**1,010**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	296	279	298	353	303	366	310	185	175	97	84	72
30	281	261	295	366	325	371	264	174	177	63	71	55
45	286	272	284	299	332	386	261	162	141	69	71	45
00	271	265	321	294	344	363	222	175	112	61	50	32
Hr Total	**1,134**	**1,077**	**1,198**	**1,312**	**1,304**	**1,486**	**1,057**	**696**	**605**	**290**	**276**	**204**

24 Hour Total : 19,186
AM Peak Hour begins : 6:45 AM Peak Volume : 1,571 AM Peak Hour Factor : 0.96
PM Peak Hour begins : 17:00 PM Peak Volume : 1,486 PM PeaK Hour Factor : 0.96

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 8, 2021 Start Time 00:00
Stop Date : September 8, 2021 Stop Time 24:00
County : Manatee
Location : US 41 south of 73rd St E

VHB Project #: 63551.03

8-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	28	23	13	18	24	58	152	229	240	186	199	203
30	23	21	21	16	31	83	162	267	240	180	178	216
45	20	16	28	25	43	101	210	255	228	185	185	187
00	16	25	25	24	45	128	260	214	208	195	181	211
Hr Total	**87**	**85**	**87**	**83**	**143**	**370**	**784**	**965**	**916**	**746**	**743**	**817**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	184	194	188	289	318	379	301	169	142	105	73	54
30	208	205	237	284	344	400	230	182	160	88	79	50
45	214	210	236	328	318	383	210	166	146	69	56	39
00	226	199	274	324	307	335	208	180	134	91	44	42
Hr Total	**832**	**808**	**935**	**1,225**	**1,287**	**1,497**	**949**	**697**	**582**	**353**	**252**	**185**

24 Hour Total : 15,428
AM Peak Hour begins : 6:45 AM Peak Volume : 1,011 AM Peak Hour Factor : 0.95
PM Peak Hour begins : 17:00 PM Peak Volume : 1,497 PM PeaK Hour Factor : 0.94

8-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	27	31	26	20	27	54	201	428	315	230	234	221
30	15	6	21	17	33	103	231	433	306	244	218	196
45	22	22	20	23	56	139	305	345	294	260	220	255
00	15	11	13	28	54	164	380	337	270	251	199	223
Hr Total	**79**	**70**	**80**	**88**	**170**	**460**	**1,117**	**1,543**	**1,185**	**985**	**871**	**895**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	205	231	205	211	262	260	216	167	127	103	78	52
30	224	201	222	272	226	268	240	155	107	89	59	43
45	195	210	244	271	238	260	210	110	85	72	55	39
00	228	213	264	234	237	240	182	106	70	56	55	34
Hr Total	**852**	**855**	**935**	**988**	**963**	**1,028**	**848**	**538**	**389**	**320**	**247**	**168**

24 Hour Total : 15,674
AM Peak Hour begins : 6:45 AM Peak Volume : 1,586 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 15:15 PM Peak Volume : 1,039 PM PeaK Hour Factor : 0.96

8-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	55	54	39	38	51	112	353	657	555	416	433	424
30	38	27	42	33	64	186	393	700	546	424	396	412
45	42	38	48	48	99	240	515	600	522	445	405	442
00	31	36	38	52	99	292	640	551	478	446	380	434
Hr Total	**166**	**155**	**167**	**171**	**313**	**830**	**1,901**	**2,508**	**2,101**	**1,731**	**1,614**	**1,712**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	389	425	393	500	580	639	517	336	269	208	151	106
30	432	406	459	556	570	668	470	337	267	177	138	93
45	409	420	480	599	556	643	420	276	231	141	111	78
00	454	412	538	558	544	575	390	286	204	147	99	76
Hr Total	**1,684**	**1,663**	**1,870**	**2,213**	**2,250**	**2,525**	**1,797**	**1,235**	**971**	**673**	**499**	**353**

24 Hour Total : 31,102
AM Peak Hour begins : 6:45 AM Peak Volume : 2,597 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:00 PM Peak Volume : 2,525 PM PeaK Hour Factor : 0.95

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

Start Date : September 9, 2021 Start Time 00:00
Stop Date : September 9, 2021 Stop Time 24:00
County : Manatee
Location : US 41 south of 73rd St E

VHB Project #: 63551.03

10-Sep-21 **Eastbound Volume for Lane 1**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	26	15	20	22	15	51	149	211	233	165	195	210
30	31	14	16	17	24	83	202	274	262	180	197	192
45	15	27	17	16	54	90	205	255	232	202	217	216
00	25	18	23	23	42	131	242	227	168	190	189	188
Hr Total	**97**	**74**	**76**	**78**	**135**	**355**	**798**	**967**	**895**	**737**	**798**	**806**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	211	239	217	271	283	365	275	165	161	118	66	47
30	235	240	241	306	265	469	251	174	176	70	65	42
45	215	233	288	276	332	502	291	128	116	78	58	39
00	241	247	297	253	341	351	225	139	111	80	50	37
Hr Total	**902**	**959**	**1,043**	**1,106**	**1,221**	**1,687**	**1,042**	**606**	**564**	**346**	**239**	**165**

24 Hour Total : 15,696
AM Peak Hour begins : 7:15 AM Peak Volume : 989 AM Peak Hour Factor : 0.90
PM Peak Hour begins : 17:00 PM Peak Volume : 1,687 PM PeaK Hour Factor : 0.84

10-Sep-21 **Westbound Volume for Lane 2**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	35	20	17	19	32	63	193	435	306	256	251	210
30	17	16	13	19	36	96	260	422	309	235	231	249
45	26	18	16	31	49	138	314	370	315	253	241	236
00	16	20	16	33	45	131	375	349	256	241	220	230
Hr Total	**94**	**74**	**62**	**102**	**162**	**428**	**1,142**	**1,576**	**1,186**	**985**	**943**	**925**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	228	211	264	257	215	234	203	137	124	50	48	26
30	197	207	226	222	248	261	206	124	70	31	38	15
45	238	213	236	220	241	234	200	141	54	32	29	20
00	201	219	254	229	216	239	154	127	38	41	21	15
Hr Total	**864**	**850**	**980**	**928**	**920**	**968**	**763**	**529**	**286**	**154**	**136**	**76**

24 Hour Total : 15,133
AM Peak Hour begins : 6:45 AM Peak Volume : 1,602 AM Peak Hour Factor : 0.92
PM Peak Hour begins : 14:00 PM Peak Volume : 980 PM PeaK Hour Factor : 0.93

10-Sep-21 **Total Volume for All Lanes**

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	61	35	37	41	47	114	342	646	539	421	446	420
30	48	30	29	36	60	179	462	696	571	415	428	441
45	41	45	33	47	103	228	519	625	547	455	458	452
00	41	38	39	56	87	262	617	576	424	431	409	418
Hr Total	**191**	**148**	**138**	**180**	**297**	**783**	**1,940**	**2,543**	**2,081**	**1,722**	**1,741**	**1,731**

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	439	450	481	528	498	599	478	302	285	168	114	73
30	432	447	467	528	513	730	457	298	246	101	103	57
45	453	446	524	496	573	736	491	269	170	110	87	59
00	442	466	551	482	557	590	379	266	149	121	71	52
Hr Total	**1,766**	**1,809**	**2,023**	**2,034**	**2,141**	**2,655**	**1,805**	**1,135**	**850**	**500**	**375**	**241**

24 Hour Total : 30,829
AM Peak Hour begins : 6:45 AM Peak Volume : 2,584 AM Peak Hour Factor : 0.93
PM Peak Hour begins : 17:00 PM Peak Volume : 2,655 PM PeaK Hour Factor : 0.90

Appendix C

Signal Warrant Analysis

TRAFFIC SIGNAL WARRANT ANALYSIS

US 41 (SR 45) at I-275 Southbound Off-Ramp
Section 13030 - MP 5.108
Manatee County

Prepared for:

THE FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 1 TRAFFIC OPERATIONS
801 North Broadway Avenue
Bartow, FL 33830

Districtwide Contract for Traffic Operations
Financial Project ID: 198346-1-32-05
Contract No.: C-9V53
ICON Contract No.: FDOT0031
Task Work Order: 090

Prepared by:
ICON Consultant Group, Inc.
10006 N. Dale Mabry Hwy, Suite 201
Tampa, FL 33618

March 2020

Prepared by: Qiong (Linda) Wu, E.I.

Professional Engineer Daniel Hendrickson, PE, PTOE
P.E. Number: 76184

EXECUTIVE SUMMARY

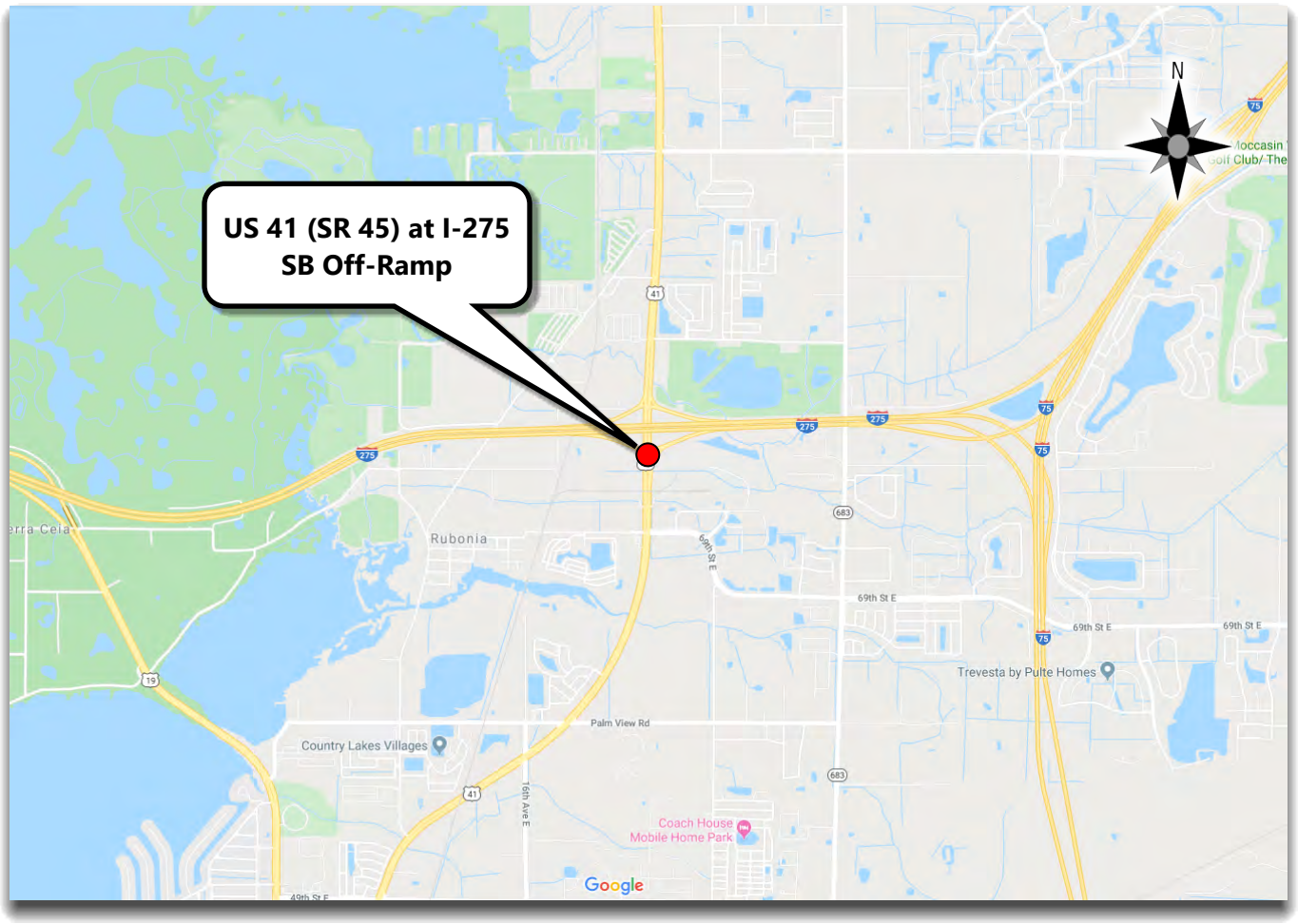
The Florida Department of Transportation (FDOT) has retained ICON Consultant Group, Inc. (ICON) to conduct a Traffic Signal Warrant Analysis at the intersection of US 41 (SR 45) and the I-275 SB Off-Ramp in Manatee County, Florida. The study has been conducted in accordance with the FDOT Manual on Uniform Traffic Studies (MUTS) and the Manual on Uniform Traffic Control Devices (MUTCD). Based on the results of the data collection, data analysis, field observations, and engineering judgment, the following conclusion was developed:

- This intersection meets Warrants 1A, 2 and 7 in the Manual on Uniform Traffic Control Devices (MUTCD 2009).

INTRODUCTION

The Florida Department of Transportation (FDOT) has retained ICON Consultant Group, Inc. (ICON) to conduct a Traffic Signal Warrant Analysis at the intersection of US 41 (SR 45) and the I-275 SB Off-Ramp in Manatee County, Florida. US 41 (SR 45) extends north and south from the intersection. The I-275 SB Off-Ramp extends west from the intersection. The study has been conducted in accordance with the FDOT Manual on Uniform Traffic Studies (MUTS) and the Manual on Uniform Traffic Control Devices (MUTCD).

Figure 1: Project Location Map



Source: Google Maps

EXISTING CONDITIONS

The intersection of US 41 (SR 45) at the I-275 SB Off-Ramp is located near Palmetto, Manatee County, Florida. **Table 1** below summarizes the existing conditions at this intersection and a Condition Diagram is provided on **Figure 2**. Pictures of the intersection are included within the Appendix.

Table 1: Summary of Existing Conditions

Feature	Description	
Major Street	US 41 (SR 45)	
Minor Street	I-275 SB Off-Ramp	
Area Location	Near Palmetto, Manatee County, Florida	
Surrounding Development	US 41 (SR 45) – Primarily commercial & residential communities I-275 SB Off-Ramp – Primarily undeveloped	
Land Uses at the Intersection	Northwest – Undeveloped Southwest – Undeveloped	Northeast – Undeveloped Southeast – Undeveloped
Pedestrian Generators	None	
Traffic Control	US 41 (SR 45) – Uncontrolled I-275 SB Off-Ramp – Stop sign	
Posted Speed Limits	US 41 (SR 45) – 60 MPH	I-275 SB Off-Ramp – Not posted
Adjacent Signalized Intersections	US 41 (SR 45) at 73rd St. E. – 0.3 mi south US 41 (SR 45) at I-275 NB Off-Ramp – 0.2 mi north	I-275 SB Off-Ramp – N/A
US 41 (SR 45)	Function – Urban principal arterial Cross Section – 6-lane divided roadway with flush shoulders Northbound Approach – 3 thru lanes and 1 right turn lane Southbound Approach – 3 thru lanes and 1 left turn lane Alignment – Relatively straight and level at the intersection Sidewalks – None Utilities – Overhead utilities were not observed Street Lighting – Along the east and west sides of the roadway	
I-275 SB Off-Ramp	Function – Interstate Off-Ramp Cross Section – 1-lane divided roadway with flush shoulders Eastbound Approach – 1 left turn lane and 1 right turn lane Westbound Approach – N.A. Alignment – Eastbound approach is on a horizontal curve and relatively level at the intersection Sidewalks – None Utilities – Overhead utilities were not observed Street Lighting – Not observed	

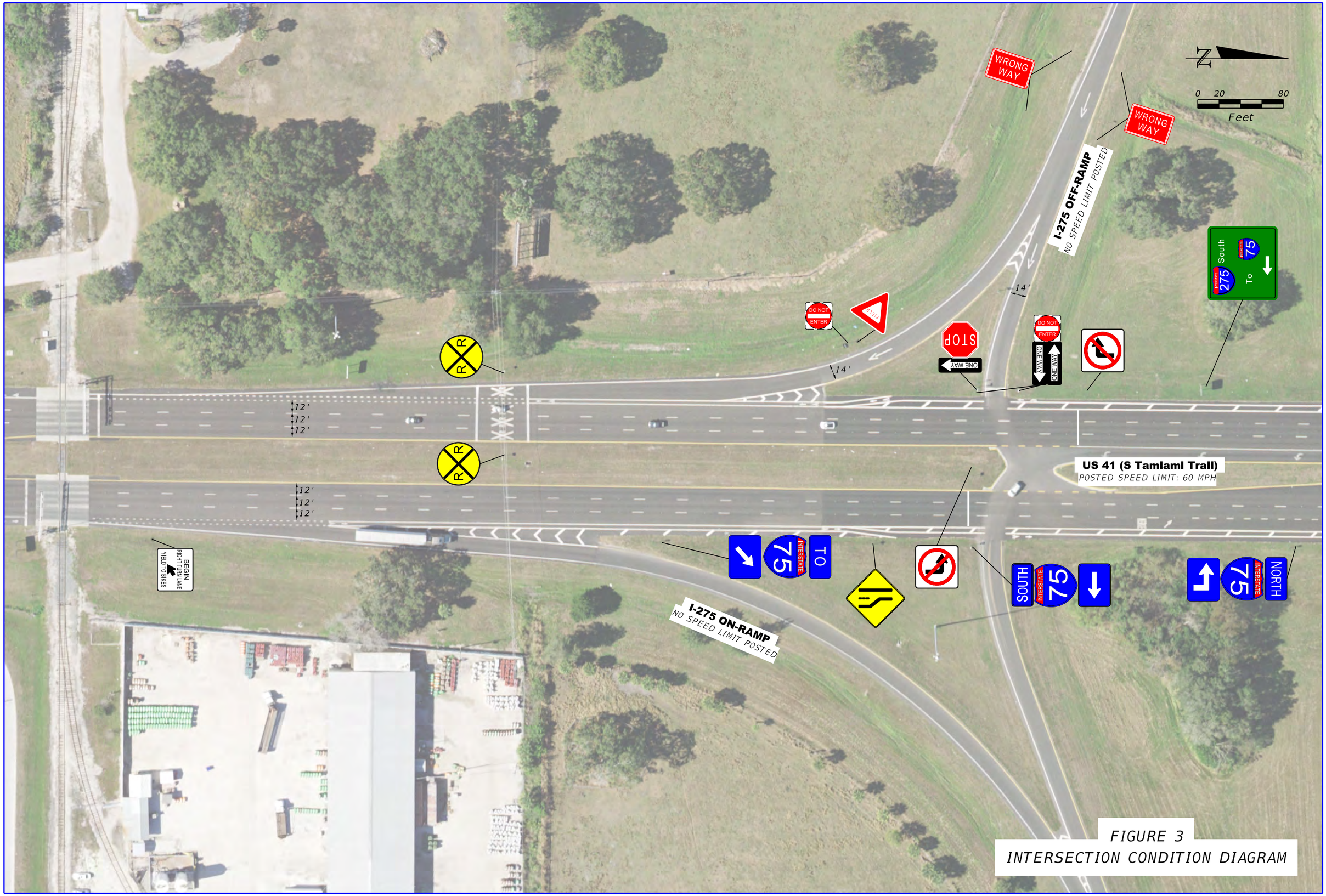


FIGURE 3
INTERSECTION CONDITION DIAGRAM

TRAFFIC VOLUMES

A 24-hour approach count was conducted at the intersection of US 41 (SR 45) and the I-275 SB Off-Ramp to determine the 12 peak hours for the 12-hour turning movement count (TMC). The TMC was conducted on Tuesday, February 11, 2020, for the hours from 7:00 AM to 7:00 PM. The intersection TMC indicated a side street morning peak hour of 7:00 to 8:00 AM and an afternoon peak hour of 5:00 to 6:00 PM. Approximately 7% of all vehicles observed at the intersection were trucks. A total of 2 pedestrian and 11 bicyclists were observed crossing at the intersection during the study period. The 24-hour approach and TMC summaries are shown in **Table 2** and **Table 3**, respectively. Detailed count information is included in the **Appendix**.

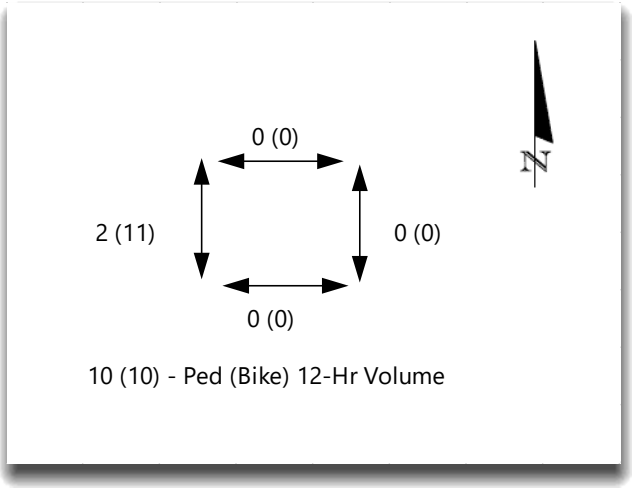
Table 2: Summary of 24-Hour Approach Counts

TIME BEGIN	NB	SB	N/S TOTAL	EB	WB	E/W TOTAL	GRAND TOTAL
12:00 AM	96	93	189	25	-	25	**214**
1:00 AM	70	65	135	15	-	15	**150**
2:00 AM	83	58	141	13	-	13	**154**
3:00 AM	86	70	156	6	-	6	**162**
4:00 AM	213	148	361	22	-	22	**383**
5:00 AM	431	360	791	49	-	49	**840**
6:00 AM	1,031	1,005	2,036	134	-	134	**2,170**
7:00 AM	1,295	1,230	2,525	151	-	151	**2,676**
8:00 AM	977	1,005	1,982	148	-	148	**2,130**
9:00 AM	869	862	1,731	131	-	131	**1,862**
10:00 AM	873	860	1,733	150	-	150	**1,883**
11:00 AM	846	924	1,770	177	-	177	**1,947**
12:00 PM	831	851	1,682	165	-	165	**1,847**
1:00 PM	868	832	1,700	190	-	190	**1,890**
2:00 PM	1,051	903	1,954	190	-	190	**2,144**
3:00 PM	1,136	961	2,097	338	-	338	**2,435**
4:00 PM	1,316	1,002	2,318	302	-	302	**2,620**
5:00 PM	1,469	982	2,451	489	-	489	**2,940**
6:00 PM	1,046	822	1,868	487	-	487	**2,355**
7:00 PM	681	523	1,204	284	-	284	**1,488**
8:00 PM	514	363	877	139	-	139	**1,016**
9:00 PM	326	287	613	109	-	109	**722**
10:00 PM	210	248	458	80	-	80	**538**
11:00 PM	173	151	324	55	-	55	**379**
TOTAL	**16,491**	**14,605**	**31,096**	**3,849**	**-**	**3,849**	**34,945**

Table 3: Summary of Intersection Turning Movement Counts

TIME	NORTHBOUND				SOUTHBOUND				TOTAL	EASTBOUND			
BEGIN-	US 41 (SR 45)				US 41 (SR 45)					I-275 SB Exit Ramp			
END	L	T	R	TOT	L	T	R	TOT	N/S	L	T	R	TOT
7 - 8	-	645	650	1,295	163	1,067	-	1,230	2,525	100	0	51	151
8 - 9	-	491	486	977	134	871	-	1,005	1,982	100	0	48	148
9 - 10	-	459	410	869	113	749	-	862	1,731	68	0	63	131
10 - 11	-	450	423	873	140	720	-	860	1,733	87	1	62	150
11 - 12	-	466	380	846	126	798	-	924	1,770	105	0	72	177
12 - 1	-	466	365	831	114	737	-	851	1,682	101	0	64	165
1 - 2	-	464	404	868	114	718	-	832	1,700	116	0	74	190
2 - 3	-	568	483	1,051	109	794	-	903	1,954	115	1	74	190
3 - 4	-	607	529	1,136	119	842	-	961	2,097	190	0	148	338
4 - 5	-	735	581	1,316	132	870	-	1,002	2,318	165	1	136	302
5 - 6	-	805	664	1,469	99	883	-	982	2,451	256	2	231	489
6 - 7	-	627	419	1,046	67	755	-	822	1,868	285	0	202	487
TOTAL	0	6,783	5,794	12,577	1,430	9,804	0	11,234	23,811	1,688	5	1,225	2,918
% Truck	7.1%				8.8%				-	7.1%			

Figure 3: Summary of Pedestrian & Bicycle Volumes



- The US 41 (SR 45) directional traffic was evenly split in the AM and heavier northbound in the PM.
- Two pedestrian and 11 bicyclists were observed during the study period.
- Eastbound traffic along I-275 SB Off-Ramp was heavier in the PM. Eastbound left turns account for approximately 50% of the total approach volume.

INTERSECTION DELAY

To measure the stop sign delay, an electronic count board manufactured by JAMAR Technologies, Inc. for collecting traffic data was used with the STOP Sign Delay template to collect the necessary data for stop sign delay and queue length estimates. The study was conducted March 11, 2020 for the eastbound approach under STOP sign control during the side street morning and afternoon peak hours. Additional delay data is included in the Appendix and **Table 4** summarizes the results of these studies.

Table 4: Summary of Delay Study

7:00 PM – 8:00 AM	Eastbound
Volume (vehicles/hour)	105
Max Queue (vehicles)	7
Average Delay Per Vehicle (seconds)	43
Max Delay per Vehicle (seconds)	206
Total Delay (vehicle-seconds)	4515
Total Delay (vehicle-hours)	1.24

5:00 PM – 6:00 PM	Eastbound
Volume (vehicles/hour)	251
Max Queue (vehicles)	22
Average Delay Per Vehicle (seconds)	70
Max Delay per Vehicle (seconds)	252
Total Delay (vehicle-seconds)	17670
Total Delay (vehicle-hours)	4.75

An average delay of 60 seconds or greater is generally considered excessive at an unsignalized intersection approach and is the approximate delay to be expected if the intersection was signalized. During the peak hours observed, the average delay experienced by eastbound traffic ranged from 43 to 70 seconds. The maximum delay experienced by a vehicle during the study was 252 seconds, which was a left turning vehicle during the afternoon peak hour study.

COLLISION DATA

Collision data was obtained from January 1, 2016 to December 31, 2018 from FDOT's CAR database and the University of Florida's Signal 4 Analytics for the intersection of US 41 (SR 45) and I-275 SB Off-Ramp A total of 19 crashes were reported at this intersection during the 36-month study period. An overview of the Collision Statistics can be found on **Table 5** and additional details can be found in the Collision Summary on **Table 6** and in the Collision Diagram on **Figure 4**.

- There were no reported fatalities, and 11 crashes resulted in 19 injuries.
- No crashes involving non-motorists were reported.
- Ten angle type crashes were reported. All but one involved eastbound & southbound vehicles.
- Additionally, 1 left turn crash, 2 sideswipe crashes and 7 rear end type crashes were reported.

Table 5: Collision Statistics

Crash Type	2016	2017	2018	Total
Rear End	3	3	1	7
Left Turn	0	1	0	1
Angle	3	3	4	10
Off Road	0	0	0	0
Sideswipe	0	2	0	2
Fixed Object	0	0	0	0
TOTAL	**6**	**9**	**5**	**20**
Fatal Crash (Fatalities)	0	0	0	0
Injury Crash (Injuries)	4(6)	5(11)	2(2)	11(19)
Day	5	6	4	15
Night	1	3	1	5
Wet Conditions	0	2	0	2
Dry Conditions	6	7	5	18

Table 6: Collision Summary

State of Florida Department of Transportation

Form 750-020-06

COLLISION SUMMARY

TRAFFIC ENGINEERING 10/15

General Information

Section/Roadway ID:	13030	State Road:	SR 45
Intersecting Route:	I-275	Study Period:	January 1, 2016 to December 31, 2018
Milepost	5.108	Data by:	CH
County	Manatee	Date:	Wednesday, March 18, 2020

No.	Date	Day	Time	Severity		Property Damage	Crash Type	Day / Night	Wet / Dry	Contributing Cause
				Fatal	Injury					
1	1/17/16	Sun	12:20 PM	0	0	$150	Rear End	Day	Dry	Careless Driving
2	3/2/16	Wed	9:35 AM	0	1	$15,000	Angle	Day	Dry	Failure to Yield R/W
3	7/4/16	Mon	9:00 PM	0	1	$5,000	Rear End	Night	Dry	Careless Driving
4	7/27/16	Wed	5:00 PM	0	2	$17,650	Rear End	Day	Dry	Careless Driving
5	12/29/16	Thu	8:28 AM	0	0	$4,000	Angle	Day	Dry	Failure to Yield R/W
6	12/29/16	Thu	10:04 AM	0	2	$6,000	Angle	Day	Dry	Failure to Yield R/W
7	1/12/17	Thu	8:45 AM	0	0	$0	Rear End	Day	Dry	Careless Driving
8	1/13/17	Fri	12:05 PM	0	0	$1,000	Sideswipe	Day	Dry	Improper Lane Change
9	3/5/17	Sun	9:23 PM	0	0	$5,000	Left Turn	Night	Dry	Failure to Yield R/W
10	3/21/17	Tue	4:31 PM	0	0	$1,500	Sideswipe	Day	Dry	Improper Lane Change
11	4/5/17	Wed	6:48 AM	0	4	$5,500	Rear End	Day	Dry	Careless Driving
12	4/22/17	Sat	10:12 PM	0	1	$0	Rear End	Night	Dry	Careless Driving
13	6/6/17	Tue	2:21 PM	0	2	$0	Angle	Day	Wet	Failure to Yield R/W
14	6/12/17	Mon	10:19 PM	0	2	$10,000	Angle	Night	Wet	Failure to Yield R/W
15	12/1/17	Fri	7:45 AM	0	2	$10,000	Angle	Day	Dry	Failure to Yield R/W
16	1/10/18	Wed	6:20 AM	0	0	$4,000	Angle	Night	Dry	Failure to Yield R/W
17	2/1/18	Thu	6:51 AM	0	1	$4,500	Rear End	Day	Dry	Careless Driving
18	3/22/18	Thu	6:54 AM	0	1	$12,500	Angle	Day	Dry	Failure to Yield R/W
19	5/16/18	Wed	12:15 PM	0	0	$7,000	Angle	Day	Dry	Failure to Yield R/W
20	7/24/18	Tue	1:53 PM	0	0	$1,250	Angle	Day	Dry	Failure to Yield R/W
TOTAL				**0**	**19**	**$110,050**				

Total No.	Fatal	Injury	PDO	Other	Rear End	Angle	Bicycle	Left Turn	Off Road	Fixed Object	Pedestrian	Sideswipe
20	0	11	9	0	7	10	0	1	0	0	0	2
Percent	0%	55%	45%	0%	35%	50%	0%	5%	0%	0%	0%	10%

Contrib. Cause	Day	Night	Pavement Conditions			Improper Lane Change	Swerved or Avoided	DUI	Careless Driving	Failure to Yield R/W	No Fault Determined	Loose Cargo
			Wet	Dry	Unknown							
Total	15	5	2	18	0	2	0	0	7	11	0	0
Percent	75%	25%	10%	90%	0%	10%	0%	0%	35%	55%	0%	0%

←	VEHICLE PATH	⇜	OFF ROAD	⇖	RIGHT TURN COLLISION	ICON CONSULTANT GROUP, INC. 10006 N. DALE MABRY HWY, SUITE 201 TAMPA, FL 33618	FIGURE 4 COLLISION DIAGRAM 1/1/2016 TO 12/31/2018	PAGE NO.
🚶	PEDESTRIAN PATH	⇜	ROLLOVER	⇤	REAR-END COLLISION			
▭	FIXED OBJECT	→	LEFT TURN COLLISION	→	HEAD-ON COLLISION			11
○	PERSONAL INJURY	→	RIGHT ANGLE COLLISION	⇜	SIDE SWIPE			
⊗	FATALITY	🚲	BIKE	↺	U-TURNING VEHICLE			

QUALITATIVE ASSESSMENT

The intersection of US 41 (SR 45) and I-275 SB Off-Ramp was observed by a registered professional engineer during the morning and afternoon peak periods to assess the existing operation/condition of the intersection, and to determine if a traffic signal is warranted.

Request: A request was submitted to determine if a traffic signal is warranted for the intersection of US 41 (SR 45) and I-275 SB Off-Ramp

Operations: Vehicle operations includes the operations and interactions of motor vehicles, pedestrians, and bicycles at the intersection. The following bullets provide a summary of the intersection traffic volumes and the observed field conditions at the intersection:

- This intersection was recently signalized while serving as the detour route while the southbound I-275 to northbound I-75 On-Ramp was under construction and closed. Some evidence of the signalization infrastructure remains such as loops and faded pavement markings.
- Vehicles on US 41 (SR 45) arrived in fairly well organized platoons from the signals at 73rd Street to the south and from the signal at I-275 NB Off-Ramp to the north.
- Eastbound left turning vehicles were observed making 2-stage turns. Multiple vehicles were queued in the median opening during the majority of the peak hour observations. Queued vehicles were both southbound and eastbound left turning vehicles.
- A major source of the eastbound vehicle delay is the high percentage of southbound left turning trucks, which require more storage space within the median opening and larger gaps in conflicting northbound traffic.
- Due to the delay time and number of queued southbound trucks, some eastbound left turning vehicles were observed to "give up" and turn right (southbound) from the left turn lane.
- The queue along the I-275 NB Off-Ramp extended beyond the off-ramp right turn gore point. Right turning vehicles were observed using shoulder to bypass queued lef turners. The queue did not extend this far during AM peak hour.
- No sight distance concerns were observed.

Safety: Vehicle, pedestrian, and bicycle safety at the intersection is assessed through review of crash reports, identification of significant crash trends and contributing factors and their correlation to field conditions. Following are the observations relating to the safety of the intersection:

- There was no evidence of crash debris near the study location and no honking or erratic driving behavior was observed.

Overall Physical Conditions: In addition to observing operational and safety conditions, correctible physical conditions are also identified during the field review. The following observations were made during the field review:

- The pavement and signs along US 41 (SR 45) are in good condition.
- Pavement raveling was observed along I-275 SB Off-Ramp and the stop bar is faded along south side of the approach.

Eastbound Pavement Condition

SIGNAL WARRANT ANALYSIS

The signal warrant analysis was done in accordance with the procedures and guidelines outlined in the Manual on Uniform Traffic Control Devices (MUTCD 2009) and Manual on Uniform Traffic Studies (MUTS).

For the Signal Warrant Analysis, US 41 (SR 45) is considered the major street and the I-275 SB Off-Ramp is considered the minor street. The detailed signal warrant sheets from the MUTS can be found in appendix D and **Table 7** summarizes the results of the warrant analysis. The following additional considerations were included in the analysis:

- Minor street right turning vehicles were observed being able to turn without excessive delay. Therefore, minor street right turn volumes were excluded from the analysis.
- Based on the posted speed limit of 60 mph on US 41 and the single left turn lane on the minor street, the 70% volume and 1-lane minor street criteria were used.
- Only the types of reported crashes susceptible to correction by a traffic control signal (angle) within the 3-year study period were used in the analysis.

Table 7: Summary of Signal Warrant Analysis

Warrant		Applicable	Satisfied	Comments
1A	Minimum Vehicular Volume	Yes	**Yes**	The traffic volumes meet 7 of the 8 required hours required for this warrant and the 8th hour was only 4 vehicles short of meeting the criteria. Therefore, this warrant will be considered satisfied.
1B	Interruption of Continuous Traffic	No	No	This Warrant is not applicable.
2	Four Hour Vehicular Volume	Yes	**Yes**	The traffic volumes meet the requirements of this warrant.
3	Peak Hour	No	No	This warrant is not applicable. It is intended to be *applied only in unusual cases, such as office complexes, manufacturing plants, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.*
4	Pedestrian Volume	Yes	No	The pedestrian volumes do not meet the requirement of this warrant.
5	School Crossing	No	No	This warrant is not applicable.
6	Coordinated Signal System	No	No	This warrant is not applicable.
7	Crash Experience	Yes	**Yes**	6 correctable (angle) crashes were reported per 12-month study period, which meet the 5-crash minimum. Therefore, this warrant is satisfied.
8	Roadway Network	No	No	This warrant is not applicable.
9	Grade Crossing	No	No	This warrant is not applicable.

CONCLUSIONS

Based on the results of the Signal Warrant Analysis, field observations, and engineering judgment, the following conclusions and recommendations were developed:

- This intersection meets Warrants 1A, 2 and 7 in the Manual on Uniform Traffic Control Devices (MUTCD 2009).

APPENDICES

Eastbound Approach Photographs

Looking west from the intersection at I-275 SB Off-Ramp

Looking east at the intersection from I-275 SB Off-Ramp

Southbound Approach Photographs

Looking south into the intersection along US 41 (SR 45)

Looking north from the intersection along US 41 (SR 45)

Northbound Approach Photographs

Looking south from the intersection along US 41 (SR 45)

Looking north at the intersection along US 41 (SR 45)

APPENDIX B

Detailed Count Data

24-HOUR APPROACH COUNTS SUMMARY

INTERSECTION: US 41 at I-275 SB Exit Ramp
CITY: Bradenton
COUNTY: Bradenton
COUNT DATE: 2/11/2020
N/S STREET: US 41 (Tamiami Trail)
E/W STREET: I-275 SB Exit Ramp

TIME BEGIN	US 41 (Tamiami Trail)		N/S TOTAL	I-275 SB Exit Ramp		E/W TOTAL	GRAND TOTAL
	NB	SB		EB	WB		
0:00	96	93	189	25	0	25	214
1:00	70	65	135	15	0	15	150
2:00	83	58	141	13	0	13	154
3:00	86	70	156	6	0	6	162
4:00	213	148	361	22	0	22	383
5:00	431	360	791	49	0	49	840
6:00	1,031	1,005	2,036	134	0	134	2,170
7:00	1,295	1,230	2,525	151	0	151	2,676
8:00	977	1,005	1,982	148	0	148	2,130
9:00	869	862	1,731	131	0	131	1,862
10:00	873	860	1,733	150	0	150	1,883
11:00	846	924	1,770	177	0	177	1,947
12:00	831	851	1,682	165	0	165	1,847
13:00	868	832	1,700	190	0	190	1,890
14:00	1,051	903	1,954	190	0	190	2,144
15:00	1,136	961	2,097	338	0	338	2,435
16:00	1,316	1,002	2,318	302	0	302	2,620
17:00	1,469	982	2,451	489	0	489	2,940
18:00	1,046	822	1,868	487	0	487	2,355
19:00	681	523	1,204	284	0	284	1,488
20:00	514	363	877	139	0	139	1,016
21:00	326	287	613	109	0	109	722
22:00	210	248	458	80	0	80	538
23:00	173	151	324	55	0	55	379
TOTAL	16,491	14,605	31,096	3,849	0	3,849	**34,945**

ICON Consultant Group, Inc.

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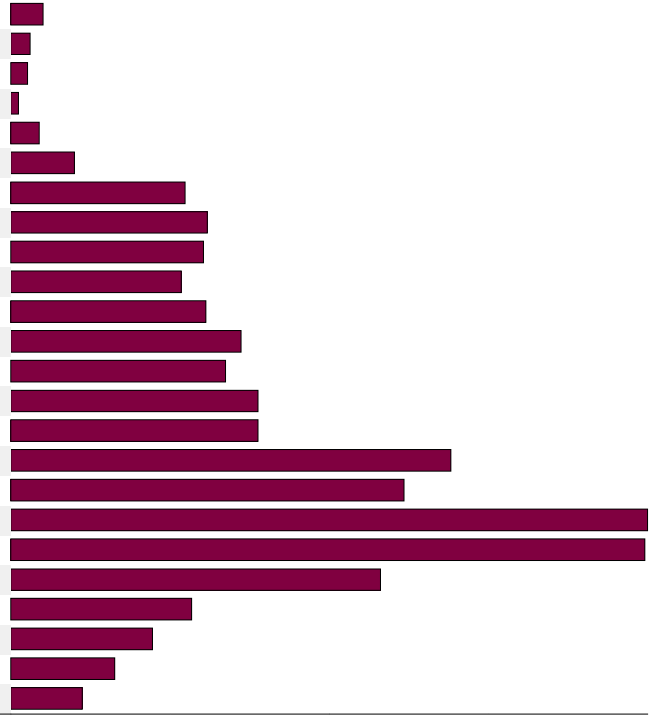
Tampa, Fl. 33618
(813) 962-8689

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Date Start: 2/11/2020
Date End: 2/12/2020
Date Printed: 2/20/2020
I-275 SB Exit Ramp (Eastbound)

Start Time	Tue 2/11/2020	<----------Quarter Hour----------> 1st	2nd	3rd	4th	Hour Total
12:00 AM		8	6	10	1	25
01:00		2	2	8	3	15
02:00		2	1	6	4	13
03:00		2	1	2	1	6
04:00		7	4	5	6	22
05:00		13	10	7	19	49
06:00		24	25	48	37	134
07:00		31	29	41	50	151
08:00		27	41	41	39	148
09:00		30	33	34	34	131
10:00		46	31	45	28	150
11:00		40	45	49	43	177
12:00 PM		47	35	36	47	165
01:00		50	43	45	52	190
02:00		55	52	50	33	190
03:00		57	85	81	115	338
04:00		88	62	41	111	302
05:00		121	129	120	119	489
06:00		141	114	106	126	487
07:00		96	85	66	37	284
08:00		39	37	31	32	139
09:00		31	31	24	23	109
10:00		18	15	33	14	80
11:00		6	19	18	12	55
Day Total						3849
Grand Total						3849



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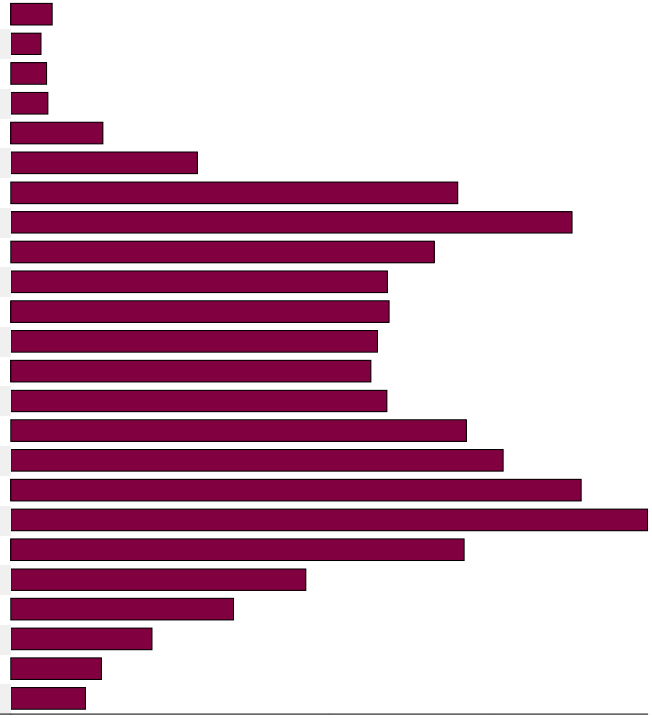
Tampa, Fl. 33618
(813) 962-8689

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Date Start: 2/11/2020
Date End: 2/12/2020
Date Printed: 2/19/2020
US 41 (SR 45) (Northbound)

Start Time	Tue 2/11/2020	<----------Quarter Hour----------> 1st	2nd	3rd	4th	Hour Total
12:00 AM		33	29	19	15	96
01:00		19	9	16	26	70
02:00		19	17	19	28	83
03:00		20	19	24	23	86
04:00		46	43	53	71	213
05:00		75	95	118	143	431
06:00		182	230	317	302	1031
07:00		305	370	316	304	1295
08:00		253	260	243	221	977
09:00		211	225	216	217	869
10:00		228	205	207	233	873
11:00		204	214	203	225	846
12:00 PM		210	196	194	231	831
01:00		198	203	224	243	868
02:00		258	250	276	267	1051
03:00		272	256	303	305	1136
04:00		301	351	328	336	1316
05:00		397	391	349	332	1469
06:00		346	271	250	179	1046
07:00		195	189	160	137	681
08:00		132	136	126	120	514
09:00		107	91	66	62	326
10:00		66	57	55	32	210
11:00		51	54	31	37	173
Day Total						16491
Grand Total						16491



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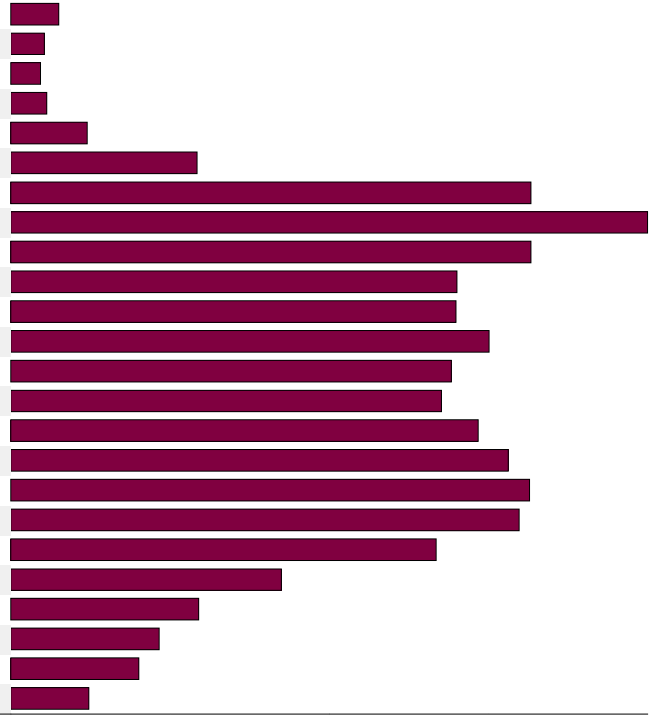
US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Date Start: 2/11/2020
Date End: 2/12/2020
Date Printed: 2/19/2020
US 41 (SR 45) (Southbound)

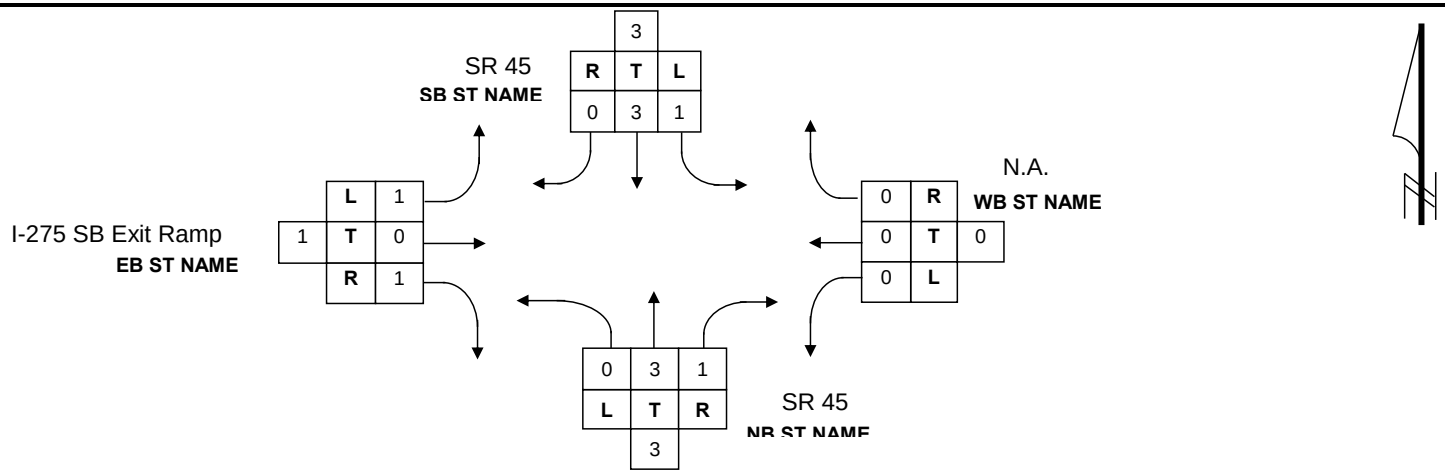
Start Time	Tue 2/11/2020	<----------Quarter Hour----------> 1st	2nd	3rd	4th	Hour Total
12:00 AM		24	28	28	13	93
01:00		22	14	12	17	65
02:00		15	16	17	10	58
03:00		16	20	13	21	70
04:00		19	36	46	47	148
05:00		62	76	96	126	360
06:00		194	220	292	299	1005
07:00		355	303	300	272	1230
08:00		277	282	234	212	1005
09:00		214	226	234	188	862
10:00		229	207	219	205	860
11:00		228	234	241	221	924
12:00 PM		180	243	223	205	851
01:00		188	230	204	210	832
02:00		205	244	237	217	903
03:00		269	213	241	238	961
04:00		241	274	228	259	1002
05:00		248	245	231	258	982
06:00		237	207	194	184	822
07:00		161	136	112	114	523
08:00		92	95	89	87	363
09:00		85	75	68	59	287
10:00		58	78	60	52	248
11:00		47	39	39	26	151
Day Total						14605
Grand Total						14605



FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION	13030	**STATE ROUTE**	SR 45 (US 41)	**COUNTY**	Manatee
MILEPOST	5.108	**INTERSECTING ROUTE**	I-275 SB Exit Ramp	**CITY**	Palmetto
OBSERVER	ICON Consultant Group, Inc.	**DATE**	02/11/2020		
WEATHER	Clear	**ROAD CONDITION**	Dry		
REMARKS					
		FORM COMPLETED BY	DM		



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL	TOTAL
BEGIN/END	**U**	**L**	**T**	**R**	**TOT**	**U**	**L**	**T**	**R**	**TOT**	**N/S**	**U**	**L**	**T**	**R**	**TOT**	**U**	**L**	**T**	**R**	**TOT**	**E/W**	**INT**
7 - 8	-	-	645	650	**1,295**	0	163	1,067	-	**1,230**	**2,525**	-	100	0	51	**151**	-	-	-	-	**0**	**151**	**2,676**
8 - 9	-	-	491	486	**977**	0	134	871	-	**1,005**	**1,982**	-	100	0	48	**148**	-	-	-	-	**0**	**148**	**2,130**
9 - 10	-	-	459	410	**869**	2	111	749	-	**862**	**1,731**	-	68	0	63	**131**	-	-	-	-	**0**	**131**	**1,862**
10 - 11	-	-	450	423	**873**	8	132	720	-	**860**	**1,733**	-	87	1	62	**150**	-	-	-	-	**0**	**150**	**1,883**
11 - 12	-	-	466	380	**846**	3	123	798	-	**924**	**1,770**	-	105	0	72	**177**	-	-	-	-	**0**	**177**	**1,947**
12 - 1	-	-	466	365	**831**	0	114	737	-	**851**	**1,682**	-	101	0	64	**165**	-	-	-	-	**0**	**165**	**1,847**
1 - 2	-	-	464	404	**868**	1	113	718	-	**832**	**1,700**	-	116	0	74	**190**	-	-	-	-	**0**	**190**	**1,890**
2 - 3	-	-	568	483	**1,051**	0	109	794	-	**903**	**1,954**	-	115	1	74	**190**	-	-	-	-	**0**	**190**	**2,144**
3 - 4	-	-	607	529	**1,136**	5	114	842	-	**961**	**2,097**	-	190	0	148	**338**	-	-	-	-	**0**	**338**	**2,435**
4 - 5	-	-	735	581	**1,316**	2	130	870	-	**1,002**	**2,318**	-	165	1	136	**302**	-	-	-	-	**0**	**302**	**2,620**
5 - 6	-	-	805	664	**1,469**	1	98	883	-	**982**	**2,451**	-	256	2	231	**489**	-	-	-	-	**0**	**489**	**2,940**
6 - 7	-	-	627	419	**1,046**	0	67	755	-	**822**	**1,868**	-	285	0	202	**487**	-	-	-	-	**0**	**487**	**2,355**
TOTAL	**0**	**0**	**6,783**	**5,794**	**12,577**	**22**	**1,408**	**9,804**	**0**	**11,234**	**23,811**	**0**	**1,688**	**5**	**1,225**	**2,918**	**0**	**0**	**0**	**0**	**0**	**2,918**	**26,729**
Percentage	0%	0%	54%	46%		0%	13%	87%	0%			0%	58%	0%	42%		0%	0%	0%	0%			
Maximum	0	0	805	664		8	163	1067	0			0	285	2	231		0	0	0	0			
Minimum	0	0	450	365		0	67	718	0			0	68	0	48		0	0	0	0			
Truck Percentage	0.0%	0.0%	6.8%	7.4%	7.1%	9.1%	17.8%	7.5%	0.0%	8.8%	-	0.0%	9.5%	0.0%	3.9%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	-	7.1%

ICON Consultant Group Inc.

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Tampa, Florida, United States 33618
(813)962-8689

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Count Name: 090_US 41 at I-275 SB Exit Ramp-SWA
Start Date: 02/11/2020

Vehicles & Heavy Vehicles

Start Time	US 41 (SR 45) Northbound						US 41 (SR 45) Southbound						I-275 SB Exit Ramp Eastbound						I-275 SB Entrance Ramp Westbound					
	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT	App. Total	Int. Total
7:00 AM	0	0	132	173	0	305	0	38	317	0	0	355	0	23	0	8	0	31	0	0	0	0	0	691
7:15 AM	0	0	182	188	0	370	0	50	253	0	0	303	0	19	0	10	0	29	0	0	0	0	0	702
7:30 AM	0	0	164	152	0	316	0	36	264	0	0	300	0	27	0	14	0	41	0	0	0	0	0	657
7:45 AM	0	0	167	137	0	304	0	39	233	0	0	272	0	31	0	19	0	50	0	0	0	0	0	626
Hourly Total	0	0	645	650	0	1295	0	163	1067	0	0	1230	0	100	0	51	0	151	0	0	0	0	0	2676
8:00 AM	0	0	117	136	0	253	0	37	240	0	0	277	0	15	0	12	0	27	0	0	0	0	0	557
8:15 AM	0	0	135	125	0	260	0	37	245	0	0	282	0	29	0	12	0	41	0	0	0	0	0	583
8:30 AM	0	0	123	120	0	243	0	32	202	0	0	234	0	30	0	11	0	41	0	0	0	0	0	518
8:45 AM	0	0	116	105	0	221	0	28	184	0	0	212	0	26	0	13	0	39	0	0	0	0	0	472
Hourly Total	0	0	491	486	0	977	0	134	871	0	0	1005	0	100	0	48	0	148	0	0	0	0	0	2130
9:00 AM	0	0	114	97	0	211	0	25	189	0	0	214	0	17	0	13	0	30	0	0	0	0	0	455
9:15 AM	0	0	121	104	0	225	0	29	197	0	0	226	0	21	0	12	0	33	0	0	0	0	0	484
9:30 AM	0	0	103	113	0	216	2	33	199	0	0	234	0	11	0	23	0	34	0	0	0	0	0	484
9:45 AM	0	0	121	96	0	217	0	24	164	0	0	188	0	19	0	15	0	34	0	0	0	0	0	439
Hourly Total	0	0	459	410	0	869	2	111	749	0	0	862	0	68	0	63	0	131	0	0	0	0	0	1862
10:00 AM	0	0	110	118	0	228	3	24	202	0	0	229	0	27	0	19	0	46	0	0	0	0	0	503
10:15 AM	0	0	111	94	0	205	2	37	168	0	0	207	0	17	0	14	0	31	0	0	0	0	0	443
10:30 AM	0	0	106	101	0	207	3	30	186	0	0	219	0	27	0	18	0	45	0	0	0	0	0	471
10:45 AM	0	0	123	110	0	233	0	41	164	0	0	205	0	16	1	11	0	28	0	0	0	0	0	466
Hourly Total	0	0	450	423	0	873	8	132	720	0	0	860	0	87	1	62	0	150	0	0	0	0	0	1883
11:00 AM	0	0	97	107	0	204	0	40	188	0	0	228	0	25	0	15	0	40	0	0	0	0	0	472
11:15 AM	0	0	119	95	0	214	1	23	210	0	0	234	0	28	0	17	0	45	0	0	0	0	0	493
11:30 AM	0	0	125	78	0	203	1	26	214	0	0	241	0	28	0	21	0	49	0	0	0	0	0	493
11:45 AM	0	0	125	100	0	225	1	34	186	0	0	221	0	24	0	19	0	43	0	0	0	0	0	489
Hourly Total	0	0	466	380	0	846	3	123	798	0	0	924	0	105	0	72	0	177	0	0	0	0	0	1947
12:00 PM	0	0	106	104	0	210	0	26	154	0	0	180	0	30	0	17	0	47	0	0	0	0	0	437
12:15 PM	0	0	112	84	0	196	0	37	206	0	0	243	0	19	0	16	0	35	0	0	0	0	0	474
12:30 PM	0	0	119	75	0	194	0	28	195	0	0	223	0	26	0	10	0	36	0	0	0	0	0	453
12:45 PM	0	0	129	102	0	231	0	23	182	0	0	205	0	26	0	21	0	47	0	0	0	0	0	483
Hourly Total	0	0	466	365	0	831	0	114	737	0	0	851	0	101	0	64	0	165	0	0	0	0	0	1847
1:00 PM	0	0	109	89	0	198	0	24	164	0	0	188	0	37	0	13	0	50	0	0	0	0	0	436
1:15 PM	0	0	96	107	0	203	0	26	204	0	0	230	0	26	0	17	0	43	0	0	0	0	0	476
1:30 PM	0	0	119	105	0	224	0	27	177	0	0	204	0	28	0	17	0	45	0	0	0	0	0	473
1:45 PM	0	0	140	103	0	243	1	36	173	0	0	210	0	25	0	27	0	52	0	0	0	0	0	505
Hourly Total	0	0	464	404	0	868	1	113	718	0	0	832	0	116	0	74	0	190	0	0	0	0	0	1890
2:00 PM	0	0	135	123	0	258	0	33	172	0	0	205	0	29	1	25	0	55	0	0	0	0	0	518
2:15 PM	0	0	136	114	0	250	0	33	211	0	0	244	0	32	0	20	0	52	0	0	0	0	0	546

2:30 PM	0	0	152	124	0	276	0	19	218	0	0	237	0	32	0	18	0	50	0	0	0	0	0	563
2:45 PM	0	0	145	122	0	267	0	24	193	0	0	217	0	22	0	11	0	33	0	0	0	0	0	517
Hourly Total	0	0	568	483	0	1051	0	109	794	0	0	903	0	115	1	74	0	190	0	0	0	0	0	2144
3:00 PM	0	0	140	132	0	272	3	26	240	0	0	269	0	31	0	26	0	57	0	0	0	0	0	598
3:15 PM	0	0	135	121	0	256	0	34	179	0	0	213	0	56	0	29	0	85	0	0	0	0	0	554
3:30 PM	0	0	168	135	0	303	1	25	215	0	0	241	0	42	0	39	0	81	0	0	0	0	0	625
3:45 PM	0	0	164	141	0	305	1	29	208	0	0	238	0	61	0	54	0	115	0	0	0	0	0	658
Hourly Total	0	0	607	529	0	1136	5	114	842	0	0	961	0	190	0	148	0	338	0	0	0	0	0	2435
4:00 PM	0	0	169	132	0	301	0	47	194	0	0	241	0	53	1	34	0	88	0	0	0	0	0	630
4:15 PM	0	0	194	157	0	351	2	24	248	0	0	274	0	30	0	32	0	62	0	0	0	0	0	687
4:30 PM	0	0	189	139	0	328	0	30	198	0	0	228	0	24	0	17	0	41	0	0	0	0	0	597
4:45 PM	0	0	183	153	0	336	0	29	230	0	0	259	0	58	0	53	0	111	0	0	0	0	0	706
Hourly Total	0	0	735	581	0	1316	2	130	870	0	0	1002	0	165	1	136	0	302	0	0	0	0	0	2620
5:00 PM	0	0	215	182	0	397	0	24	224	0	0	248	0	60	0	61	0	121	0	0	0	0	0	766
5:15 PM	0	0	219	172	0	391	0	27	218	0	0	245	0	64	0	65	0	129	0	0	0	0	0	765
5:30 PM	0	0	183	166	0	349	0	24	207	0	0	231	0	72	1	47	0	120	0	0	0	0	0	700
5:45 PM	0	0	188	144	0	332	1	23	234	0	0	258	0	60	1	58	0	119	0	0	0	0	0	709
Hourly Total	0	0	805	664	0	1469	1	98	883	0	0	982	0	256	2	231	0	489	0	0	0	0	0	2940
6:00 PM	0	0	198	148	0	346	0	14	223	0	0	237	0	78	0	63	0	141	0	0	0	0	0	724
6:15 PM	0	0	172	99	0	271	0	15	192	0	0	207	0	68	0	46	0	114	0	0	0	0	0	592
6:30 PM	0	0	148	102	0	250	0	18	176	0	0	194	0	70	0	36	0	106	0	0	0	0	0	550
6:45 PM	0	0	109	70	0	179	0	20	164	0	0	184	0	69	0	57	0	126	0	0	0	0	0	489
Hourly Total	0	0	627	419	0	1046	0	67	755	0	0	822	0	285	0	202	0	487	0	0	0	0	0	2355
Grand Total	0	0	6783	5794	0	12577	22	1408	9804	0	0	11234	0	1688	5	1225	0	2918	0	0	0	0	0	26729
Approach %	0.0	0.0	53.9	46.1	-	-	0.2	12.5	87.3	0.0	-	-	0.0	57.8	0.2	42.0	-	-	0.0	0.0	0.0	0.0	-	-
Total %	0.0	0.0	25.4	21.7	-	47.1	0.1	5.3	36.7	0.0	-	42.0	0.0	6.3	0.0	4.6	-	10.9	0.0	0.0	0.0	0.0	0.0	-
Vehicles	0	0	6322	5367	-	11689	20	1158	9055	0	-	10233	0	1528	5	1177	-	2710	0	0	0	0	0	24632
% Vehicles	-	-	93.2	92.6	-	92.9	90.9	82.2	92.4	-	-	91.1	-	90.5	100.0	96.1	-	92.9	-	-	-	-	-	92.2
Heavy Vehicles	0	0	460	427	-	887	2	250	732	0	-	984	0	160	0	48	-	208	0	0	0	0	0	2079
% Heavy Vehicles	-	-	6.8	7.4	-	7.1	9.1	17.8	7.5	-	-	8.8	-	9.5	0.0	3.9	-	7.1	-	-	-	-	-	7.8
Bicycles on Road	0	0	1	0	-	1	0	0	17	0	-	17	0	0	0	0	-	0	0	0	0	0	0	18
% Bicycles on Road	-	-	0.0	0.0	-	0.0	0.0	0.0	0.2	-	-	0.2	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	0.1

ICON Consultant Group Inc.

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Tampa, Florida, United States 33618
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US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Count Name: 090_US 41 at I-275 SB Exit Ramp-SWA
Start Date: 02/11/2020

Heavy Vehicles

Start Time	US 41 (SR 45) Northbound						US 41 (SR 45) Southbound						I-275 SB Exit Ramp Eastbound						I-275 SB Entrance Ramp Westbound					
	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT		App. Total	U-Turn	LT	TH	RT	App. Total	Int. Total
7:00 AM	0	0	10	11	0	21	0	5	13	0	0	18	0	5	0	0	0	5	0	0	0	0	0	44
7:15 AM	0	0	13	7	0	20	0	7	17	0	0	24	0	6	0	0	0	6	0	0	0	0	0	50
7:30 AM	0	0	12	8	0	20	0	7	20	0	0	27	0	4	0	0	0	4	0	0	0	0	0	51
7:45 AM	0	0	12	7	0	19	0	11	19	0	0	30	0	2	0	1	0	3	0	0	0	0	0	52
Hourly Total	0	0	47	33	0	80	0	30	69	0	0	99	0	17	0	1	0	18	0	0	0	0	0	197
8:00 AM	0	0	10	6	0	16	0	7	15	0	0	22	0	1	0	1	0	2	0	0	0	0	0	40
8:15 AM	0	0	19	12	0	31	0	7	19	0	0	26	0	8	0	1	0	9	0	0	0	0	0	66
8:30 AM	0	0	7	9	0	16	0	8	14	0	0	22	0	10	0	1	0	11	0	0	0	0	0	49
8:45 AM	0	0	9	15	0	24	0	10	19	0	0	29	0	4	0	1	0	5	0	0	0	0	0	58
Hourly Total	0	0	45	42	0	87	0	32	67	0	0	99	0	23	0	4	0	27	0	0	0	0	0	213
9:00 AM	0	0	15	8	0	23	0	6	15	0	0	21	0	3	0	0	0	3	0	0	0	0	0	47
9:15 AM	0	0	16	9	0	25	0	10	33	0	0	43	0	3	0	0	0	3	0	0	0	0	0	71
9:30 AM	0	0	6	12	0	18	1	7	21	0	0	29	0	3	0	1	0	4	0	0	0	0	0	51
9:45 AM	0	0	13	12	0	25	0	4	18	0	0	22	0	3	0	0	0	3	0	0	0	0	0	50
Hourly Total	0	0	50	41	0	91	1	27	87	0	0	115	0	12	0	1	0	13	0	0	0	0	0	219
10:00 AM	0	0	12	7	0	19	0	5	27	0	0	32	0	7	0	1	0	8	0	0	0	0	0	59
10:15 AM	0	0	12	10	0	22	0	5	23	0	0	28	0	4	0	1	0	5	0	0	0	0	0	55
10:30 AM	0	0	13	9	0	22	0	4	17	0	0	21	0	5	0	0	0	5	0	0	0	0	0	48
10:45 AM	0	0	14	15	0	29	0	7	18	0	0	25	0	1	0	0	0	1	0	0	0	0	0	55
Hourly Total	0	0	51	41	0	92	0	21	85	0	0	106	0	17	0	2	0	19	0	0	0	0	0	217
11:00 AM	0	0	11	13	0	24	0	6	21	0	0	27	0	9	0	1	0	10	0	0	0	0	0	61
11:15 AM	0	0	15	8	0	23	0	5	19	0	0	24	0	8	0	0	0	8	0	0	0	0	0	55
11:30 AM	0	0	7	9	0	16	0	8	19	0	0	27	0	5	0	0	0	5	0	0	0	0	0	48
11:45 AM	0	0	9	7	0	16	0	10	24	0	0	34	0	7	0	0	0	7	0	0	0	0	0	57
Hourly Total	0	0	42	37	0	79	0	29	83	0	0	112	0	29	0	1	0	30	0	0	0	0	0	221
12:00 PM	0	0	9	14	0	23	0	7	20	0	0	27	0	3	0	0	0	3	0	0	0	0	0	53
12:15 PM	0	0	12	9	0	21	0	7	20	0	0	27	0	3	0	2	0	5	0	0	0	0	0	53
12:30 PM	0	0	10	14	0	24	0	6	22	0	0	28	0	2	0	0	0	2	0	0	0	0	0	54
12:45 PM	0	0	13	16	0	29	0	4	42	0	0	46	0	5	0	1	0	6	0	0	0	0	0	81
Hourly Total	0	0	44	53	0	97	0	24	104	0	0	128	0	13	0	3	0	16	0	0	0	0	0	241
1:00 PM	0	0	6	11	0	17	0	2	11	0	0	13	0	6	0	1	0	7	0	0	0	0	0	37
1:15 PM	0	0	10	17	0	27	0	4	13	0	0	17	0	7	0	1	0	8	0	0	0	0	0	52
1:30 PM	0	0	11	17	0	28	0	4	8	0	0	12	0	4	0	2	0	6	0	0	0	0	0	46
1:45 PM	0	0	14	10	0	24	0	10	17	0	0	27	0	6	0	3	0	9	0	0	0	0	0	60
Hourly Total	0	0	41	55	0	96	0	20	49	0	0	69	0	23	0	7	0	30	0	0	0	0	0	195
2:00 PM	0	0	12	17	0	29	0	7	10	0	0	17	0	6	0	2	0	8	0	0	0	0	0	54
2:15 PM	0	0	8	8	0	16	0	6	19	0	0	25	0	0	0	0	0	0	0	0	0	0	0	41

2:30 PM	0	0	10	13	0	23	0	5	16	0	0	21	0	4	0	0	0	4	0	0	0	0	0	48
2:45 PM	0	0	6	12	0	18	0	5	20	0	0	25	0	2	0	2	0	4	0	0	0	0	0	47
Hourly Total	0	0	36	50	0	86	0	23	65	0	0	88	0	12	0	4	0	16	0	0	0	0	0	190
3:00 PM	0	0	6	6	0	12	1	1	10	0	0	12	0	0	0	1	0	1	0	0	0	0	0	25
3:15 PM	0	0	7	7	0	14	0	2	10	0	0	12	0	2	0	3	0	5	0	0	0	0	0	31
3:30 PM	0	0	11	5	0	16	0	4	6	0	0	10	0	2	0	1	0	3	0	0	0	0	0	29
3:45 PM	0	0	6	9	0	15	0	8	8	0	0	16	0	3	0	3	0	6	0	0	0	0	0	37
Hourly Total	0	0	30	27	0	57	1	15	34	0	0	50	0	7	0	8	0	15	0	0	0	0	0	122
4:00 PM	0	0	6	9	0	15	0	7	8	0	0	15	0	0	0	3	0	3	0	0	0	0	0	33
4:15 PM	0	0	7	6	0	13	0	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0	22
4:30 PM	0	0	5	2	0	7	0	3	8	0	0	11	0	0	0	0	0	0	0	0	0	0	0	18
4:45 PM	0	0	7	7	0	14	0	4	10	0	0	14	0	1	0	2	0	3	0	0	0	0	0	31
Hourly Total	0	0	25	24	0	49	0	16	33	0	0	49	0	1	0	5	0	6	0	0	0	0	0	104
5:00 PM	0	0	8	7	0	15	0	1	10	0	0	11	0	1	0	1	0	2	0	0	0	0	0	28
5:15 PM	0	0	4	3	0	7	0	2	5	0	0	7	0	0	0	2	0	2	0	0	0	0	0	16
5:30 PM	0	0	8	0	0	8	0	2	5	0	0	7	0	3	0	1	0	4	0	0	0	0	0	19
5:45 PM	0	0	9	5	0	14	0	0	12	0	0	12	0	0	0	1	0	1	0	0	0	0	0	27
Hourly Total	0	0	29	15	0	44	0	5	32	0	0	37	0	4	0	5	0	9	0	0	0	0	0	90
6:00 PM	0	0	8	2	0	10	0	2	5	0	0	7	0	1	0	2	0	3	0	0	0	0	0	20
6:15 PM	0	0	3	2	0	5	0	2	8	0	0	10	0	0	0	2	0	2	0	0	0	0	0	17
6:30 PM	0	0	4	3	0	7	0	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0	17
6:45 PM	0	0	5	2	0	7	0	3	2	0	0	5	0	1	0	3	0	4	0	0	0	0	0	16
Hourly Total	0	0	20	9	0	29	0	8	24	0	0	32	0	2	0	7	0	9	0	0	0	0	0	70
Grand Total	0	0	460	427	0	887	2	250	732	0	0	984	0	160	0	48	0	208	0	0	0	0	0	2079
Approach %	0.0	0.0	51.9	48.1	-	-	0.2	25.4	74.4	0.0	-	-	0.0	76.9	0.0	23.1	-	-	0.0	0.0	0.0	0.0	-	-
Total %	0.0	0.0	22.1	20.5	-	42.7	0.1	12.0	35.2	0.0	-	47.3	0.0	7.7	0.0	2.3	-	10.0	0.0	0.0	0.0	0.0	0.0	-
Heavy Vehicles	0	0	460	427	-	887	2	250	732	0	-	984	0	160	0	48	-	208	0	0	0	0	0	2079
% Heavy Vehicles	-	-	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	-	100.0	-	100.0	-	100.0	-	-	-	-	-	100.0

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

Pedestrian / Bicycle Count
Field Data Sheet

File Name: 090_Ped-Bike
Start Date: 2/11/2020
Start Time: 7:00 AM
End Time: 7:00 PM

Peds/Bikes Crossing North Leg

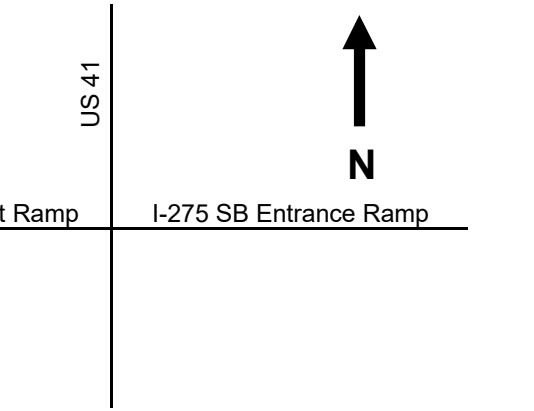
	From: 7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
PED												
BIKE												
PED												
BIKE												
To:	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00

Peds/Bikes Crossing West Leg

From:	To:	PED	BIKE		
7:00	8:00				
8:00	9:00		11		
9:00	10:00				
10:00	11:00	1			
11:00	12:00				
12:00	13:00				
13:00	14:00			1	
14:00	15:00				
15:00	16:00				
16:00	17:00				
17:00	18:00				
18:00	19:00				
		PED	BIKE		

Peds/Bikes Crossing East Leg

From:	To:	PED	BIKE		
7:00	8:00				
8:00	9:00				
9:00	10:00				
10:00	11:00				
11:00	12:00				
12:00	13:00				
13:00	14:00				
14:00	15:00				
15:00	16:00				
16:00	17:00				
17:00	18:00				
18:00	19:00				
		PED	BIKE		



Peds/Bikes Crossing South Leg

	From: 7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
PED												
BIKE												
PED												
BIKE												
To:	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00

TOTAL	
PED	BIKE
2	11

APPENDIX C

Delay Data

ICON Consultant Group, Inc.

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Tampa, Fl. 33618
(813) 962 8689

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay AM (EB)
Site Code : 00000000
Start Date : 3/11/2020
Page No : 1

Ln.	No.	Joined Queue	Released From Queue	Delay
1	1	6:59:00 AM	6:59:18 AM	18
1	2	6:59:01 AM	6:59:26 AM	25
1	3	6:59:53 AM	7:00:07 AM	14
1	4	7:00:16 AM	7:00:35 AM	19
1	5	7:01:39 AM	7:01:46 AM	7
1	6	7:02:58 AM	7:03:48 AM	50
1	7	7:03:29 AM	7:03:49 AM	20
1	8	7:04:09 AM	7:04:46 AM	37
1	9	7:04:10 AM	7:04:48 AM	38
1	10	7:05:42 AM	7:06:40 AM	58
1	11	7:06:21 AM	7:06:44 AM	23
1	12	7:06:33 AM	7:06:52 AM	19
1	13	7:07:12 AM	7:08:02 AM	50
1	14	7:07:43 AM	7:08:14 AM	31
1	15	7:09:03 AM	7:10:29 AM	86
1	16	7:09:03 AM	7:10:32 AM	89
1	17	7:11:17 AM	7:11:27 AM	10
1	18	7:11:53 AM	7:12:13 AM	20
1	19	7:12:17 AM	7:12:58 AM	41
1	20	7:13:25 AM	7:13:39 AM	14
1	21	7:14:35 AM	7:14:42 AM	7
1	22	7:14:59 AM	7:15:32 AM	33
1	23	7:16:14 AM	7:17:49 AM	95
1	24	7:16:29 AM	7:17:50 AM	81
1	25	7:16:36 AM	7:17:51 AM	75
1	26	7:17:02 AM	7:17:55 AM	53
1	27	7:18:02 AM	7:18:29 AM	27
1	28	7:19:25 AM	7:20:46 AM	81
1	29	7:19:25 AM	7:21:12 AM	107
1	30	7:19:26 AM	7:21:24 AM	118
1	31	7:19:39 AM	7:21:28 AM	109
1	32	7:19:47 AM	7:21:32 AM	105
1	33	7:20:05 AM	7:21:36 AM	91
1	34	7:20:56 AM	7:21:39 AM	43
1	35	7:21:33 AM	7:21:43 AM	10
1	36	7:21:33 AM	7:21:49 AM	16
1	37	7:21:34 AM	7:23:34 AM	120
1	38	7:22:36 AM	7:23:36 AM	60
1	39	7:22:54 AM	7:23:38 AM	44
1	40	7:23:00 AM	7:24:00 AM	60
1	41	7:24:08 AM	7:24:15 AM	7
1	42	7:24:20 AM	7:25:09 AM	49
1	43	7:25:27 AM	7:28:53 AM	206
1	44	7:27:03 AM	7:28:54 AM	111
1	45	7:27:29 AM	7:28:59 AM	90
1	46	7:27:32 AM	7:29:10 AM	98
1	47	7:28:26 AM	7:29:14 AM	48
1	48	7:28:28 AM	7:29:18 AM	50
1	49	7:28:38 AM	7:29:21 AM	43
1	50	7:29:12 AM	7:29:22 AM	10
1	51	7:29:17 AM	7:30:03 AM	46
1	52	7:29:48 AM	7:30:09 AM	21
1	53	7:31:00 AM	7:31:36 AM	36
1	54	7:31:23 AM	7:32:10 AM	47
1	55	7:31:54 AM	7:32:51 AM	57
1	56	7:33:15 AM	7:33:35 AM	20
1	57	7:34:08 AM	7:34:40 AM	32
1	58	7:34:11 AM	7:34:42 AM	31
1	59	7:34:20 AM	7:34:55 AM	35
1	60	7:34:22 AM	7:35:19 AM	57
1	61	7:34:26 AM	7:35:24 AM	58
1	62	7:34:33 AM	7:35:32 AM	59

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File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay AM (EB)
Site Code : 00000000
Start Date : 3/11/2020

Ln.	No.	Joined Queue	Released From Queue	Delay
1	63	7:37:03 AM	7:37:08 AM	5
1	64	7:37:03 AM	7:37:32 AM	29
1	65	7:37:12 AM	7:37:33 AM	21
1	66	7:37:14 AM	7:37:40 AM	26
1	67	7:38:01 AM	7:38:18 AM	17
1	68	7:38:27 AM	7:38:54 AM	27
1	69	7:38:32 AM	7:39:11 AM	39
1	70	7:39:09 AM	7:39:26 AM	17
1	71	7:39:33 AM	7:39:51 AM	18
1	72	7:39:47 AM	7:39:56 AM	9
1	73	7:40:00 AM	7:40:06 AM	6
1	74	7:40:11 AM	7:40:42 AM	31
1	75	7:40:14 AM	7:41:04 AM	50
1	76	7:40:24 AM	7:41:05 AM	41
1	77	7:41:55 AM	7:43:16 AM	81
1	78	7:42:23 AM	7:43:22 AM	59
1	79	7:44:16 AM	7:44:35 AM	19
1	80	7:44:33 AM	7:44:41 AM	8
1	81	7:44:47 AM	7:44:54 AM	7
1	82	7:45:00 AM	7:45:43 AM	43
1	83	7:45:22 AM	7:45:47 AM	25
1	84	7:45:43 AM	7:46:04 AM	21
1	85	7:45:50 AM	7:47:08 AM	78
1	86	7:48:32 AM	7:49:15 AM	43
1	87	7:49:12 AM	7:49:45 AM	33
1	88	7:49:38 AM	7:49:49 AM	11
1	89	7:50:18 AM	7:50:31 AM	13
1	90	7:50:20 AM	7:50:33 AM	13
1	91	7:51:09 AM	7:51:18 AM	9
1	92	7:51:24 AM	7:51:31 AM	7
1	93	7:53:02 AM	7:53:42 AM	40
1	94	7:53:38 AM	7:54:02 AM	24
1	95	7:53:47 AM	7:54:03 AM	16
1	96	7:54:52 AM	7:55:27 AM	35
1	97	7:55:39 AM	7:55:54 AM	15
1	98	7:55:40 AM	7:56:22 AM	42
1	99	7:55:41 AM	7:56:33 AM	52
1	100	7:55:42 AM	7:56:39 AM	57
1	101	7:55:56 AM	7:57:00 AM	64
1	102	7:56:15 AM	7:57:05 AM	50
1	103	7:56:31 AM	7:57:08 AM	37
1	104	7:57:44 AM	7:57:48 AM	4
1	105	7:58:53 AM	7:59:51 AM	58

Summary Information:

6:59:00 AM - 8:00:00 AM	LT
Total Vehicle Count:	105
Delayed Vehicle Count:	105
Through Vehicle Count:	0
Average Stopped Time:	43.00
Maximum Stopped Time:	206
Min. Secs. for Delay:	1
Average Queue:	1.24
Queue Density:	2.00
Maximum Queue:	7
Delay in Vehicle Hour:	1.24
Total Delay:	4515

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(813) 962 8689

US 41 at I-275 SB Exit Ramp
Section: 13030 MP: 5.108
Weather: Clear
County: Manatee

File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay PM (EB)
Site Code : 00000000
Start Date : 3/10/2020
Page No : 1

Ln.	No.	Joined Queue	Released From Queue	Delay
1	1	4:59:01 PM	4:59:10 PM	9
1	2	5:00:06 PM	5:00:28 PM	22
1	3	5:00:29 PM	5:00:38 PM	9
1	4	5:01:21 PM	5:01:38 PM	17
1	5	5:01:37 PM	5:01:42 PM	5
1	6	5:02:03 PM	5:03:49 PM	106
1	7	5:02:20 PM	5:03:52 PM	92
1	8	5:02:25 PM	5:03:53 PM	88
1	9	5:03:01 PM	5:04:12 PM	71
1	10	5:03:09 PM	5:04:23 PM	74
1	11	5:03:21 PM	5:04:24 PM	63
1	12	5:03:40 PM	5:04:30 PM	50
1	13	5:04:44 PM	5:04:53 PM	9
1	14	5:04:50 PM	5:04:58 PM	8
1	15	5:04:54 PM	5:05:13 PM	19
1	16	5:04:59 PM	5:05:37 PM	38
1	17	5:05:06 PM	5:06:01 PM	55
1	18	5:05:24 PM	5:06:07 PM	43
1	19	5:05:27 PM	5:06:15 PM	48
1	20	5:06:25 PM	5:06:55 PM	30
1	21	5:06:51 PM	5:07:12 PM	21
1	22	5:07:24 PM	5:07:36 PM	12
1	23	5:07:27 PM	5:07:40 PM	13
1	24	5:07:41 PM	5:07:49 PM	8
1	25	5:07:43 PM	5:07:52 PM	9
1	26	5:07:44 PM	5:08:08 PM	24
1	27	5:08:10 PM	5:08:18 PM	8
1	28	5:08:55 PM	5:09:13 PM	18
1	29	5:08:55 PM	5:09:15 PM	20
1	30	5:08:57 PM	5:09:24 PM	27
1	31	5:09:01 PM	5:09:32 PM	31
1	32	5:09:38 PM	5:09:59 PM	21
1	33	5:09:39 PM	5:09:59 PM	20
1	34	5:09:40 PM	5:10:15 PM	35
1	35	5:10:00 PM	5:10:22 PM	22
1	36	5:10:20 PM	5:10:27 PM	7
1	37	5:10:25 PM	5:10:47 PM	22
1	38	5:10:45 PM	5:11:42 PM	57
1	39	5:11:22 PM	5:11:44 PM	22
1	40	5:11:25 PM	5:12:06 PM	41
1	41	5:11:27 PM	5:12:08 PM	41
1	42	5:11:32 PM	5:12:30 PM	58
1	43	5:11:48 PM	5:12:31 PM	43
1	44	5:12:05 PM	5:12:34 PM	29
1	45	5:12:37 PM	5:12:50 PM	13
1	46	5:12:43 PM	5:13:27 PM	44
1	47	5:12:59 PM	5:13:46 PM	47
1	48	5:13:00 PM	5:14:13 PM	73
1	49	5:13:39 PM	5:14:16 PM	37
1	50	5:13:39 PM	5:14:22 PM	43
1	51	5:13:52 PM	5:14:41 PM	49
1	52	5:13:53 PM	5:14:46 PM	53
1	53	5:14:05 PM	5:14:50 PM	45
1	54	5:14:37 PM	5:14:56 PM	19
1	55	5:15:02 PM	5:15:05 PM	3
1	56	5:15:03 PM	5:15:32 PM	29
1	57	5:15:22 PM	5:16:09 PM	47
1	58	5:15:41 PM	5:16:26 PM	45
1	59	5:15:43 PM	5:16:28 PM	45
1	60	5:15:44 PM	5:16:48 PM	64
1	61	5:15:50 PM	5:16:52 PM	62
1	62	5:16:07 PM	5:16:56 PM	49

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File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay PM (EB)
Site Code : 00000000
Start Date : 3/10/2020
Page No : 2

Ln.	No.	Joined Queue	Released From Queue	Delay
1	63	5:16:35 PM	5:17:00 PM	25
1	64	5:16:37 PM	5:17:03 PM	26
1	65	5:16:49 PM	5:17:05 PM	16
1	66	5:17:01 PM	5:17:10 PM	9
1	67	5:17:02 PM	5:17:12 PM	10
1	68	5:17:37 PM	5:17:55 PM	18
1	69	5:17:38 PM	5:18:07 PM	29
1	70	5:17:40 PM	5:18:08 PM	28
1	71	5:17:41 PM	5:18:09 PM	28
1	72	5:17:47 PM	5:18:40 PM	53
1	73	5:18:12 PM	5:18:42 PM	30
1	74	5:18:13 PM	5:18:45 PM	32
1	75	5:18:15 PM	5:18:49 PM	34
1	76	5:19:16 PM	5:19:33 PM	17
1	77	5:19:16 PM	5:19:35 PM	19
1	78	5:19:21 PM	5:20:44 PM	83
1	79	5:19:24 PM	5:20:46 PM	82
1	80	5:19:32 PM	5:20:54 PM	82
1	81	5:19:42 PM	5:20:58 PM	76
1	82	5:20:32 PM	5:21:01 PM	29
1	83	5:20:52 PM	5:21:10 PM	18
1	84	5:21:18 PM	5:21:25 PM	7
1	85	5:21:43 PM	5:23:14 PM	91
1	86	5:22:13 PM	5:23:16 PM	63
1	87	5:22:27 PM	5:23:51 PM	84
1	88	5:22:52 PM	5:23:52 PM	60
1	89	5:22:55 PM	5:23:53 PM	58
1	90	5:22:58 PM	5:24:02 PM	64
1	91	5:23:09 PM	5:24:06 PM	57
1	92	5:23:21 PM	5:24:10 PM	49
1	93	5:23:31 PM	5:24:15 PM	44
1	94	5:23:38 PM	5:25:30 PM	112
1	95	5:23:43 PM	5:25:42 PM	119
1	96	5:23:45 PM	5:25:52 PM	127
1	97	5:23:46 PM	5:25:54 PM	128
1	98	5:23:47 PM	5:26:18 PM	151
1	99	5:24:17 PM	5:26:23 PM	126
1	100	5:24:21 PM	5:26:26 PM	125
1	101	5:24:24 PM	5:26:28 PM	124
1	102	5:25:05 PM	5:26:36 PM	91
1	103	5:25:05 PM	5:26:40 PM	95
1	104	5:25:46 PM	5:27:12 PM	86
1	105	5:25:56 PM	5:27:40 PM	104
1	106	5:26:25 PM	5:27:55 PM	90
1	107	5:26:32 PM	5:28:14 PM	102
1	108	5:27:01 PM	5:28:25 PM	84
1	109	5:27:26 PM	5:28:47 PM	81
1	110	5:27:27 PM	5:28:49 PM	82
1	111	5:27:27 PM	5:29:34 PM	127
1	112	5:27:33 PM	5:29:54 PM	141
1	113	5:27:33 PM	5:29:56 PM	143
1	114	5:27:43 PM	5:29:59 PM	136
1	115	5:27:43 PM	5:30:05 PM	142
1	116	5:28:01 PM	5:30:27 PM	146
1	117	5:28:52 PM	5:30:34 PM	102
1	118	5:29:18 PM	5:30:43 PM	85
1	119	5:29:28 PM	5:30:45 PM	77
1	120	5:29:31 PM	5:30:50 PM	79
1	121	5:29:40 PM	5:30:54 PM	74
1	122	5:30:00 PM	5:30:56 PM	56
1	123	5:30:23 PM	5:31:01 PM	38
1	124	5:30:47 PM	5:31:03 PM	16
1	125	5:30:52 PM	5:31:08 PM	16
1	126	5:31:00 PM	5:32:24 PM	84
1	127	5:31:11 PM	5:32:28 PM	77

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File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay PM (EB)
Site Code : 00000000
Start Date : 3/10/2020

Ln.	No.	Joined Queue	Released From Queue	Delay
1	128	5:31:18 PM	5:32:31 PM	73
1	129	5:31:40 PM	5:32:35 PM	55
1	130	5:31:42 PM	5:33:00 PM	78
1	131	5:32:00 PM	5:33:05 PM	65
1	132	5:32:02 PM	5:33:11 PM	69
1	133	5:32:06 PM	5:34:31 PM	145
1	134	5:32:11 PM	5:34:38 PM	147
1	135	5:32:58 PM	5:34:53 PM	115
1	136	5:34:13 PM	5:34:56 PM	43
1	137	5:34:14 PM	5:35:03 PM	49
1	138	5:34:18 PM	5:35:06 PM	48
1	139	5:34:20 PM	5:35:09 PM	49
1	140	5:34:20 PM	5:35:11 PM	51
1	141	5:34:57 PM	5:36:30 PM	93
1	142	5:35:01 PM	5:36:33 PM	92
1	143	5:35:06 PM	5:36:35 PM	89
1	144	5:35:17 PM	5:36:37 PM	80
1	145	5:35:19 PM	5:37:00 PM	101
1	146	5:35:22 PM	5:37:12 PM	110
1	147	5:35:47 PM	5:37:22 PM	95
1	148	5:35:47 PM	5:37:23 PM	96
1	149	5:35:48 PM	5:37:59 PM	131
1	150	5:35:48 PM	5:38:02 PM	134
1	151	5:36:00 PM	5:38:11 PM	131
1	152	5:36:02 PM	5:38:25 PM	143
1	153	5:36:06 PM	5:38:40 PM	154
1	154	5:36:08 PM	5:38:45 PM	157
1	155	5:36:09 PM	5:38:46 PM	157
1	156	5:36:11 PM	5:38:48 PM	157
1	157	5:36:18 PM	5:38:56 PM	158
1	158	5:36:33 PM	5:39:24 PM	171
1	159	5:36:34 PM	5:39:26 PM	172
1	160	5:36:39 PM	5:39:29 PM	170
1	161	5:36:41 PM	5:40:08 PM	207
1	162	5:36:43 PM	5:40:24 PM	221
1	163	5:36:57 PM	5:40:25 PM	208
1	164	5:37:03 PM	5:40:40 PM	217
1	165	5:37:06 PM	5:40:45 PM	219
1	166	5:37:11 PM	5:40:53 PM	222
1	167	5:37:18 PM	5:40:59 PM	221
1	168	5:37:27 PM	5:41:10 PM	223
1	169	5:37:28 PM	5:41:10 PM	222
1	170	5:37:33 PM	5:41:29 PM	236
1	171	5:38:04 PM	5:41:57 PM	233
1	172	5:38:07 PM	5:42:19 PM	252
1	173	5:38:27 PM	5:42:19 PM	232
1	174	5:38:50 PM	5:42:25 PM	215
1	175	5:38:50 PM	5:42:40 PM	230
1	176	5:39:00 PM	5:42:45 PM	225
1	177	5:39:09 PM	5:42:51 PM	222
1	178	5:39:33 PM	5:42:56 PM	203
1	179	5:40:12 PM	5:43:05 PM	173
1	180	5:40:15 PM	5:43:07 PM	172
1	181	5:40:19 PM	5:43:12 PM	173
1	182	5:40:38 PM	5:43:13 PM	155
1	183	5:41:06 PM	5:43:19 PM	133
1	184	5:42:20 PM	5:43:51 PM	91
1	185	5:42:23 PM	5:43:55 PM	92
1	186	5:42:42 PM	5:44:10 PM	88
1	187	5:42:49 PM	5:44:28 PM	99
1	188	5:42:55 PM	5:44:32 PM	97
1	189	5:44:24 PM	5:44:50 PM	26
1	190	5:44:26 PM	5:45:03 PM	37
1	191	5:44:30 PM	5:45:09 PM	39
1	192	5:45:04 PM	5:45:15 PM	11

ICON Consultant Group, Inc.

10006 N. Dale Mabry Hwy, Suite 201
Tampa, Fl. 33618
(813) 962 8689

File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay PM (EB)
Site Code : 00000000
Start Date : 3/10/2020
Page No : 4

Ln.	No.	Joined Queue	Released From Queue	Delay
1	193	5:45:13 PM	5:45:23 PM	10
1	194	5:45:25 PM	5:45:28 PM	3
1	195	5:45:27 PM	5:45:31 PM	4
1	196	5:45:30 PM	5:45:36 PM	6
1	197	5:45:30 PM	5:46:13 PM	43
1	198	5:45:52 PM	5:46:13 PM	21
1	199	5:46:21 PM	5:46:50 PM	29
1	200	5:46:22 PM	5:46:53 PM	31
1	201	5:46:35 PM	5:47:09 PM	34
1	202	5:47:05 PM	5:47:18 PM	13
1	203	5:47:05 PM	5:47:20 PM	15
1	204	5:47:07 PM	5:47:51 PM	44
1	205	5:47:07 PM	5:47:54 PM	47
1	206	5:47:12 PM	5:48:05 PM	53
1	207	5:47:22 PM	5:48:08 PM	46
1	208	5:47:36 PM	5:48:17 PM	41
1	209	5:47:39 PM	5:48:30 PM	51
1	210	5:47:45 PM	5:48:59 PM	74
1	211	5:47:49 PM	5:49:03 PM	74
1	212	5:47:50 PM	5:49:24 PM	94
1	213	5:48:14 PM	5:49:51 PM	97
1	214	5:48:47 PM	5:49:53 PM	66
1	215	5:49:21 PM	5:50:00 PM	39
1	216	5:49:46 PM	5:50:03 PM	17
1	217	5:49:49 PM	5:50:13 PM	24
1	218	5:50:05 PM	5:50:20 PM	15
1	219	5:50:17 PM	5:50:49 PM	32
1	220	5:50:50 PM	5:51:13 PM	23
1	221	5:50:51 PM	5:51:16 PM	25
1	222	5:51:11 PM	5:51:21 PM	10
1	223	5:51:18 PM	5:52:14 PM	56
1	224	5:51:46 PM	5:52:15 PM	29
1	225	5:52:07 PM	5:52:31 PM	24
1	226	5:52:20 PM	5:52:41 PM	21
1	227	5:53:42 PM	5:54:02 PM	20
1	228	5:54:15 PM	5:54:45 PM	30
1	229	5:54:35 PM	5:54:53 PM	18
1	230	5:55:03 PM	5:55:06 PM	3
1	231	5:55:34 PM	5:55:50 PM	16
1	232	5:55:48 PM	5:56:08 PM	20
1	233	5:56:08 PM	5:56:14 PM	6
1	234	5:56:57 PM	5:57:15 PM	18
1	235	5:57:00 PM	5:57:17 PM	17
1	236	5:57:11 PM	5:57:22 PM	11
1	237	5:57:14 PM	5:57:26 PM	12
1	238	5:57:30 PM	5:57:36 PM	6
1	239	5:57:50 PM	5:58:00 PM	10
1	240	5:57:51 PM	5:58:03 PM	12
1	241	5:58:17 PM	5:58:40 PM	23
1	242	5:58:19 PM	5:58:47 PM	28
1	243	5:59:00 PM	5:59:07 PM	7
1	244	5:59:17 PM	5:59:45 PM	28
1	245	5:59:18 PM	5:59:58 PM	40
1	246	5:59:19 PM	6:00:01 PM	42
1	247	5:59:21 PM	6:00:02 PM	41
1	248	5:59:22 PM	6:00:04 PM	42
1	249	5:59:55 PM	6:00:09 PM	14
1	250	6:00:00 PM	6:00:53 PM	53
1	251	6:00:11 PM	6:01:02 PM	51

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10006 N. Dale Mabry Hwy, Suite 201
Tampa, Fl. 33618
(813) 962 8689

File Name : 090_US 41 at I-275 SB Exit Ramp - SS Delay PM (EB)
Site Code : 00000000
Start Date : 3/10/2020

Summary Information:

4:59:00 PM - 6:02:00 PM	LT
Total Vehicle Count:	251
Delayed Vehicle Count:	251
Through Vehicle Count:	0
Average Stopped Time:	70.40
Maximum Stopped Time:	252
Min. Secs. for Delay:	1
Average Queue:	4.75
Queue Density:	5.51
Maximum Queue:	22
Delay in Vehicle Hour:	4.75
Total Delay:	17670

APPENDIX D

Signal Warrant Analysis

Input Data

Form 750-020-01
TRAFFIC ENGINEERING
10/15

City:	Palmetto		
County:	13 – Manatee	Engineer:	Daniel Hendrickson
District:	One	Date:	March 13, 2020

Major Street:	SR 45 (US 41)	# Lanes:	3	Major Approach Speed:	60
Minor Street:	I-275 SB Off-Ramp	# Lanes:	1	Minor Approach Speed:	35

Eight Hour Volumes (Condition A)

Hours	Major Street (total of both approaches)	Minor Street (one direction only)
7:00 AM	2525	100
11:00 AM	1770	105
1:00 PM	1700	116
2:00 PM	1954	115
3:00 PM	2097	190
4:00 PM	2318	165
5:00 PM	2451	256
6:00 PM	1868	285

Eight Hour Volumes (Condition B)

Hours	Major Street (total of both approaches)	Minor Street (one direction only)
7:00 AM	2525	100
11:00 AM	1770	105
1:00 PM	1700	116
2:00 PM	1954	115
3:00 PM	2097	190
4:00 PM	2318	165
5:00 PM	2451	256
6:00 PM	1868	285

Highest Four Hour Vehicular Volumes

Hours	Major Street (total of both approaches)	Minor Street (one direction only)
3:00 PM	2097	190
4:00 PM	2318	165
5:00 PM	2451	256
6:00 PM	1868	285

Highest Four Hour Pedestrian Volumes

Hours	Major Street (total of both approaches)	Pedestrian Crossings on Major Street
3:00 PM	2097	0
4:00 PM	2318	0
5:00 PM	2451	0
6:00 PM	1868	0

Vehicular Peak Hour Volumes

Peak Hour	Major Street (total of both approaches)	Minor Street (one direction only)	Total Entering Volume
5:00 PM	2451	256	2707

Pedestrian Peak Hour Volumes

Peak Hour	Major Street (total of both approaches)	Pedestrian Crossing Volumes on Major Street
5:00 PM	2451	0

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ 70% ☐ 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied for eight hours. ☐ Yes ☑ No

Warrant 1 is also satisfied if both Condition A and Condition B are "80%" satisfied (should only be applied after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems). ☐ Yes ☑ No

Condition A - Minimum Vehicular Volume

Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

100% Satisfied:	☐ Yes	☑ No
80% Satisfied:	☐ Yes	☑ No
70% Satisfied:	☑ Yes	☑ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	**Minor**	**100%[a]**	**80%[b]**	**70%[c]**	**100%[a]**	**80%[b]**	**70%[c]**
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

[a] Basic Minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Street	Eight Highest Hours							
	7:00 AM	**11:00 AM**	**1:00 PM**	**2:00 PM**	**3:00 PM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major	2,525	1,770	1,700	1,954	2,097	2,318	2,451	1,868
Minor	100	105	116	115	190	165	256	285

Existing Volumes

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

Condition B - Interruption of Continuous Traffic

Condition B is intended for application where Condition A is not satisfied and the traffic volume on a major street is so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Applicable:	☐ Yes	☑ No
100% Satisfied:	☐ Yes	☑ No
80% Satisfied:	☐ Yes	☑ No
70% Satisfied:	☐ Yes	☑ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	**Minor**	**100%[a]**	**80%[b]**	**70%[c]**	**100%[a]**	**80%[b]**	**70%[c]**
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

[a] Basic Minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Eight Highest Hours								
Street	**7:00 AM**	**11:00 AM**	**1:00 PM**	**2:00 PM**	**3:00 PM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major	2,525	1,770	1,700	1,954	2,097	2,318	2,451	1,868
Minor	100	105	116	115	190	165	256	285

Existing Volumes

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ Yes ☐ No

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

If all four points lie above the appropriate line, then the warrant is satisfied.

Applicable: ☑ Yes ☐ No

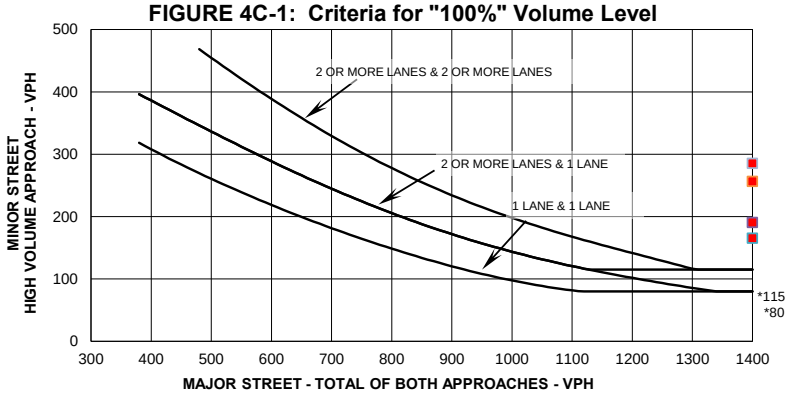
Satisfied: ☑ Yes ☐ No

Plot four volume combinations on the applicable figure below.

100% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
3:00 PM	2097	190
4:00 PM	2318	165
5:00 PM	2451	256
6:00 PM	1868	285

FIGURE 4C-1: Criteria for "100%" Volume Level



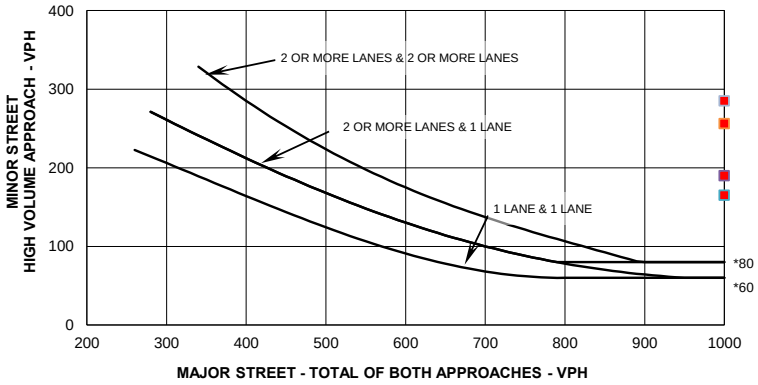
** Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

70% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
3:00 PM	2097	190
4:00 PM	2318	165
5:00 PM	2451	256
6:00 PM	1868	285

FIGURE 4C-2: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	Palmetto	Engineer:	Daniel Hendrickson
County:	13 – Manatee	Date:	March 13, 2020
District:	One		

Major Street:	SR 45 (US 41)	Lanes:	3	Major Approach Speed:	60
Minor Street:	I-275 SB Off-Ramp	Lanes:	1	Minor Approach Speed:	35

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ 70% ☐ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☐ Yes ☑ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
5:00 PM	2451	256

Criteria

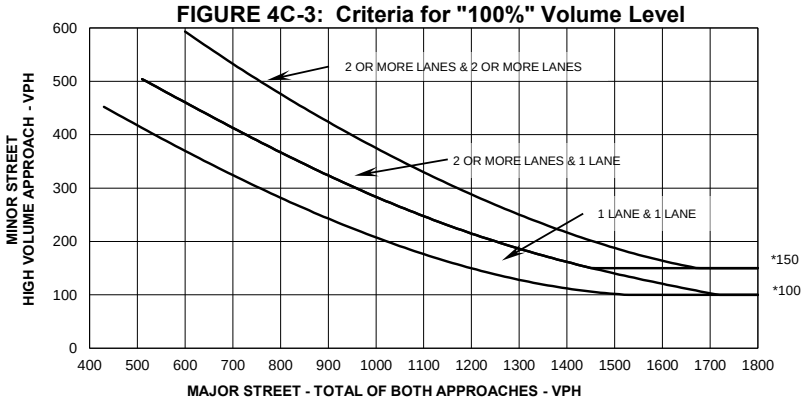
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*		
Fulfilled?:	☐ Yes	☐ No

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*		
Fulfilled?:	☐ Yes	☐ No

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*		
Fulfilled?:	☐ Yes	☐ No

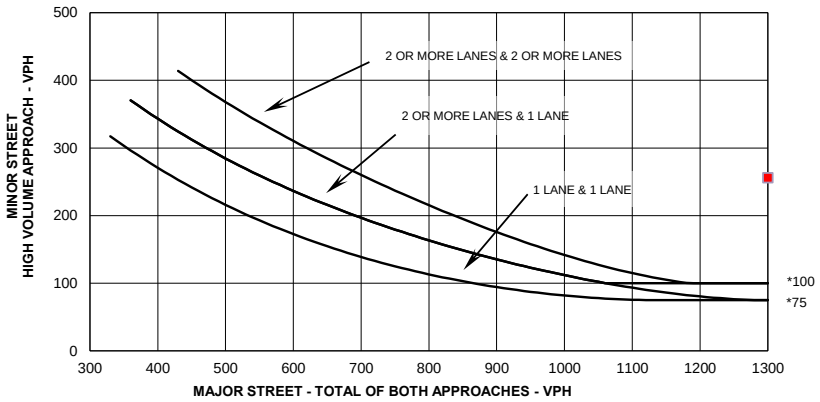
Plot volume combination on the applicable figure below.

FIGURE 4C-3: Criteria for "100%" Volume Level



** Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

FIGURE 4C-4: Criteria for "70%" Volume Level
(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ 70% ☐ 100%

WARRANT 4 - PEDESTRIAN VOLUME

For each of any 4 hours of an average day, the plotted points lie above the appropriate line, then the warrant is satisfied.

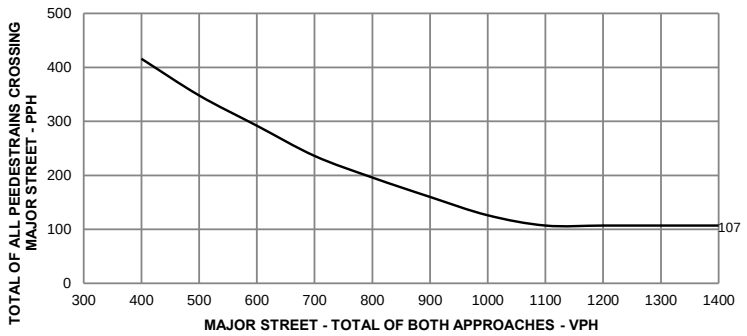
Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Plot four volume combinations on the applicable figure below.

100% Volume Level

Four Highest Hours	Volumes	
	Major Street	Pedestrian Total

Figure 4C-5. Criteria for "100%" Volume Level

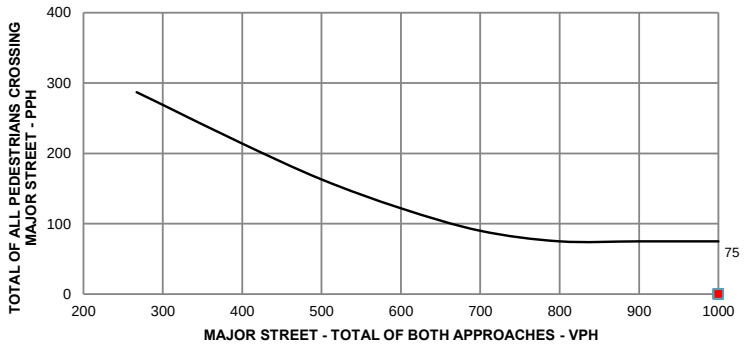


** Note: 107 pph applies as the lower threshold volume*

70% Volume Level

Four Highest Hours	Volumes	
	Major Street	Pedestrian Total
3:00 PM	2097	
4:00 PM	2318	
5:00 PM	2451	
6:00 PM	1868	

Figure 4C-6 Criteria for "70%" Volume Level



** Note: 75 pph applies as the lower threshold volume*

WARRANT 4 - PEDESTRIAN VOLUME

For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point falls above the appropriate line, then the warrant is satisfied.

Applicable: ☐ Yes ☑ No

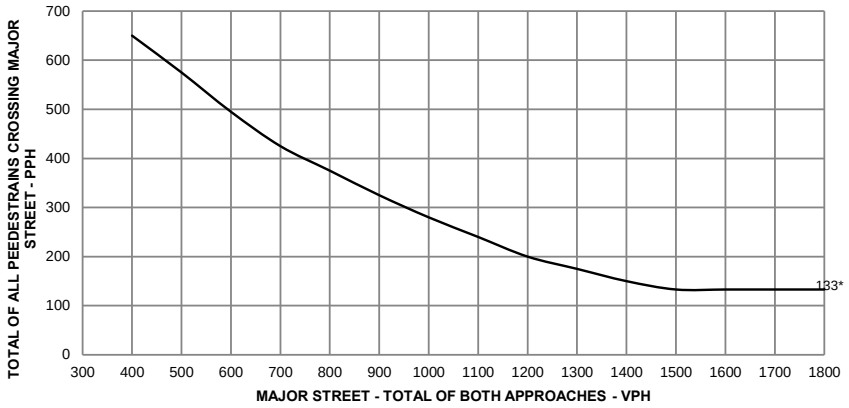
Satisfied: ☐ Yes ☑ No

Plot one volume combination on the applicable figure below.

100% Volume Level

Peak Hour	Volumes	
	Major Street	Pedestrian Total

Figure 4C-7. Criteria for "100%" Volume Level - Peak Hour

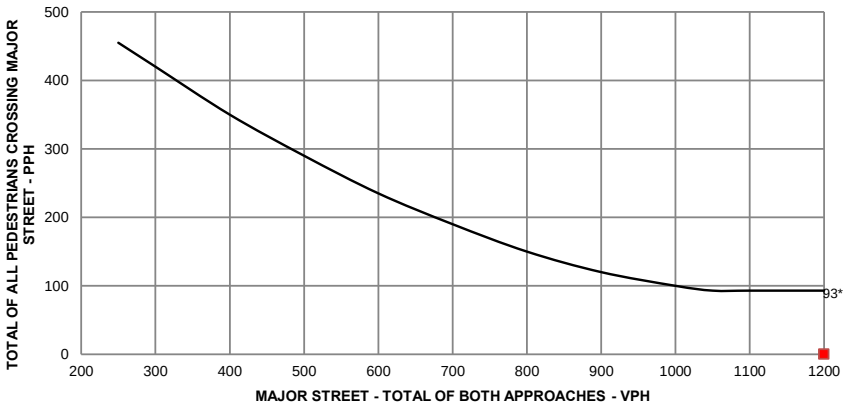


** Note: 133 pph applies as the lower threshold volume*

70% Volume Level

Peak Hour	Volumes	
	Major Street	Pedestrian Total
5:00 PM	2451	

Figure 4C-8 Criteria for "70%" Volume Level - Peak Hour



** Note: 93 pph applies as the lower threshold volume*

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

WARRANT 5 - SCHOOL CROSSING

Record hours where criteria are fulfilled and the corresponding volume or gap frequency in the boxes provided. The warrant is satisfied if all three of the criteria are fulfilled.

Applicable: ☐ Yes ☑ No

Satisfied: ☐ Yes ☑ No

Criteria				Fulfilled? Yes	Fulfilled? No
1. There are a minimum of 20 students crossing the major street during the highest crossing hour.	Students:	Hour:			
2. There are fewer adequate gaps in the major street traffic stream during the period when the children are using the established school crossing than the number of minutes in the same period.		Minutes:	Gaps:		
3. The nearest traffic signal along the major street is located more than 300 ft. (90 m) away, or the nearest signal is within 300 ft. (90 m) but the proposed traffic signal will not restrict the progressive movement of traffic.					

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

WARRANT 6 - COORDINATED SIGNAL SYSTEM

Indicate if the criteria are fulfilled in the boxes provided. The warrant is satisfied if either criterion is fulfilled. This warrant should not be applied when the resulting signal spacing would be less than 300 m (1,000 ft.).

Applicable: ☐ Yes ☑ No

Satisfied: ☐ Yes ☑ No

	Criteria	Fulfilled? Yes	Fulfilled? No
1.	On a one-way street or a street that has traffic predominately in one direction, the adjacent signals are so far apart that they do not provide the necessary degree of vehicle platooning.		
2.	On a two-way street, adjacent signals do not provide the necessary degree of platooning, and the proposed and adjacent signals will collectively provide a progressive operation.		

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

WARRANT 7 - CRASH EXPERIENCE

Record hours where criteria are fulfilled, the corresponding volume, and other information in the boxes provided. The warrant is satisfied if all three of the criteria are fulfilled.

Applicable: ☑ Yes ☐ No

Satisfied: ☐ Yes ☑ No

Criteria		Hour								Volume		Met?		Fulfilled?	
										Major	Minor	Yes	No	Yes	No
1. One of the warrants to the right is met.	Warrant 1, Condition A (80% satisfied)														
	Warrant 1, Condition B (80% satisfied)														
	Warrant 4, Pedestrian Volume at 80% of volume requirements: # ped/hr for four (4) hours or # ped/hr for one (1) hour.														
2. Adequate trial of other remedial measure has failed to reduce crash frequency.		Measure tried:													
3. Five or more reported crashes, of types susceptible to correction by signal, have occurred within a 12-month period.		Observed Crash Types:				Angle				Number of crashes per 12 months:			6	x	

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
District:	**One**		

Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
Minor Street:	**I-275 SB Off-Ramp**	Lanes:	**1**	Minor Approach Speed:	**35**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

WARRANT 8 - ROADWAY NETWORK

Record hours where criteria are fulfilled, and the corresponding volume or other information in the boxes provided. The warrant is satisfied if at least one of the criteria is fulfilled and if all intersecting routes have one or more of the Major Route characteristics listed.

Applicable: ☐ Yes ☑ No

Satisfied: ☐ Yes ☑ No

Criteria								Met? Yes	Met? No	Fulfilled? Yes	Fulfilled? No
1. Both of the criteria to the right are met.	a. Total entering volume of at least 1,000 veh/hr during a typical weekday peak hour.			Entering Volume:							
	b. Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.			Warrant:	1	2	3				
				Satisfied?:							
2. Total entering volume at least 1,000 veh/hr for each of any 5 hrs of a non-normal business day (Sat. or Sun.)								← Hour			
								←Volume			

Characteristics of Major Routes		Met? Yes	Met? No	Fulfilled? Yes	Fulfilled? No
1. Part of the street or highway system that serves as the principal roadway network for through traffic flow.	Major Street:				
	Minor Street:				
2. Rural or suburban highway outside of, entering, or traversing a city.	Major Street:				
	Minor Street:				
3. Appears as a major route on an official plan.	Major Street:				
	Minor Street:				

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	Palmetto	Engineer:	Daniel Hendrickson
County:	13 – Manatee	Date:	March 13, 2020
District:	One		

Major Street:	SR 45 (US 41)	Lanes:	3	Major Approach Speed:	60
Minor Street:	I-275 SB Off-Ramp	Lanes:	1	Minor Approach Speed:	35

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Approach Lane Criteria

1. How many approach lanes are there at the track crossing? ☐ 1 ☐ 2 or

If there is 1 lane, use Figure 4C-9 and if there are 2 or more, use Figure 4C-10. ☐ Fig 4C-9 ☐ Fig 4C-10

WARRANT 9 - INTERSECTION NEAR A GRADE CROSSING

This signal warrant should be applied only after adequate consideration has been given to other alternatives or after a trial of an alternative has failed to alleviate the safety concerns associated with the grade crossing.

Indicate if both criteria are fulfilled in the boxes provided. The warrant is satisfied if both criteria are met.

Applicable: ☐ Yes ☐ No

Satisfied: ☐ Yes ☑ No

Criteria	Fulfilled? Yes	Fulfilled? No
1. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and	☐	☐
2. During the highest traffic volume hour during which the rail uses the crossing, the plotted point falls above the applicable curve for the existing combination of approach lanes over the track and the distance D (clear storage distance).	☐	☐

Use the following tables (4C-2, 4C-3, and 4C-4 to appropriately adjust the minor-street approach volume).

Inputs		Adjustment Factors from Tables
Occurrences of Rail traffic per day		
% of High Occupancy Buses on Minor-Street Approach		1.00
Enter D (feet)		
% of Tractor-Trailer Trucks on Minor-Street Approach		0.50

Table 4C-2. Adjustment Factor for Daily Frequency of Rail Traffic

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

Table 4C-3. Adjustment Factor for Percentage of High-Occupancy Buses

% of High-Occupancy Buses* on Minor Street Approach	Adjustment Factor
0%	1.00
2%	1.09
4%	1.19
6% or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people

Table 4C-4. Adjustment Factor for Percentage of Tractor-Trailer Trucks

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

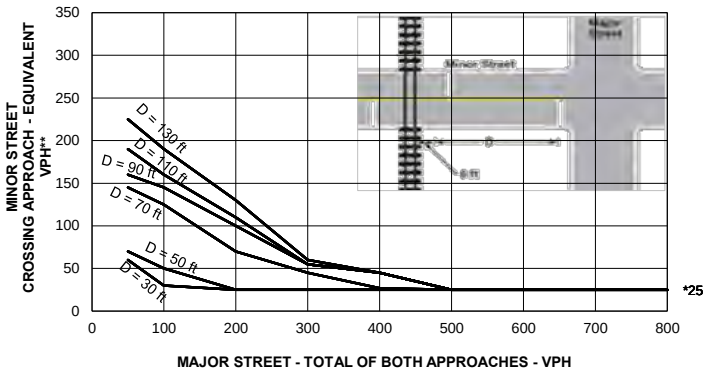
Input the major and minor street volumes before adjustment factors are applied

1 Approach Lane		
D (ft)	Major Vol.	Minor Vol.

After adjustment factors are applied

1 Approach Lane w/Factors		
D (ft)	Major Vol.	Minor Vol.

FIGURE 4C-9: Criteria for 1 Approach Lane at the Track Crossing



** Note: 25 vph applies as the lower threshold volume*

** *Note: VPH after applying the adjustment factors in Tables 4C-2, 4C, and or 4C-4, if appropriate*

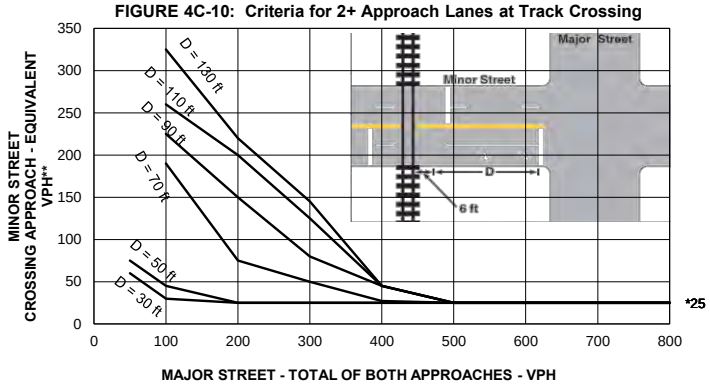
Input D and the major and minor street volumes before adjustment factors are applied

2 or more Approach Lanes		
D (ft)	Major Vol.	Minor Vol.

After adjustment factors are applied

2+ Approach Lane w/Factors		
D (ft)	Major Vol.	Minor Vol.

FIGURE 4C-10: Criteria for 2+ Approach Lanes at Track Crossing



** Note: 25 vph applies as the lower threshold volume*

** *Note: VPH after applying the adjustment factors in Tables 4C-2, 4C, and or 4C-4, if appropriate*

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	**Palmetto**	Engineer:	**Daniel Hendrickson**
County:	**13 – Manatee**	Date:	**March 13, 2020**
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Major Street:	**SR 45 (US 41)**	Lanes:	**3**	Major Approach Speed:	**60**
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MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

CONCLUSIONS

Remarks: **The intersection meet Warrants 1A, 2, and 7 in the Manual on Uniform Traffic Control Devices.**

WARRANTS SATISFIED:

☑ Warrant 1	☐ Not Applicable
☑ Warrant 2	☐ Not Applicable
☐ Warrant 3	☑ Not Applicable
☐ Warrant 4	☐ Not Applicable
☐ Warrant 5	☑ Not Applicable
☐ Warrant 6	☑ Not Applicable
☑ Warrant 7	☐ Not Applicable
☐ Warrant 8	☑ Not Applicable
☐ Warrant 9	☑ Not Applicable

Appendix D

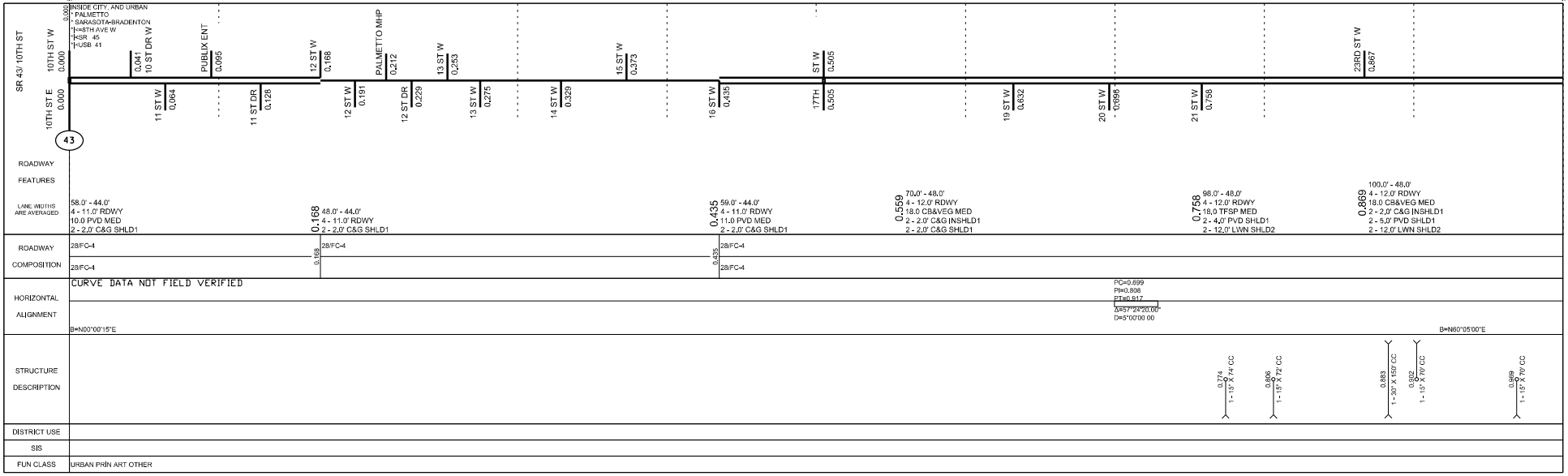
Straight Line Diagrams

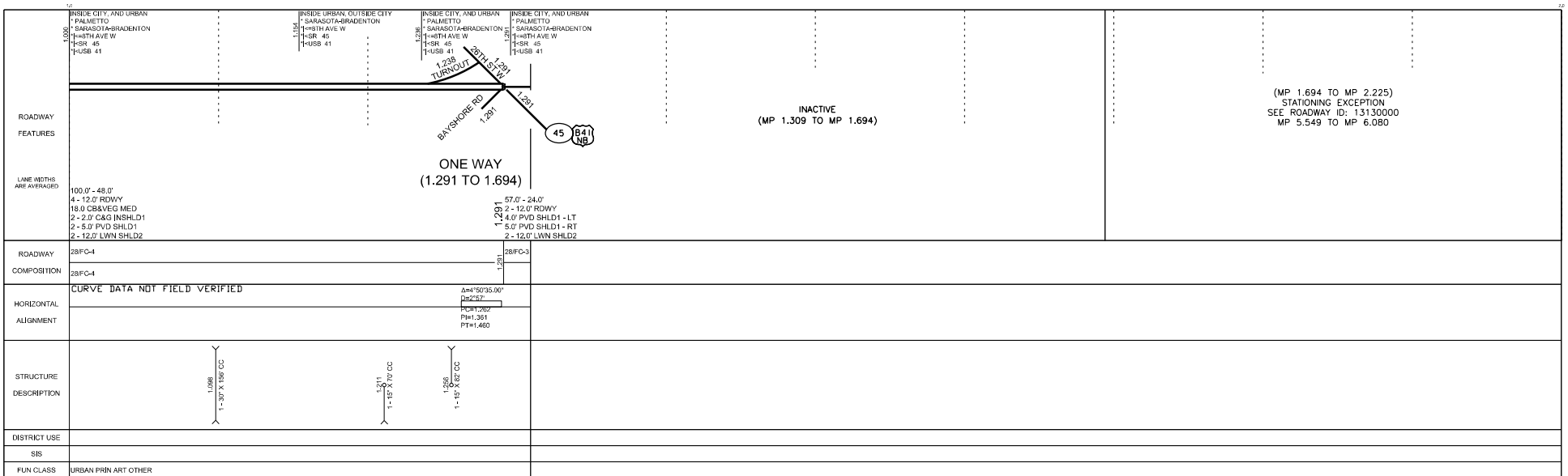
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	11/08/2017	12/08/2017				
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
12	USB 41/US 41	SR 45	MANATEE	01	13030000	1 OF 3





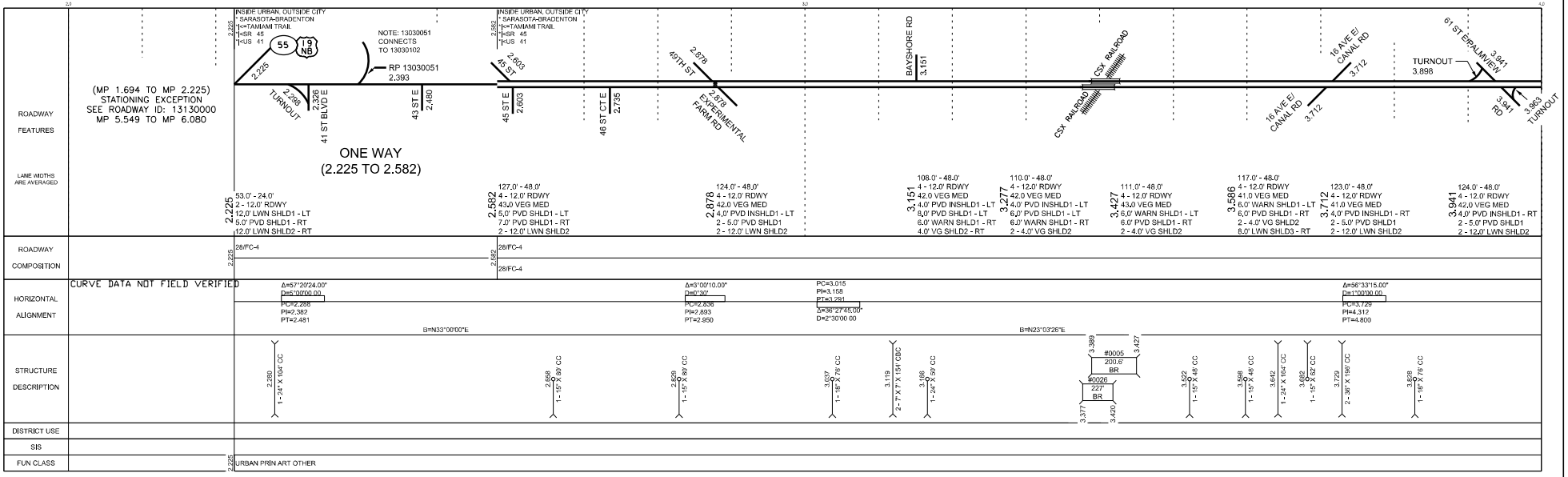
Version: 1.4.2.27 02/16/2021

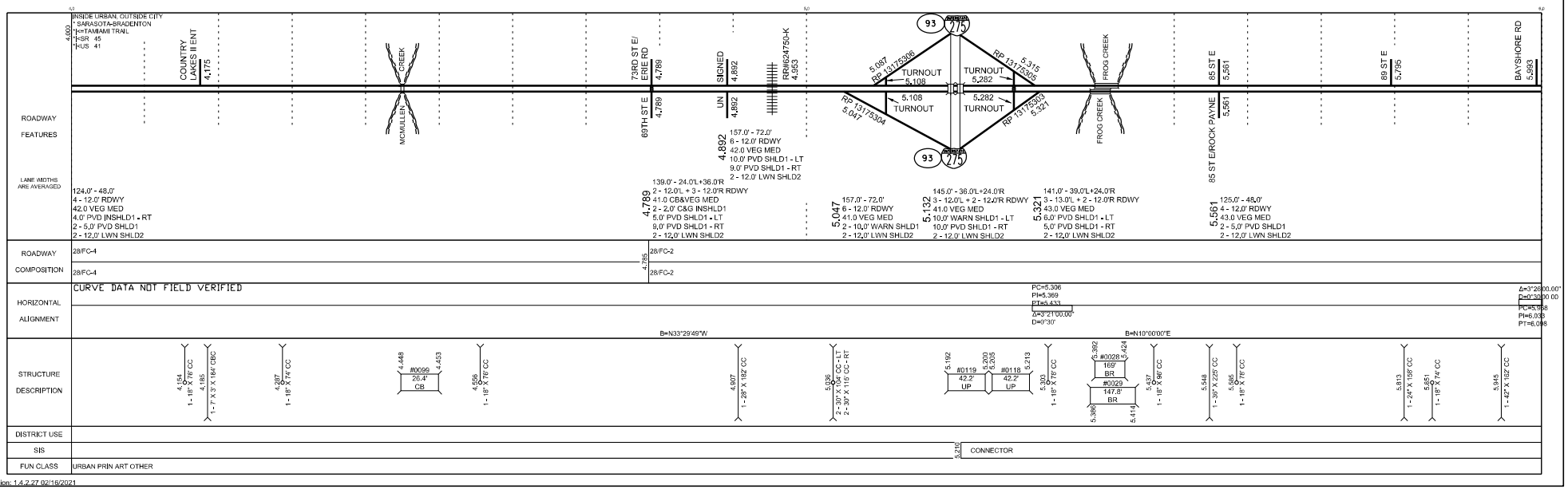
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	11/08/2017	12/08/2017				
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
12	USB 41/US 41	SR 45	MANATEE	01	13030000	2 OF 3





Version: 1.4.2.27 02/16/2021

	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	11/08/2017	12/08/2017				
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
12	USB 41/US 41	SR 45	MANATEE	01	13030000	3 OF 3

ROADWAY FEATURES

INSIDE URBAN, OUTSIDE CITY
- SARASOTA-BRADENTON
- <=TAMIAMI TRAIL
- <SR 45
- <US 41

6.000

BISHOP HARBOR RD 6.310

MOCCASIN WALLOW RD 6.310

ROMAN RD 6.808

TRILECTRON ENT 7.156

113 ST E 7.315

ARMSTRONG RD 7.582

BUCKEYE RD 7.825

LANE WIDTHS ARE AVERAGED

125.0' - 48.0'
4 - 12.0' RDWY
43.0 VEG MED
2 - 5.0' PVD SHLD1
2 - 12.0' LWN SHLD2

ROADWAY COMPOSITION

28/FC-2

28/FC-2

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

PC=6.301
PI=6.318
PT=6.336
Δ=0°27'30.00"
D=0°15'00.00

Δ=2°36'10.00"
D=0°20'00.00
PC=6.483
PI=6.557
PT=6.631

PC=6.884
PI=6.915
PT=6.945
Δ=1°03'50.00"
D=0°20'00.00

B=N34°39'39"W

STRUCTURE DESCRIPTION

6.117 1 - 18" X 74' CC

6.284 2 - 42" X 82' CC - LT; 2 - 42" X 116' CC - RT

6.466 1 - 30" X 72' CC - LT; 1 - 30" X 86' CC - RT

6.551 2 - 30" X 80' CC - LT; 2 - 30" X 80' CC - RT

6.820 2 - 42" X 162' CC

6.844 1 - 18" X 76' CC

7.008 1 - 36" X 162' CC

7.310 2 - 8' X 5' X 162' CBC

7.411 2 - 30" X 76' CC - LT; 2 - 30" X 90' CC - RT

7.469 1 - 18" X 76' CC

7.620 1 - 18" X 76' CC

7.809 1 - 24" X 92' CC

7.843 2 - 8' X 4' X 154' CBC

DISTRICT USE

SIS CONNECTOR

FUN CLASS URBAN PRIN ART OTHER

ROADWAY FEATURES

INSIDE URBAN, OUTSIDE CITY
- SARASOTA-BRADENTON
- <=TAMIAMI TRAIL
- <SR 45
- <US 41

8.000

S DOCK ST 8.343

PINEY POINT RD 8.542

INLAND TRANSPORT ST 8.542

SCALE AVE 9.181

10.709 RR#: 624751-S

9.514 MANATEE AIRPORT RD

HILLSBOROUGH CO LIN

GPS COORDINATES
27° 38'43.946" N
82° 31'29.1242" W

LANE WIDTHS ARE AVERAGED

125.0' - 48.0'
4 - 12.0' RDWY
43.0 VEG MED
2 - 5.0' PVD SHLD1
2 - 12.0' LWN SHLD2

8.228: 126.0' - 48.0'
4 - 12.0' RDWY
44.0 VEG MED
2 - 5.0' PVD SHLD1
2 - 12.0' LWN SHLD2

8.343: 117.0' - 48.0'
4 - 12.0' RDWY
47.0 VEG MED
4.0' PVD INSHLD1 - LT
2 - 5.0' PVD SHLD1
12.0' LWN SHLD2 - RT

8.654: 127.0' - 48.0'
4 - 12.0' RDWY
45.0 VEG MED
4.0' PVD INSHLD1 - LT
2 - 5.0' PVD SHLD1
2 - 12.0' LWN SHLD2

8.717: 116.0' - 48.0'
4 - 12.0' RDWY
44.0 VEG MED
4.0' PVD INSHLD1 - LT
2 - 12.0' PVD SHLD1

8.786: 121.0' - 48.0'
4 - 12.0' RDWY
44.0 VEG MED
12.0' PVD SHLD1 - LT
5.0' PVD SHLD1 - RT
12.0' LWN SHLD2 - RT

8.864: 125.0' - 48.0'
4 - 12.0' RDWY
44.0 VEG MED
4.0' PVD SHLD1 - LT
5.0' PVD SHLD1 - RT
2 - 12.0' LWN SHLD2

9.514: 123.0' - 48.0'
4 - 12.0' RDWY
41.0 VEG MED
2 - 5.0' PVD SHLD1
2 - 12.0' LWN SHLD2

END MP: 9.782
NET ROADWAY ID LENGTH: 8.866

ROADWAY COMPOSITION

28/FC-2 — 8.228 — 08/FC-2 — 8.864 — 28/FC-2

28/FC-2 — 08/FC-2 — 28/FC-2

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

PC=8.320
PI=8.341
PT=8.361
Δ=0°32'10.00"
D=0°15'00.00

PC=8.485
PI=8.565
PT=8.819
Δ=62°59'15.00"
D=3°00'00.00

B=N18°51'46"E

STRUCTURE DESCRIPTION

8.040 1 - 18" X 74' CC

8.238 1 - 18" X 86' CC

8.390 1 - 18" X 86' CC

8.789 1 - 8' X 4' X 140' CBC

9.027 1 - 18" X 86' CC

9.210 2 - 7' X 5' X 134' CBC

9.398 1 - 18" X 76' CC

9.757 1 - 10' X 4' X 142' CBC

DISTRICT USE

SIS CONNECTOR — CONNECTOR 8.554

FUN CLASS URBAN PRIN ART OTHER

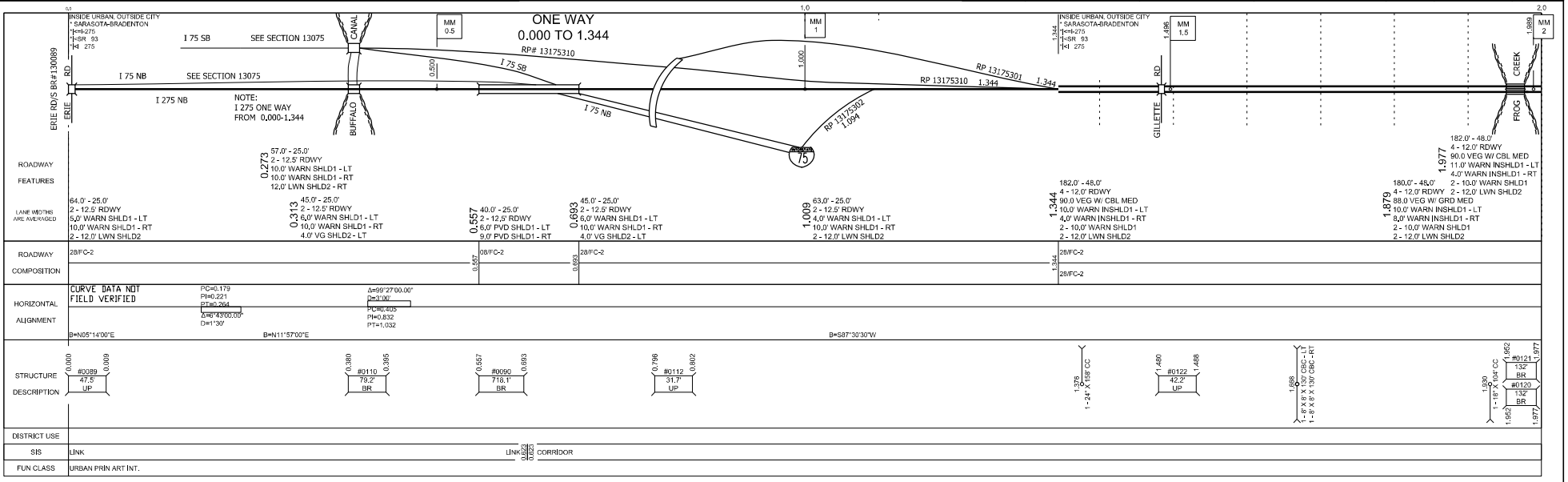
Version: 1.4.2.27 02/16/2021

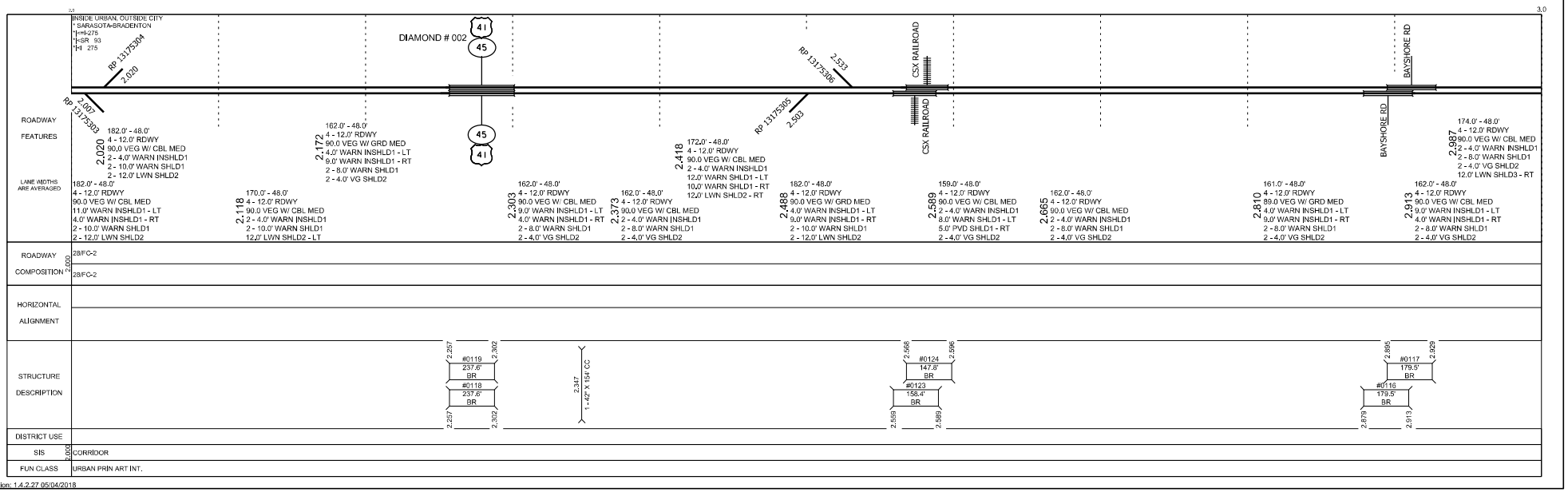
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	04/11/2018	05/04/2018	0.000	5.233		07/06/2021 (CD)
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	I 275	SR 93	MANATEE	01	13175000	1 OF 2





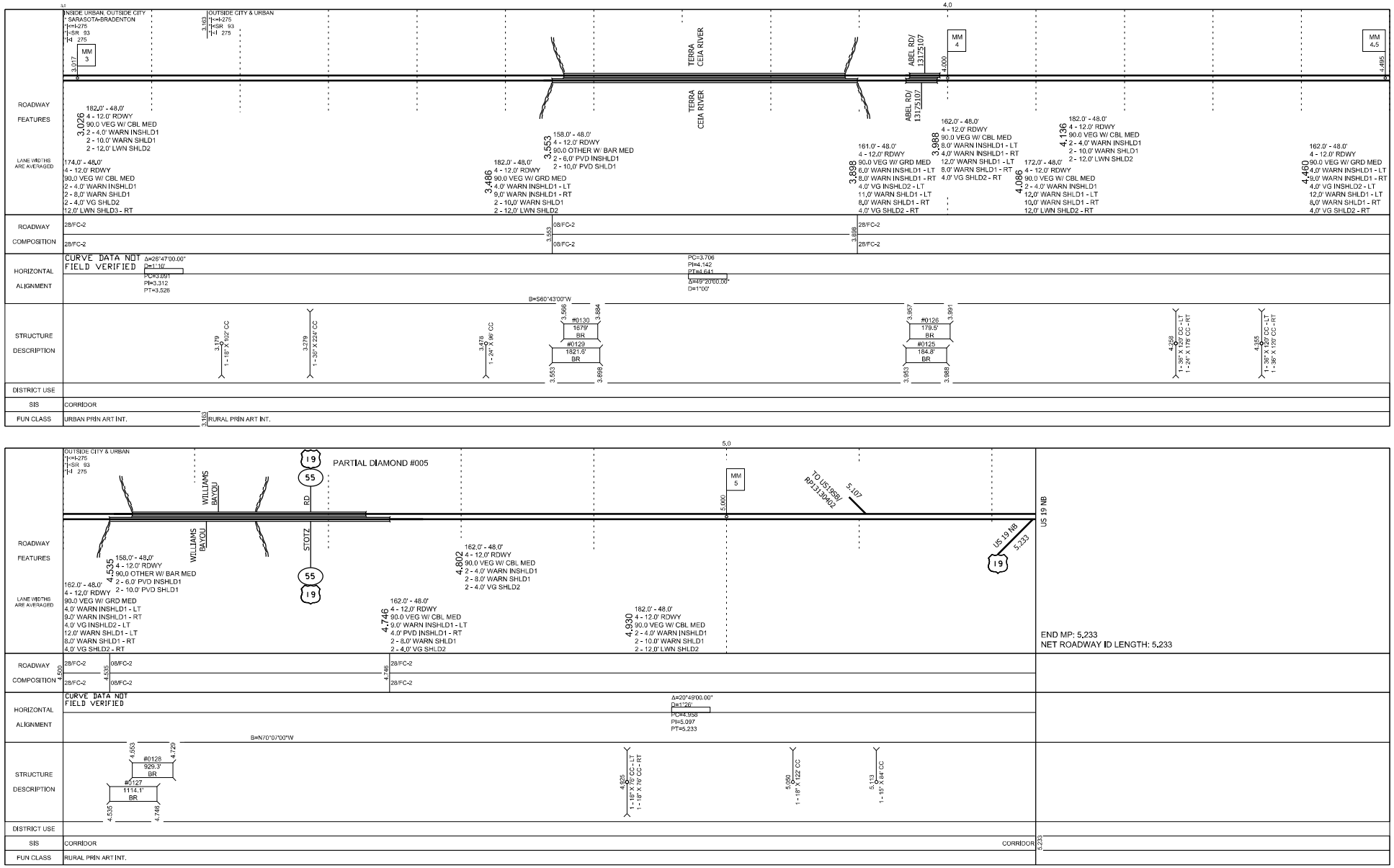
Version: 1.4.2.27 05/04/2018

	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	04/11/2018	05/04/2018	0.000	5.233		07/06/2021 (CD)
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	I 275	SR 93	MANATEE	01	13175000	2 OF 2



Version: 1.4.2.27 05/04/2018

Appendix E

2019 FTO Seasonal & Axle Factors

2019 Peak Season Factor Category Report - Report Type: ALL
Category: 1302 US 41, 19 & 301

MOCF: 0.93

Week	Dates	SF	PSCF
1	01/01/2019 - 01/05/2019	0.98	1.05
2	01/06/2019 - 01/12/2019	0.99	1.06
3	01/13/2019 - 01/19/2019	0.99	1.06
4	01/20/2019 - 01/26/2019	0.98	1.05
* 5	01/27/2019 - 02/02/2019	0.96	1.03
* 6	02/03/2019 - 02/09/2019	0.95	1.02
* 7	02/10/2019 - 02/16/2019	0.94	1.01
* 8	02/17/2019 - 02/23/2019	0.93	1.00
* 9	02/24/2019 - 03/02/2019	0.92	0.99
*10	03/03/2019 - 03/09/2019	0.92	0.99
*11	03/10/2019 - 03/16/2019	0.91	0.98
*12	03/17/2019 - 03/23/2019	0.92	0.99
*13	03/24/2019 - 03/30/2019	0.92	0.99
*14	03/31/2019 - 04/06/2019	0.93	1.00
*15	04/07/2019 - 04/13/2019	0.93	1.00
*16	04/14/2019 - 04/20/2019	0.94	1.01
*17	04/21/2019 - 04/27/2019	0.96	1.03
18	04/28/2019 - 05/04/2019	0.97	1.04
19	05/05/2019 - 05/11/2019	0.99	1.06
20	05/12/2019 - 05/18/2019	1.01	1.09
21	05/19/2019 - 05/25/2019	1.02	1.10
22	05/26/2019 - 06/01/2019	1.03	1.11
23	06/02/2019 - 06/08/2019	1.05	1.13
24	06/09/2019 - 06/15/2019	1.06	1.14
25	06/16/2019 - 06/22/2019	1.07	1.15
26	06/23/2019 - 06/29/2019	1.08	1.16
27	06/30/2019 - 07/06/2019	1.09	1.17
28	07/07/2019 - 07/13/2019	1.10	1.18
29	07/14/2019 - 07/20/2019	1.11	1.19
30	07/21/2019 - 07/27/2019	1.10	1.18
31	07/28/2019 - 08/03/2019	1.09	1.17
32	08/04/2019 - 08/10/2019	1.08	1.16
33	08/11/2019 - 08/17/2019	1.08	1.16
34	08/18/2019 - 08/24/2019	1.08	1.16
35	08/25/2019 - 08/31/2019	1.08	1.16
36	09/01/2019 - 09/07/2019	1.08	1.16
37	09/08/2019 - 09/14/2019	1.08	1.16
38	09/15/2019 - 09/21/2019	1.08	1.16
39	09/22/2019 - 09/28/2019	1.06	1.14
40	09/29/2019 - 10/05/2019	1.05	1.13
41	10/06/2019 - 10/12/2019	1.03	1.11
42	10/13/2019 - 10/19/2019	1.02	1.10
43	10/20/2019 - 10/26/2019	1.01	1.09
44	10/27/2019 - 11/02/2019	1.00	1.08
45	11/03/2019 - 11/09/2019	0.99	1.06
46	11/10/2019 - 11/16/2019	0.98	1.05
47	11/17/2019 - 11/23/2019	0.98	1.05
48	11/24/2019 - 11/30/2019	0.98	1.05

49	12/01/2019 - 12/07/2019	0.98	1.05
50	12/08/2019 - 12/14/2019	0.98	1.05
51	12/15/2019 - 12/21/2019	0.98	1.05
52	12/22/2019 - 12/28/2019	0.99	1.06
53	12/29/2019 - 12/31/2019	0.99	1.06

* Peak Season

14-Feb-2020 15:39:19 830UPD
1_1302_PKSEASON.TXT

2019 Peak Season Factor Category Report - Report Type: ALL
Category: 1300 MANATEE COUNTYWIDE

MOCF: 0.93

Week	Dates	SF	PSCF
1	01/01/2019 - 01/05/2019	0.99	1.06
2	01/06/2019 - 01/12/2019	0.99	1.06
3	01/13/2019 - 01/19/2019	0.99	1.06
4	01/20/2019 - 01/26/2019	0.97	1.04
5	01/27/2019 - 02/02/2019	0.96	1.03
* 6	02/03/2019 - 02/09/2019	0.94	1.01
* 7	02/10/2019 - 02/16/2019	0.93	1.00
* 8	02/17/2019 - 02/23/2019	0.92	0.99
* 9	02/24/2019 - 03/02/2019	0.92	0.99
*10	03/03/2019 - 03/09/2019	0.91	0.98
*11	03/10/2019 - 03/16/2019	0.90	0.97
*12	03/17/2019 - 03/23/2019	0.91	0.98
*13	03/24/2019 - 03/30/2019	0.92	0.99
*14	03/31/2019 - 04/06/2019	0.92	0.99
*15	04/07/2019 - 04/13/2019	0.93	1.00
*16	04/14/2019 - 04/20/2019	0.93	1.00
*17	04/21/2019 - 04/27/2019	0.95	1.02
*18	04/28/2019 - 05/04/2019	0.96	1.03
19	05/05/2019 - 05/11/2019	0.97	1.04
20	05/12/2019 - 05/18/2019	0.98	1.05
21	05/19/2019 - 05/25/2019	1.00	1.08
22	05/26/2019 - 06/01/2019	1.02	1.10
23	06/02/2019 - 06/08/2019	1.04	1.12
24	06/09/2019 - 06/15/2019	1.06	1.14
25	06/16/2019 - 06/22/2019	1.08	1.16
26	06/23/2019 - 06/29/2019	1.09	1.17
27	06/30/2019 - 07/06/2019	1.11	1.19
28	07/07/2019 - 07/13/2019	1.12	1.20
29	07/14/2019 - 07/20/2019	1.13	1.22
30	07/21/2019 - 07/27/2019	1.12	1.20
31	07/28/2019 - 08/03/2019	1.11	1.19
32	08/04/2019 - 08/10/2019	1.10	1.18
33	08/11/2019 - 08/17/2019	1.09	1.17
34	08/18/2019 - 08/24/2019	1.09	1.17
35	08/25/2019 - 08/31/2019	1.09	1.17
36	09/01/2019 - 09/07/2019	1.08	1.16
37	09/08/2019 - 09/14/2019	1.08	1.16
38	09/15/2019 - 09/21/2019	1.08	1.16
39	09/22/2019 - 09/28/2019	1.06	1.14
40	09/29/2019 - 10/05/2019	1.04	1.12
41	10/06/2019 - 10/12/2019	1.03	1.11
42	10/13/2019 - 10/19/2019	1.01	1.09
43	10/20/2019 - 10/26/2019	1.00	1.08
44	10/27/2019 - 11/02/2019	1.00	1.08
45	11/03/2019 - 11/09/2019	1.00	1.08
46	11/10/2019 - 11/16/2019	0.99	1.06
47	11/17/2019 - 11/23/2019	0.99	1.06
48	11/24/2019 - 11/30/2019	0.99	1.06

49	12/01/2019 - 12/07/2019	0.99	1.06
50	12/08/2019 - 12/14/2019	0.99	1.06
51	12/15/2019 - 12/21/2019	0.99	1.06
52	12/22/2019 - 12/28/2019	0.99	1.06
53	12/29/2019 - 12/31/2019	0.99	1.06

* Peak Season

14-Feb-2020 15:39:19 830UPD
1_1300_PKSEASON.TXT

2019 Peak Season Factor Category Report - Report Type: ALL
Category: 1327 MANATEE I275

MOCF: 0.93

Week	Dates	SF	PSCF
1	01/01/2019 - 01/05/2019	0.98	1.05
2	01/06/2019 - 01/12/2019	1.00	1.08
3	01/13/2019 - 01/19/2019	1.02	1.10
4	01/20/2019 - 01/26/2019	0.99	1.06
* 5	01/27/2019 - 02/02/2019	0.97	1.04
* 6	02/03/2019 - 02/09/2019	0.95	1.02
* 7	02/10/2019 - 02/16/2019	0.93	1.00
* 8	02/17/2019 - 02/23/2019	0.92	0.99
* 9	02/24/2019 - 03/02/2019	0.92	0.99
*10	03/03/2019 - 03/09/2019	0.91	0.98
*11	03/10/2019 - 03/16/2019	0.90	0.97
*12	03/17/2019 - 03/23/2019	0.91	0.98
*13	03/24/2019 - 03/30/2019	0.92	0.99
*14	03/31/2019 - 04/06/2019	0.93	1.00
*15	04/07/2019 - 04/13/2019	0.94	1.01
*16	04/14/2019 - 04/20/2019	0.95	1.02
*17	04/21/2019 - 04/27/2019	0.96	1.03
18	04/28/2019 - 05/04/2019	0.98	1.05
19	05/05/2019 - 05/11/2019	0.99	1.06
20	05/12/2019 - 05/18/2019	1.01	1.09
21	05/19/2019 - 05/25/2019	1.02	1.10
22	05/26/2019 - 06/01/2019	1.02	1.10
23	06/02/2019 - 06/08/2019	1.03	1.11
24	06/09/2019 - 06/15/2019	1.04	1.12
25	06/16/2019 - 06/22/2019	1.04	1.12
26	06/23/2019 - 06/29/2019	1.05	1.13
27	06/30/2019 - 07/06/2019	1.05	1.13
28	07/07/2019 - 07/13/2019	1.06	1.14
29	07/14/2019 - 07/20/2019	1.06	1.14
30	07/21/2019 - 07/27/2019	1.07	1.15
31	07/28/2019 - 08/03/2019	1.07	1.15
32	08/04/2019 - 08/10/2019	1.08	1.16
33	08/11/2019 - 08/17/2019	1.09	1.17
34	08/18/2019 - 08/24/2019	1.09	1.17
35	08/25/2019 - 08/31/2019	1.09	1.17
36	09/01/2019 - 09/07/2019	1.09	1.17
37	09/08/2019 - 09/14/2019	1.10	1.18
38	09/15/2019 - 09/21/2019	1.10	1.18
39	09/22/2019 - 09/28/2019	1.08	1.16
40	09/29/2019 - 10/05/2019	1.06	1.14
41	10/06/2019 - 10/12/2019	1.04	1.12
42	10/13/2019 - 10/19/2019	1.03	1.11
43	10/20/2019 - 10/26/2019	1.02	1.10
44	10/27/2019 - 11/02/2019	1.01	1.09
45	11/03/2019 - 11/09/2019	1.00	1.08
46	11/10/2019 - 11/16/2019	1.00	1.08
47	11/17/2019 - 11/23/2019	0.99	1.06
48	11/24/2019 - 11/30/2019	0.99	1.06

49	12/01/2019 - 12/07/2019	0.98	1.05
50	12/08/2019 - 12/14/2019	0.98	1.05
51	12/15/2019 - 12/21/2019	0.98	1.05
52	12/22/2019 - 12/28/2019	1.00	1.08
53	12/29/2019 - 12/31/2019	1.02	1.10

* Peak Season

14-Feb-2020 15:39:19 830UPD
1_1327_PKSEASON.TXT

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2019	1330	01/01/2019 - 01/05/2019	0.96	13
2019	1330	01/06/2019 - 01/12/2019	0.96	13
2019	1330	01/13/2019 - 01/19/2019	0.96	13
2019	1330	01/20/2019 - 01/26/2019	0.96	13
2019	1330	01/27/2019 - 02/02/2019	0.96	13
2019	1330	02/03/2019 - 02/09/2019	0.96	13
2019	1330	02/10/2019 - 02/16/2019	0.96	13
2019	1330	02/17/2019 - 02/23/2019	0.96	13
2019	1330	02/24/2019 - 03/02/2019	0.96	13
2019	1330	03/03/2019 - 03/09/2019	0.96	13
2019	1330	03/10/2019 - 03/16/2019	0.96	13
2019	1330	03/17/2019 - 03/23/2019	0.96	13
2019	1330	03/24/2019 - 03/30/2019	0.96	13
2019	1330	03/31/2019 - 04/06/2019	0.96	13
2019	1330	04/07/2019 - 04/13/2019	0.96	13
2019	1330	04/14/2019 - 04/20/2019	0.96	13
2019	1330	04/21/2019 - 04/27/2019	0.96	13
2019	1330	04/28/2019 - 05/04/2019	0.96	13
2019	1330	05/05/2019 - 05/11/2019	0.96	13
2019	1330	05/12/2019 - 05/18/2019	0.96	13
2019	1330	05/19/2019 - 05/25/2019	0.96	13
2019	1330	05/26/2019 - 06/01/2019	0.96	13
2019	1330	06/02/2019 - 06/08/2019	0.96	13
2019	1330	06/09/2019 - 06/15/2019	0.96	13
2019	1330	06/16/2019 - 06/22/2019	0.96	13
2019	1330	06/23/2019 - 06/29/2019	0.96	13
2019	1330	06/30/2019 - 07/06/2019	0.96	13
2019	1330	07/07/2019 - 07/13/2019	0.96	13
2019	1330	07/14/2019 - 07/20/2019	0.96	13
2019	1330	07/21/2019 - 07/27/2019	0.96	13
2019	1330	07/28/2019 - 08/03/2019	0.96	13
2019	1330	08/04/2019 - 08/10/2019	0.96	13
2019	1330	08/11/2019 - 08/17/2019	0.96	13
2019	1330	08/18/2019 - 08/24/2019	0.96	13
2019	1330	08/25/2019 - 08/31/2019	0.96	13
2019	1330	09/01/2019 - 09/07/2019	0.96	13
2019	1330	09/08/2019 - 09/14/2019	0.96	13
2019	1330	09/15/2019 - 09/21/2019	0.96	13
2019	1330	09/22/2019 - 09/28/2019	0.96	13
2019	1330	09/29/2019 - 10/05/2019	0.96	13
2019	1330	10/06/2019 - 10/12/2019	0.96	13
2019	1330	10/13/2019 - 10/19/2019	0.96	13

YEAR	AFCAT	DATES	VALUE	COUNTY
2019	1330	10/20/2019 - 10/26/2019	0.96	13
2019	1330	10/27/2019 - 11/02/2019	0.96	13
2019	1330	11/03/2019 - 11/09/2019	0.96	13
2019	1330	11/10/2019 - 11/16/2019	0.96	13
2019	1330	11/17/2019 - 11/23/2019	0.96	13
2019	1330	11/24/2019 - 11/30/2019	0.96	13
2019	1330	12/01/2019 - 12/07/2019	0.96	13
2019	1330	12/08/2019 - 12/14/2019	0.96	13
2019	1330	12/15/2019 - 12/21/2019	0.96	13
2019	1330	12/22/2019 - 12/28/2019	0.96	13
2019	1330	12/29/2019 - 12/31/2019	0.96	13
2019	1336	01/01/2019 - 01/05/2019	0.97	13
2019	1336	01/06/2019 - 01/12/2019	0.97	13
2019	1336	01/13/2019 - 01/19/2019	0.97	13
2019	1336	01/20/2019 - 01/26/2019	0.97	13
2019	1336	01/27/2019 - 02/02/2019	0.97	13
2019	1336	02/03/2019 - 02/09/2019	0.97	13
2019	1336	02/10/2019 - 02/16/2019	0.97	13
2019	1336	02/17/2019 - 02/23/2019	0.97	13
2019	1336	02/24/2019 - 03/02/2019	0.97	13
2019	1336	03/03/2019 - 03/09/2019	0.97	13
2019	1336	03/10/2019 - 03/16/2019	0.97	13
2019	1336	03/17/2019 - 03/23/2019	0.97	13
2019	1336	03/24/2019 - 03/30/2019	0.97	13
2019	1336	03/31/2019 - 04/06/2019	0.97	13
2019	1336	04/07/2019 - 04/13/2019	0.97	13
2019	1336	04/14/2019 - 04/20/2019	0.97	13
2019	1336	04/21/2019 - 04/27/2019	0.97	13
2019	1336	04/28/2019 - 05/04/2019	0.97	13
2019	1336	05/05/2019 - 05/11/2019	0.97	13
2019	1336	05/12/2019 - 05/18/2019	0.97	13
2019	1336	05/19/2019 - 05/25/2019	0.97	13
2019	1336	05/26/2019 - 06/01/2019	0.97	13
2019	1336	06/02/2019 - 06/08/2019	0.97	13
2019	1336	06/09/2019 - 06/15/2019	0.97	13
2019	1336	06/16/2019 - 06/22/2019	0.97	13
2019	1336	06/23/2019 - 06/29/2019	0.97	13
2019	1336	06/30/2019 - 07/06/2019	0.97	13
2019	1336	07/07/2019 - 07/13/2019	0.97	13
2019	1336	07/14/2019 - 07/20/2019	0.97	13
2019	1336	07/21/2019 - 07/27/2019	0.97	13
2019	1336	07/28/2019 - 08/03/2019	0.97	13

YEAR	AFCAT	DATES	VALUE	COUNTY
2019	1336	08/04/2019 - 08/10/2019	0.97	13
2019	1336	08/11/2019 - 08/17/2019	0.97	13
2019	1336	08/18/2019 - 08/24/2019	0.97	13
2019	1336	08/25/2019 - 08/31/2019	0.97	13
2019	1336	09/01/2019 - 09/07/2019	0.97	13
2019	1336	09/08/2019 - 09/14/2019	0.97	13
2019	1336	09/15/2019 - 09/21/2019	0.97	13
2019	1336	09/22/2019 - 09/28/2019	0.97	13
2019	1336	09/29/2019 - 10/05/2019	0.97	13
2019	1336	10/06/2019 - 10/12/2019	0.97	13
2019	1336	10/13/2019 - 10/19/2019	0.97	13
2019	1336	10/20/2019 - 10/26/2019	0.97	13
2019	1336	10/27/2019 - 11/02/2019	0.97	13
2019	1336	11/03/2019 - 11/09/2019	0.97	13
2019	1336	11/10/2019 - 11/16/2019	0.97	13
2019	1336	11/17/2019 - 11/23/2019	0.97	13
2019	1336	11/24/2019 - 11/30/2019	0.97	13
2019	1336	12/01/2019 - 12/07/2019	0.97	13
2019	1336	12/08/2019 - 12/14/2019	0.97	13
2019	1336	12/15/2019 - 12/21/2019	0.97	13
2019	1336	12/22/2019 - 12/28/2019	0.97	13
2019	1336	12/29/2019 - 12/31/2019	0.97	13
2019	1377	01/01/2019 - 01/05/2019	0.95	13
2019	1377	01/06/2019 - 01/12/2019	0.95	13
2019	1377	01/13/2019 - 01/19/2019	0.95	13
2019	1377	01/20/2019 - 01/26/2019	0.95	13
2019	1377	01/27/2019 - 02/02/2019	0.95	13
2019	1377	02/03/2019 - 02/09/2019	0.95	13
2019	1377	02/10/2019 - 02/16/2019	0.95	13
2019	1377	02/17/2019 - 02/23/2019	0.95	13
2019	1377	02/24/2019 - 03/02/2019	0.95	13
2019	1377	03/03/2019 - 03/09/2019	0.95	13
2019	1377	03/10/2019 - 03/16/2019	0.95	13
2019	1377	03/17/2019 - 03/23/2019	0.95	13
2019	1377	03/24/2019 - 03/30/2019	0.95	13
2019	1377	03/31/2019 - 04/06/2019	0.95	13
2019	1377	04/07/2019 - 04/13/2019	0.95	13
2019	1377	04/14/2019 - 04/20/2019	0.95	13
2019	1377	04/21/2019 - 04/27/2019	0.95	13
2019	1377	04/28/2019 - 05/04/2019	0.95	13
2019	1377	05/05/2019 - 05/11/2019	0.95	13
2019	1377	05/12/2019 - 05/18/2019	0.95	13

YEAR	AFCAT	DATES	VALUE	COUNTY
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2019	1377	05/26/2019 - 06/01/2019	0.95	13
2019	1377	06/02/2019 - 06/08/2019	0.95	13
2019	1377	06/09/2019 - 06/15/2019	0.95	13
2019	1377	06/16/2019 - 06/22/2019	0.95	13
2019	1377	06/23/2019 - 06/29/2019	0.95	13
2019	1377	06/30/2019 - 07/06/2019	0.95	13
2019	1377	07/07/2019 - 07/13/2019	0.95	13
2019	1377	07/14/2019 - 07/20/2019	0.95	13
2019	1377	07/21/2019 - 07/27/2019	0.95	13
2019	1377	07/28/2019 - 08/03/2019	0.95	13
2019	1377	08/04/2019 - 08/10/2019	0.95	13
2019	1377	08/11/2019 - 08/17/2019	0.95	13
2019	1377	08/18/2019 - 08/24/2019	0.95	13
2019	1377	08/25/2019 - 08/31/2019	0.95	13
2019	1377	09/01/2019 - 09/07/2019	0.95	13
2019	1377	09/08/2019 - 09/14/2019	0.95	13
2019	1377	09/15/2019 - 09/21/2019	0.95	13
2019	1377	09/22/2019 - 09/28/2019	0.95	13
2019	1377	09/29/2019 - 10/05/2019	0.95	13
2019	1377	10/06/2019 - 10/12/2019	0.95	13
2019	1377	10/13/2019 - 10/19/2019	0.95	13
2019	1377	10/20/2019 - 10/26/2019	0.95	13
2019	1377	10/27/2019 - 11/02/2019	0.95	13
2019	1377	11/03/2019 - 11/09/2019	0.95	13
2019	1377	11/10/2019 - 11/16/2019	0.95	13
2019	1377	11/17/2019 - 11/23/2019	0.95	13
2019	1377	11/24/2019 - 11/30/2019	0.95	13
2019	1377	12/01/2019 - 12/07/2019	0.95	13
2019	1377	12/08/2019 - 12/14/2019	0.95	13
2019	1377	12/15/2019 - 12/21/2019	0.95	13
2019	1377	12/22/2019 - 12/28/2019	0.95	13
2019	1377	12/29/2019 - 12/31/2019	0.95	13
2019	1378	01/01/2019 - 01/05/2019	0.95	13
2019	1378	01/06/2019 - 01/12/2019	0.95	13
2019	1378	01/13/2019 - 01/19/2019	0.95	13
2019	1378	01/20/2019 - 01/26/2019	0.95	13
2019	1378	01/27/2019 - 02/02/2019	0.95	13
2019	1378	02/03/2019 - 02/09/2019	0.95	13
2019	1378	02/10/2019 - 02/16/2019	0.95	13
2019	1378	02/17/2019 - 02/23/2019	0.95	13
2019	1378	02/24/2019 - 03/02/2019	0.95	13

YEAR	AFCAT	DATES	VALUE	COUNTY
2019	1378	03/03/2019 - 03/09/2019	0.95	13
2019	1378	03/10/2019 - 03/16/2019	0.95	13
2019	1378	03/17/2019 - 03/23/2019	0.95	13
2019	1378	03/24/2019 - 03/30/2019	0.95	13
2019	1378	03/31/2019 - 04/06/2019	0.95	13
2019	1378	04/07/2019 - 04/13/2019	0.95	13
2019	1378	04/14/2019 - 04/20/2019	0.95	13
2019	1378	04/21/2019 - 04/27/2019	0.95	13
2019	1378	04/28/2019 - 05/04/2019	0.95	13
2019	1378	05/05/2019 - 05/11/2019	0.95	13
2019	1378	05/12/2019 - 05/18/2019	0.95	13
2019	1378	05/19/2019 - 05/25/2019	0.95	13
2019	1378	05/26/2019 - 06/01/2019	0.95	13
2019	1378	06/02/2019 - 06/08/2019	0.95	13
2019	1378	06/09/2019 - 06/15/2019	0.95	13
2019	1378	06/16/2019 - 06/22/2019	0.95	13
2019	1378	06/23/2019 - 06/29/2019	0.95	13
2019	1378	06/30/2019 - 07/06/2019	0.95	13
2019	1378	07/07/2019 - 07/13/2019	0.95	13
2019	1378	07/14/2019 - 07/20/2019	0.95	13
2019	1378	07/21/2019 - 07/27/2019	0.95	13
2019	1378	07/28/2019 - 08/03/2019	0.95	13
2019	1378	08/04/2019 - 08/10/2019	0.95	13
2019	1378	08/11/2019 - 08/17/2019	0.95	13
2019	1378	08/18/2019 - 08/24/2019	0.95	13
2019	1378	08/25/2019 - 08/31/2019	0.95	13
2019	1378	09/01/2019 - 09/07/2019	0.95	13
2019	1378	09/08/2019 - 09/14/2019	0.95	13
2019	1378	09/15/2019 - 09/21/2019	0.95	13
2019	1378	09/22/2019 - 09/28/2019	0.95	13
2019	1378	09/29/2019 - 10/05/2019	0.95	13
2019	1378	10/06/2019 - 10/12/2019	0.95	13
2019	1378	10/13/2019 - 10/19/2019	0.95	13
2019	1378	10/20/2019 - 10/26/2019	0.95	13
2019	1378	10/27/2019 - 11/02/2019	0.95	13
2019	1378	11/03/2019 - 11/09/2019	0.95	13
2019	1378	11/10/2019 - 11/16/2019	0.95	13
2019	1378	11/17/2019 - 11/23/2019	0.95	13
2019	1378	11/24/2019 - 11/30/2019	0.95	13
2019	1378	12/01/2019 - 12/07/2019	0.95	13
2019	1378	12/08/2019 - 12/14/2019	0.95	13
2019	1378	12/15/2019 - 12/21/2019	0.95	13

YEAR	AFCAT	DATES	VALUE	COUNTY
2019	1378	12/22/2019 - 12/28/2019	0.95	13
2019	1378	12/29/2019 - 12/31/2019	0.95	13

Appendix F

Existing Year 2021 HCS Outputs

HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2021
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1479	4800	0.31	70.0	10.6	A

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	1479	199	4800	2000	0.31	0.10	57.5	57.5	12.9	15.5	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1280	4800	0.27	69.7	9.1	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2296	4989	0.46	59.1	12.9	B

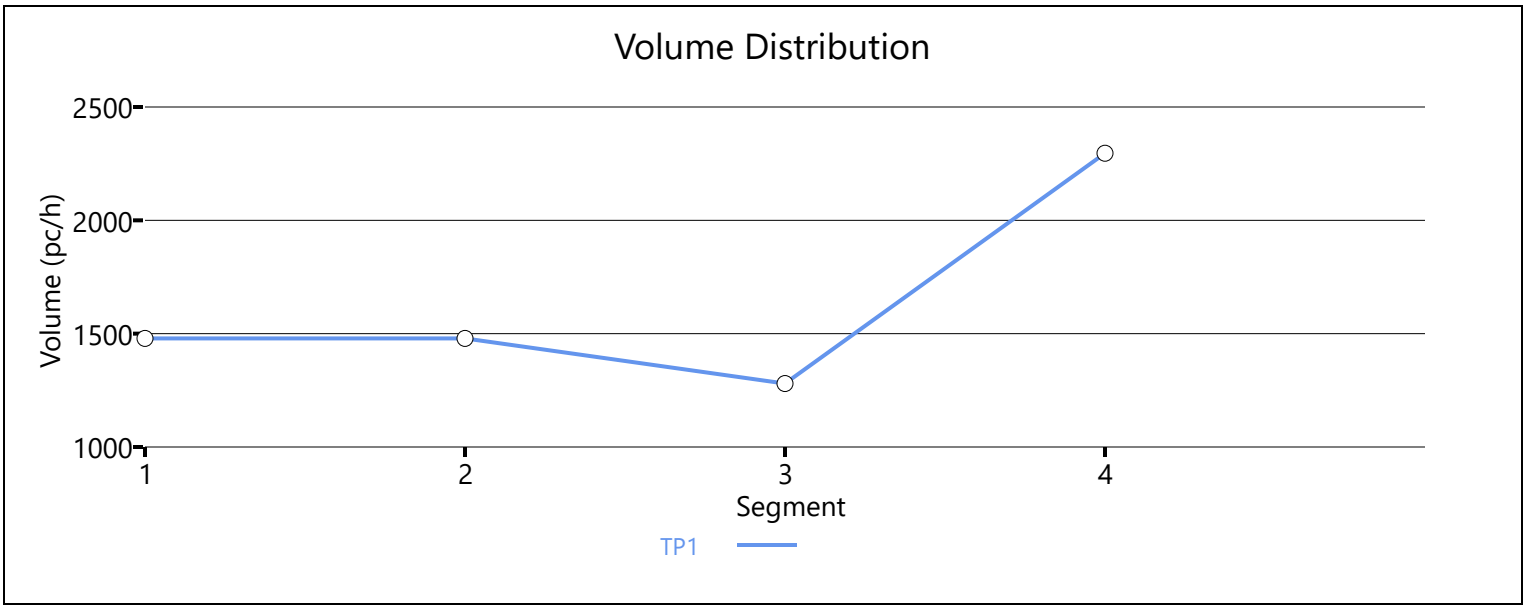
Facility Time Period Results

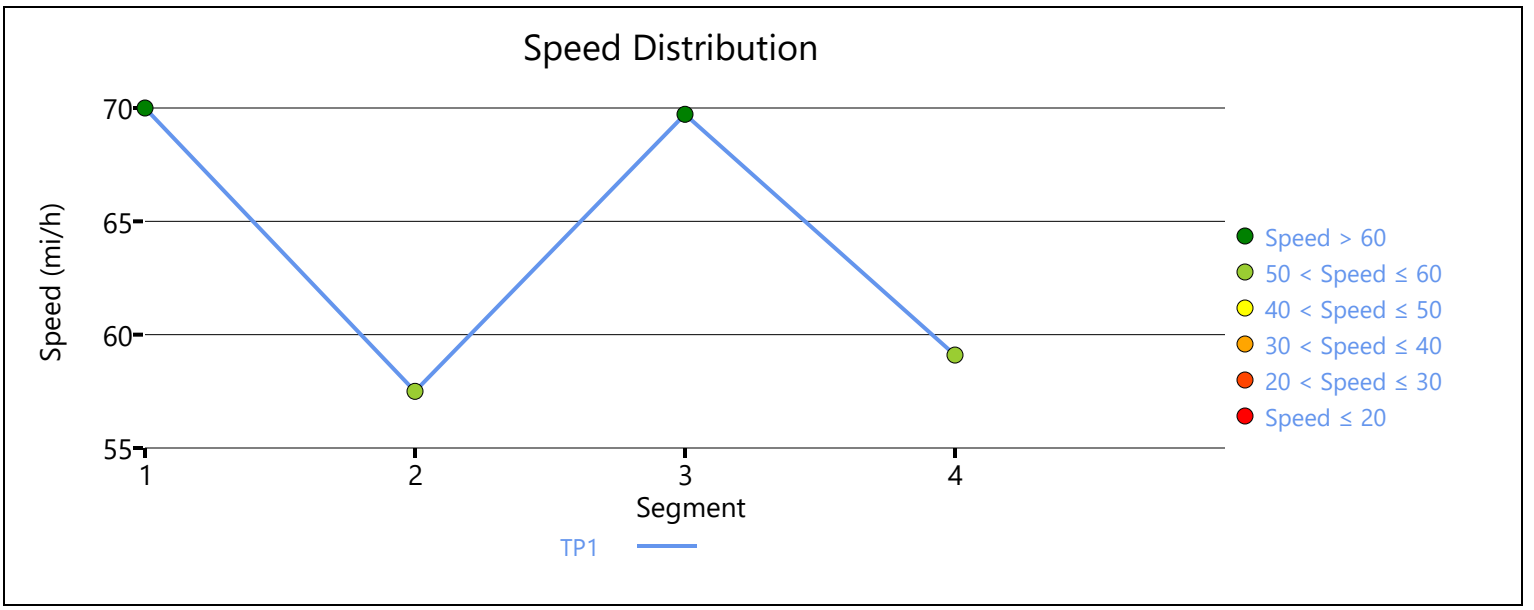
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	64.1	11.4	10.2	2.40	B

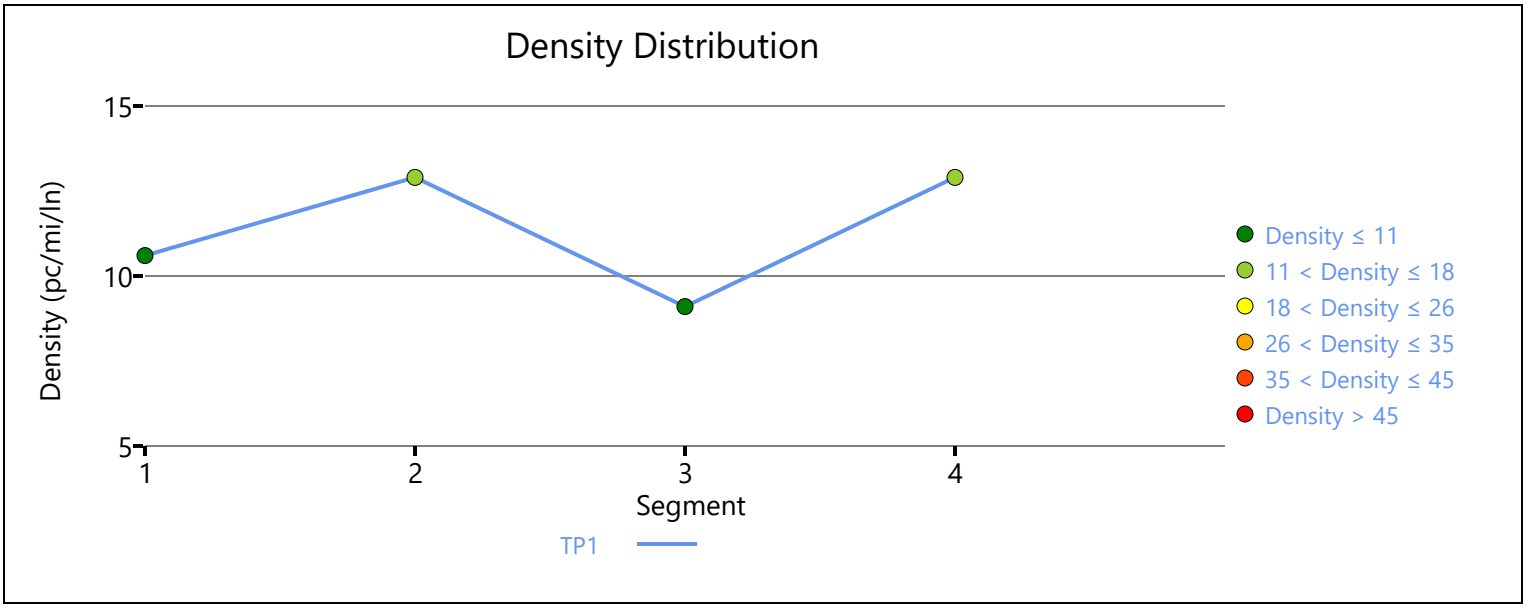
Facility Overall Results			
Space Mean Speed, mi/h	64.1	Density, veh/mi/ln	10.2
Average Travel Time, min	2.40	Density, pc/mi/ln	11.4

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.
INFORMATION 1	Density for segment 1 in time period 1 is within 0.5 pc/mi/ln of LOS boundary. Be cautious when comparing LOS results.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2021
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1804	4800	0.38	73.6	12.3	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2610	806	4800	2000	0.54	0.40	64.8	64.8	20.1	20.5	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2610	4800	0.54	69.3	18.7	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2610	925	4800	2000	0.54	0.46	55.7	55.7	23.4	24.6	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1685	4800	0.35	69.8	12.0	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2218	533	4800	2000	0.46	0.27	61.1	61.1	18.2	19.2	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2218	4800	0.46	70.0	15.8	B

Facility Time Period Results

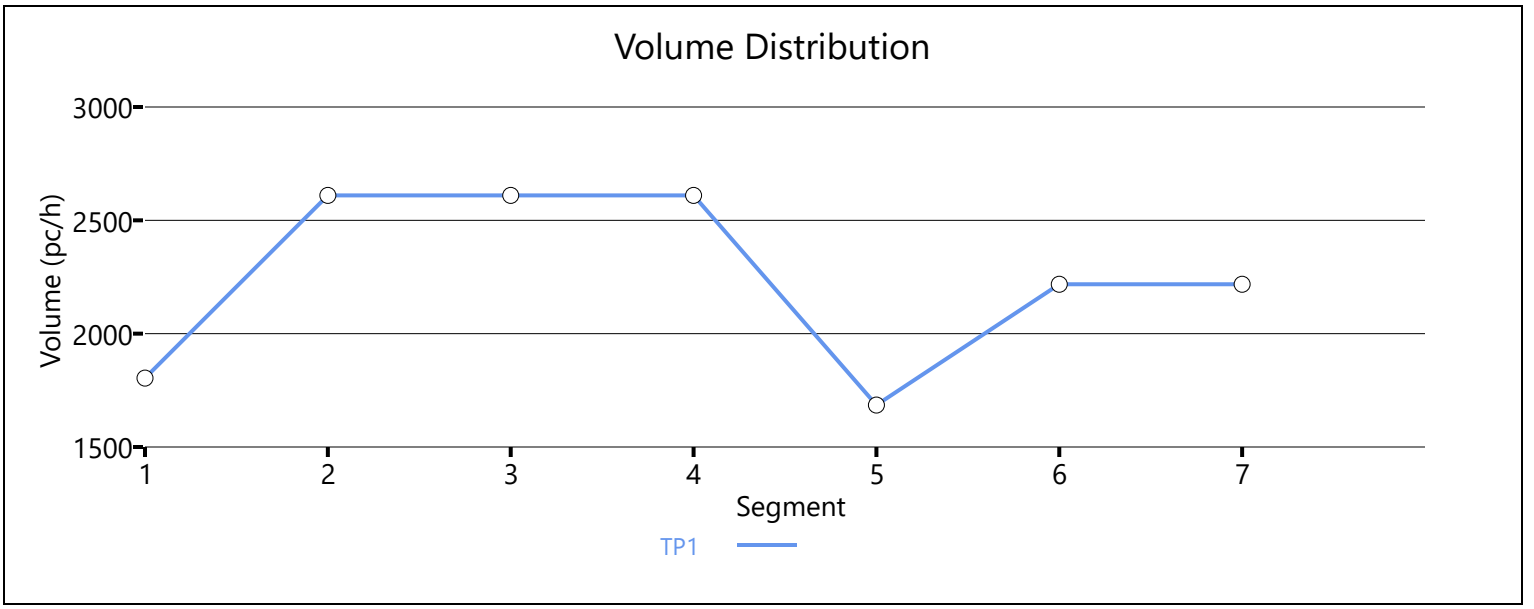
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.7	15.4	14.1	3.30	B

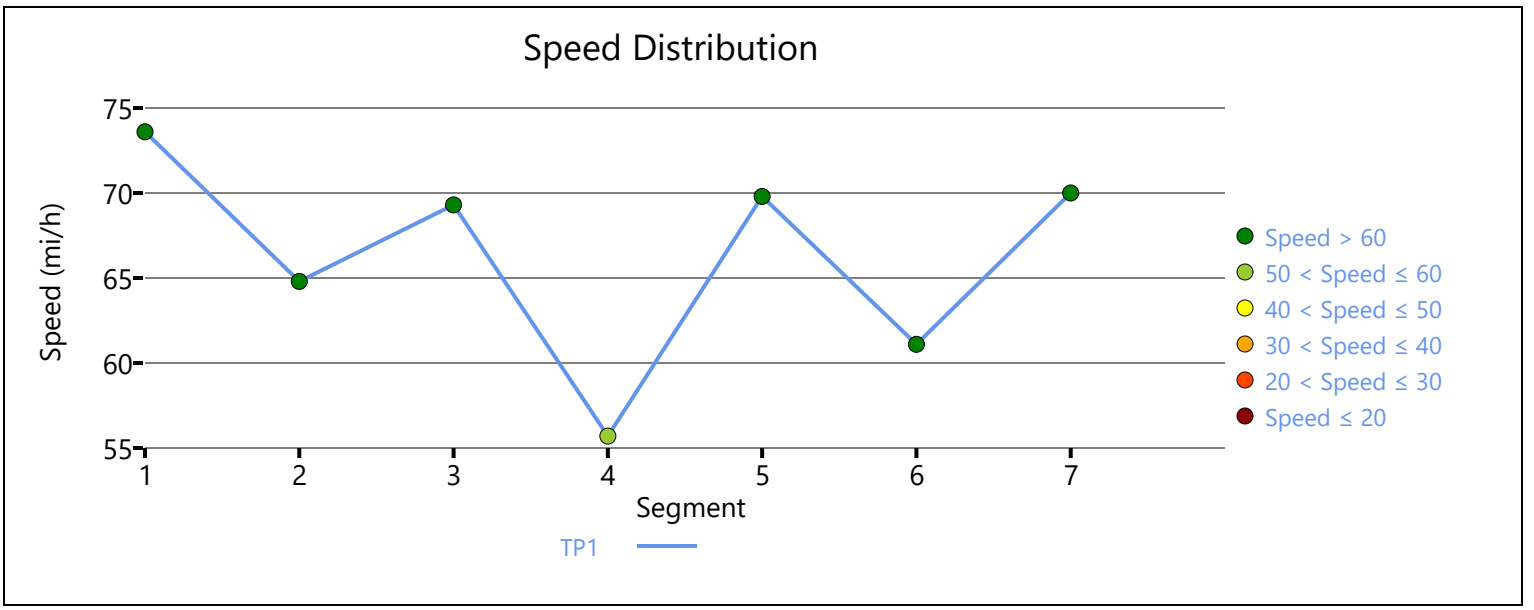
Facility Overall Results

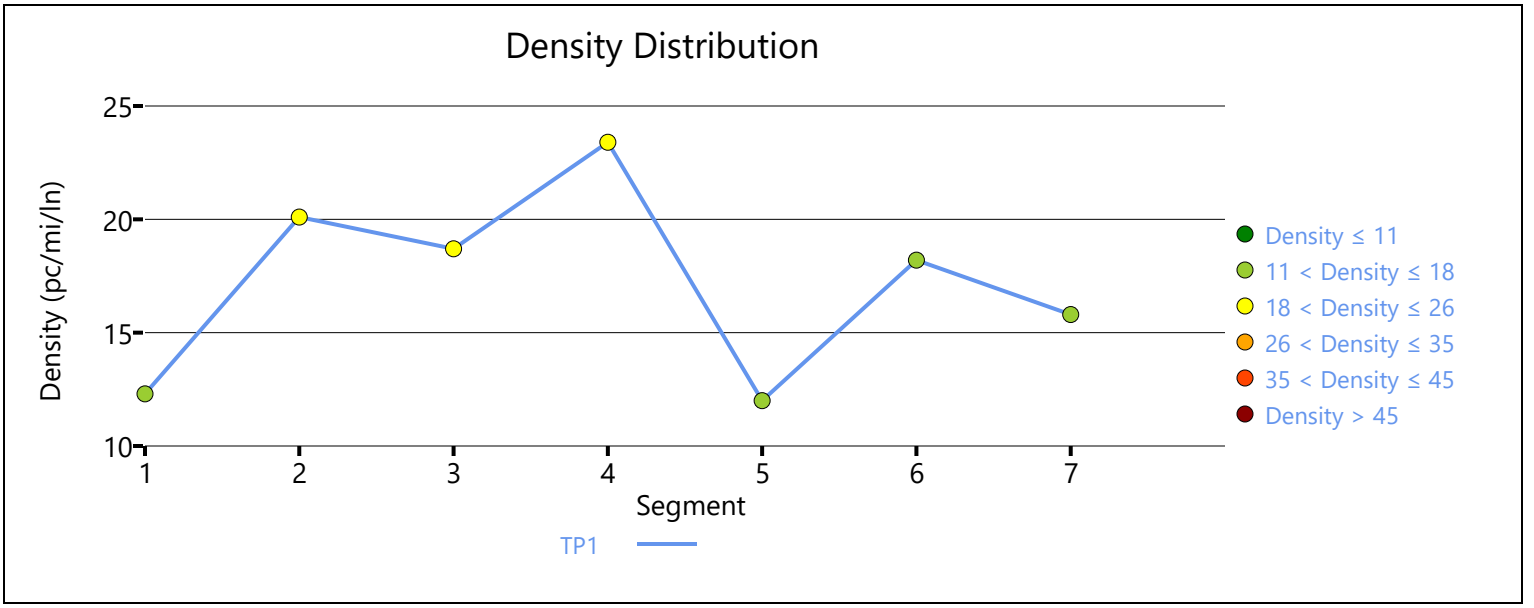
Space Mean Speed, mi/h	67.7	Density, veh/mi/ln	14.1
Average Travel Time, min	3.30	Density, pc/mi/ln	15.4

Messages

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2021
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2523	4800	0.53	70.0	18.0	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2523	475	4800	2000	0.53	0.24	56.8	56.8	22.2	24.5	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2048	4800	0.43	69.7	14.6	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	3051	5405	0.56	56.9	17.9	B

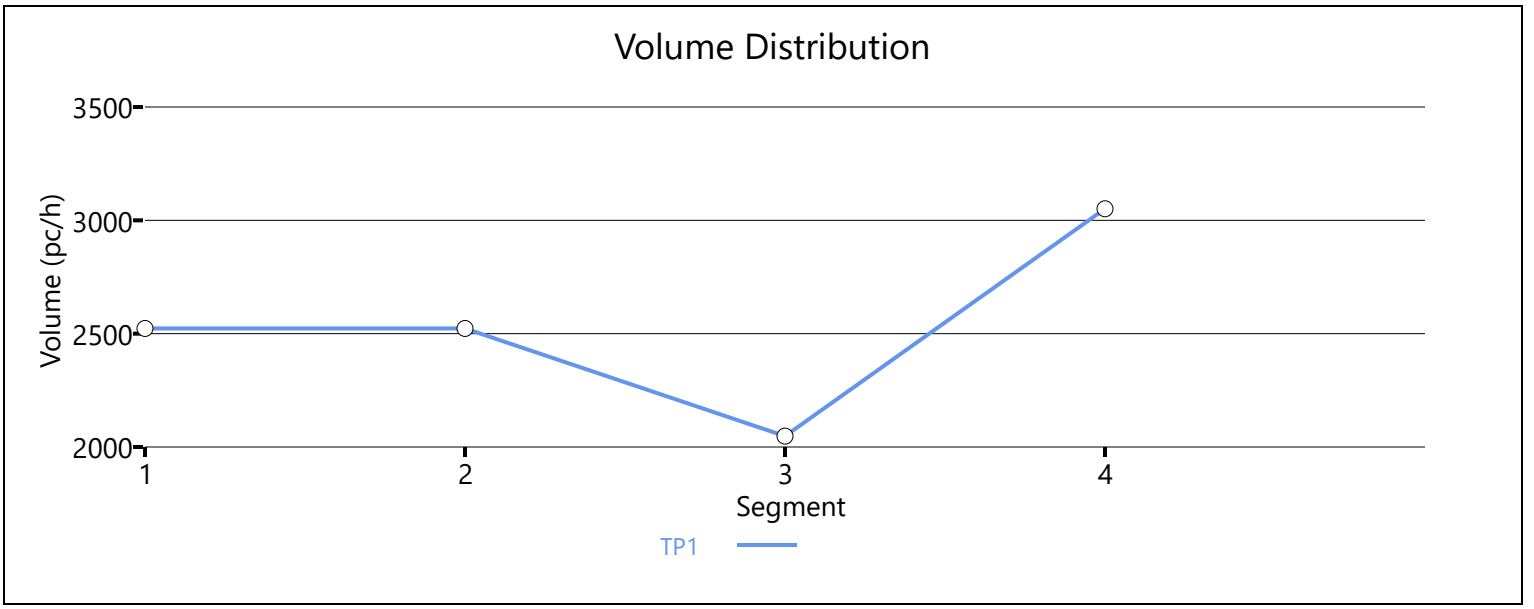
Facility Time Period Results

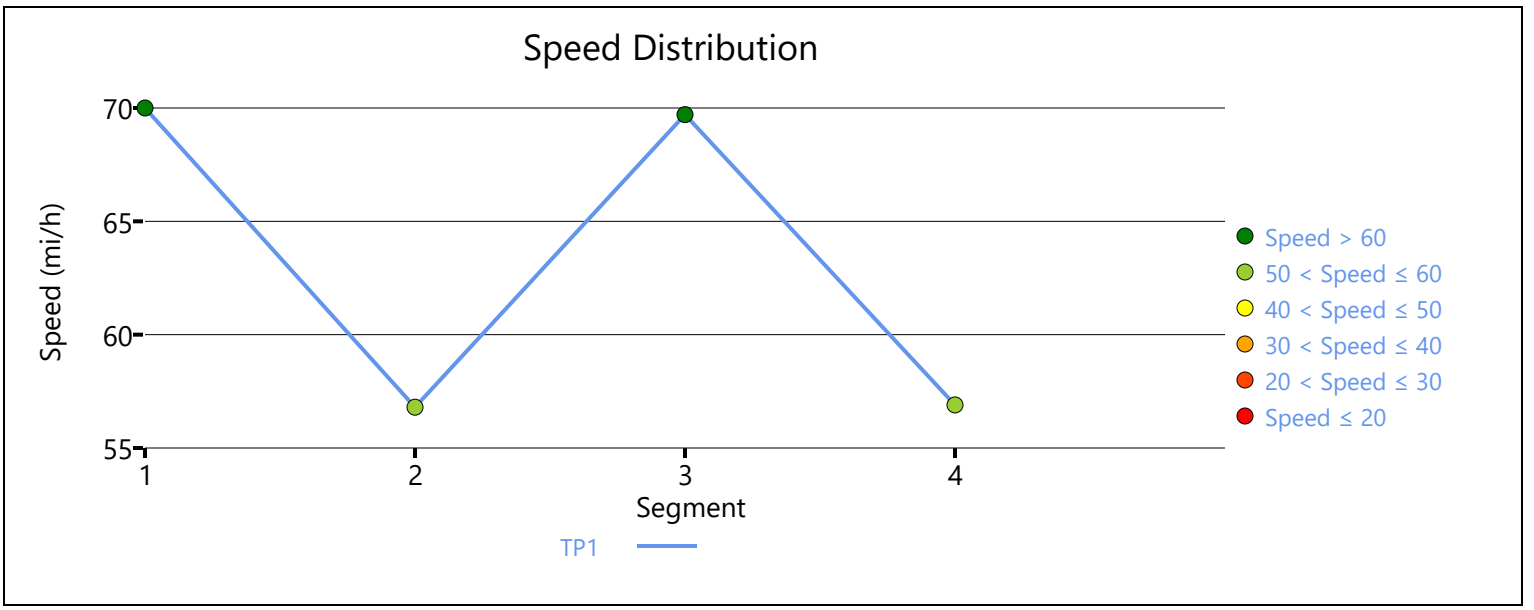
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.6	17.7	16.0	2.50	B

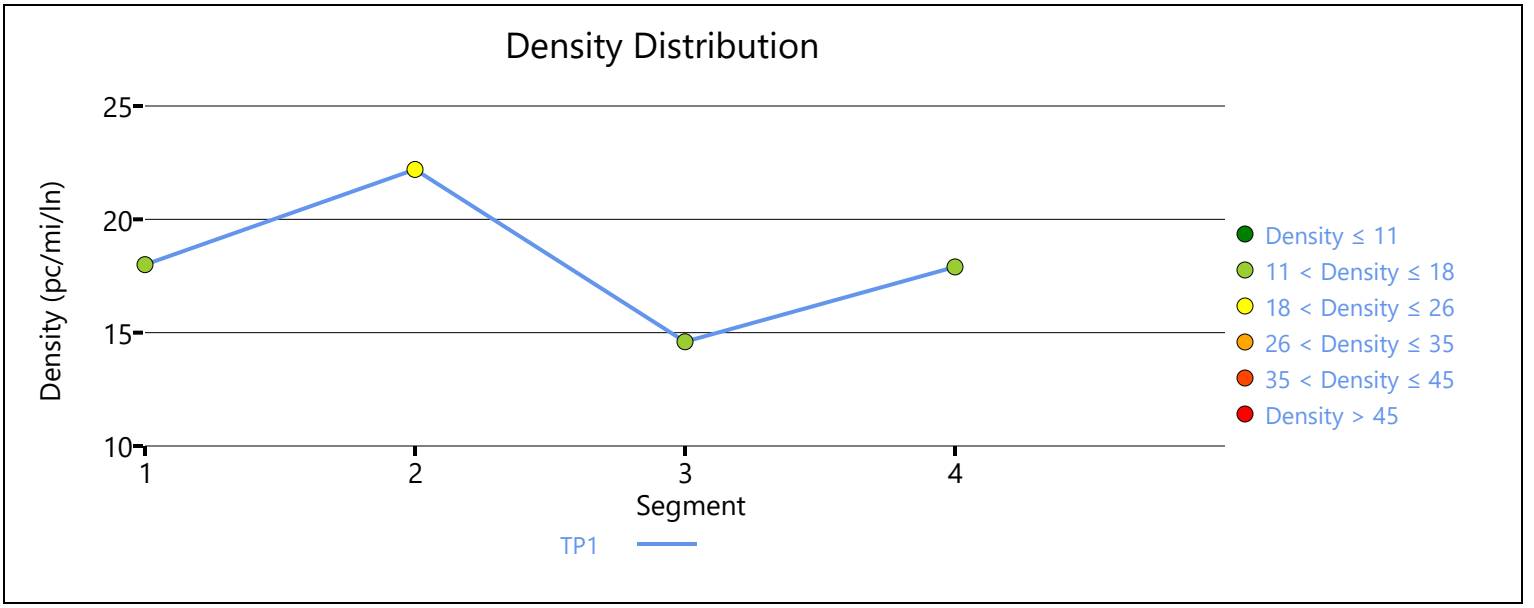
Facility Overall Results			
Space Mean Speed, mi/h	63.6	Density, veh/mi/ln	16.0
Average Travel Time, min	2.50	Density, pc/mi/ln	17.7

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.
INFORMATION 1	Density for segment 1 in time period 1 is within 0.5 pc/mi/ln of LOS boundary. Be cautious when comparing LOS results.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2021
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1568	4764	0.33	68.2	11.5	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2269	701	4800	2000	0.47	0.35	65.3	65.3	17.4	17.9	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2269	4800	0.47	69.3	16.2	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2269	814	4800	2000	0.47	0.41	56.0	56.0	20.3	21.7	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1455	4800	0.30	69.8	10.4	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	1671	216	4800	2000	0.35	0.11	61.5	61.5	13.6	15.0	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1672	4800	0.35	70.0	11.9	B

Facility Time Period Results

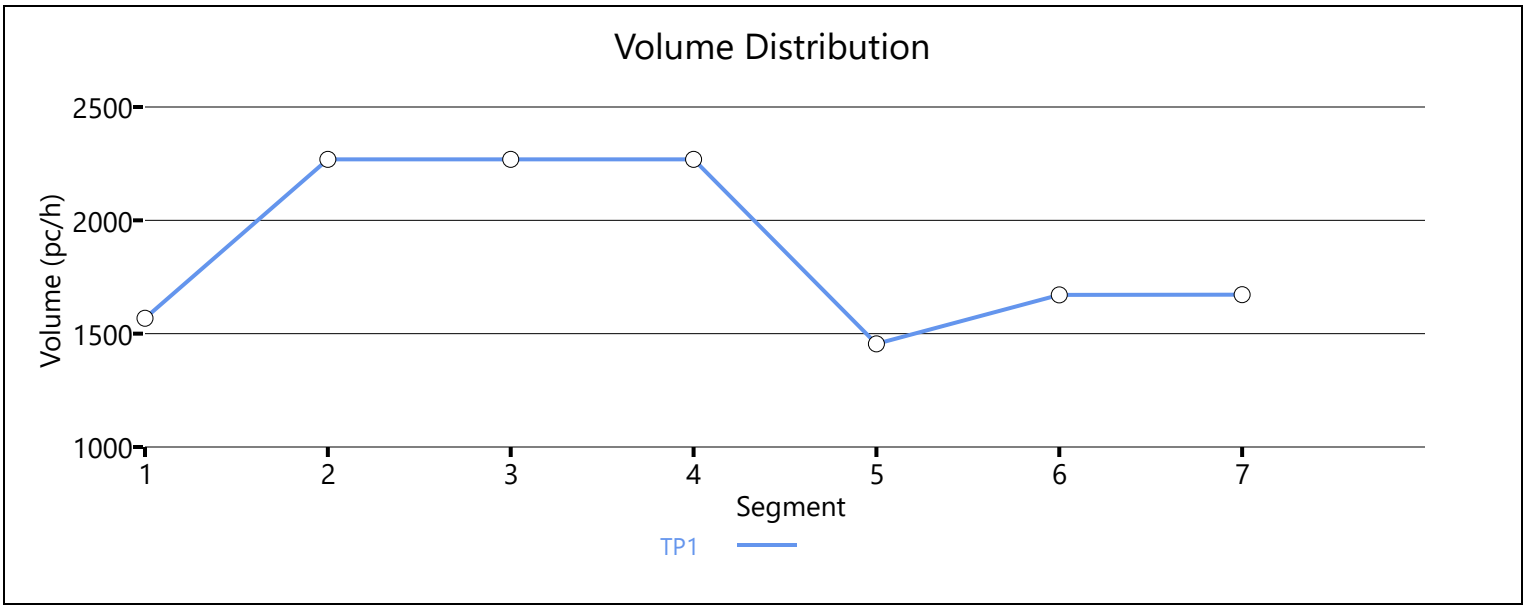
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.6	12.9	11.9	3.30	B

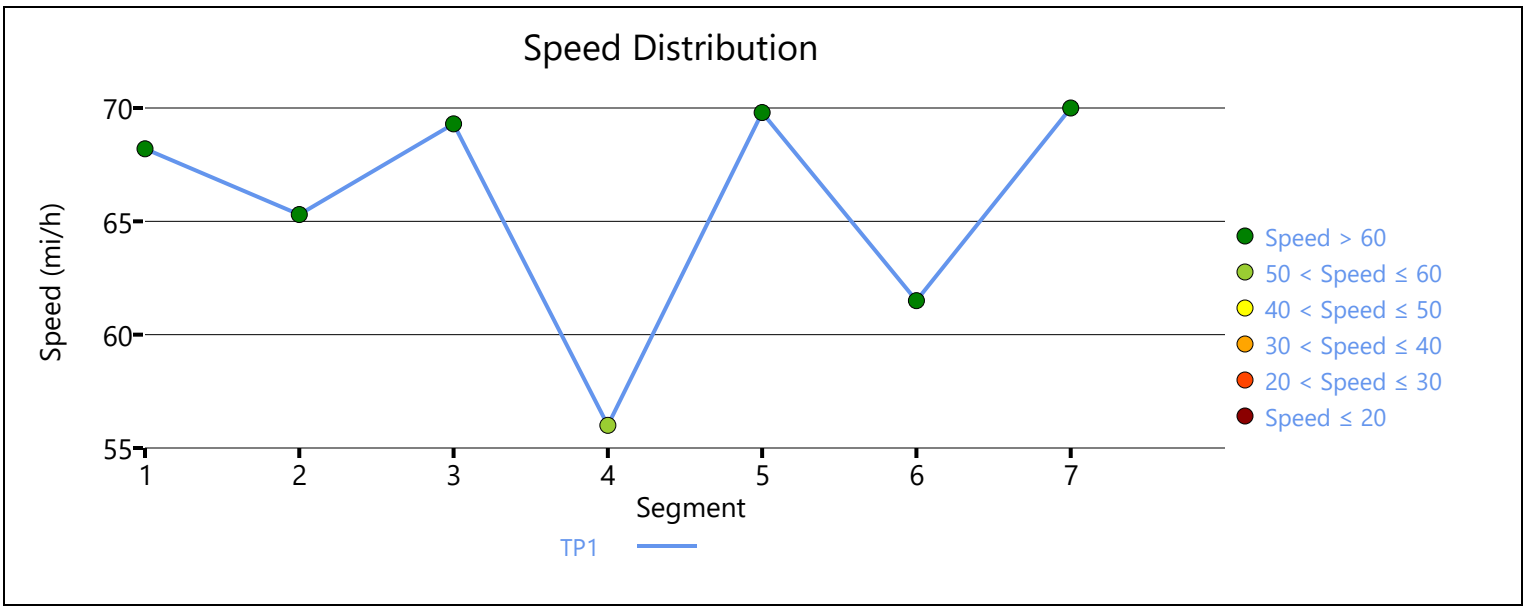
Facility Overall Results

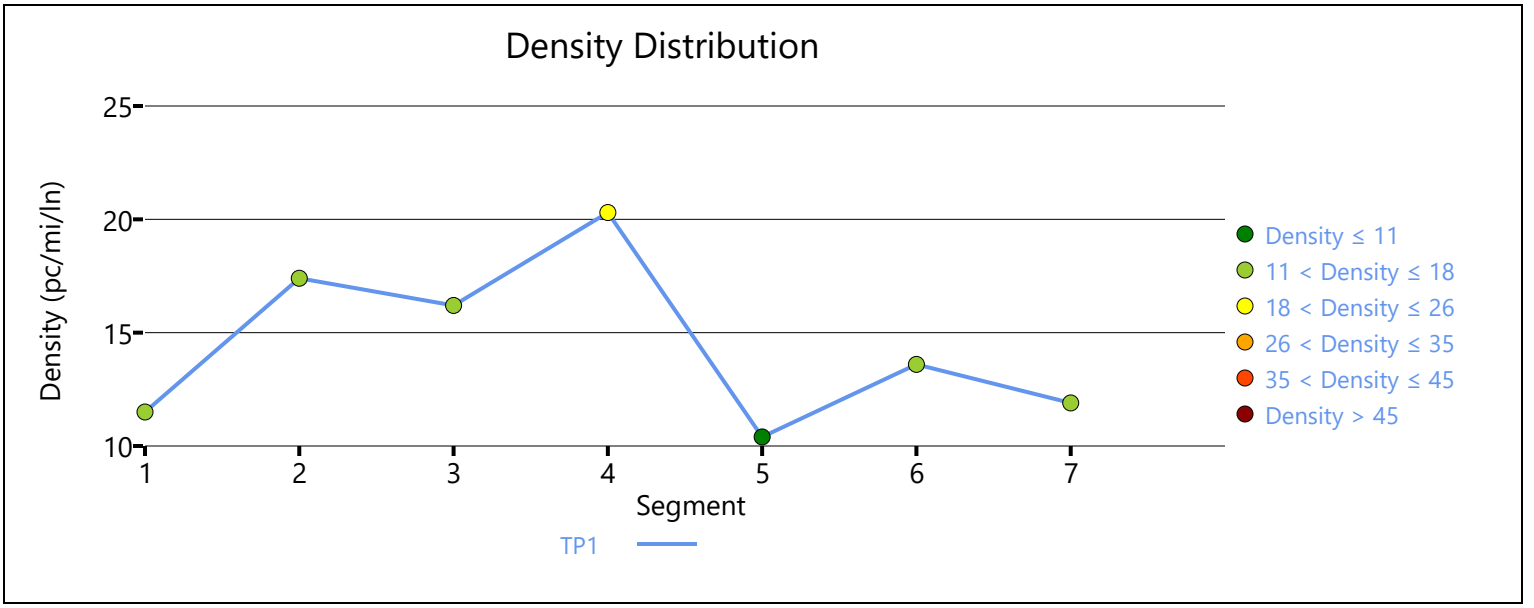
Space Mean Speed, mi/h	66.6	Density, veh/mi/ln	11.9
Average Travel Time, min	3.30	Density, pc/mi/ln	12.9

Messages

Comments







Appendix G

Existing Year 2021 Synchro Outputs & Signal Timings

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2021 Existing AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	30	25	417	33	390	17	939	187	123	1226	34
Future Volume (veh/h)	41	30	25	417	33	390	17	939	187	123	1226	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1752	1870	1796	1841	1796	1811	1856	1678	1811	1841
Adj Flow Rate, veh/h	43	31	26	434	34	406	18	978	195	128	1277	35
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
Percent Heavy Veh, %	0	4	10	2	7	4	7	6	3	15	6	4
Cap, veh/h	178	346	290	533	45	532	32	1168	534	153	1432	649
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.02	0.34	0.34	0.10	0.42	0.42
Sat Flow, veh/h	964	925	776	1346	119	1421	1711	3441	1572	1598	3441	1560
Grp Volume(v), veh/h	43	0	57	434	0	440	18	978	195	128	1277	35
Grp Sat Flow(s),veh/h/ln	964	0	1701	1346	0	1540	1711	1721	1572	1598	1721	1560
Q Serve(g_s), s	5.0	0.0	2.7	37.7	0.0	30.7	1.3	32.1	11.5	9.6	42.2	1.6
Cycle Q Clear(g_c), s	35.7	0.0	2.7	40.4	0.0	30.7	1.3	32.1	11.5	9.6	42.2	1.6
Prop In Lane	1.00		0.46	1.00		0.92	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	0	636	533	0	576	32	1168	534	153	1432	649
V/C Ratio(X)	0.24	0.00	0.09	0.81	0.00	0.76	0.56	0.84	0.37	0.84	0.89	0.05
Avail Cap(c_a), veh/h	208	0	689	575	0	624	210	1264	578	287	1461	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	24.8	37.9	0.0	33.6	59.6	37.3	30.5	54.5	33.2	21.4
Incr Delay (d2), s/veh	1.0	0.0	0.1	8.8	0.0	5.7	14.6	5.6	0.9	11.5	7.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.0	1.9	19.3	0.0	17.6	1.2	19.6	7.6	7.6	24.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	24.9	46.7	0.0	39.3	74.2	42.9	31.4	65.9	40.9	21.4
LnGrp LOS	D	A	C	D	A	D	E	D	C	E	D	C
Approach Vol, veh/h		100			874			1191			1440	
Approach Delay, s/veh		35.8			43.0			41.5			42.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.7	49.6		53.2	10.3	59.0		53.2
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	22.0	45.0		49.6	15.0	52.0		49.6
Max Q Clear Time (g_c+I1), s	11.6	34.1		37.7	3.3	44.2		42.4
Green Ext Time (p_c), s	0.2	7.4		0.4	0.0	6.2		3.4

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	636	0	164	178	613	0	0	875	283
Future Volume (veh/h)	0	0	0	636	0	164	178	613	0	0	875	283
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1826	1811	0	0	1811	1841
Adj Flow Rate, veh/h				662	0	0	185	639	0	0	911	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				5	0	5	5	6	0	0	6	4
Cap, veh/h				811	0		361	2718	0	0	1606	
Arrive On Green				0.24	0.00	0.00	0.09	0.55	0.00	0.00	0.34	0.00
Sat Flow, veh/h				3374	0	1547	1739	5107	0	0	4926	1560
Grp Volume(v), veh/h				662	0	0	185	639	0	0	911	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1739	1648	0	0	1558	1560
Q Serve(g_s), s				14.6	0.0	0.0	5.0	5.3	0.0	0.0	12.5	0.0
Cycle Q Clear(g_c), s				14.6	0.0	0.0	5.0	5.3	0.0	0.0	12.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				811	0		361	2718	0	0	1606	
V/C Ratio(X)				0.82	0.00		0.51	0.24	0.00	0.00	0.57	
Avail Cap(c_a), veh/h				1524	0		534	4657	0	0	2974	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				28.2	0.0	0.0	14.7	9.1	0.0	0.0	21.0	0.0
Incr Delay (d2), s/veh				2.1	0.0	0.0	1.1	0.0	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				9.5	0.0	0.0	3.1	2.6	0.0	0.0	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.3	0.0	0.0	15.8	9.2	0.0	0.0	21.3	0.0
LnGrp LOS				C	A		B	A	A	A	C	
Approach Vol, veh/h					662	A		824			911	A
Approach Delay, s/veh					30.3			10.7			21.3	
Approach LOS					C			B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.2	36.0		26.4		52.2
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	15.0	50.0		35.5		74.0
Max Q Clear Time (g_c+I1), s	7.0	14.5		16.6		7.3
Green Ext Time (p_c), s	0.3	5.2		2.3		3.5

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	29.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	108	0	64	0	0	0	0	683	687	192	1319	0
Future Vol, veh/h	108	0	64	0	0	0	0	683	687	192	1319	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	0	0	0	0	0	6	5	5	6	0
Mvmt Flow	115	0	68	0	0	0	0	727	731	204	1403	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	2102	-	702	-	0	0	727	0	0
Stage 1	1811	-	-	-	-	-	-	-	-
Stage 2	291	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.1	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.9	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 80	0	330	0	-	-	519	-	0
Stage 1	~ 74	0	-	0	-	-	-	-	0
Stage 2	667	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 49	0	330	-	-	-	519	-	-
Mov Cap-2 Maneuver	~ 49	0	-	-	-	-	-	-	-
Stage 1	~ 74	0	-	-	-	-	-	-	-
Stage 2	405	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s$	504.4	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	49	330	519	-
HCM Lane V/C Ratio	-	-	2.345	0.206	0.394	-
HCM Control Delay (s)	-	-	$ 792.2	18.7	16.4	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	11.9	0.8	1.9	-

Notes

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

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2021 Existing PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	29	39	166	38	212	33	1472	343	263	800	56
Future Volume (veh/h)	66	29	39	166	38	212	33	1472	343	263	800	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1870	1900	1796	1900	1811	1856	1841	1811	1870
Adj Flow Rate, veh/h	69	31	41	175	40	223	35	1549	361	277	842	59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	3	2	0	7	0	6	3	4	6	2
Cap, veh/h	158	171	227	325	58	323	53	1347	616	305	1845	850
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.03	0.39	0.39	0.17	0.54	0.54
Sat Flow, veh/h	1116	742	981	1328	251	1398	1810	3441	1572	1753	3441	1585
Grp Volume(v), veh/h	69	0	72	175	0	263	35	1549	361	277	842	59
Grp Sat Flow(s),veh/h/ln	1116	0	1723	1328	0	1648	1810	1721	1572	1753	1721	1585
Q Serve(g_s), s	6.9	0.0	3.9	14.0	0.0	16.8	2.2	45.0	20.8	17.8	17.3	2.1
Cycle Q Clear(g_c), s	23.7	0.0	3.9	17.9	0.0	16.8	2.2	45.0	20.8	17.8	17.3	2.1
Prop In Lane	1.00		0.57	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	0	398	325	0	381	53	1347	616	305	1845	850
V/C Ratio(X)	0.44	0.00	0.18	0.54	0.00	0.69	0.66	1.15	0.59	0.91	0.46	0.07
Avail Cap(c_a), veh/h	381	0	744	591	0	711	236	1347	616	335	1845	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	0.0	35.5	42.6	0.0	40.4	55.2	35.0	27.6	46.6	16.4	12.8
Incr Delay (d2), s/veh	2.7	0.0	0.3	2.0	0.0	3.2	13.2	76.5	2.3	26.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.0	2.9	8.2	0.0	11.3	2.1	44.6	12.1	14.6	10.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	0.0	35.8	44.6	0.0	43.6	68.4	111.5	29.9	72.7	16.8	12.9
LnGrp LOS	D	A	D	D	A	D	E	F	C	E	B	B
Approach Vol, veh/h		141			438			1945			1178	
Approach Delay, s/veh		44.7			44.0			95.6			29.7	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	53.0		34.0	11.4	69.6		34.0
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	22.0	45.0		49.6	15.0	52.0		49.6
Max Q Clear Time (g_c+I1), s	19.8	47.0		25.7	4.2	19.3		19.9
Green Ext Time (p_c), s	0.2	0.0		0.9	0.0	11.9		3.3

Intersection Summary	
HCM 6th Ctrl Delay	66.6
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	517	0	194	75	1137	0	0	526	114
Future Volume (veh/h)	0	0	0	517	0	194	75	1137	0	0	526	114
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1841	1811	0	0	1811	1841
Adj Flow Rate, veh/h				544	0	0	79	1197	0	0	554	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				5	0	5	4	6	0	0	6	4
Cap, veh/h				699	0		447	2774	0	0	1772	
Arrive On Green				0.21	0.00	0.00	0.06	0.56	0.00	0.00	0.38	0.00
Sat Flow, veh/h				3374	0	1547	1753	5107	0	0	4926	1560
Grp Volume(v), veh/h				544	0	0	79	1197	0	0	554	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1753	1648	0	0	1558	1560
Q Serve(g_s), s				10.9	0.0	0.0	1.8	10.0	0.0	0.0	5.9	0.0
Cycle Q Clear(g_c), s				10.9	0.0	0.0	1.8	10.0	0.0	0.0	5.9	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				699	0		447	2774	0	0	1772	
V/C Ratio(X)				0.78	0.00		0.18	0.43	0.00	0.00	0.31	
Avail Cap(c_a), veh/h				1682	0		719	5138	0	0	3281	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				26.7	0.0	0.0	11.2	9.0	0.0	0.0	15.6	0.0
Incr Delay (d2), s/veh				1.9	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				7.4	0.0	0.0	1.0	4.4	0.0	0.0	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.6	0.0	0.0	11.4	9.1	0.0	0.0	15.6	0.0
LnGrp LOS				C	A		B	A	A	A	B	
Approach Vol, veh/h					544	A		1276			554	A
Approach Delay, s/veh					28.6			9.3			15.6	
Approach LOS					C			A			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	36.0		22.3		49.0
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	15.0	50.0		35.5		74.0
Max Q Clear Time (g_c+I1), s	3.8	7.9		12.9		12.0
Green Ext Time (p_c), s	0.1	2.9		1.9		7.8

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	57.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	222	0	193	0	0	0	0	990	760	117	926	0
Future Vol, veh/h	222	0	193	0	0	0	0	990	760	117	926	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	4	0	0	0	0	6	5	5	6	0
Mvmt Flow	236	0	205	0	0	0	0	1053	809	124	985	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1654	-	493	-	0	0	1053	0	0
Stage 1	1233	-	-	-	-	-	-	-	-
Stage 2	421	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.18	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.94	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 140	0	442	0	-	-	360	-	0
Stage 1	~ 171	0	-	0	-	-	-	-	0
Stage 2	572	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 92	0	442	-	-	-	360	-	-
Mov Cap-2 Maneuver	~ 92	0	-	-	-	-	-	-	-
Stage 1	~ 171	0	-	-	-	-	-	-	-
Stage 2	375	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s$	441.8	0	2.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	92	442	360	-
HCM Lane V/C Ratio	-	-	2.567	0.465	0.346	-
HCM Control Delay (s)	-	-	$ 808.5	20	20.2	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	22	2.4	1.5	-

Notes

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

This document has been digitally signed and sealed by

FDOT - DISTRICT 1
801 N Broadway Ave, Bartow, FL 33830

Signal Timing Report

(For isolated traffic signal)

RICHARD W. MATTHEWS LICENSE No 77050 STATE OF FLORIDA PROFESSIONAL ENGINEER

Richard W Matthews
2019.08.29 12:33:06 -05'00'

Drawn By:	EME
Date:	08/2019
Checked By:	RM
Date:	08/2019

on the date adjacent to the seal.

Printed Copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Revisions	Location Details			
02/2019: Added FYA delay. 08/2019: Updated to current timing format.	Section:	***13030***	Mile Post:	***5.293***
	Major Street:	***US 41***	Orientation:	***N-S***
	Minor Street:	***I-275 NB Ramps***	Orientation:	***E-W***
	Sig ID:	***1495***		

Disclaimer Statement

The revisions noted above are the only timing parameters being approved. The remaining timing data was previously approved as part of previous revisions or as part of previous retiming efforts or other projects.

Controller Timings

Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8	Notes
Direction	***NBL***	***SB***				***NB***	***WBL***		
Turn Type	***Prot/Perm***						***Protected***		**FYA=Ø1**
Min Green	***5***	***27***				***27***	***5***		
Ext	***3.0***	***2.6***				***2.6***	***3.0***		
Yellow	***6.0***	***6.0***				***6.0***	***4.5***		
All Red	***3.0***	***3.0***				***3.0***	***3***		
Max I	***15***	***50***				***50***	***35***		
Max II									
Max Limit	***30***	***80***				***80***	***60***		
Adjust By	***10***	***10***				***10***	***10***		
Walk									
Flashing Don't Walk									
Detector Memory									
Det. Cross Switch.	***YES***								
Dual Entry		***ON***				***ON***			
Recall		***MIN***				***MIN***			

SPECIAL SOP

Ring - 1	1	2	
Ring - 2		6	7

Notes:

1) Program phase restrictions to omit phase 1 when phase 2 is green, in addition to detector cross switching.

2) Program 2 seconds "FYA Delay" for phase 1

FDOT - DISTRICT 1

Signal Timing Report

(For isolated traffic signal)

Drawn By:	RC
Date:	10/2015
Checked By:	EMC
Date:	10/2015

Approved By:

Rovindra Churaman, P.E. # 73829

Date: 11.12.2015

Revisions	Location Details	
03/2015: Updated the controller timing parameters to June 2014 Guidelines. Added detection delay for minor street right turn movements.	Section: *13030*	Mile Post: *4.789*
	Major Street: *US 41*	Orientation: *N-S*
	Minor Street: *73rd St E/69th St E*	Orientation: *E-W*
	Sig ID: *433*	
	Implemented: 06.25.2015	

Disclaimer Statement

The revisions noted above are the only timing parameters being approved. The remaining timing data was previously approved as part of previous revisions or as part of previous retiming efforts.

Controller Timings

Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8	Notes
Direction	*SBL*	*NB*		*EB*	*NBL*	*SB*		*WB*	
Turn Type	*Prot*				*Prot*				
Min Green	*5*	*15*		*7*	*5*	*15*		*7*	
Ext	*3.0*	*5.0*		*4.0*	*3.0*	*5.0*		*4.0*	
Yellow	*6.0*	*6.0*		*4.5*	*6.0*	*6.0*		*4.5*	
All Red	*2.0*	*2.0*		*2.9*	*2.0*	*2.0*		*2.9*	
Max I	*22*	*45*		*40*	*15*	*45*		*40*	
Max II									
Max Limit	*30*	*60*		*50*	*30*	*60*		*50*	
Adjust By	*10*	*10*		*10*	*10*	*10*		*10*	
Walk		*7*		*7*		*7*		*7*	
Flashing Don't Walk		*23*		*39*		*18*		*42*	
Detector Memory		*ON*				*ON*			
Det. Cross Switch.									
Dual Entry		*ON*		*ON*		*ON*		*ON*	
Recall		*MIN*				*MIN*			

SOP 7

Ring - 1	1	2	4
Ring - 2	5	6	8

Notes:

1) Program 8 sec detection delay for minor side street right turn movements.

Appendix H

Model Validation Memorandum

TECHNICAL MEMORANDUM

DATE: 07/11/2021

TO: Chris Simpron, Systems Planning Office, FDOT District One

FROM: RS&H Inc.

SUBJECT: Travel Demand Forecasting: Subarea Model Validation Tech Memo for US 41 at I-275 Signalization IOAR

This memorandum outlines the travel demand forecasting methodology and analysis used in the subarea validation of the District One Regional Planning Model (D1RPM) for the US 41 at I-275 Interchange Signalization IOAR.

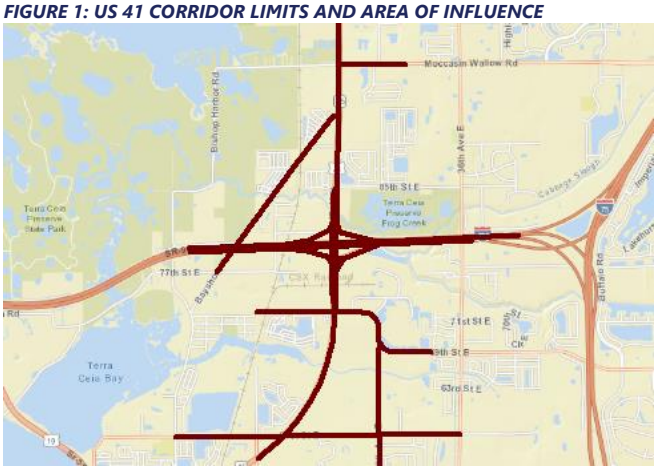
This study utilizes the 2045 D1RPM (v2.0) for base and future year travel demand forecasts. The analyses are based on the traffic development guidelines set forth in the FDOT FSUTMS Model Calibration and Validation Standards and the 2019 FDOT Project Traffic Forecasting Handbook.

REVIEW OF THE BASE TRAVEL DEMAND MODEL

A review of the D1RPM was conducted to assess whether the model is replicating travel patterns in the study area of influence reasonably and at acceptable error threshold. Figure 1 shows the subarea network.

The primary measures used to assess the performance of the 2015 Base model include the percent deviation between the counts and assigned volumes (V/C ratio). All evaluation and subsequent corridor validation are based on the AADT values obtained directly from D1RPM. The results of this evaluation served as the basis for determining the necessity and scale of a subarea model validation.

FIGURE 1: US 41 CORRIDOR LIMITS AND AREA OF INFLUENCE



Counts coded into the D1RPM were reviewed using the 2015 FDOT FTI database and used as the primary inputs to evaluate the base year model.

AADT values obtained from D1RPM were compared to 2015 count data. Table 1 illustrates volume-over-count ratio for US 41 and the other facilities in the subarea. The average V/C ratio for US 41 is 0.83 and for the entire subarea the average V/C ratio is 0.99.

TABLE 1: D1RPM BASE 2015 VOLUME/COUNT RATIOS

Road	AT	FT	Direction	Count	Model AADT	V/C
28 Ave. E. @ Bridge # 134007	33	43	N	144	328	2.28
28 Ave. E. @ Bridge # 134007	33	43	S	144	315	2.19
69 St. E. @ SR 45& US 41	33	43	E	4866	6235	1.28
69 St. E. @ SR 45& US 41	33	43	W	4866	5889	1.21
69TH ST E, 425' W OF CR 683/ELLENTON-GILLETTE PTMS 2017 MCPR 17	33	43	E	3212	4990	1.55
69TH ST E, 425' W OF CR 683/ELLENTON-GILLETTE PTMS 2017 MCPR 17	33	43	W	3212	4632	1.44
73 St. E. @ SR 45& US 41	33	43	E	446	607	1.36
73 St. E. @ SR 45& US 41	33	43	W	446	577	1.29
73RD ST E, 900 FT W OF US-41/TAMIAMI TRL, PALMETTO	33	43	E	725	1047	1.44
73RD ST E, 900 FT W OF US-41/TAMIAMI TRL, PALMETTO	33	43	W	725	1016	1.40
BAYSHORE RD, 0.37 MI N OF I-275 OVERPASS @ BR #134091, MC 10-17	33	46	NE	625	611	0.98
BAYSHORE RD, 0.37 MI N OF I-275 OVERPASS @ BR #134091, MC 10-17	33	46	SW	625	606	0.97
MOCCASIN WALLOW RD, E OF SR45/US41/8TH AVE W MC 10-08	33	46	E	2450	775	0.32
MOCCASIN WALLOW RD, E OF SR45/US41/8TH AVE W MC 10-08	33	46	W	2450	592	0.24
SR-45/SR-41, N OF PINEY POINT RD	33	22	NE	4650	4662	1.00
SR-45/SR-41, N OF PINEY POINT RD	33	22	SW	4650	4662	1.00
SR 45/US 41, S OF PINEY POINT ROAD	33	22	N	5650	4863	0.86
SR 45/US 41, S OF PINEY POINT ROAD	33	22	S	5650	4863	0.86
SR 45/US 41, N OF MCMULLEN CREEK/S OF ERIE ROAD	33	23	NE	12000	8810	0.73
SR 45/US 41, N OF MCMULLEN CREEK/S OF ERIE ROAD	33	23	SW	12000	7536	0.63
SR 45/US 41, S OF 43RD ST E	33	22	N	11000	12370	1.12
SR 45/US 41 SB, SOUTH OF SR 45/US 41 NB	33	22	S	15000	11031	0.74
SR 93/I-275, EAST OF SR 45/US 41 & E OF FROG CREEK	32	12	NE	24500	27217	1.11
SR 93/I-275, EAST OF SR 45/US 41 & E OF FROG CREEK	32	12	SW	24500	26626	1.09
SR 93/I-275, WEST OF SR 45/US 41	32	12	NE	19750	20404	1.03
SR 93/I-275, WEST OF SR 45/US 41	32	12	SW	19750	20375	1.03
					Subarea	**0.99**
					US 41	**0.83**

Initial review of the model shows that moderate refinements to the model network could improve the distribution of trips on the corridor and improve the model forecast accuracy by reducing the forecast errors.

SUBAREA MODEL VALIDATION

For this study, FDOT standard measures of travel demand assignment validation were used to compare the assigned model volumes to observed 24 hour traffic counts within the subarea.. These measures serve as tools to validate that the model is accurately representing the demand for the corridor.

Based on the results of the base model review, the following refinements were made to the base year model network:

- Road functional classification adjustments were made in the study area to better balance the volume estimations:
  - Terra Ceia Rd from Bayshore Dr to Bayshore Rd changed from FTYPE 43 to 48
  - Bishop Harbor Rd from 77th St to Bayshore Rd changed from FTYPE 41 to 48
  - 71st St from Bishop Harbor Rd to US 41 changed from FTYPE 41 to 48
  - US 41 from 73rd St to 49th St changed from FTYPE 23 to 22
  - 28th Ave from 69th St to 49th St changed from FTYPE 43 to 48
  - 73rd St/69th St from Bayshore Rd to Erie Rd changed from FTYPE 43 to 46
  - Moccasin Wallow Rd from US 41 to I-75 changed from FTYPE 46 to 43
  - 36th Ave from Moccasin Wallow Rd to 37th St changed from FTYPE 35 to 43
- Adjustments were made to the TAZ centroids and centroid connectors to provide better distribution of trips to facilities in the subarea. The modified TAZ centroid connectors include:
  - 6059, 6316, 6315, 6057, 6056, 6055

The implementation of the network coding adjustments listed above resulted in improvement to the overall validation of model estimation accuracy in the subarea and US 41 corridor. Table 2 illustrates validated volume-over-count ratios which shows an improvement in V/C ratio for US 41 from 0.83 to 0.89 which falls within acceptable thresholds as outlined in the 2019 FDOT Traffic Forecasting Handbook.

TABLE 2: D1RPM VALIDATED 2015 VOLUME/COUNT RATIOS

Road	AT	FT	Direction	Count	Model AADT	V/C
28 Ave. E. @ Bridge # 134007	33	48	N	144	213	1.48
28 Ave. E. @ Bridge # 134007	33	48	S	144	277	1.92
69 St. E. @ SR 45& US 41	33	46	E	4866	5434	1.12
69 St. E. @ SR 45& US 41	33	46	W	4866	5260	1.08
69TH ST E, 425' W OF CR 683/ELLENTON-GILLETTE PTMS 2017 MCPR 17	33	46	W	3212	3535	1.10
69TH ST E, 425' W OF CR 683/ELLENTON-GILLETTE PTMS 2017 MCPR 17	33	46	E	3212	3646	1.14
73 St. E. @ SR 45& US 41	33	46	E	446	454	1.02
73 St. E. @ SR 45& US 41	33	46	W	446	461	1.03
73RD ST E, 900 FT W OF US-41/TAMIAMI TRL, PALMETTO	33	46	E	725	447	0.62
73RD ST E, 900 FT W OF US-41/TAMIAMI TRL, PALMETTO	33	46	W	725	454	0.63
BAYSHORE RD, 0.37 MI N OF I-275 OVERPASS @ BR #134091, MC 10-17	33	46	NE	625	463	0.74
BAYSHORE RD, 0.37 MI N OF I-275 OVERPASS @ BR #134091, MC 10-17	33	46	SW	625	451	0.72
MOCCASIN WALLOW RD, E OF SR45/US41/8TH AVE W MC 10-08	33	43	W	2450	803	0.33
MOCCASIN WALLOW RD, E OF SR45/US41/8TH AVE W MC 10-08	33	43	E	2450	1180	0.48
SR-45/SR-41, N OF PINEY POINT RD	33	22	NE	4650	4661	1.00
SR-45/SR-41, N OF PINEY POINT RD	33	22	SW	4650	4662	1.00
SR 45/US 41, S OF PINEY POINT ROAD	33	22	N	5650	4863	0.86
SR 45/US 41, S OF PINEY POINT ROAD	33	22	S	5650	4864	0.86
SR 45/US 41, N OF MCMULLEN CREEK/S OF ERIE ROAD	33	22	NE	12000	9916	0.83
SR 45/US 41, N OF MCMULLEN CREEK/S OF ERIE ROAD	33	22	SW	12000	9216	0.77
SR 45/US 41, S OF 43RD ST E	33	22	N	11000	12655	1.15
SR 45/US 41 SB, SOUTH OF SR 45/US 41 NB	33	22	S	15000	11960	0.80
SR 93/I-275, EAST OF SR 45/US 41 & E OF FROG CREEK	32	12	SW	24500	27463	1.12
SR 93/I-275, EAST OF SR 45/US 41 & E OF FROG CREEK	32	12	NE	24500	27507	1.12
SR 93/I-275, WEST OF SR 45/US 41	32	12	NE	19750	20443	1.04
SR 93/I-275, WEST OF SR 45/US 41	32	12	SW	19750	20281	1.03
					Subarea	**0.99**
					US 41	**0.89**

FUTURE TRAFFIC FORECAST

A review of the D1RPM 2045 Cost Feasible Network model was conducted to assess the reasonableness of future traffic projections for the No-Build alternative in the study area. The study area model review checked for speed and capacity calculations, trip pathing, reasonableness of trip distribution and assignment, and the reasonableness of population and employment growth.

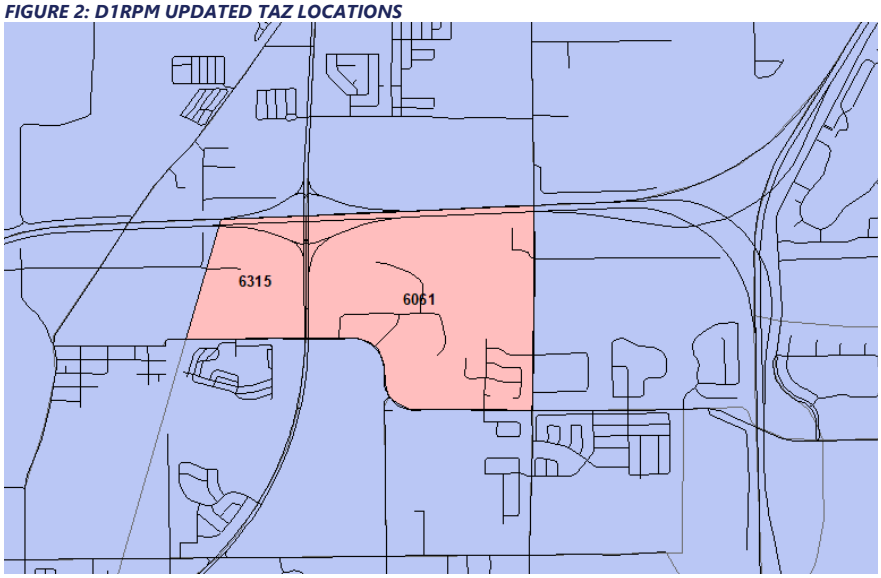
2045 Forecast SE Data Update

The US 41 at 39th Circle E Operational Analysis (March 16th, 2021) was reviewed to determine whether the planned development included in the study is included in the D1RPM 2045 CF model. The review revealed that the planned development is only partially included in the 2045 D1RPM. Table 3 illustrates the comparison results. The 2045 SE Data was updated for the project No Build model to include the planned developments on the south side of the US 41 and I-275 interchange. Figure 2 illustrates the location of the TAZs that were updated.

TABLE 3: D1RPM 2045 SE DATA COMPARISON

Development LU				TAZ	2015 Ind	2045 Ind	Diff	D1RPM 2015 Com	2045 Com	Diff	2015 Svc	2045 Svc	Diff
US 41 @ 39th Circle E SEC			60,000sf Office	6061							35,500sf	63,000sf	27,500sf
US 41 @ 69th St E NEC		4,650sf Retail (7-11)						51,000sf	55,000sf	4,000sf			
S 41 @ 39th Circle E SEC NW	113,800sf U-Haul												
US 41 @ 73rd ST E NWC	Southeastern Freight - 217 Bay Doors (100,000sf)			6315	0sf	4,000sf	4,000sf						
				Industrial Shortage:		209,800sf							
				Retail Shortage:		650sf							
				Office Shortage:		32,500sf							

FIGURE 2: D1RPM UPDATED TAZ LOCATIONS



Future Year Model Run and Results

The refinements from the validated network as well as the updated SE Data for zones 6061 and 6315 were applied to the 2045 No-Build model and the model was run to obtain the traffic growth for the corridor. The overall average forecasted annual traffic growth for the US 41 project corridor ranges from 1.8% - 4.6%. Review of the 2045 No-Build model did not reveal any issues that could be considered causes for concern.

TABLE 4: MODEL TRAFFIC GROWTH FOR US 41

Road	2015 AADT	2045 AADT	Annual Growth
US 41 from Palm View Rd to 73rd St	19,100	29,500	1.8%
US 41 from 73rd St to I-275 Ramps (South)	26,200	42,400	2.1%
US 41 from I-275 Ramps (North) to Moccasin Wallow Rd	16,300	38,600	4.6%

The model AADT plots for the base year and forecast No Build model are attached to this memo.

APPENDICES

D1RPM Original 2015 AADT

D1RPM Subarea Validated 2015 Model AADT

D1RPM 2045 No Build AADT

Appendix I

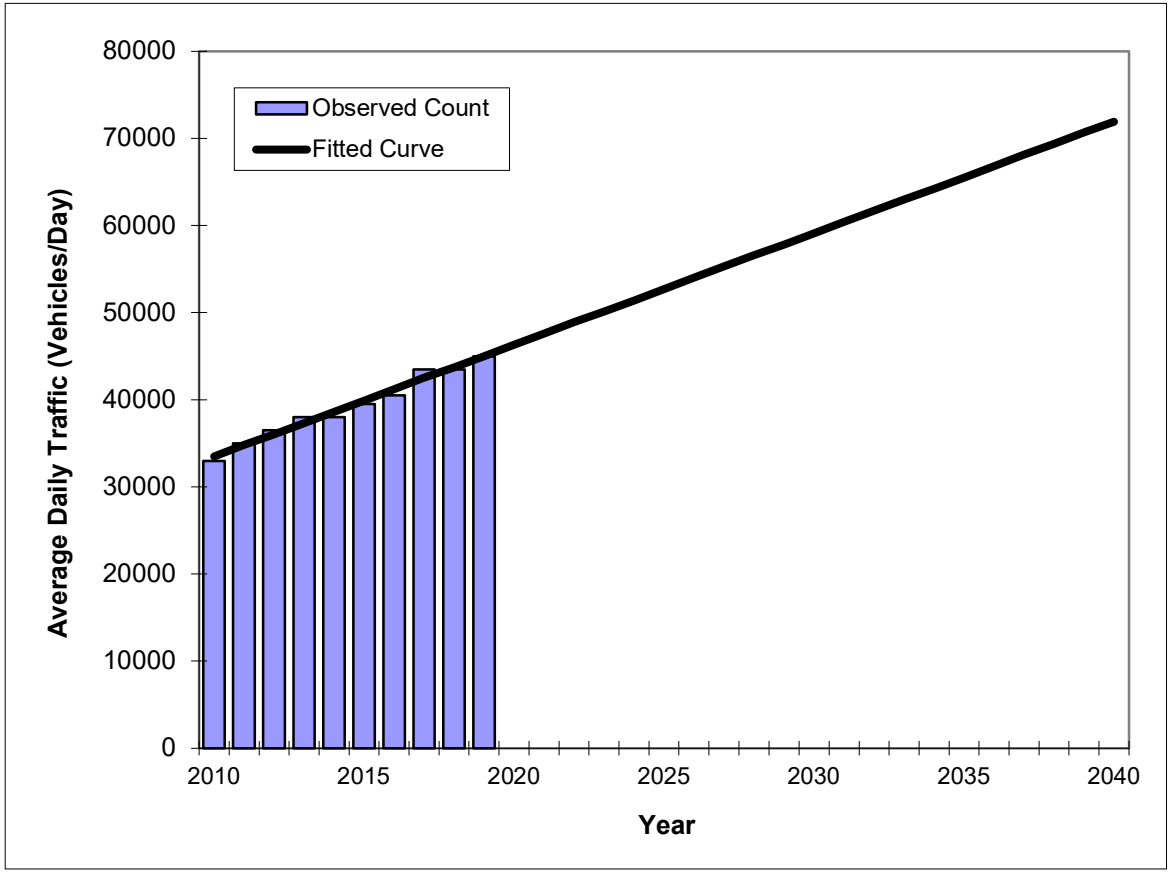
Trends Analysis

Traffic Trends - V2.0

I-275 -- I-275 West of US 41

PIN#	63551.03-29
Location	8

County:	Manatee (13)
Station #:	0059
Highway:	I-275



Year	Traffic (ADT/AADT) Count*	Trend**
2010	33000	33500
2011	35000	34800
2012	36500	36000
2013	38000	37300
2014	38000	38600
2015	39500	39900
2016	40500	41200
2017	43500	42500
2018	43500	43700
2019	45000	45000
2024 Opening Year Trend		
2024	N/A	51400
2029 Mid-Year Trend		
2029	N/A	57800
2034 Design Year Trend		
2034	N/A	64200
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	1,282
Trend R-squared:	97.78%
Trend Annual Historic Growth Rate:	3.81%
Trend Growth Rate (2019 to Design Year):	2.84%
Printed:	3-Sep-21

Straight Line Growth Option

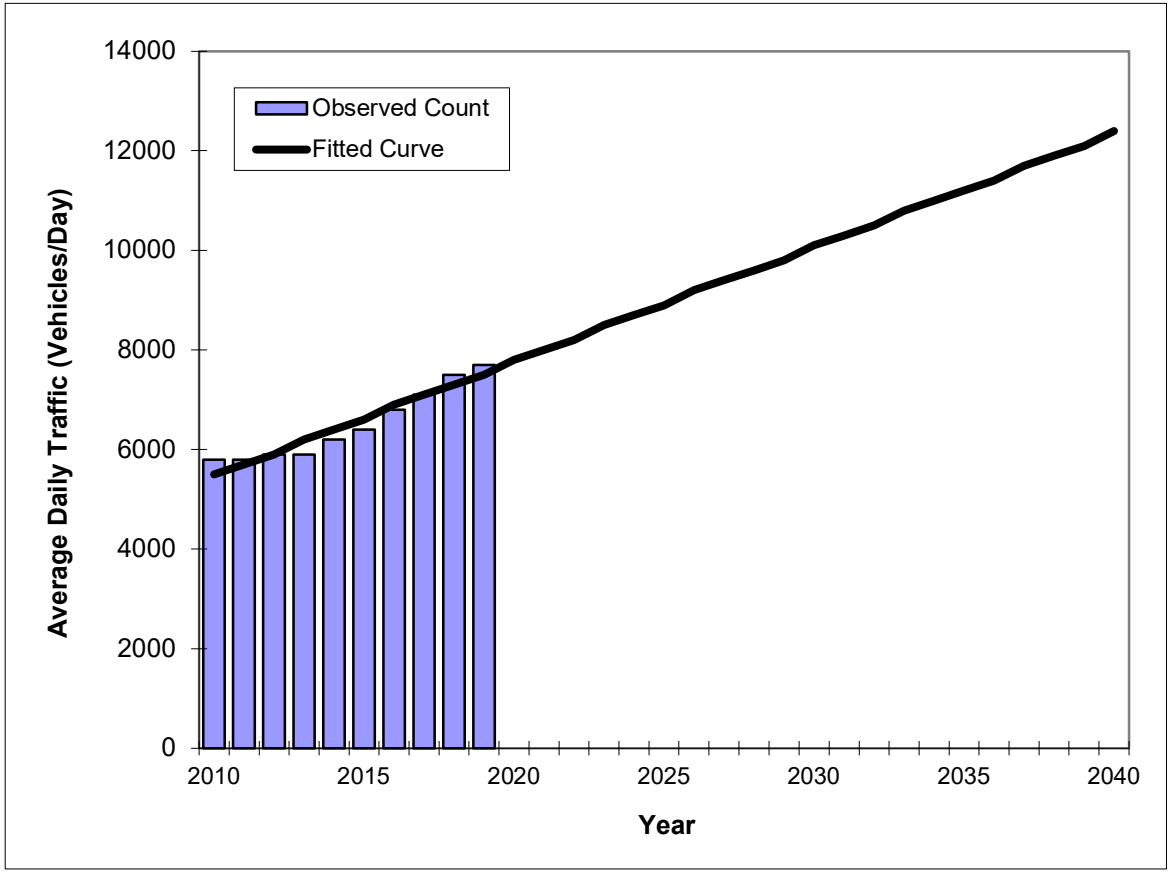
*Axle-Adjusted

Traffic Trends - V2.0

69th ST E -- 69th St E east of US 41

PIN#	63551.03-29
Location	3

County:	Manatee (13)
Station #:	4017
Highway:	69th ST E



Year	Traffic (ADT/AADT) Count*	Trend**
2010	5800	5500
2011	5800	5700
2012	5900	5900
2013	5900	6200
2014	6200	6400
2015	6400	6600
2016	6800	6900
2017	7100	7100
2018	7500	7300
2019	7700	7500
2024 Opening Year Trend		
2024	N/A	8700
2029 Mid-Year Trend		
2029	N/A	9800
2034 Design Year Trend		
2034	N/A	11000
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	230
Trend R-squared:	92.83%
Trend Annual Historic Growth Rate:	4.04%
Trend Growth Rate (2019 to Design Year):	3.11%
Printed:	3-Sep-21

Straight Line Growth Option

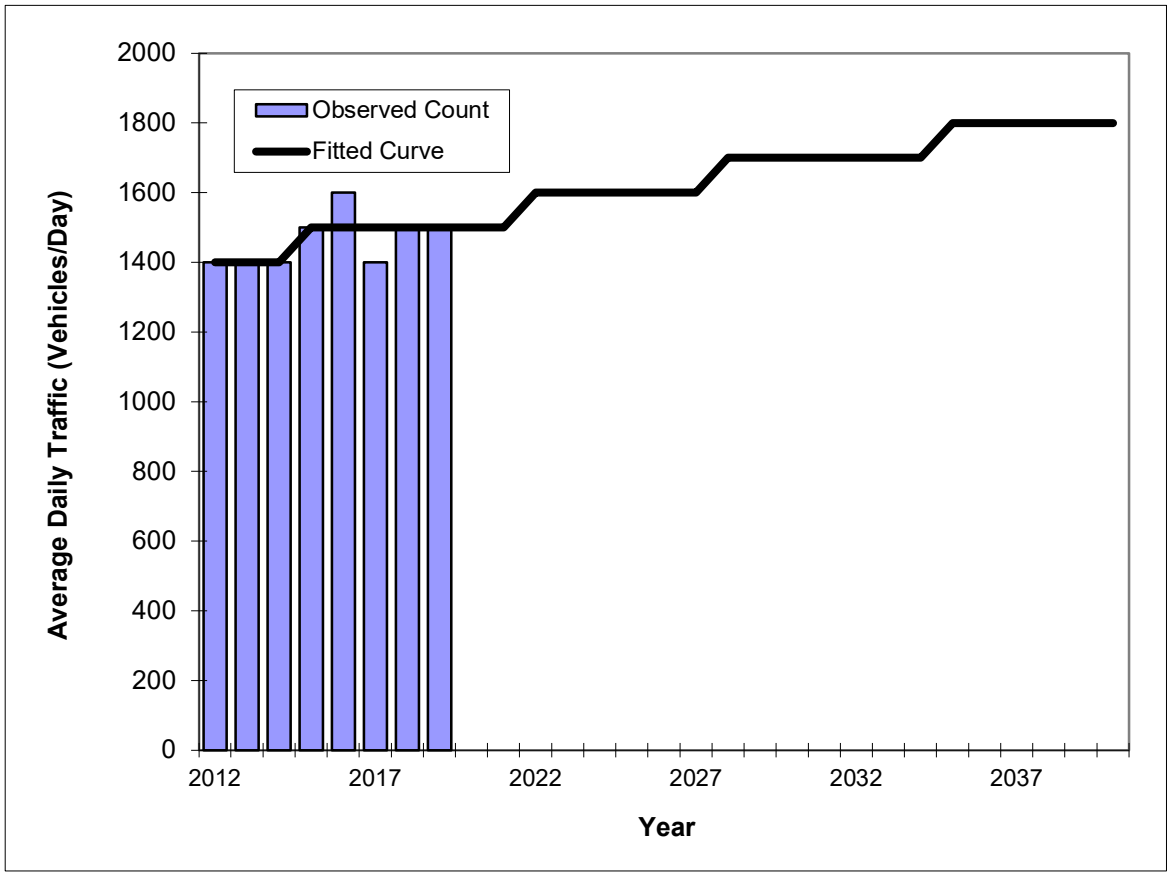
*Axle-Adjusted

Traffic Trends - V2.0

73RD STREET E. -- 73rd St E west of US 41

PIN#	63551.03-29
Location	2

County:	Manatee (13)
Station #:	4242
Highway:	73RD STREET E.



Year	Traffic (ADT/AADT) Count*	Trend**
2012	1400	1400
2013	1400	1400
2014	1400	1400
2015	1500	1500
2016	1600	1500
2017	1400	1500
2018	1500	1500
2019	1500	1500
2024 Opening Year Trend		
2024	N/A	1600
2029 Mid-Year Trend		
2029	N/A	1700
2034 Design Year Trend		
2034	N/A	1700
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	15
Trend R-squared:	25.96%
Trend Annual Historic Growth Rate:	1.02%
Trend Growth Rate (2019 to Design Year):	0.89%
Printed:	3-Sep-21

Straight Line Growth Option

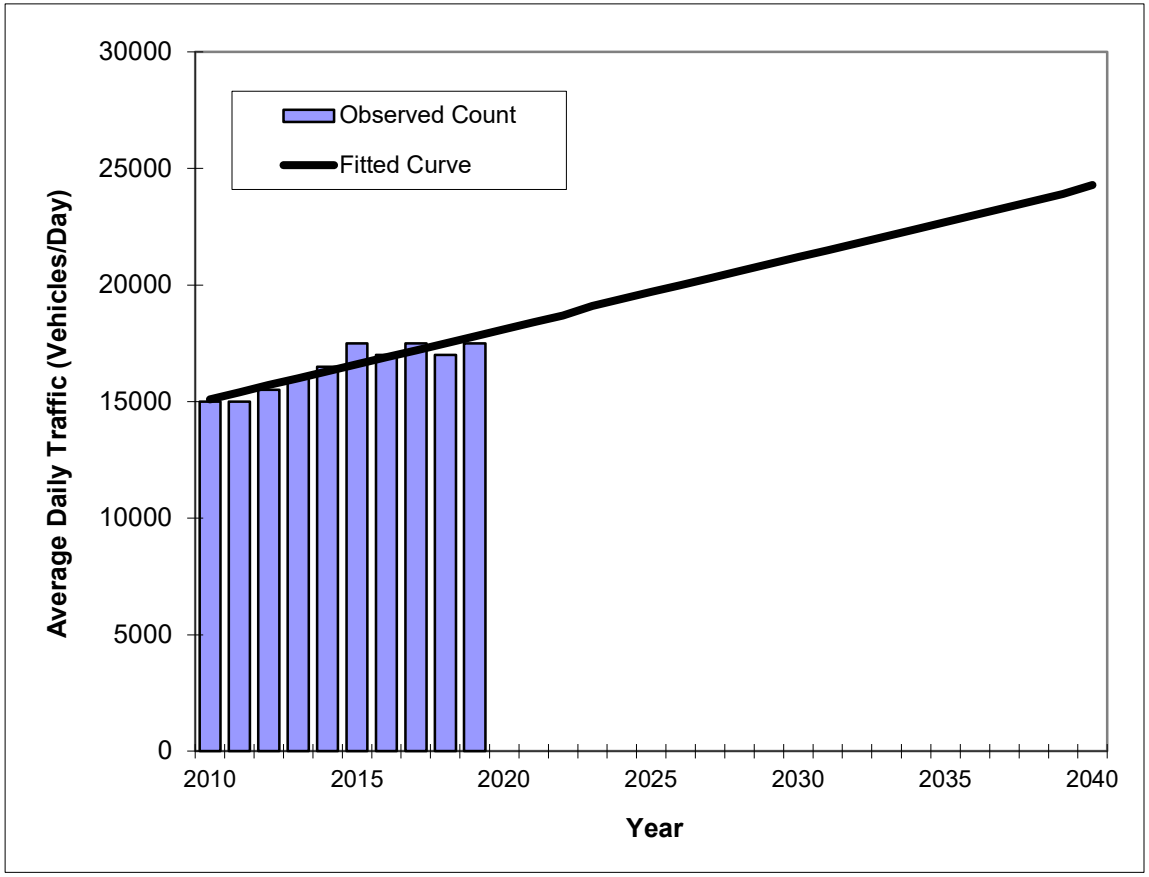
*Axle-Adjusted

Traffic Trends - V2.0

I-75 NB -- Off-Ramp to I-275

PIN#	63551.03-29
Location	1

County:	Manatee (13)
Station #:	7041
Highway:	I-75 NB



Year	Traffic (ADT/AADT) Count*	Trend**
2010	15000	15100
2011	15000	15400
2012	15500	15700
2013	16000	16000
2014	16500	16300
2015	17500	16600
2016	17000	16900
2017	17500	17200
2018	17000	17500
2019	17500	17800
2024 Opening Year Trend		
2024	N/A	19400
2029 Mid-Year Trend		
2029	N/A	20900
2034 Design Year Trend		
2034	N/A	22400
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	306
Trend R-squared:	83.77%
Trend Annual Historic Growth Rate:	1.99%
Trend Growth Rate (2019 to Design Year):	1.72%
Printed:	28-Feb-22

Straight Line Growth Option

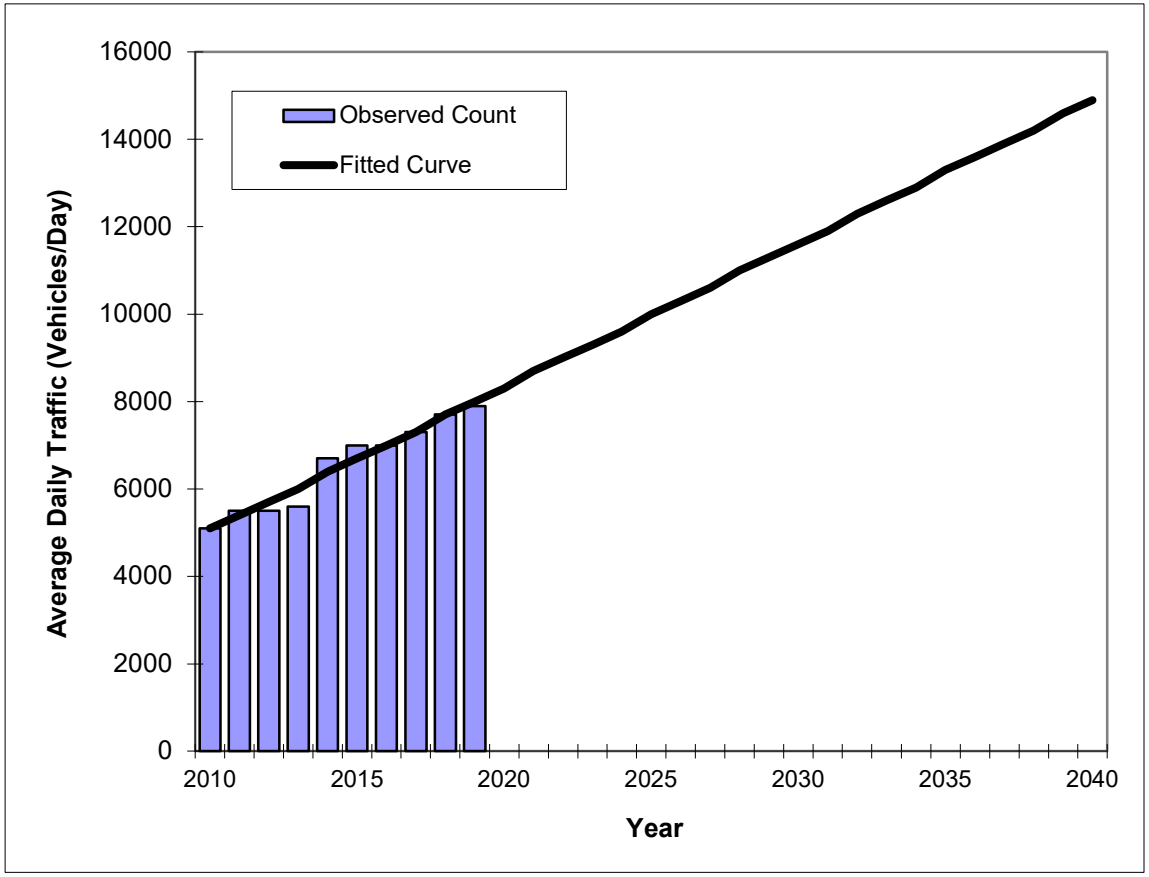
*Axle-Adjusted

Traffic Trends - V2.0

I-75 SB -- Off-Ramp to I-275

PIN#	63551.03-29
Location	1

County:	Manatee (13)
Station #:	7044
Highway:	I-75 SB



Year	Traffic (ADT/AADT) Count*	Trend**
2010	5100	5100
2011	5500	5400
2012	5500	5700
2013	5600	6000
2014	6700	6400
2015	7000	6700
2016	7000	7000
2017	7300	7300
2018	7700	7700
2019	7900	8000
2024 Opening Year Trend		
2024	N/A	9600
2029 Mid-Year Trend		
2029	N/A	11300
2034 Design Year Trend		
2034	N/A	12900
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	328
Trend R-squared:	94.95%
Trend Annual Historic Growth Rate:	6.32%
Trend Growth Rate (2019 to Design Year):	4.08%
Printed:	28-Feb-22

Straight Line Growth Option

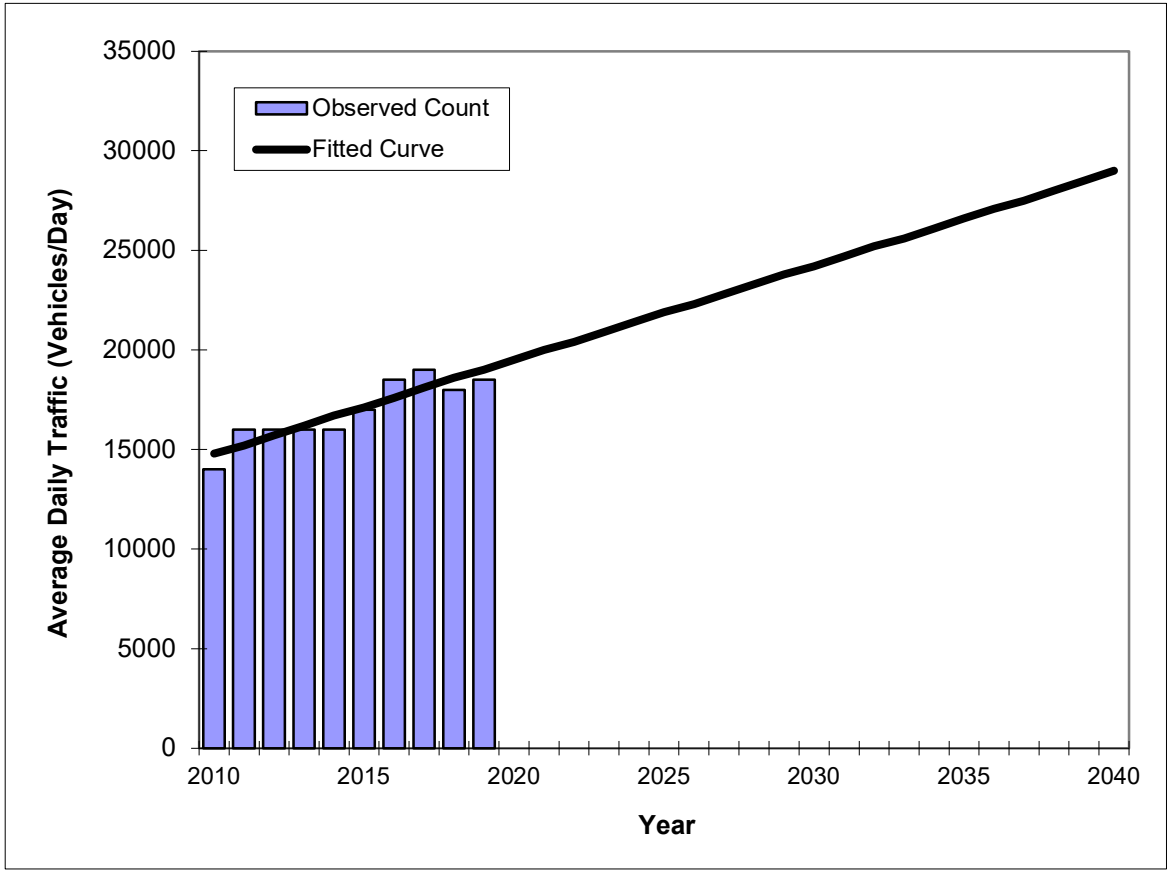
*Axle-Adjusted

Traffic Trends - V2.0

I-275 On Ramp to I-75 SB -- I-275 East Off Ramp to I-75 SB

PIN#	63551.03-29
Location	10

County:	Manatee (13)
Station #:	7042
Highway:	I-275 On Ramp to I-75 SB



Year	Traffic (ADT/AADT) Count*	Trend**
2010	14000	14800
2011	16000	15200
2012	16000	15700
2013	16000	16200
2014	16000	16700
2015	17000	17100
2016	18500	17600
2017	19000	18100
2018	18000	18600
2019	18500	19000
2024 Opening Year Trend		
2024	N/A	21400
2029 Mid-Year Trend		
2029	N/A	23800
2034 Design Year Trend		
2034	N/A	26100
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	473
Trend R-squared:	82.31%
Trend Annual Historic Growth Rate:	3.15%
Trend Growth Rate (2019 to Design Year):	2.49%
Printed:	3-Sep-21

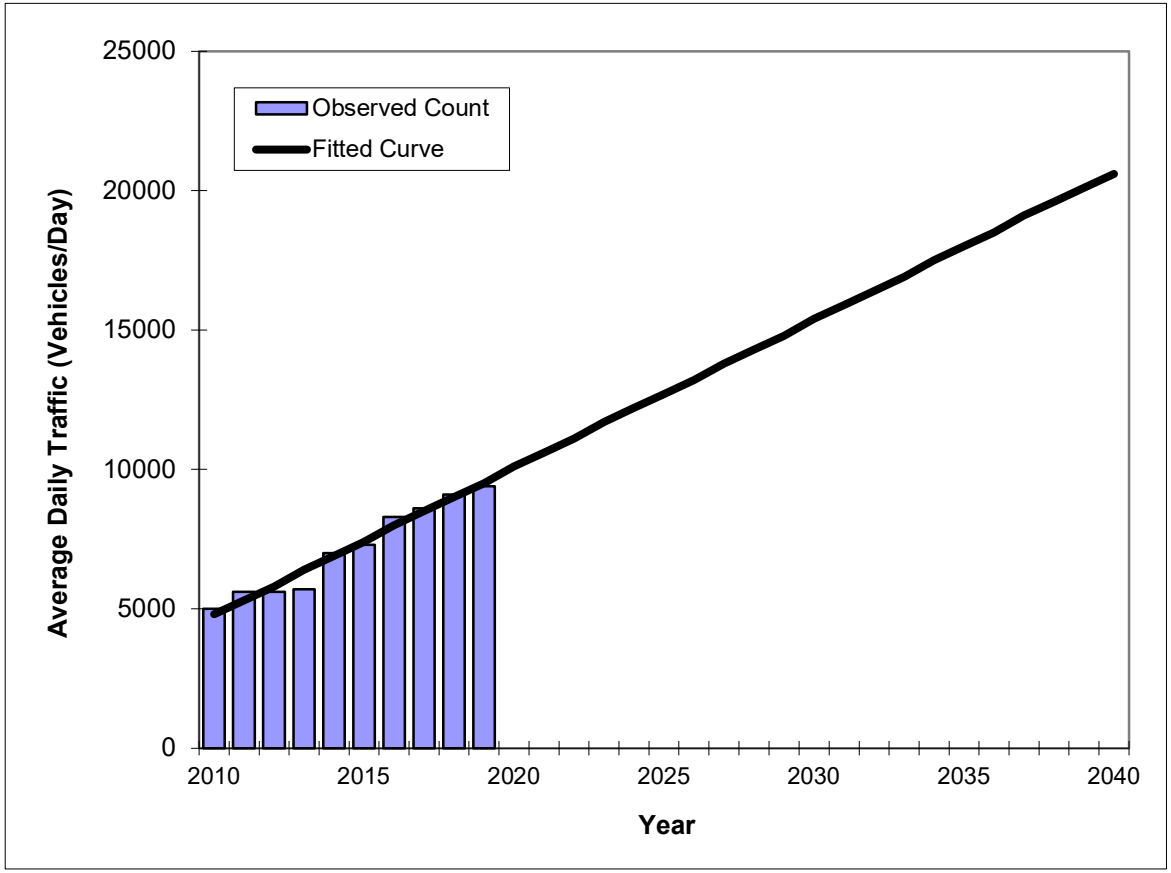
Straight Line Growth Option

Traffic Trends - V2.0

I-275 On Ramp to I-75 NB -- I-275 East Off Ramp to I-75 NB

PIN#	63551.03-29
Location	11

County:	Manatee (13)
Station #:	7043
Highway:	I-275 On Ramp to I-75 NB



Year	Traffic (ADT/AADT) Count*	Trend**
2010	5000	4800
2011	5600	5300
2012	5600	5800
2013	5700	6400
2014	7000	6900
2015	7300	7400
2016	8300	8000
2017	8600	8500
2018	9100	9000
2019	9400	9500
2024 Opening Year Trend		
2024	N/A	12200
2029 Mid-Year Trend		
2029	N/A	14800
2034 Design Year Trend		
2034	N/A	17500
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	528
Trend R-squared:	96.56%
Trend Annual Historic Growth Rate:	10.88%
Trend Growth Rate (2019 to Design Year):	5.61%
Printed:	3-Sep-21

Straight Line Growth Option

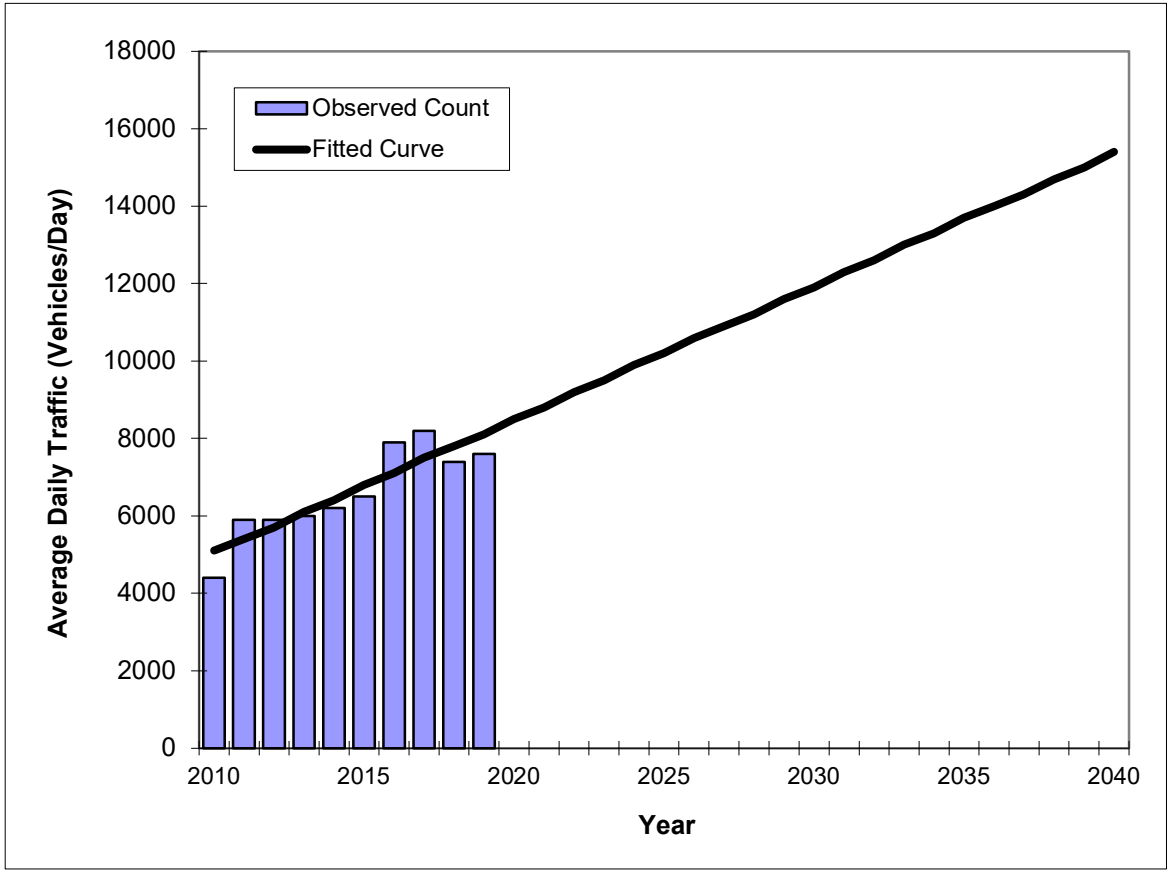
*Axle-Adjusted

Traffic Trends - V2.0

I-275 NB to US 41 SB -- I-275 NB Off Ramp at US 41

PIN#	63551.03-29
Location	4

County:	Manatee (13)
Station #:	7101
Highway:	I-275 NB to US 41 SB



Year	Traffic (ADT/AADT) Count*	Trend**
2010	4400	5100
2011	5900	5400
2012	5900	5700
2013	6000	6100
2014	6200	6400
2015	6500	6800
2016	7900	7100
2017	8200	7500
2018	7400	7800
2019	7600	8100
2024 Opening Year Trend		
2024	N/A	9900
2029 Mid-Year Trend		
2029	N/A	11600
2034 Design Year Trend		
2034	N/A	13300
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	344
Trend R-squared:	79.87%
Trend Annual Historic Growth Rate:	6.54%
Trend Growth Rate (2019 to Design Year):	4.28%
Printed:	3-Sep-21

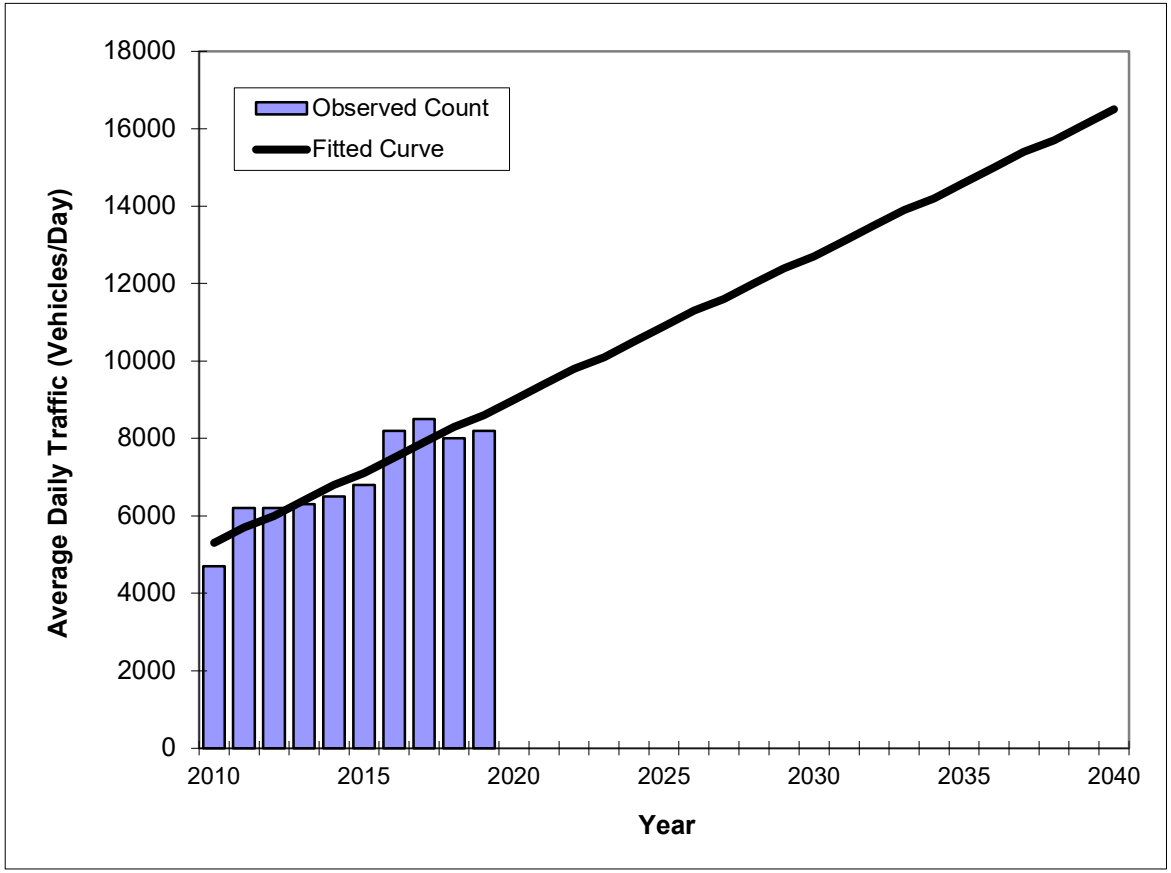
Straight Line Growth Option

Traffic Trends - V2.0

US 41 to I-275 W -- I-275 WB On Ramp at US 41

PIN#	63551.03-29
Location	7

County:	Manatee (13)
Station #:	7102
Highway:	US 41 to I-275 W



Year	Traffic (ADT/AADT) Count*	Trend**
2010	4700	5300
2011	6200	5700
2012	6200	6000
2013	6300	6400
2014	6500	6800
2015	6800	7100
2016	8200	7500
2017	8500	7900
2018	8000	8300
2019	8200	8600
2024 Opening Year Trend		
2024	N/A	10500
2029 Mid-Year Trend		
2029	N/A	12400
2034 Design Year Trend		
2034	N/A	14200
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	373
Trend R-squared:	85.40%
Trend Annual Historic Growth Rate:	6.92%
Trend Growth Rate (2019 to Design Year):	4.34%
Printed:	3-Sep-21

Straight Line Growth Option

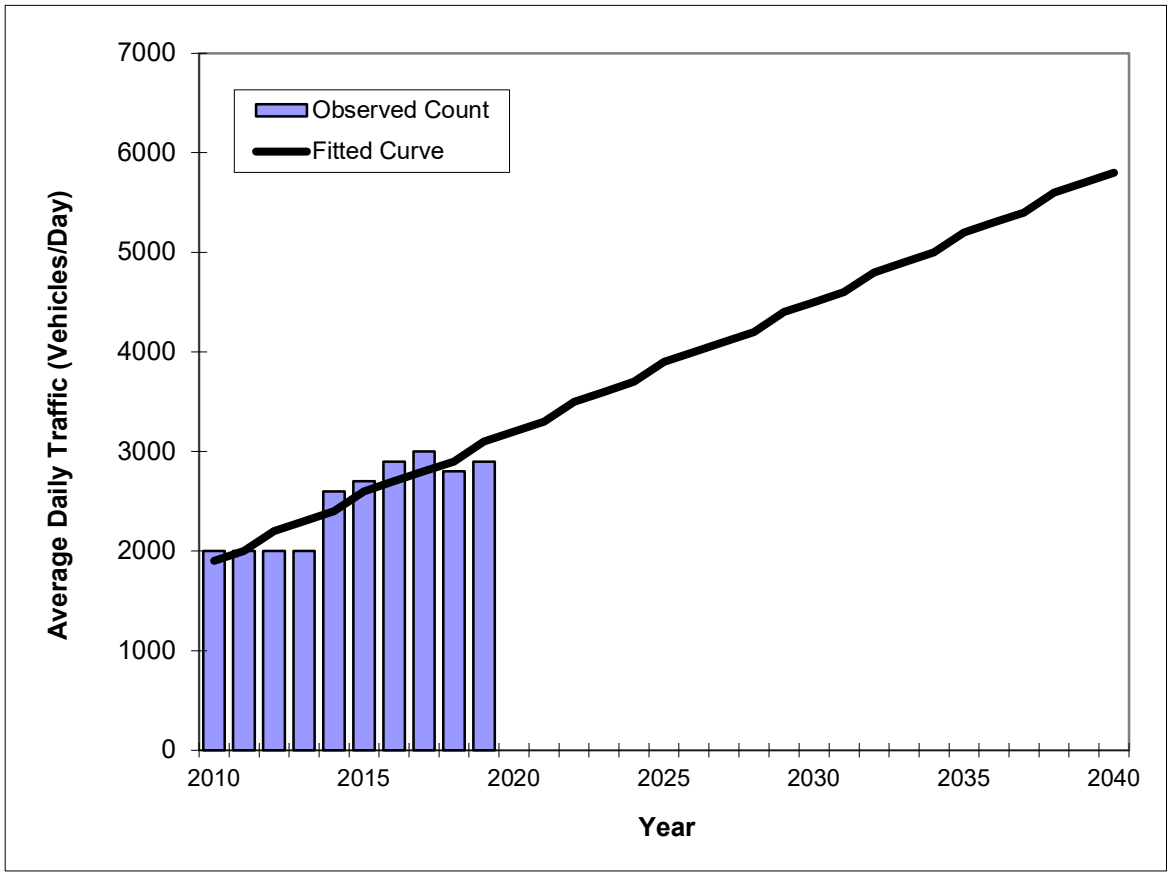
*Axle-Adjusted

Traffic Trends - V2.0

US 41 to I-275 E -- I-275 NB On Ramp at US 41

PIN#	63551.03-29
Location	5

County:	Manatee (13)
Station #:	7103
Highway:	US 41 to I-275 E



Year	Traffic (ADT/AADT) Count*	Trend**
2010	2000	1900
2011	2000	2000
2012	2000	2200
2013	2000	2300
2014	2600	2400
2015	2700	2600
2016	2900	2700
2017	3000	2800
2018	2800	2900
2019	2900	3100
2024 Opening Year Trend		
2024	N/A	3700
2029 Mid-Year Trend		
2029	N/A	4400
2034 Design Year Trend		
2034	N/A	5000
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	130
Trend R-squared:	81.96%
Trend Annual Historic Growth Rate:	7.02%
Trend Growth Rate (2019 to Design Year):	4.09%
Printed:	3-Sep-21

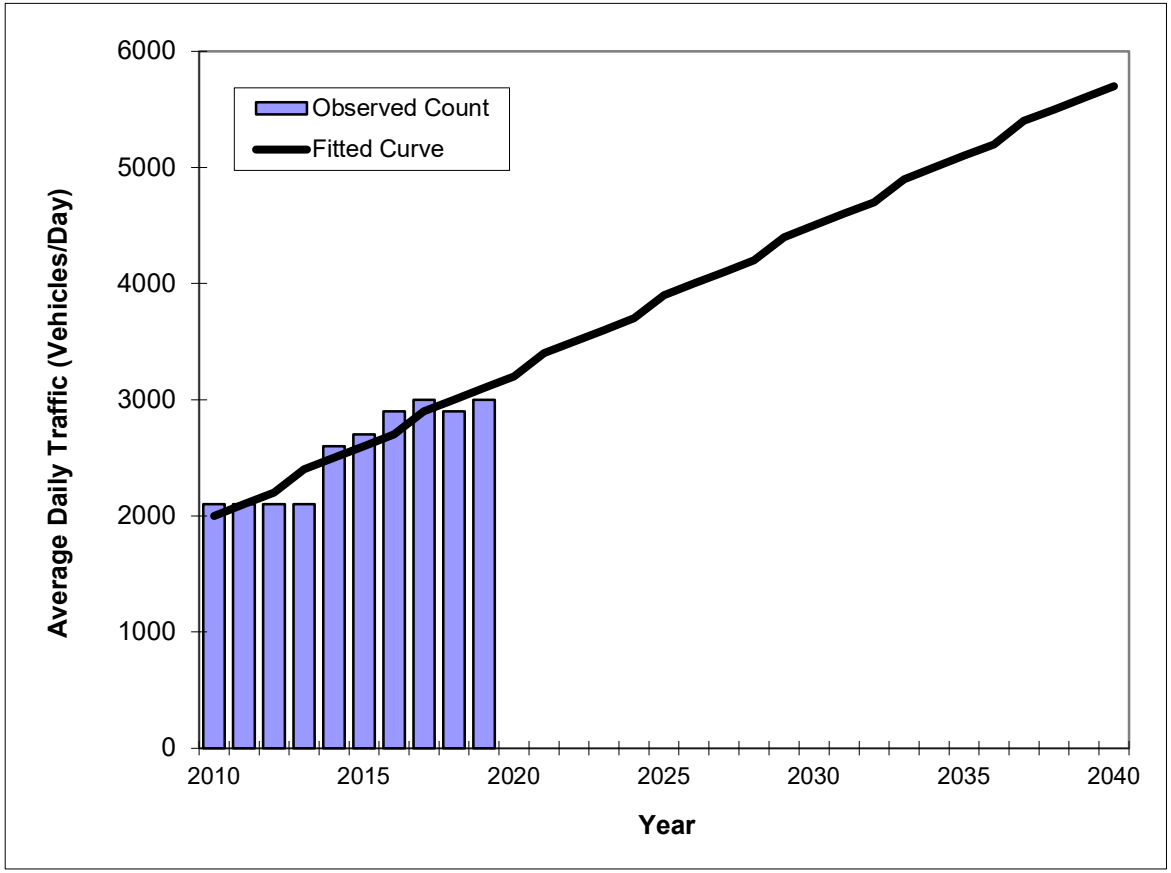
Straight Line Growth Option

Traffic Trends - V2.0

I-275 W to US 41 -- I-275 WB Off Ramp at US 41

PIN#	63551.03-29
Location	6

County:	Manatee (13)
Station #:	7104
Highway:	I-275 W to US 41



Year	Traffic (ADT/AADT) Count*	Trend**
2010	2100	2000
2011	2100	2100
2012	2100	2200
2013	2100	2400
2014	2600	2500
2015	2700	2600
2016	2900	2700
2017	3000	2900
2018	2900	3000
2019	3000	3100
2024 Opening Year Trend		
2024	N/A	3700
2029 Mid-Year Trend		
2029	N/A	4400
2034 Design Year Trend		
2034	N/A	5000
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	125
Trend R-squared:	87.44%
Trend Annual Historic Growth Rate:	6.11%
Trend Growth Rate (2019 to Design Year):	4.09%
Printed:	3-Sep-21

Straight Line Growth Option

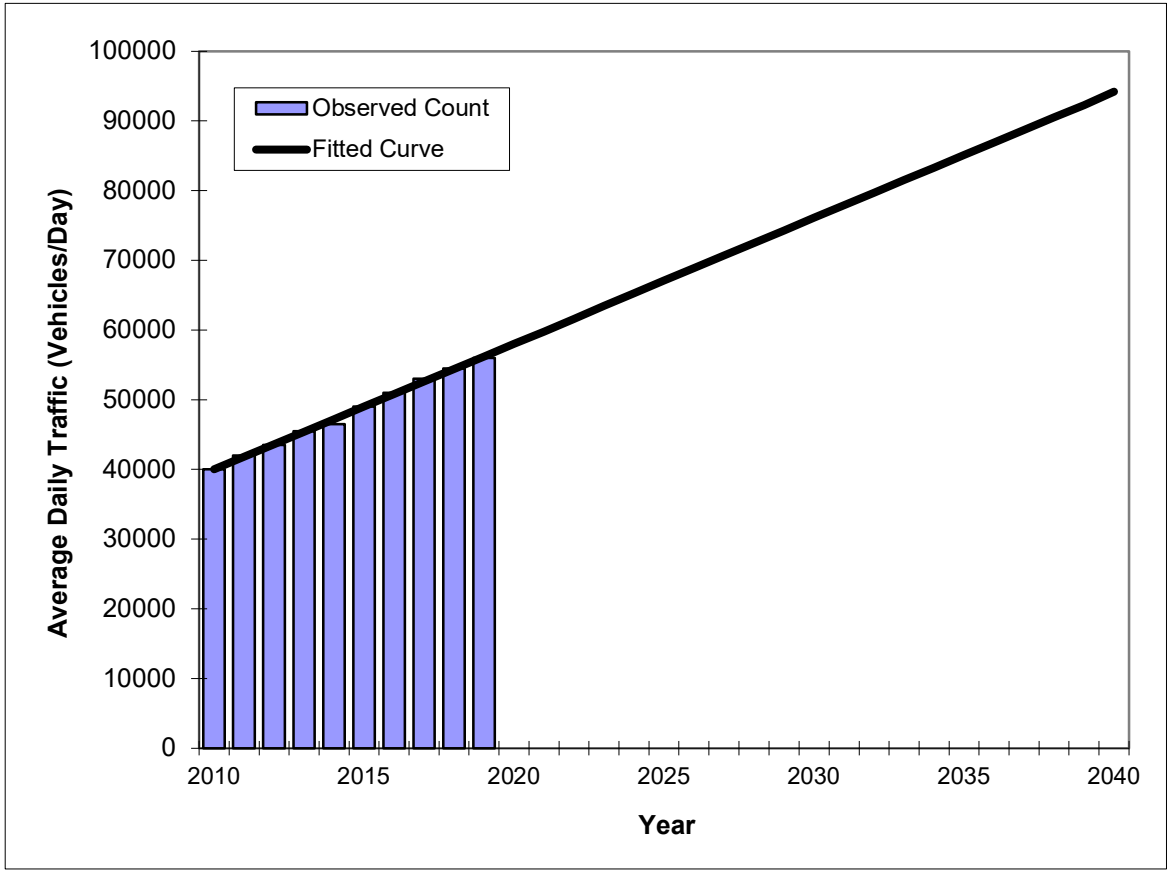
*Axle-Adjusted

Traffic Trends - V2.0

I-275 -- I-275 East of US 41

PIN#	63551.03-29
Location	9

County:	Manatee (13)
Station #:	0058
Highway:	I-275



Year	Traffic (ADT/AADT) Count*	Trend**
2010	40000	40000
2011	42000	41800
2012	43500	43600
2013	45500	45400
2014	46500	47200
2015	49000	49000
2016	51000	50800
2017	53000	52600
2018	54500	54400
2019	56000	56200
2024 Opening Year Trend		
2024	N/A	65300
2029 Mid-Year Trend		
2029	N/A	74300
2034 Design Year Trend		
2034	N/A	83300
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	1,806
Trend R-squared:	99.70%
Trend Annual Historic Growth Rate:	4.50%
Trend Growth Rate (2019 to Design Year):	3.21%
Printed:	3-Sep-21

Straight Line Growth Option

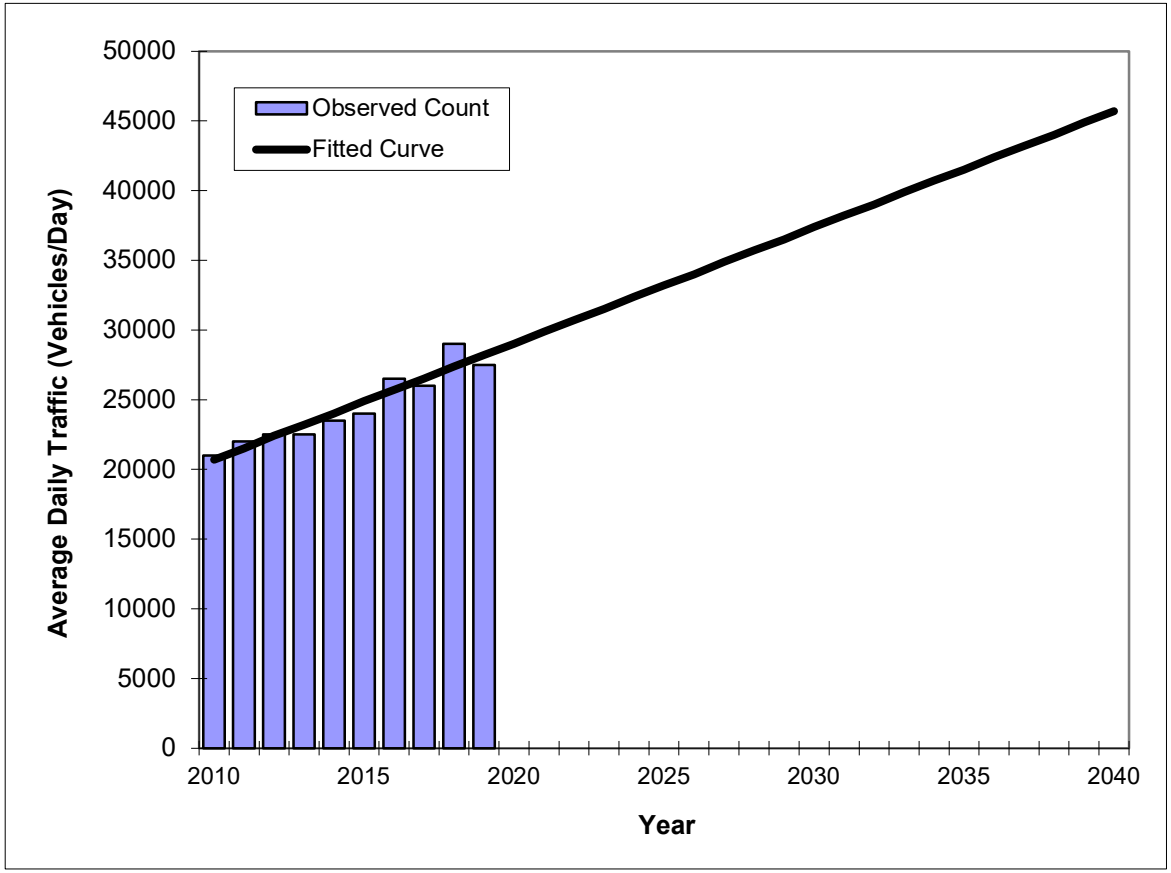
*Axle-Adjusted

Traffic Trends - V2.0

TAMIAMI TRAIL -- South of 73rd St E

PIN#	63551.03-29
Location	1

County:	Manatee (13)
Station #:	0007
Highway:	TAMIAMI TRAIL



Year	Traffic (ADT/AADT) Count*	Trend**
2010	21000	20700
2011	22000	21500
2012	22500	22400
2013	22500	23200
2014	23500	24000
2015	24000	24900
2016	26500	25700
2017	26000	26500
2018	29000	27400
2019	27500	28200
2024 Opening Year Trend		
2024	N/A	32400
2029 Mid-Year Trend		
2029	N/A	36500
2034 Design Year Trend		
2034	N/A	40700
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	833
Trend R-squared:	90.62%
Trend Annual Historic Growth Rate:	4.03%
Trend Growth Rate (2019 to Design Year):	2.96%
Printed:	3-Sep-21

Straight Line Growth Option

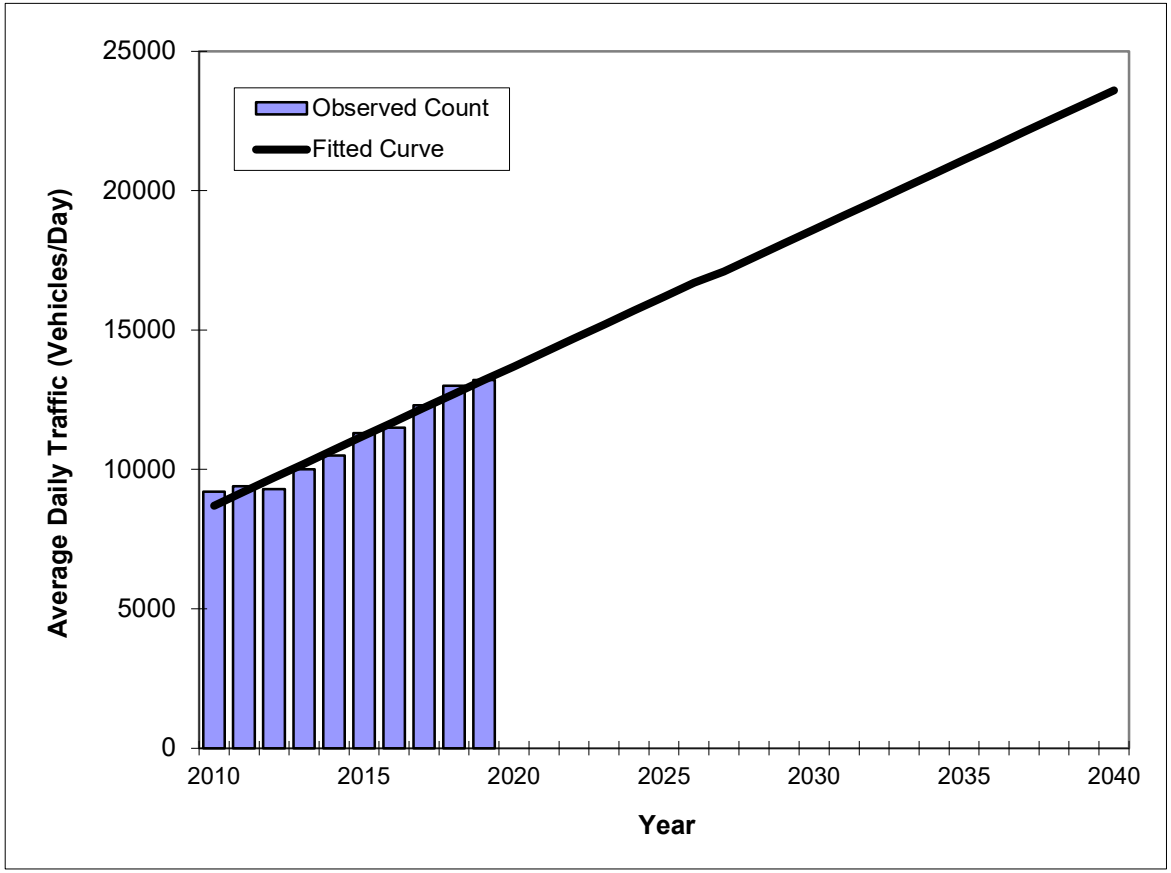
*Axle-Adjusted

Traffic Trends - V2.0

TAMIAMI TRAIL -- South of Piney Point Road

PIN#	63551.03-29
Location	12

County:	Manatee (13)
Station #:	0006
Highway:	TAMIAMI TRAIL



Year	Traffic (ADT/AADT) Count*	Trend**
2010	9200	8700
2011	9400	9200
2012	9300	9700
2013	10000	10200
2014	10500	10700
2015	11300	11200
2016	11500	11700
2017	12300	12200
2018	13000	12700
2019	13200	13200
2024 Opening Year Trend		
2024	N/A	15700
2029 Mid-Year Trend		
2029	N/A	18100
2034 Design Year Trend		
2034	N/A	20600
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	494
Trend R-squared:	96.76%
Trend Annual Historic Growth Rate:	5.75%
Trend Growth Rate (2019 to Design Year):	3.74%
Printed:	7-Sep-21

Straight Line Growth Option

*Axle-Adjusted

Appendix J

BEBR Population Projections

College of Liberal Arts and Sciences
Bureau of Economic and Business Research

Florida Population Studies

BEBR

Volume 54, Bulletin 189, April 2021

Projections of Florida Population by County, 2025–2045, with Estimates for 2020

Stefan Rayer, Population Program Director
Ying Wang, Research Demographer

The Bureau of Economic and Business Research (BEBR) has been making population projections for Florida and its counties since the 1970s. This report presents our most recent set of projections and describes the methodology used to construct those projections. To account for uncertainty regarding future population growth, we publish three series of projections. We believe the medium series is the most likely to provide accurate forecasts in most circumstances, but the low and high series provide an indication of the uncertainty surrounding the medium series. It should be noted that these projections refer solely to permanent residents of Florida; they do not include tourists or seasonal residents. Furthermore, we note that this set of projections is still based on the Census 2010 counts and the BEBR population estimates since then. The next set of BEBR county projections, scheduled for release in early 2022, will incorporate the Census 2020 counts.

State projections

The starting point for the state-level projections was the April 1, 2010 census population count by age, sex, race, and Hispanic origin, as adjusted by the National Center for Health Statistics (NCHS) in the Vintage 2017 bridged race population estimates. Projections were made in one-year intervals using a cohort-component methodology in which births, deaths, and migration are projected separately for each age-sex cohort in Florida for non-Hispanic whites, non-Hispanic nonwhites, and Hispanics. We applied three different sets of assumptions to provide low, medium, and high series of projections. Although the low and high series do not provide absolute bounds on future population change, they provide a reasonable range in which Florida's future population is likely to fall.

Survival rates were applied by single year of age, sex, race, and Hispanic origin to project future deaths in the population. These rates were based on Florida Life Tables for 2012–2018, using mortality data published by the Office of Vital Statistics in the Florida Department of Health. The survival rates were adjusted upward each year until 2044 to account for projected increases in life expectancy. These adjustments were based on projected increases in survival rates released by the U.S. Census Bureau. We used the same mortality assumptions for all three series of projections because there is less uncertainty regarding future changes in mortality rates than is true for migration and fertility rates.

Domestic migration rates by age and sex were based on Public Use Microdata Sample (PUMS) files from the 2010–2019 American Community Survey (ACS) 1-year estimates, and the 2014–2018 and 2015–2019 ACS 5-year estimates. We first calculated an average of the 2010–2018 1-year estimates and the 2014–2018 5-year estimates. Next, we calculated an average of the 2011–2019 1-year estimates and the 2015–2019 5-year estimates. Our final domestic migration rates were based on an average of these two

Projections of Florida Population by County, 2025–2045, with Estimates for 2020 (continued)

County and State	Estimates April 1, 2020	2025	2030	2035	2040	2045
HOLMES	20,001					
Low		18,400	17,900	17,300	16,700	16,200
Medium		20,100	20,100	20,200	20,200	20,300
High		21,800	22,600	23,300	24,100	24,800
INDIAN RIVER	158,834					
Low		154,500	157,800	159,100	159,100	158,000
Medium		171,300	181,700	189,900	196,900	203,100
High		187,000	205,000	221,800	237,400	253,000
JACKSON	46,587					
Low		44,000	43,200	42,200	41,000	39,800
Medium		47,100	47,500	47,700	47,800	47,900
High		50,400	52,300	53,900	55,100	56,200
JEFFERSON	14,394					
Low		13,400	13,100	12,800	12,400	12,100
Medium		14,600	14,700	14,800	15,000	15,100
High		15,800	16,500	17,200	17,900	18,600
LAFAYETTE	8,690					
Low		8,300	8,300	8,300	8,200	8,100
Medium		9,000	9,300	9,600	9,800	9,900
High		9,800	10,500	11,200	11,800	12,400
LAKE	366,742					
Low		375,400	397,100	414,100	426,400	436,300
Medium		409,200	445,400	475,800	501,700	525,200
High		439,800	493,500	542,700	589,100	634,900
LEE	750,493					
Low		760,700	796,700	823,500	843,800	858,100
Medium		829,300	894,600	948,800	996,100	1,038,500
High		891,100	990,000	1,079,400	1,165,600	1,248,600
LEON	299,484					
Low		291,300	293,300	293,400	292,200	289,800
Medium		312,300	323,000	331,400	338,500	344,600
High		332,500	353,000	369,900	385,400	399,300
LEVY	41,699					
Low		40,300	40,300	40,200	39,900	39,600
Medium		43,100	44,300	45,200	45,900	46,700
High		46,200	48,900	51,400	53,600	55,900
LIBERTY	8,575					
Low		8,100	8,100	8,000	7,800	7,600
Medium		8,800	9,100	9,200	9,400	9,500
High		9,600	10,200	10,700	11,200	11,700
MADISON	18,954					
Low		17,500	17,000	16,500	15,900	15,400
Medium		19,000	19,100	19,200	19,200	19,300
High		20,700	21,400	22,200	22,900	23,600
MANATEE	398,503					
Low		401,400	419,000	431,900	442,600	449,200
Medium		437,600	470,600	498,000	522,600	544,400
High		470,200	520,600	566,100	611,400	653,700
MARION	368,135					
Low		368,400	379,800	386,600	390,100	391,300
Medium		394,900	417,100	434,200	448,100	460,000
High		420,600	457,100	487,400	514,500	539,300
MARTIN	161,301					
Low		156,500	157,800	158,200	158,000	157,000
Medium		170,500	177,600	183,500	188,700	193,300
High		184,300	198,200	211,400	224,000	236,600

Appendix K

Turns5 Input/Output Sheets

TURNS5 ANALYSIS SHEET - INPUT

Analyst:	TKW
Date:	9-Dec-21
Highway:	US 41
Intersection:	69th Street East
Project:	US 41 at I-275 IOAR
County:	Manatee

Is this a 4 way intersection?

- (●) Yes, my intersection has four approaches

If not, which 3 approaches exist in the intersection?

- ( ) EB, WB, and SB
- ( ) EB, WB, and NB
- ( ) EB, SB, and NB
- ( ) WB, SB, and NB

Is the Mainline Oriented North/South? Enter Yes or No: (●) Yes ( ) No

K Factors	
Mainline	9.00%
Side street	9.00%

D Factors	*Mainline*
Northbound (NB)	42.1%
Southbound (SB)	57.9%
	Side street
Westbound (WB)	65.4%
Eastbound (EB)	34.6%

Do you have FTSUTMS Model Year traffic from which you would like to interpolate/extrapolate for project years? (Y/N)

Enter Yes or No: (●) Yes ( ) No

If "Yes" go to cell C47 — If "No" go to cell C31

Enter Year and Growth Rates from Base Year:

	Year	*Rate* (1.0% = 0.01) **Mainline**	**Side Street**
Base			
Opening			
Mid			
Design			

Mainline Growth Function: (●) Linear ( ) Exponential ( ) Decaying

Side Street Growth Function: (●) Linear ( ) Exponential ( ) Decaying

Enter Base Year AADTs for Volume Comparison:
(growth rates are used to calculate other project years)

From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
0	0	0	0	0

Enter Project and Model Years

	Year
Base	2021
Opening	2024
Mid	2029
Design	2034
Model	2034

Enter Base and Model Year AADTs for Volume Comparison:
(volumes for other project years are calculated by interpolation)

	From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
2021	1000	13500	32500	32500	79500
2034	1200	14500	38000	34500	88200

		1st Guess Turning %'s for AADT Balancing	**Actual/Counted Traffic for 2021**
(EB LT)	*West-to-North*	42.7%	41
(EB THRU)	*West-to-East*	31.3%	30
(EB RT)	*West-to-South*	26.0%	25
(WB LT)	*East-to-South*	49.6%	417
(WB THRU)	*East-to-West*	4.0%	33
(WB RT)	*East-to-North*	46.4%	390
(SB LT)	*North-to-East*	8.9%	123
(SB THRU)	*North-to-South*	88.6%	1226
(SB RT)	*North-to-West*	2.5%	34
(NB LT)	*South-to-West*	1.5%	17
(NB THRU)	*South-to-North*	82.1%	939
(NB RT)	*South-to-East*	16.4%	187

Desired Closure: 0.01

First Guess Turning % Option Used
Existing Turning Movement Counts

Existing Year AADTs — Only the existing year total departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

Existing Turning Movement Counts — The turning percentages first guess is the same as the ***actual distribution of turning volumes entered***. No balancing technique is used.

FSUTMS Model Year AADTs — Only the FSUTMS model year departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

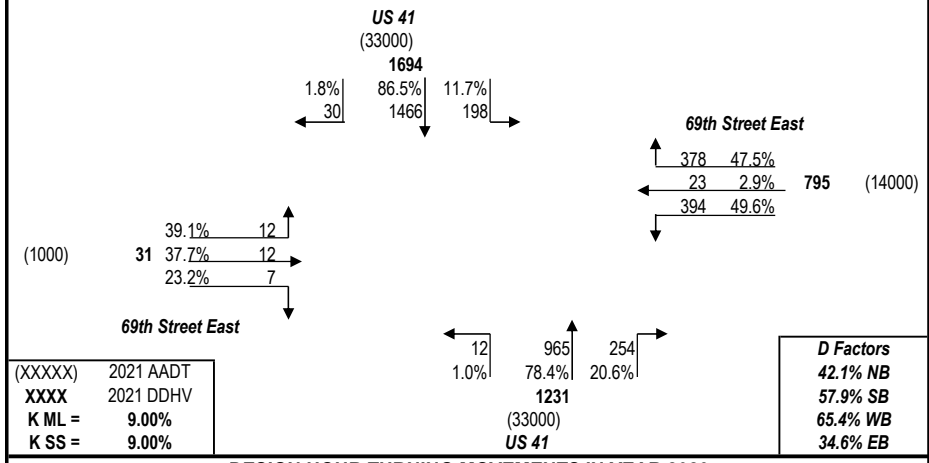
TURNS5 INITIAL TURNING VOLUME SUMMARY

Highway:	US 41	**County:**	Manatee
Intersection:	69th Street East		
Project:	US 41 at I-275 IOAR	**Analyst:**	TKW
		Date:	9-Dec-21

Approach-To-Approach	2021 Initial Estimate	2021 Final Estimate	2021 Calculated Volume	2024 Final Estimate	2024 Calculated Volume	2029 Final Estimate	2029 Calculated Volume	2034 Final Estimate	2034 Calculated Volume
West-To-North (LT)	0.427	0.391	12	0.411	14	0.443	16	0.475	18
West-To-East (Thru)	0.313	0.377	12	0.371	12	0.361	12	0.348	12
West-To-South (RT)	0.260	0.232	7	0.218	7	0.196	7	0.177	7
Total Flow From West:			**31**		**33**		**35**		**37**
East-To-South (LT)	0.496	0.496	394	0.468	378	0.425	353	0.384	328
East-To-West (Thru)	0.040	0.029	23	0.029	24	0.029	24	0.029	24
East-To-North (RT)	0.464	0.475	378	0.503	406	0.546	454	0.587	501
Total Flow From East:			**795**		**808**		**831**		**853**
North-To-East (LT)	0.089	0.117	198	0.122	215	0.131	245	0.138	273
North-To-South (Thru)	0.886	0.865	1466	0.859	1512	0.849	1588	0.840	1663
North-To-West (RT)	0.025	0.018	30	0.019	33	0.020	37	0.022	44
Total Flow From North:			**1694**		**1760**		**1870**		**1980**
South-To-West (LT)	0.015	0.010	12	0.010	12	0.009	12	0.009	12
South-To-North (Thru)	0.821	0.784	965	0.794	992	0.811	1036	0.826	1079
South-To-East (RT)	0.164	0.206	254	0.196	245	0.180	230	0.165	216
Total Flow From South:			**1231**		**1249**		**1278**		**1307**

PROJECT TRAFFIC FOR US 41 AT 69th Street East

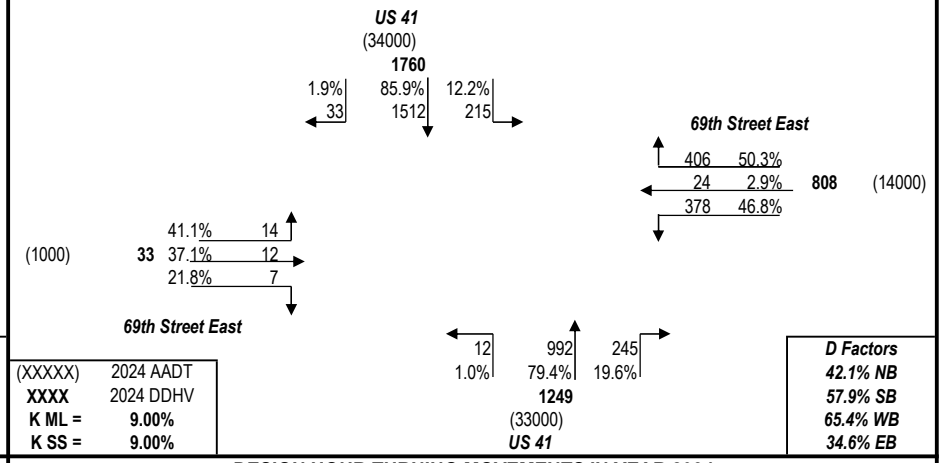
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2021



(XXXXX)	2021 AADT
XXXX	2021 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
65.4% WB
34.6% EB

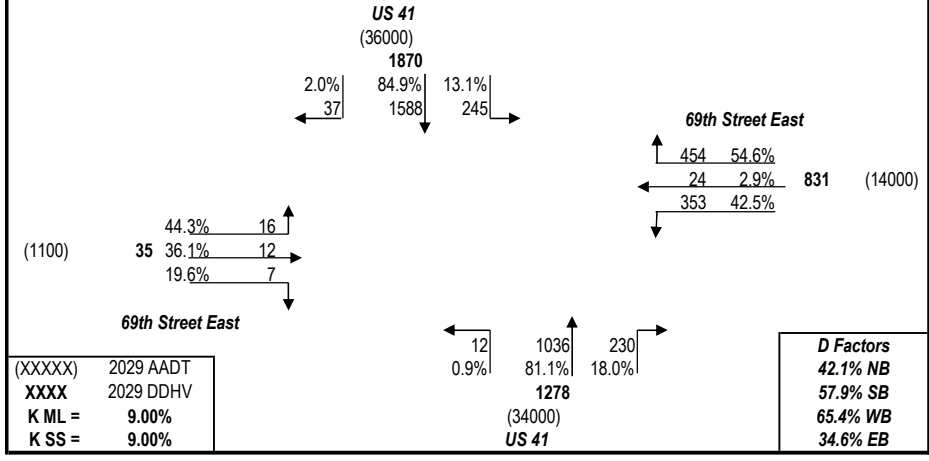
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2024



(XXXXX)	2024 AADT
XXXX	2024 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
65.4% WB
34.6% EB

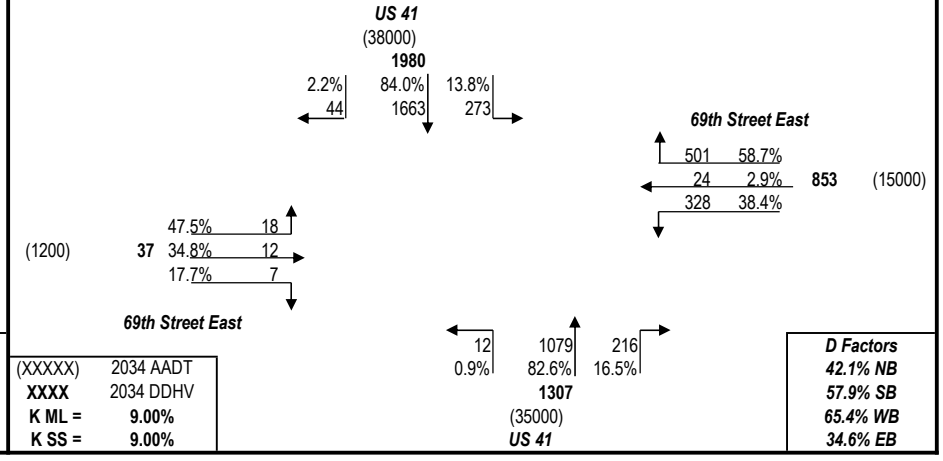
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2029



(XXXXX)	2029 AADT
XXXX	2029 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
65.4% WB
34.6% EB

DESIGN HOUR TURNING MOVEMENTS IN YEAR 2034

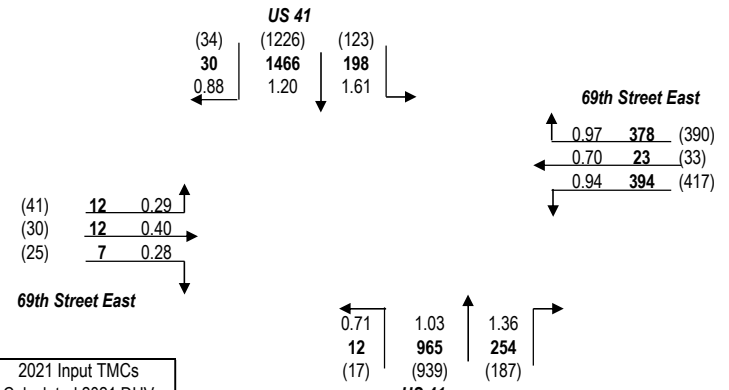


(XXXXX)	2034 AADT
XXXX	2034 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
65.4% WB
34.6% EB

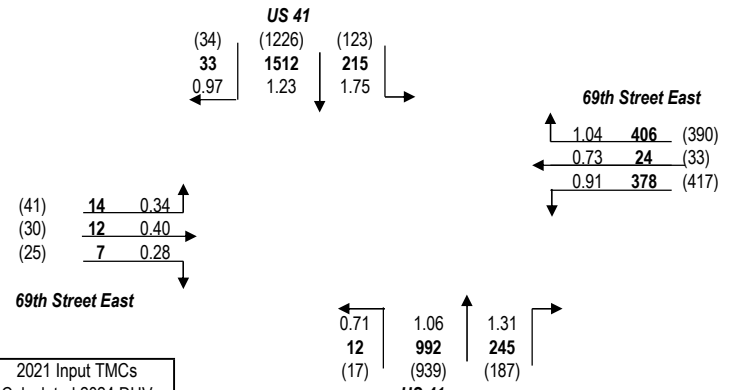
PROJECT TRAFFIC FOR US 41 AT 69th Street East

2021 INPUT TMCs COMPARED TO 2021 DHV



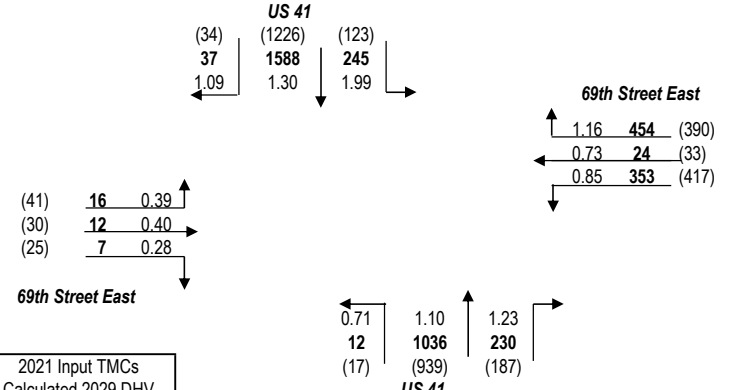
(XXX)	2021 Input TMCs
XXX	Calculated 2021 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2024 DHV



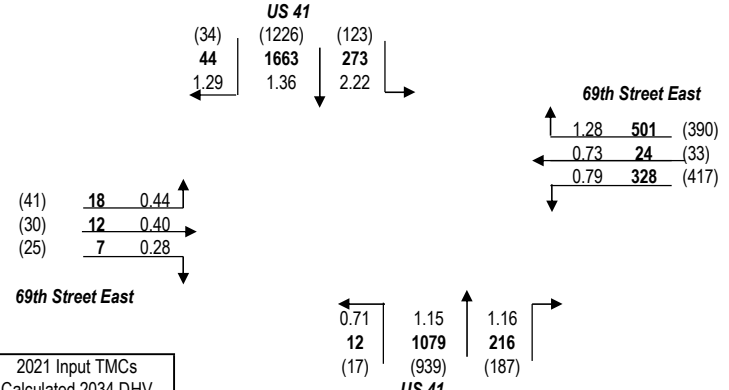
(XXX)	2021 Input TMCs
XXX	Calculated 2024 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2029 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2029 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2034 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2034 DHV
X.XX	Ratio

TURNS5 ANALYSIS SHEET - INPUT

Analyst:	TKW
Date:	9-Dec-21
Highway:	US 41
Intersection:	69th Street East
Project:	US 41 at I-275 IOAR
County:	Manatee

Is this a 4 way intersection?

- (●) Yes, my intersection has four approaches

If not, which 3 approaches exist in the intersection?

- ( ) EB, WB, and SB
- ( ) EB, WB, and NB
- ( ) EB, SB, and NB
- ( ) WB, SB, and NB

Is the Mainline Oriented North/South? Enter Yes or No

- (●) Yes
- ( ) No

K Factors	
Mainline	9.00%
Side street	9.00%

D Factors	*Mainline*
Northbound (NB)	57.9%
Southbound (SB)	42.1%
	Side street
Westbound (WB)	34.6%
Eastbound (EB)	65.4%

Do you have FTSUTMS Model Year traffic from which you would like to interpolate/extrapolate for project years? (Y/N)

Enter Yes or No

- (●) Yes
- ( ) No

If "Yes" go to cell C47 — If "No" go to cell C31

Enter Year and Growth Rates from Base Year:

	Year	*Rate* (1.0% = 0.01) **Mainline**	**Side Street**
Base			
Opening			
Mid			
Design			

Mainline Growth Function

- (●) Linear
- ( ) Exponential
- ( ) Decaying

Side Street Growth Function

- (●) Linear
- ( ) Exponential
- ( ) Decaying

Enter Base Year AADTs for Volume Comparison:
(growth rates are used to calculate other project years)

From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
0	0	0	0	0

Enter Project and Model Years

	Year
Base	2021
Opening	2024
Mid	2029
Design	2034
Model	2034

Enter Base and Model Year AADTs for Volume Comparison:
(volumes for other project years are calculated by interpolation)

	From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
2021	1000	13500	32500	32500	79500
2034	1200	14500	38000	34500	88200

		1st Guess Turning %'s for AADT Balancing	**Actual/Counted Traffic for 2021**
(EB LT)	*West-to-North*	49.3%	66
(EB THRU)	*West-to-East*	21.6%	29
(EB RT)	*West-to-South*	29.1%	39
(WB LT)	*East-to-South*	39.9%	166
(WB THRU)	*East-to-West*	9.1%	38
(WB RT)	*East-to-North*	51.0%	212
(SB LT)	*North-to-East*	23.5%	263
(SB THRU)	*North-to-South*	71.5%	800
(SB RT)	*North-to-West*	5.0%	56
(NB LT)	*South-to-West*	1.8%	33
(NB THRU)	*South-to-North*	79.6%	1472
(NB RT)	*South-to-East*	18.6%	343

Desired Closure: 0.01

First Guess Turning % Option Used
Existing Turning Movement Counts

Existing Year AADTs — Only the existing year total departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

Existing Turning Movement Counts — The turning percentages first guess is the same as the ***actual distribution of turning volumes entered***. No balancing technique is used.

FSUTMS Model Year AADTs — Only the FSUTMS model year departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

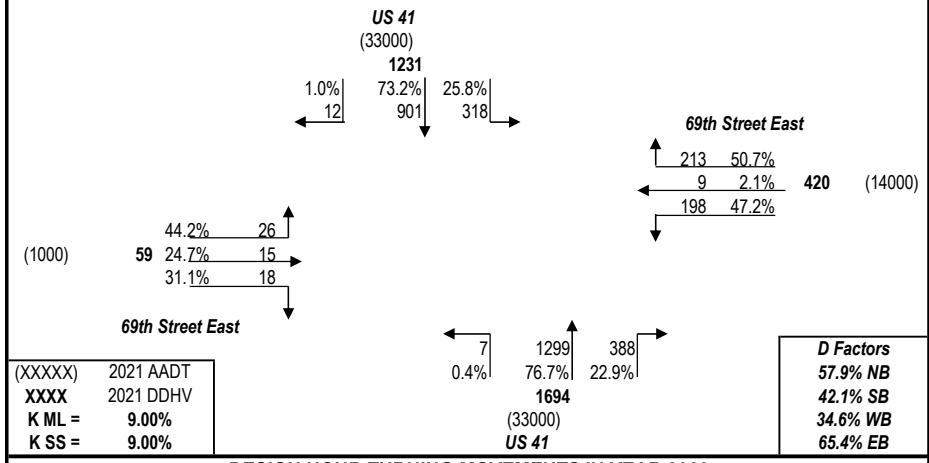
TURNS5 INITIAL TURNING VOLUME SUMMARY

Highway:	US 41	**County:**	Manatee
Intersection:	69th Street East		
Project:	US 41 at I-275 IOAR	**Analyst:**	TKW
		Date:	9-Dec-21

Approach-To-Approach	2021 Initial Estimate	2021 Final Estimate	2021 Calculated Volume	2024 Final Estimate	2024 Calculated Volume	2029 Final Estimate	2029 Calculated Volume	2034 Final Estimate	2034 Calculated Volume
West-To-North (LT)	0.493	0.442	26	0.465	29	0.502	33	0.474	34
West-To-East (Thru)	0.216	0.247	15	0.244	15	0.236	16	0.235	16
West-To-South (RT)	0.291	0.311	18	0.291	18	0.262	17	0.291	21
Total Flow From West:			**59**		**62**		**66**		**71**
East-To-South (LT)	0.399	0.472	198	0.444	190	0.400	176	0.438	198
East-To-West (Thru)	0.091	0.021	9	0.021	9	0.022	10	0.023	10
East-To-North (RT)	0.510	0.507	213	0.535	229	0.578	254	0.539	244
Total Flow From East:			**420**		**428**		**440**		**452**
North-To-East (LT)	0.235	0.258	318	0.268	343	0.282	384	0.261	376
North-To-South (Thru)	0.715	0.732	901	0.721	923	0.706	960	0.727	1047
North-To-West (RT)	0.050	0.010	12	0.011	14	0.012	16	0.012	17
Total Flow From North:			**1231**		**1280**		**1360**		**1440**
South-To-West (LT)	0.018	0.004	7	0.004	7	0.004	7	0.004	7
South-To-North (Thru)	0.796	0.767	1299	0.778	1336	0.796	1399	0.788	1417
South-To-East (RT)	0.186	0.229	388	0.218	375	0.200	352	0.208	374
Total Flow From South:			**1694**		**1718**		**1758**		**1798**

PROJECT TRAFFIC FOR US 41 AT 69th Street East

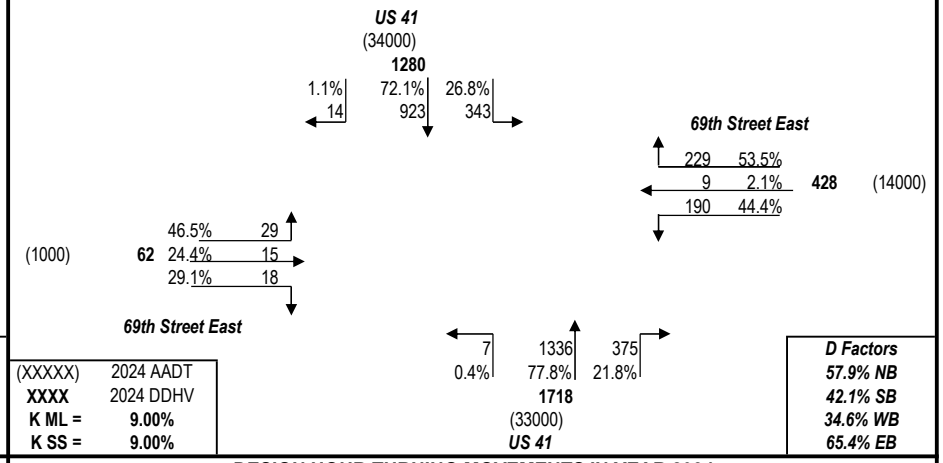
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2021



(XXXXX)	2021 AADT
XXXX	2021 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
57.9% NB
42.1% SB
34.6% WB
65.4% EB

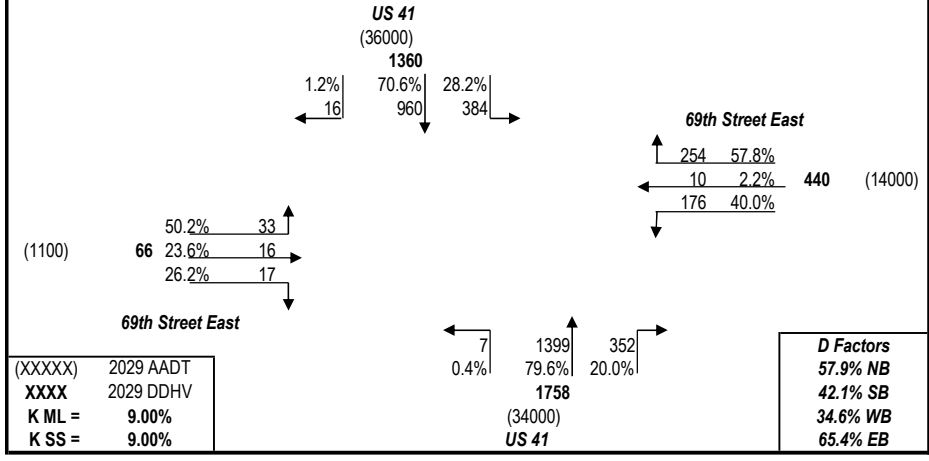
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2024



(XXXXX)	2024 AADT
XXXX	2024 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
57.9% NB
42.1% SB
34.6% WB
65.4% EB

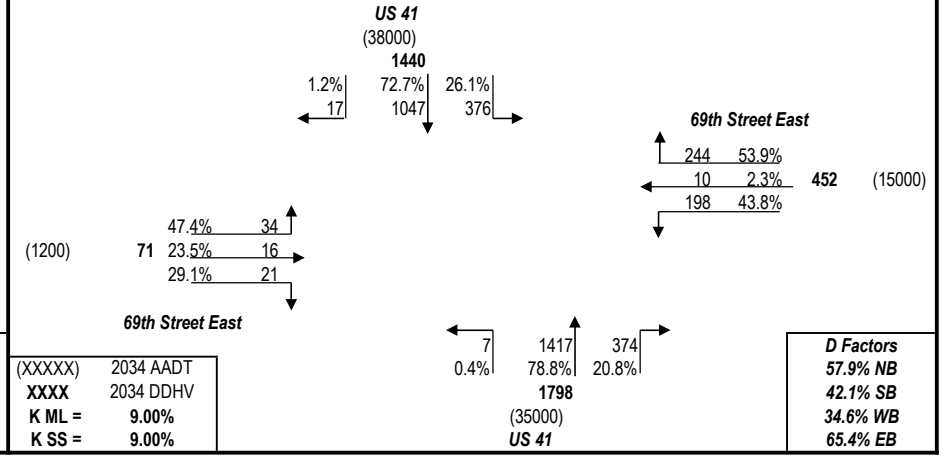
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2029



(XXXXX)	2029 AADT
XXXX	2029 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
57.9% NB
42.1% SB
34.6% WB
65.4% EB

DESIGN HOUR TURNING MOVEMENTS IN YEAR 2034

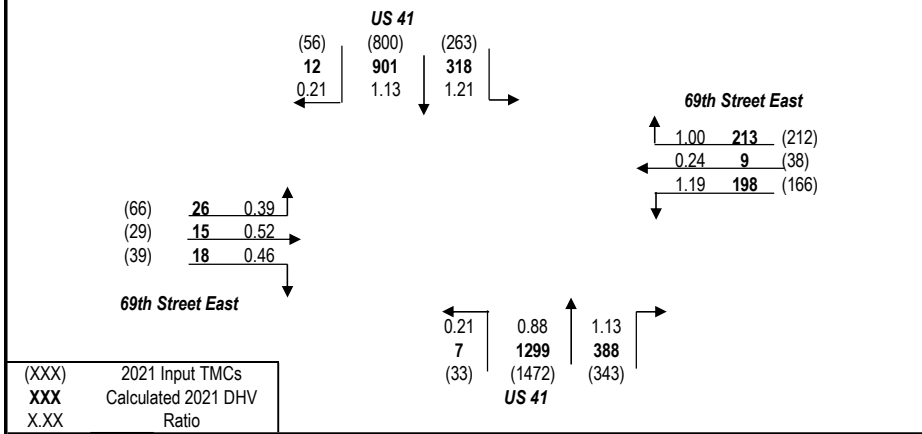


(XXXXX)	2034 AADT
XXXX	2034 DDHV
K ML =	9.00%
K SS =	9.00%

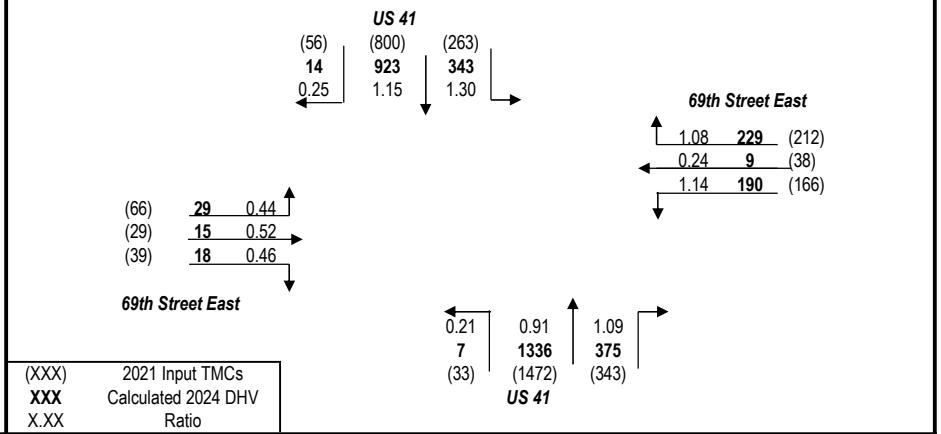
D Factors
57.9% NB
42.1% SB
34.6% WB
65.4% EB

PROJECT TRAFFIC FOR US 41 AT 69th Street East

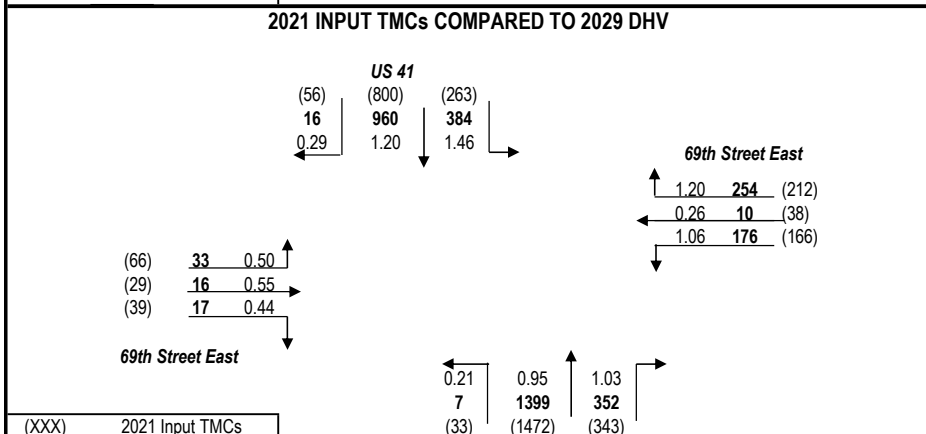
2021 INPUT TMCs COMPARED TO 2021 DHV



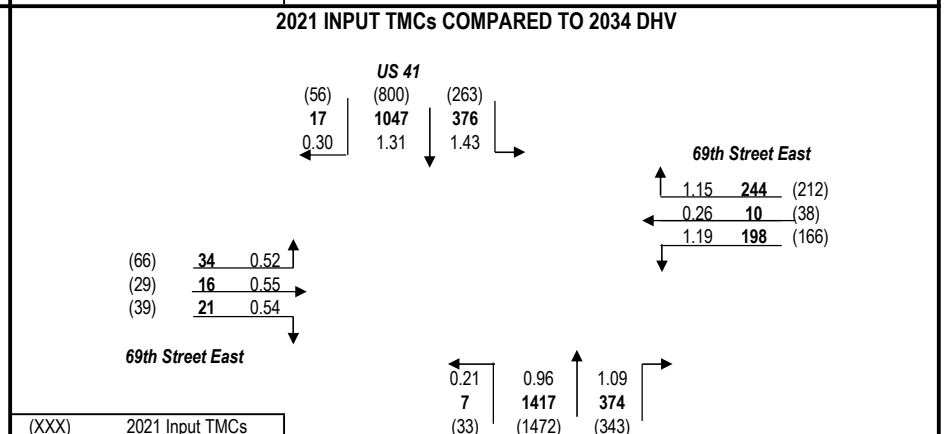
2021 INPUT TMCs COMPARED TO 2024 DHV



2021 INPUT TMCs COMPARED TO 2029 DHV



2021 INPUT TMCs COMPARED TO 2034 DHV



TURNS5 ANALYSIS SHEET - INPUT

Analyst:	TKW
Date:	9-Dec-21
Highway:	US 41
Intersection:	I-275
Project:	US 41 at I-275 IOAR
County:	Manatee

Is this a 4 way intersection?

- (●) Yes, my intersection has four approaches

If not, which 3 approaches exist in the intersection?

- ( ) EB, WB, and SB
- ( ) EB, WB, and NB
- ( ) EB, SB, and NB
- ( ) WB, SB, and NB

Is the Mainline Oriented North/South? Enter Yes or No: (●) Yes ( ) No

K Factors	
Mainline	9.00%
Side street	9.00%

D Factors	*Mainline*
Northbound (NB)	42.1%
Southbound (SB)	57.9%
	Side street
Westbound (WB)	56.7%
Eastbound (EB)	43.3%

Do you have FTSUTMS Model Year traffic from which you would like to interpolate/extrapolate for project years? (Y/N)

Enter Yes or No: (●) Yes ( ) No

If "Yes" go to cell C47 — If "No" go to cell C31

Enter Year and Growth Rates from Base Year:

	Year	*Rate* (1.0% = 0.01) **Mainline**	**Side Street**
Base	2021		
Opening	2031		
Mid	2041		
Design	2051		

Mainline Growth Function: (●) Linear ( ) Exponential ( ) Decaying

Side Street Growth Function: (●) Linear ( ) Exponential ( ) Decaying

Enter Base Year AADTs for Volume Comparison:
(growth rates are used to calculate other project years)

From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
0	0	0	0	0

Enter Project and Model Years

	Year
Base	2021
Opening	2024
Mid	2029
Design	2034
Model	2034

Enter Base and Model Year AADTs for Volume Comparison:
(volumes for other project years are calculated by interpolation)

	From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
2021	7100	20000	20000	32500	79600
2034	11000	25500	31000	38000	105500

		1st Guess Turning %'s for AADT Balancing	**Actual/Counted Traffic for 2021**
(EB LT)	*West-to-North*	62.8%	108
(EB THRU)	*West-to-East*	0.0%	0
(EB RT)	*West-to-South*	37.2%	64
(WB LT)	*East-to-South*	79.5%	636
(WB THRU)	*East-to-West*	0.0%	0
(WB RT)	*East-to-North*	20.5%	164
(SB LT)	*North-to-East*	16.6%	192
(SB THRU)	*North-to-South*	59.0%	683
(SB RT)	*North-to-West*	24.4%	283
(NB LT)	*South-to-West*	13.0%	178
(NB THRU)	*South-to-North*	36.9%	505
(NB RT)	*South-to-East*	50.1%	687

Desired Closure: 0.01

First Guess Turning % Option Used
Existing Turning Movement Counts

Existing Year AADTs — Only the existing year total departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

Existing Turning Movement Counts — The turning percentages first guess is the same as the ***actual distribution of turning volumes entered***. No balancing technique is used.

FSUTMS Model Year AADTs — Only the FSUTMS model year departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

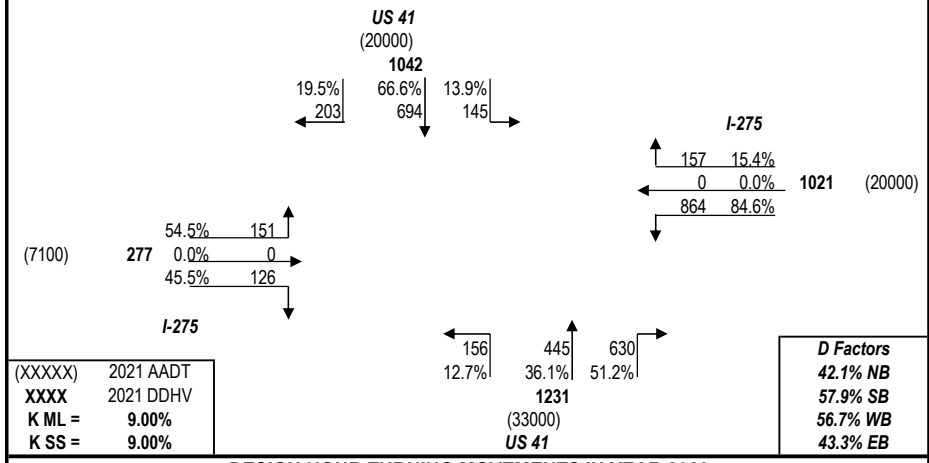
TURNS5 INITIAL TURNING VOLUME SUMMARY

Highway:	US 41	**County:**	Manatee
Intersection:	I-275		
Project:	US 41 at I-275 IOAR	**Analyst:**	TKW
		Date:	9-Dec-21

Approach-To-Approach	2021 Initial Estimate	2021 Final Estimate	2021 Calculated Volume	2024 Final Estimate	2024 Calculated Volume	2029 Final Estimate	2029 Calculated Volume	2034 Final Estimate	2034 Calculated Volume
West-To-North (LT)	0.628	0.545	151	0.591	184	0.648	240	0.689	296
West-To-East (Thru)	0.000	0.000	0	0.000	0	0.000	0	0.000	0
West-To-South (RT)	0.372	0.455	126	0.409	128	0.352	130	0.311	133
Total Flow From West:			**277**		**312**		**370**		**429**
East-To-South (LT)	0.795	0.846	864	0.819	889	0.781	932	0.747	972
East-To-West (Thru)	0.000	0.000	0	0.000	0	0.000	0	0.000	0
East-To-North (RT)	0.205	0.154	157	0.181	196	0.219	261	0.253	329
Total Flow From East:			**1021**		**1085**		**1193**		**1301**
North-To-East (LT)	0.166	0.139	145	0.154	181	0.173	241	0.189	305
North-To-South (Thru)	0.590	0.666	694	0.633	743	0.592	826	0.560	905
North-To-West (RT)	0.244	0.195	203	0.213	250	0.235	328	0.251	405
Total Flow From North:			**1042**		**1174**		**1395**		**1615**
South-To-West (LT)	0.130	0.127	156	0.124	159	0.119	162	0.115	166
South-To-North (Thru)	0.369	0.361	445	0.369	472	0.383	521	0.395	568
South-To-East (RT)	0.501	0.512	630	0.507	649	0.498	677	0.490	706
Total Flow From South:			**1231**		**1280**		**1360**		**1440**

PROJECT TRAFFIC FOR US 41 AT I-275

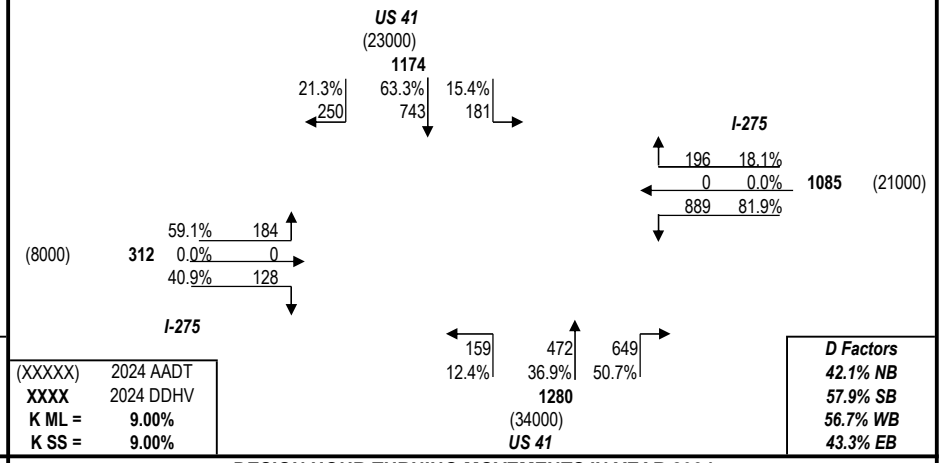
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2021



(XXXXX)	2021 AADT
XXXX	2021 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
56.7% WB
43.3% EB

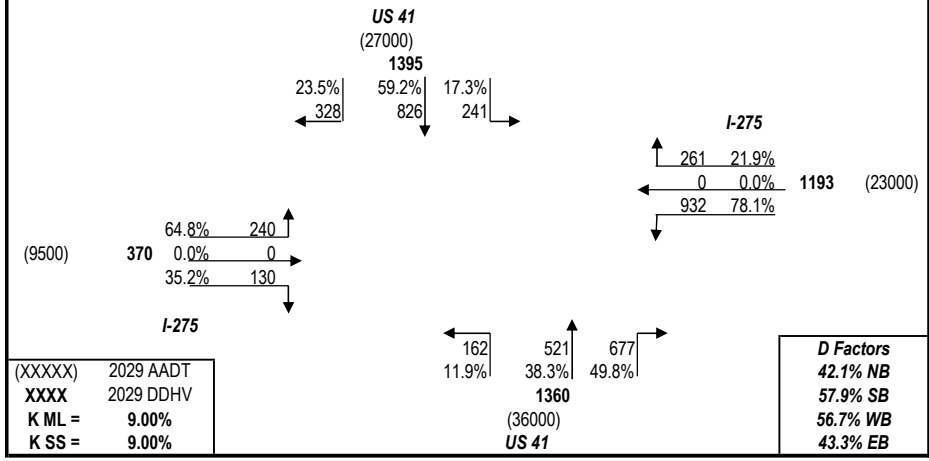
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2024



(XXXXX)	2024 AADT
XXXX	2024 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
56.7% WB
43.3% EB

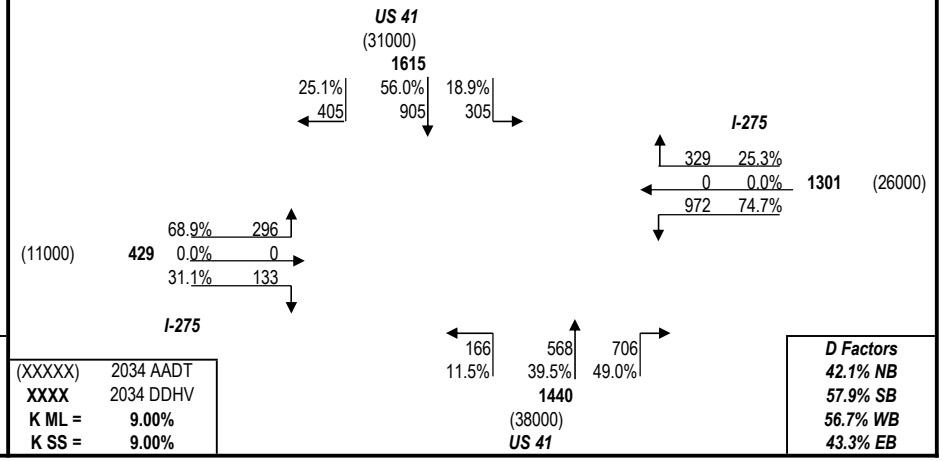
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2029



(XXXXX)	2029 AADT
XXXX	2029 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
56.7% WB
43.3% EB

DESIGN HOUR TURNING MOVEMENTS IN YEAR 2034

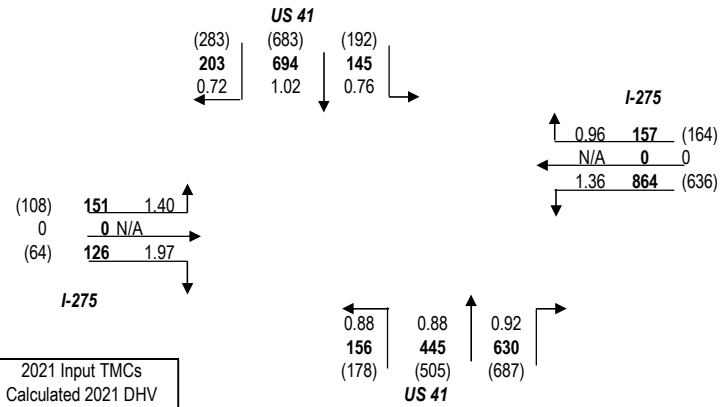


(XXXXX)	2034 AADT
XXXX	2034 DDHV
K ML =	9.00%
K SS =	9.00%

D Factors
42.1% NB
57.9% SB
56.7% WB
43.3% EB

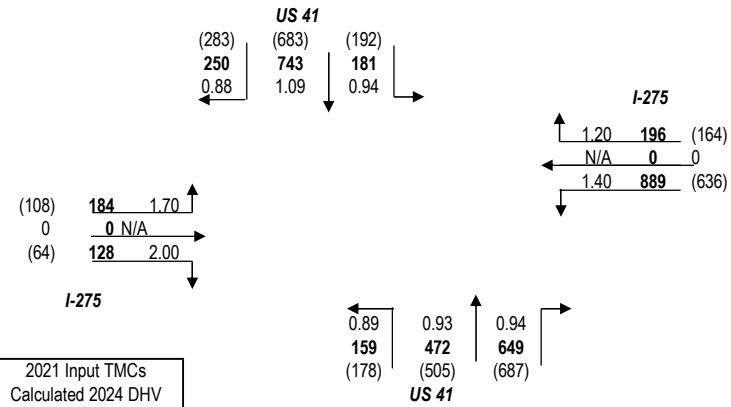
PROJECT TRAFFIC FOR US 41 AT I-275

2021 INPUT TMCs COMPARED TO 2021 DHV



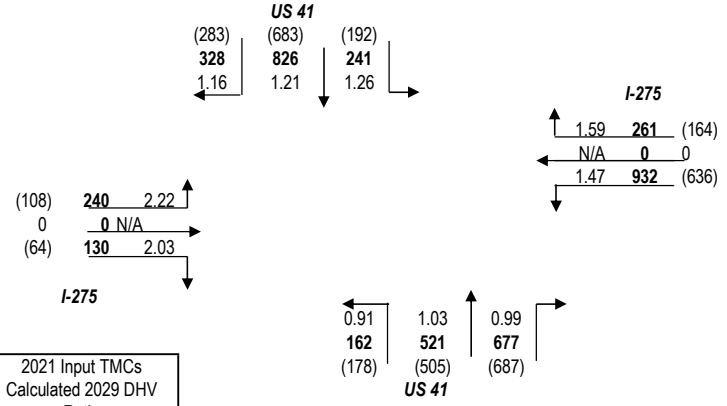
(XXX)	2021 Input TMCs
XXX	Calculated 2021 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2024 DHV



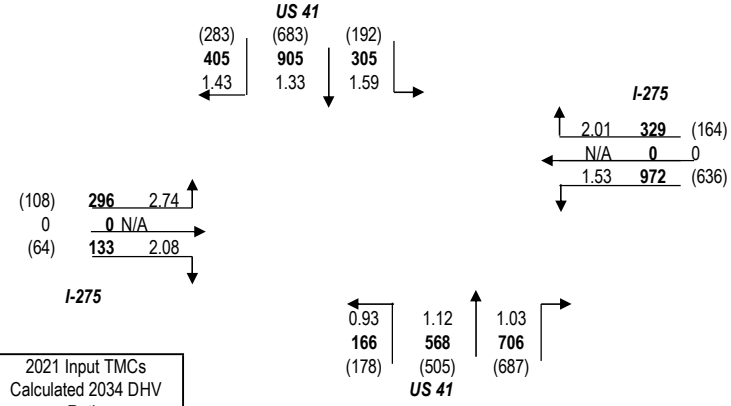
(XXX)	2021 Input TMCs
XXX	Calculated 2024 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2029 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2029 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2034 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2034 DHV
X.XX	Ratio

TURNS5 ANALYSIS SHEET - INPUT

Analyst:	TKW
Date:	9-Dec-21
Highway:	US 41
Intersection:	I-275
Project:	US 41 at I-275 IOAR
County:	Manatee

Is this a 4 way intersection?
- (●) Yes, my intersection has four approaches

If not, which 3 approaches exist in the intersection?
- ( ) EB, WB, and SB
- ( ) EB, WB, and NB
- ( ) EB, SB, and NB
- ( ) WB, SB, and NB

Is the Mainline Oriented North/South? Enter Yes or No
- (●) Yes
- ( ) No

K Factors	
Mainline	9.00%
Side street	9.00%

D Factors	*Mainline*
Northbound (NB)	57.9%
Southbound (SB)	42.1%
	Side street
Westbound (WB)	43.3%
Eastbound (EB)	56.7%

Do you have FTSUTMS Model Year traffic from which you would like to interpolate/extrapolate for project years? (Y/N)

Enter Yes or No
- (●) Yes
- ( ) No

If "Yes" go to cell C47 — If "No" go to cell C31

Enter Year and Growth Rates from Base Year:

	Year	*Rate* (1.0% = 0.01) **Mainline**	**Side Street**
Base	2021		
Opening	2031		
Mid	2041		
Design	2051		

Mainline Growth Function
- (●) Linear
- ( ) Exponential
- ( ) Decaying

Side Street Growth Function
- (●) Linear
- ( ) Exponential
- ( ) Decaying

Enter Base Year AADTs for Volume Comparison:
(growth rates are used to calculate other project years)

From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
0	0	0	0	0

Enter Project and Model Years

	Year
Base	2021
Opening	2024
Mid	2029
Design	2034
Model	2034

Enter Base and Model Year AADTs for Volume Comparison:
(volumes for other project years are calculated by interpolation)

	From West: EB Approach	*From East: WB Approach*	*From North: SB Approach*	*From South: NB Approach*	***TOTAL***
2021	7100	20000	20000	32500	79600
2034	11000	25500	31000	38000	105500

		1st Guess Turning %'s for AADT Balancing	**Actual/Counted Traffic for 2021**
(EB LT)	*West-to-North*	53.5%	222
(EB THRU)	*West-to-East*	0.0%	0
(EB RT)	*West-to-South*	46.5%	193
(WB LT)	*East-to-South*	72.7%	517
(WB THRU)	*East-to-West*	0.0%	0
(WB RT)	*East-to-North*	27.3%	194
(SB LT)	*North-to-East*	18.3%	117
(SB THRU)	*North-to-South*	63.9%	409
(SB RT)	*North-to-West*	17.8%	114
(NB LT)	*South-to-West*	4.3%	75
(NB THRU)	*South-to-North*	52.3%	915
(NB RT)	*South-to-East*	43.4%	760

Desired Closure: 0.01

Existing Year AADTs

Existing Turning Movement Counts

FSUTMS Model Year AADTs

First Guess Turning % Option Used
Existing Turning Movement Counts

Only the existing year total departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

The turning percentages first guess is the same as the ***actual distribution of turning volumes entered***. No balancing technique is used.

Only the FSUTMS model year departure volumes [AADT*K*(1-D)] will be used to calculate the turning percentages first guess.

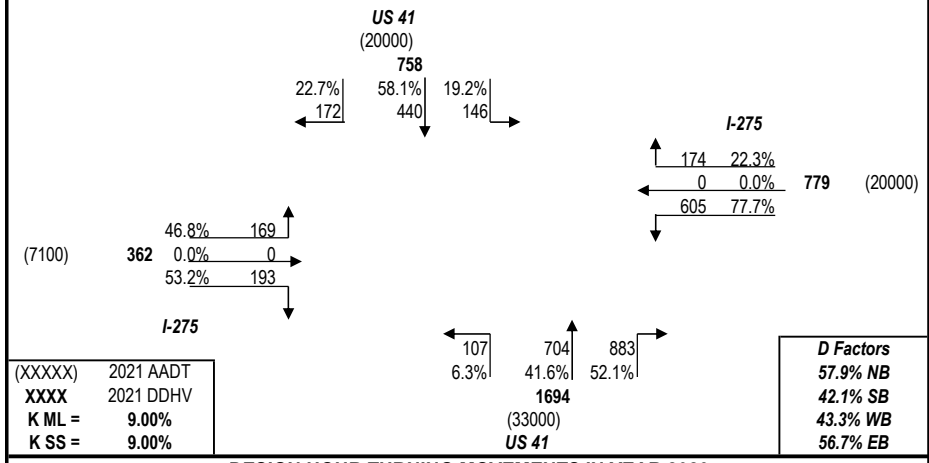
TURNS5 INITIAL TURNING VOLUME SUMMARY

Highway:	US 41	**County:**	Manatee
Intersection:	I-275		
Project:	US 41 at I-275 IOAR	**Analyst:**	TKW
		Date:	9-Dec-21

Approach-To-Approach	2021 Initial Estimate	2021 Final Estimate	2021 Calculated Volume	2024 Final Estimate	2024 Calculated Volume	2029 Final Estimate	2029 Calculated Volume	2034 Final Estimate	2034 Calculated Volume
West-To-North (LT)	0.535	0.468	169	0.516	211	0.577	280	0.617	346
West-To-East (Thru)	0.000	0.000	0	0.000	0	0.000	0	0.000	0
West-To-South (RT)	0.465	0.532	193	0.484	197	0.423	205	0.383	215
Total Flow From West:			**362**		**408**		**485**		**561**
East-To-South (LT)	0.727	0.777	605	0.742	615	0.692	630	0.655	651
East-To-West (Thru)	0.000	0.000	0	0.000	0	0.000	0	0.000	0
East-To-North (RT)	0.273	0.223	174	0.258	214	0.308	281	0.345	343
Total Flow From East:			**779**		**829**		**911**		**994**
North-To-East (LT)	0.183	0.192	146	0.211	180	0.236	239	0.252	296
North-To-South (Thru)	0.639	0.581	440	0.547	467	0.506	513	0.478	562
North-To-West (RT)	0.178	0.227	172	0.242	207	0.258	262	0.270	317
Total Flow From North:			**758**		**854**		**1014**		**1175**
South-To-West (LT)	0.043	0.063	107	0.060	106	0.056	105	0.054	107
South-To-North (Thru)	0.523	0.416	704	0.426	749	0.440	823	0.453	897
South-To-East (RT)	0.434	0.521	883	0.514	905	0.504	942	0.493	976
Total Flow From South:			**1694**		**1760**		**1870**		**1980**

PROJECT TRAFFIC FOR US 41 AT I-275

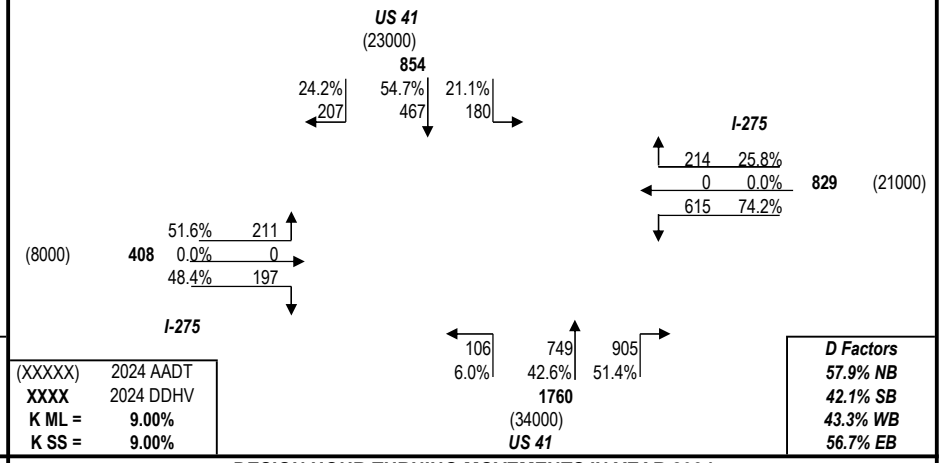
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2021



(XXXXX)	2021 AADT
XXXX	2021 DDHV
K ML =	**9.00%**
K SS =	**9.00%**

D Factors
57.9% NB
42.1% SB
43.3% WB
56.7% EB

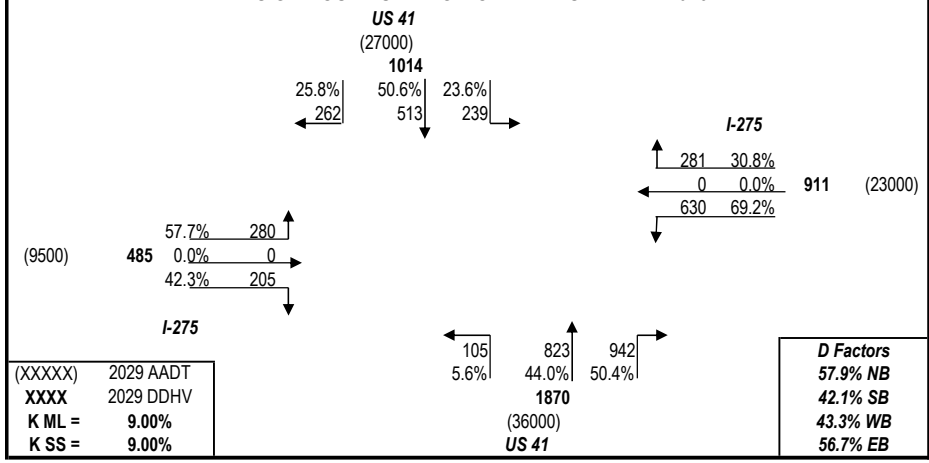
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2024



(XXXXX)	2024 AADT
XXXX	2024 DDHV
K ML =	**9.00%**
K SS =	**9.00%**

D Factors
57.9% NB
42.1% SB
43.3% WB
56.7% EB

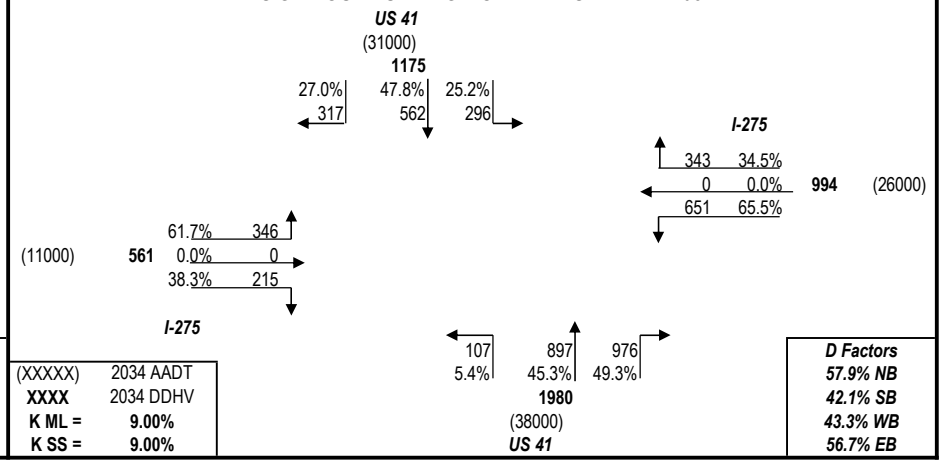
DESIGN HOUR TURNING MOVEMENTS IN YEAR 2029



(XXXXX)	2029 AADT
XXXX	2029 DDHV
K ML =	**9.00%**
K SS =	**9.00%**

D Factors
57.9% NB
42.1% SB
43.3% WB
56.7% EB

DESIGN HOUR TURNING MOVEMENTS IN YEAR 2034

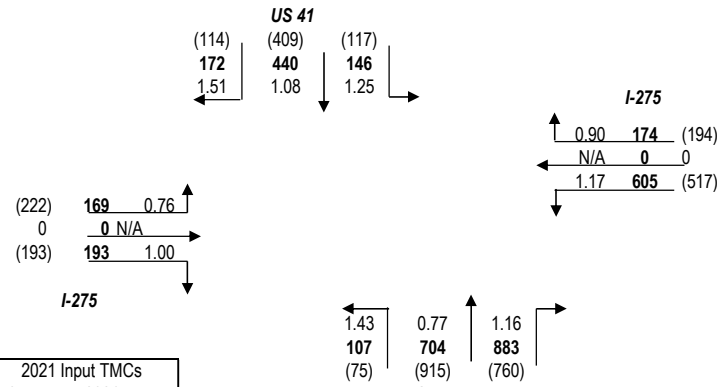


(XXXXX)	2034 AADT
XXXX	2034 DDHV
K ML =	**9.00%**
K SS =	**9.00%**

D Factors
57.9% NB
42.1% SB
43.3% WB
56.7% EB

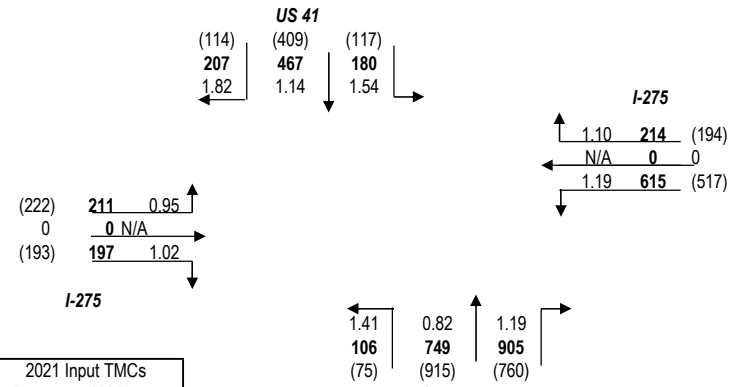
PROJECT TRAFFIC FOR US 41 AT I-275

2021 INPUT TMCs COMPARED TO 2021 DHV



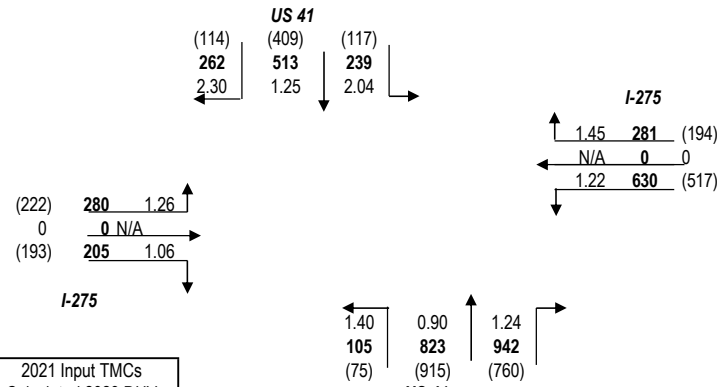
(XXX)	2021 Input TMCs
XXX	Calculated 2021 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2024 DHV



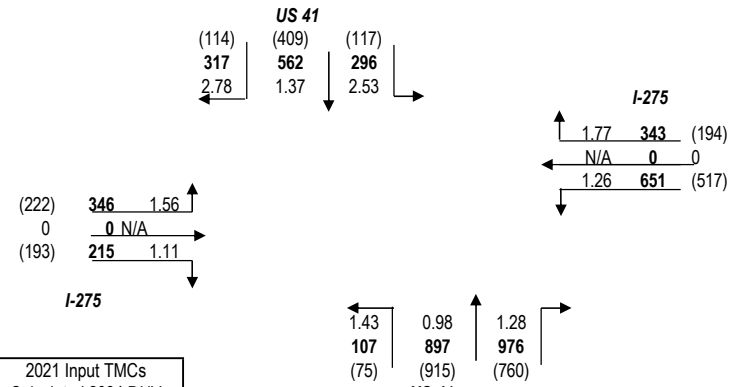
(XXX)	2021 Input TMCs
XXX	Calculated 2024 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2029 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2029 DHV
X.XX	Ratio

2021 INPUT TMCs COMPARED TO 2034 DHV



(XXX)	2021 Input TMCs
XXX	Calculated 2034 DHV
X.XX	Ratio

Appendix L

Opening Year 2024 HCS Outputs

HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2024
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1688	4800	0.35	70.0	12.1	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	1688	267	4800	2000	0.35	0.13	57.3	57.3	14.7	17.3	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1421	4800	0.30	69.7	10.1	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2473	5042	0.49	58.5	14.1	B

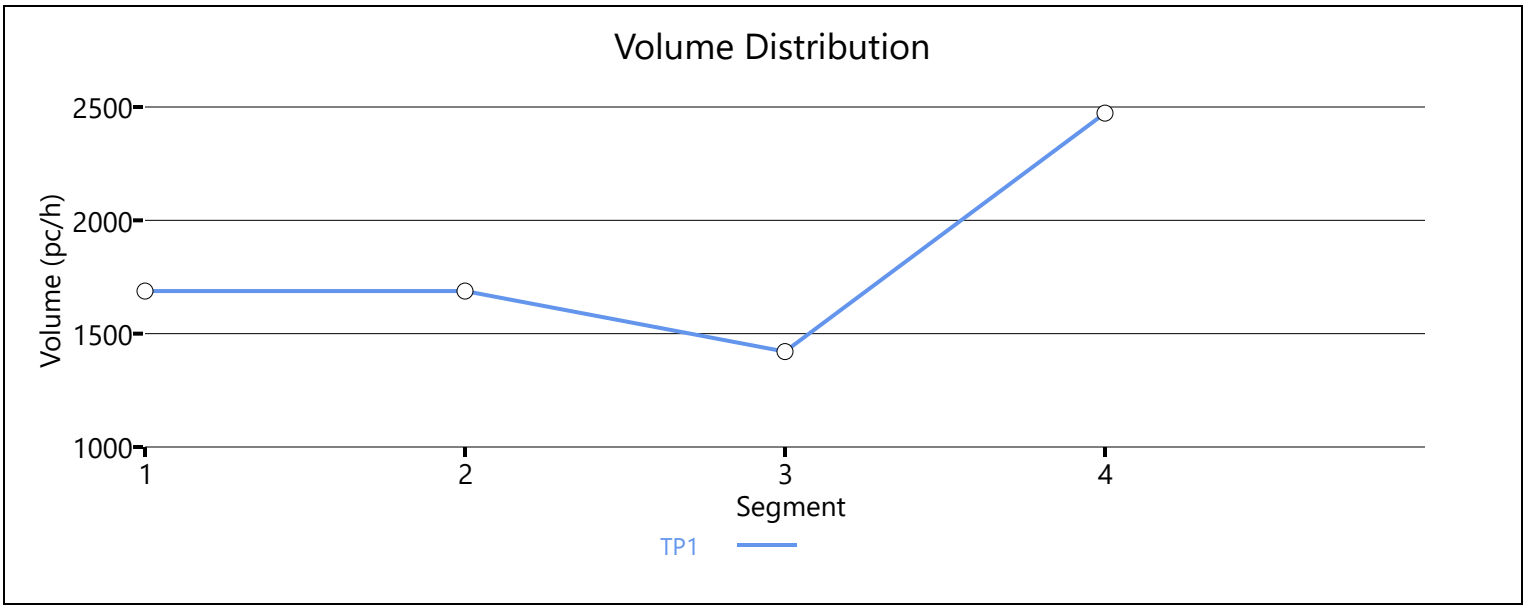
Facility Time Period Results

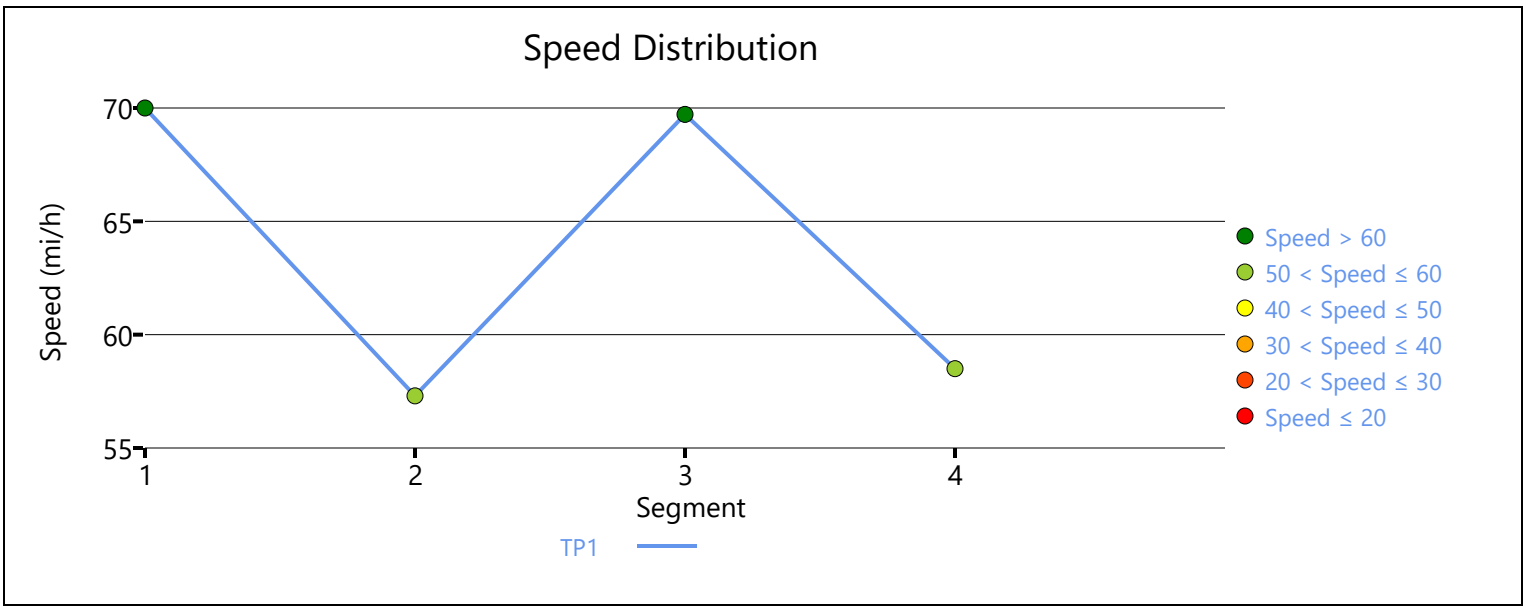
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.9	12.7	11.4	2.50	B

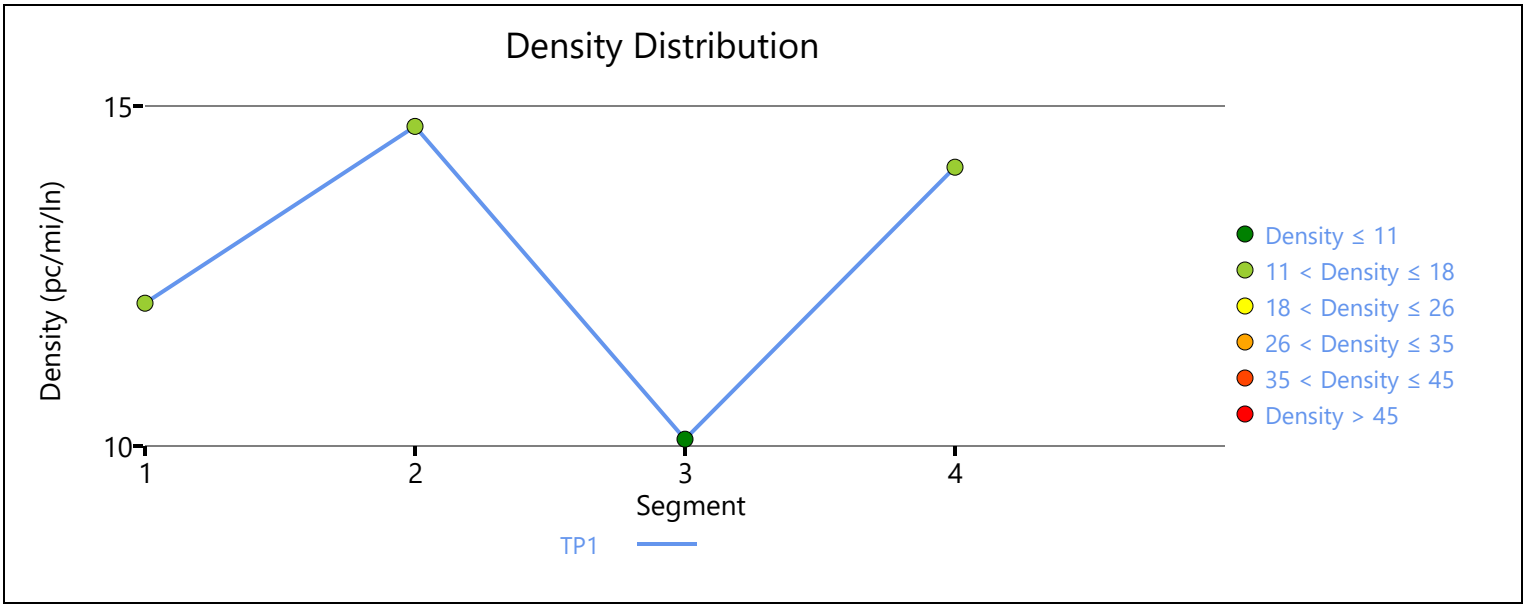
Facility Overall Results			
Space Mean Speed, mi/h	63.9	Density, veh/mi/ln	11.4
Average Travel Time, min	2.50	Density, pc/mi/ln	12.7

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2024
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2017	4800	0.42	73.6	13.7	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2919	902	4800	2000	0.61	0.45	64.1	64.1	22.8	22.9	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2919	4800	0.61	69.2	21.1	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2919	1059	4800	2000	0.61	0.53	55.4	55.4	26.3	27.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1859	4800	0.39	69.7	13.3	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2428	569	4800	2000	0.51	0.28	60.8	60.8	20.0	20.8	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2428	4800	0.51	70.0	17.3	B

Facility Time Period Results

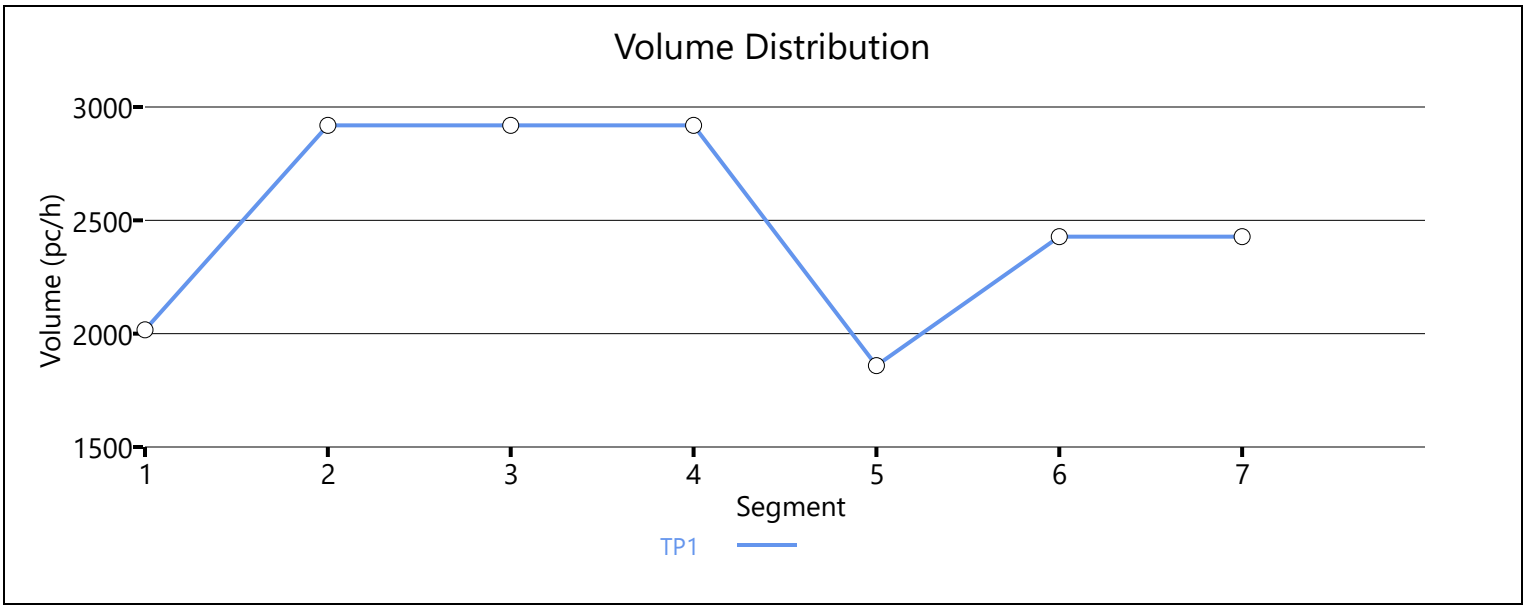
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.5	17.1	15.7	3.30	B

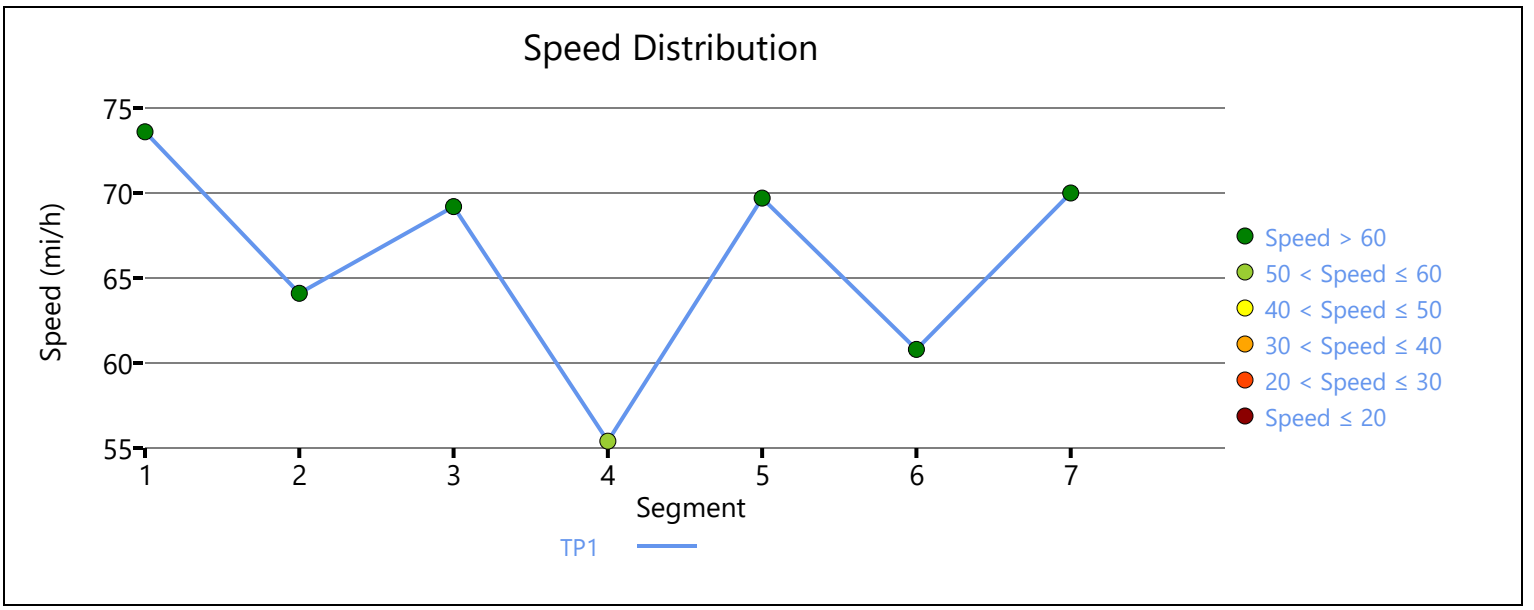
Facility Overall Results

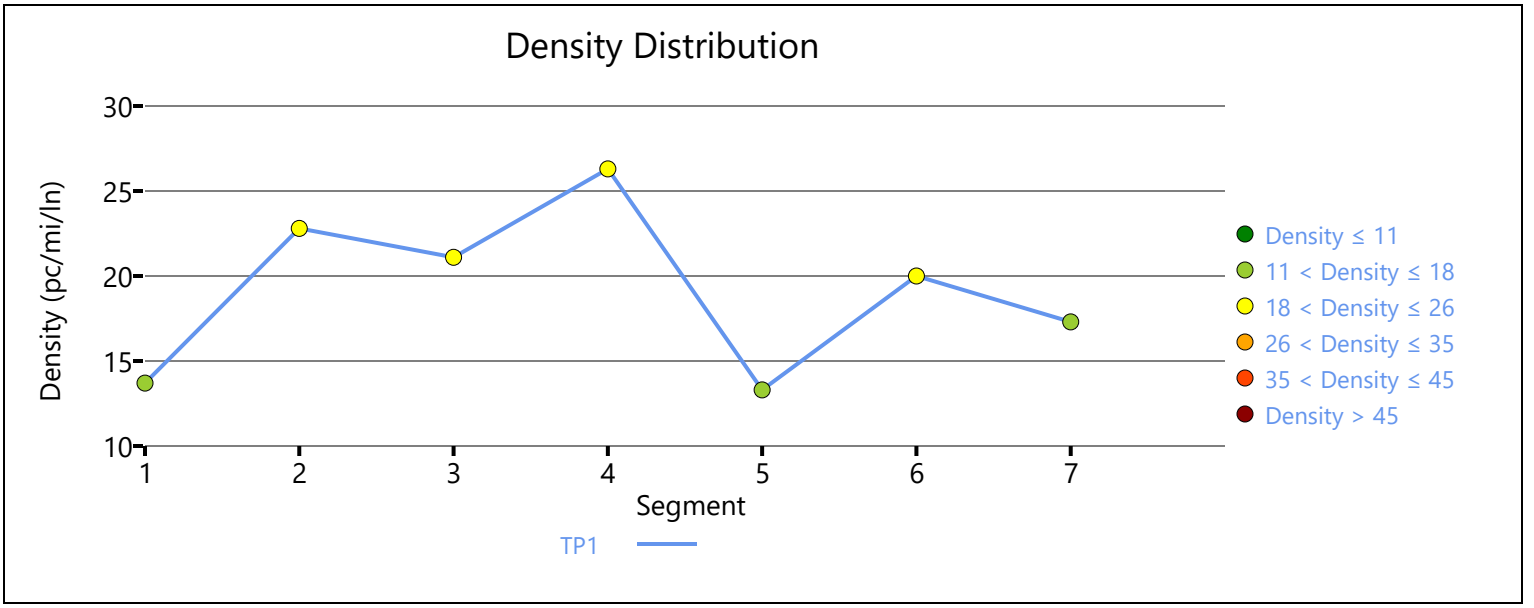
Space Mean Speed, mi/h	67.5	Density, veh/mi/ln	15.7
Average Travel Time, min	3.30	Density, pc/mi/ln	17.1

Messages

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2024
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2656	4800	0.55	69.8	19.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2656	514	4800	2000	0.55	0.26	56.7	56.7	23.4	25.7	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2142	4800	0.45	69.7	15.3	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	3250	5358	0.61	56.1	19.3	B

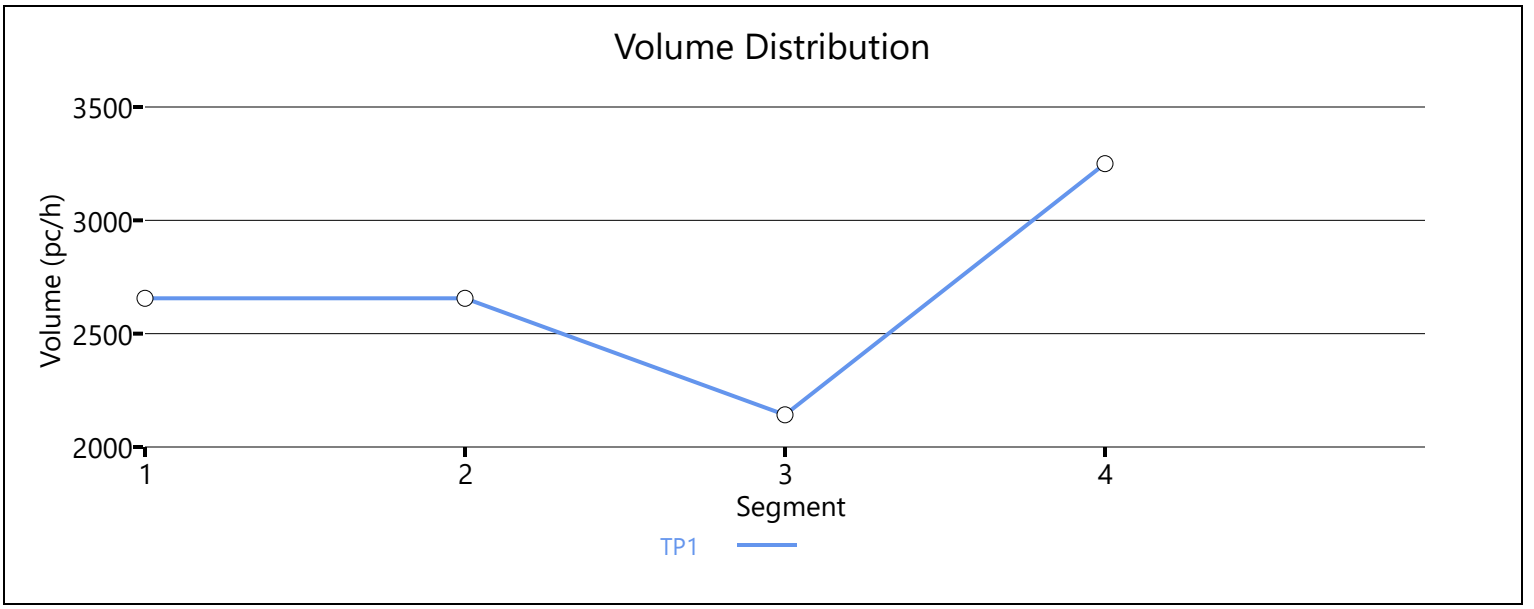
Facility Time Period Results

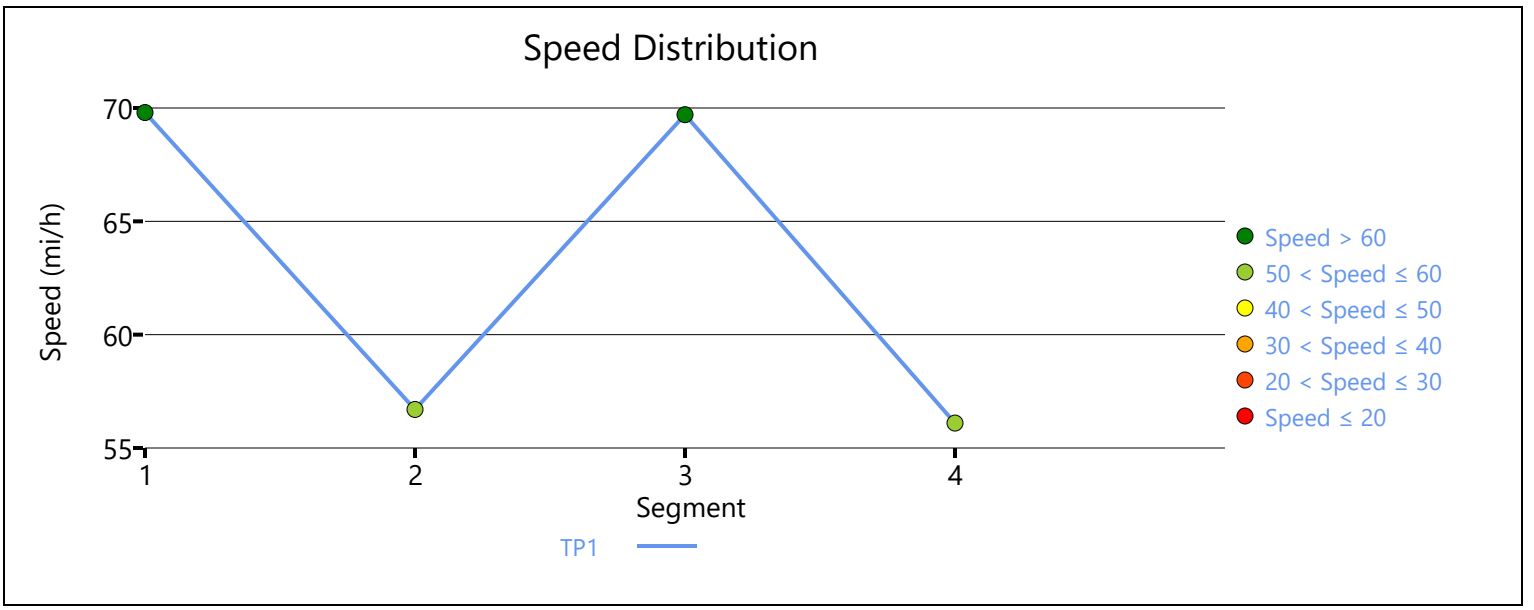
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.1	18.8	17.0	2.50	C

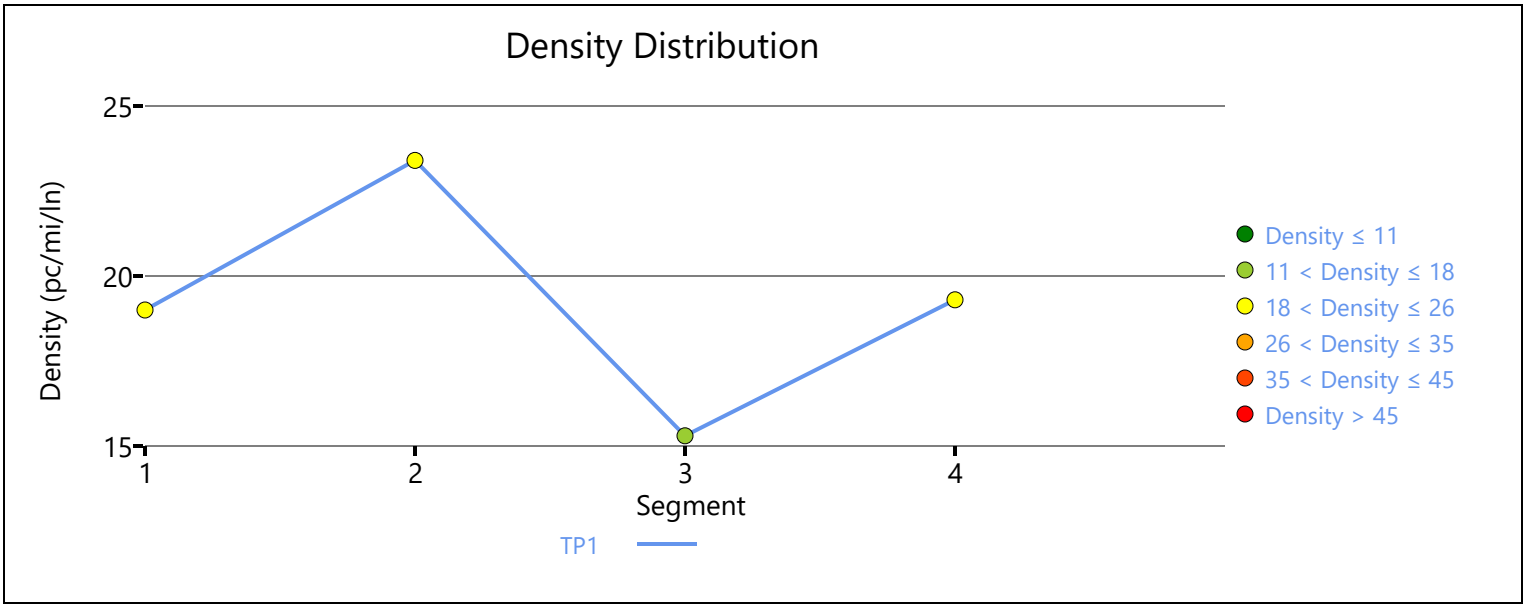
Facility Overall Results			
Space Mean Speed, mi/h	63.1	Density, veh/mi/ln	17.0
Average Travel Time, min	2.50	Density, pc/mi/ln	18.8

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2024
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1686	4764	0.35	68.2	12.4	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2440	754	4800	2000	0.51	0.38	65.0	65.0	18.8	19.2	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2441	4800	0.51	69.3	17.4	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2441	888	4800	2000	0.51	0.44	55.8	55.8	21.9	23.2	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1553	4800	0.32	69.8	11.1	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	1831	278	4800	2000	0.38	0.14	61.4	61.4	14.9	16.3	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1831	4800	0.38	70.0	13.1	B

Facility Time Period Results

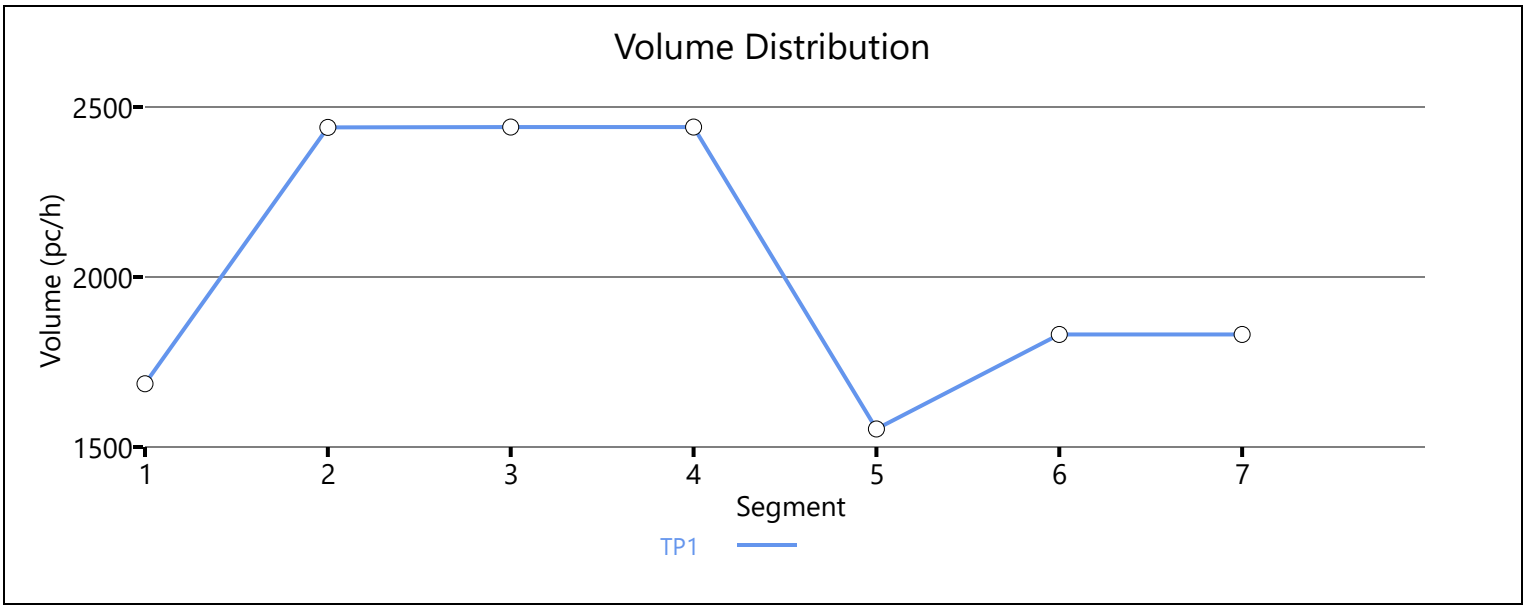
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.5	14.0	12.9	3.30	B

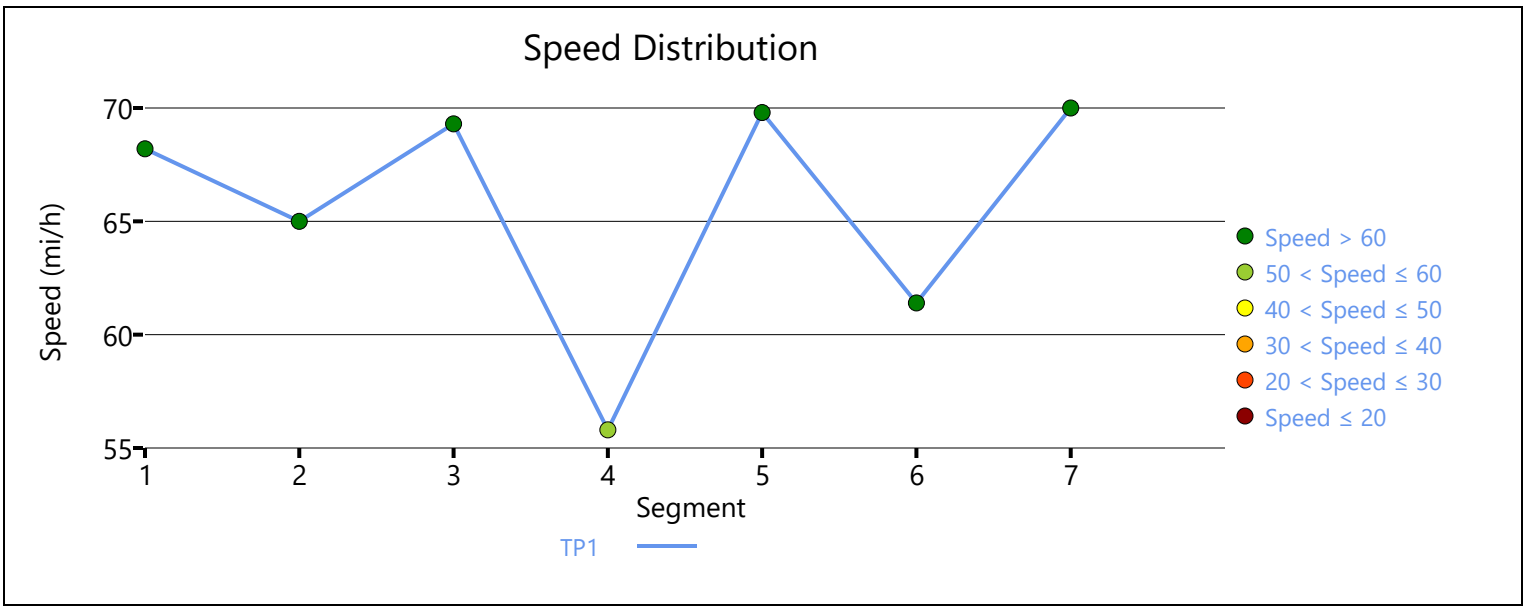
Facility Overall Results

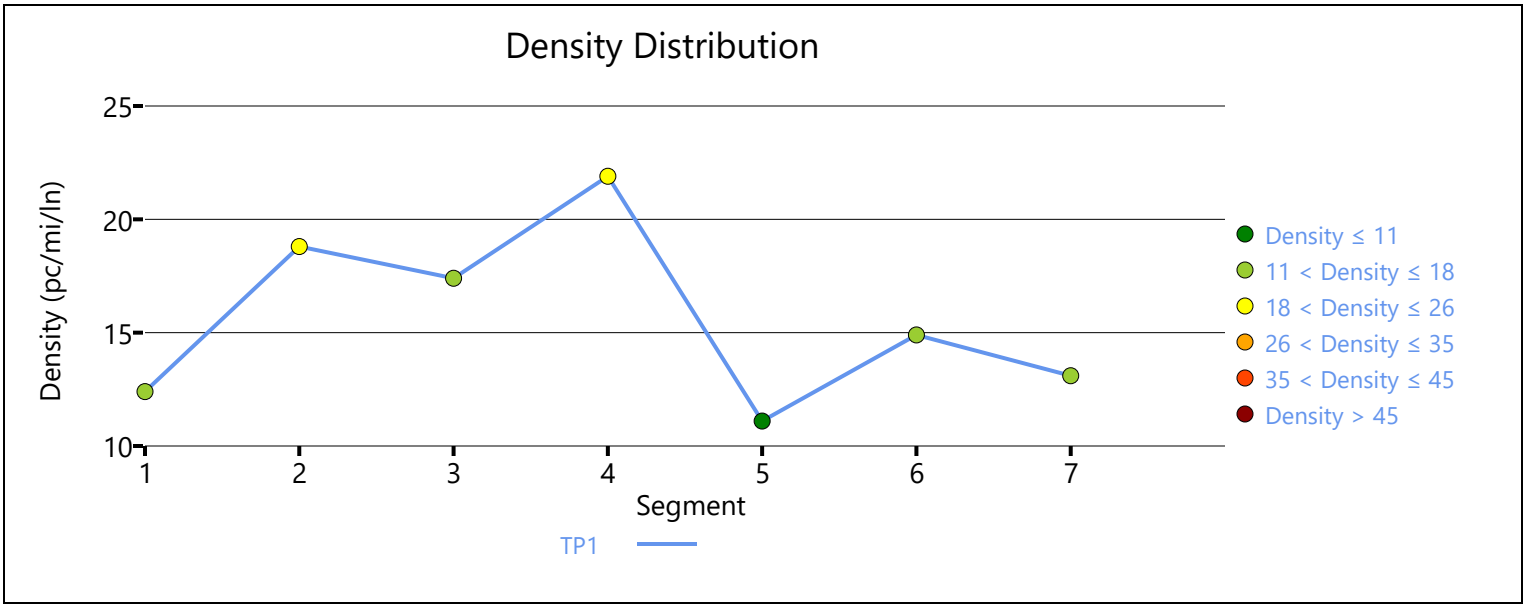
Space Mean Speed, mi/h	66.5	Density, veh/mi/ln	12.9
Average Travel Time, min	3.30	Density, pc/mi/ln	14.0

Messages

Comments







Appendix M

Opening Year 2024 No Build Synchro Outputs

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2024 No-Build AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	30	25	423	33	416	17	953	194	158	1327	36
Future Volume (veh/h)	42	30	25	423	33	416	17	953	194	158	1327	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1752	1870	1796	1841	1796	1811	1856	1678	1811	1841
Adj Flow Rate, veh/h	44	31	26	441	34	433	18	993	202	165	1382	38
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
Percent Heavy Veh, %	0	4	10	2	7	4	7	6	3	15	6	4
Cap, veh/h	118	327	274	496	40	505	31	1263	577	185	1600	725
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.02	0.37	0.37	0.12	0.47	0.47
Sat Flow, veh/h	941	925	776	1346	112	1427	1711	3441	1572	1598	3441	1560
Grp Volume(v), veh/h	44	0	57	441	0	467	18	993	202	165	1382	38
Grp Sat Flow(s),veh/h/ln	941	0	1701	1346	0	1539	1711	1721	1572	1598	1721	1560
Q Serve(g_s), s	6.5	0.0	3.2	46.6	0.0	40.3	1.5	36.8	13.4	14.6	51.4	1.9
Cycle Q Clear(g_c), s	46.8	0.0	3.2	49.8	0.0	40.3	1.5	36.8	13.4	14.6	51.4	1.9
Prop In Lane	1.00		0.46	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	0	601	496	0	544	31	1263	577	185	1600	725
V/C Ratio(X)	0.37	0.00	0.09	0.89	0.00	0.86	0.59	0.79	0.35	0.89	0.86	0.05
Avail Cap(c_a), veh/h	118	0	601	496	0	544	60	1395	637	201	1707	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.6	0.0	30.9	47.6	0.0	42.9	69.8	40.3	32.9	62.4	34.2	21.0
Incr Delay (d2), s/veh	2.8	0.0	0.1	18.0	0.0	13.3	16.7	3.5	0.8	33.7	5.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	2.4	24.6	0.0	23.8	1.4	21.8	8.7	11.9	28.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	0.0	31.0	65.6	0.0	56.2	86.5	43.8	33.7	96.0	39.4	21.1
LnGrp LOS	E	A	C	E	A	E	F	D	C	F	D	C
Approach Vol, veh/h		101			908			1213			1585	
Approach Delay, s/veh		46.9			60.8			42.8			44.9	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.6	60.5		58.0	10.6	74.6		58.0
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	18.0	58.0		50.6	5.0	71.0		50.6
Max Q Clear Time (g_c+I1), s	16.6	38.8		48.8	3.5	53.4		51.8
Green Ext Time (p_c), s	0.1	11.6		0.1	0.0	13.2		0.0

Intersection Summary			
HCM 6th Ctrl Delay			48.1
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	714	0	202	181	690	0	0	945	311
Future Volume (veh/h)	0	0	0	714	0	202	181	690	0	0	945	311
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1826	1811	0	0	1811	1841
Adj Flow Rate, veh/h				744	0	0	189	719	0	0	984	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				5	0	5	5	6	0	0	6	4
Cap, veh/h				898	0		334	2632	0	0	1539	
Arrive On Green				0.27	0.00	0.00	0.09	0.53	0.00	0.00	0.33	0.00
Sat Flow, veh/h				3374	0	1547	1739	5107	0	0	4926	1560
Grp Volume(v), veh/h				744	0	0	189	719	0	0	984	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1739	1648	0	0	1558	1560
Q Serve(g_s), s				17.0	0.0	0.0	5.5	6.5	0.0	0.0	14.7	0.0
Cycle Q Clear(g_c), s				17.0	0.0	0.0	5.5	6.5	0.0	0.0	14.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				898	0		334	2632	0	0	1539	
V/C Ratio(X)				0.83	0.00		0.57	0.27	0.00	0.00	0.64	
Avail Cap(c_a), veh/h				1914	0		448	3800	0	0	2337	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				28.3	0.0	0.0	16.6	10.5	0.0	0.0	23.3	0.0
Incr Delay (d2), s/veh				2.0	0.0	0.0	1.5	0.0	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				10.7	0.0	0.0	3.5	3.4	0.0	0.0	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.3	0.0	0.0	18.1	10.5	0.0	0.0	23.7	0.0
LnGrp LOS				C	A		B	B	A	A	C	
Approach Vol, veh/h					744	A		908			984	A
Approach Delay, s/veh					30.3			12.1			23.7	
Approach LOS					C			B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.6	36.0		29.3		52.6
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	13.0	41.0		46.5		63.0
Max Q Clear Time (g_c+I1), s	7.5	16.7		19.0		8.5
Green Ext Time (p_c), s	0.2	5.4		2.8		4.0

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	92.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	151	0	80	0	0	0	0	720	691	218	1441	0
Future Vol, veh/h	151	0	80	0	0	0	0	720	691	218	1441	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	0	0	0	0	0	6	5	5	6	0
Mvmt Flow	161	0	85	0	0	0	0	766	735	232	1533	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	2303	-	767	-	0	0	766	0	0
Stage 1	1997	-	-	-	-	-	-	-	-
Stage 2	306	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.1	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.9	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 62	0	299	0	-	-	497	-	0
Stage 1	~ 56	0	-	0	-	-	-	-	0
Stage 2	655	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 33	0	299	-	-	-	497	-	-
Mov Cap-2 Maneuver	~ 33	0	-	-	-	-	-	-	-
Stage 1	~ 56	0	-	-	-	-	-	-	-
Stage 2	349	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1303.5	0	2.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	33	299	497	-
HCM Lane V/C Ratio	-	-	4.868	0.285	0.467	-
HCM Control Delay (s)	-	-	$ 1982.5	21.8	18.4	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	19.1	1.1	2.4	-

Notes

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

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2024 No-Build PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	29	40	173	39	233	33	1517	348	289	851	57
Future Volume (veh/h)	72	29	40	173	39	233	33	1517	348	289	851	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1870	1900	1796	1900	1811	1856	1841	1811	1870
Adj Flow Rate, veh/h	76	31	42	182	41	245	35	1597	366	304	896	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	3	2	0	7	0	6	3	4	6	2
Cap, veh/h	151	181	245	337	58	348	49	1478	675	261	1897	874
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.03	0.43	0.43	0.15	0.55	0.55
Sat Flow, veh/h	1093	731	991	1327	236	1410	1810	3441	1572	1753	3441	1585
Grp Volume(v), veh/h	76	0	73	182	0	286	35	1597	366	304	896	60
Grp Sat Flow(s),veh/h/ln	1093	0	1722	1327	0	1646	1810	1721	1572	1753	1721	1585
Q Serve(g_s), s	9.1	0.0	4.5	16.8	0.0	21.2	2.6	57.6	23.2	20.0	21.2	2.4
Cycle Q Clear(g_c), s	30.4	0.0	4.5	21.2	0.0	21.2	2.6	57.6	23.2	20.0	21.2	2.4
Prop In Lane	1.00		0.58	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	425	337	0	407	49	1478	675	261	1897	874
V/C Ratio(X)	0.50	0.00	0.17	0.54	0.00	0.70	0.71	1.08	0.54	1.16	0.47	0.07
Avail Cap(c_a), veh/h	280	0	629	494	0	601	94	1478	675	261	1897	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	0.0	39.7	48.1	0.0	46.0	64.7	38.3	28.5	57.1	18.3	14.0
Incr Delay (d2), s/veh	3.7	0.0	0.3	1.9	0.0	3.2	17.3	48.6	1.6	107.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	0.0	3.4	9.5	0.0	13.8	2.5	44.1	13.3	24.5	12.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	0.0	40.0	50.0	0.0	49.2	82.0	86.9	30.1	164.1	18.6	14.1
LnGrp LOS	E	A	D	D	A	D	F	F	C	F	B	B
Approach Vol, veh/h		149			468			1998			1260	
Approach Delay, s/veh		52.0			49.5			76.4			53.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	65.6		40.5	11.6	82.0		40.5
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	20.0	57.6		49.0	7.0	70.6		49.0
Max Q Clear Time (g_c+I1), s	22.0	59.6		32.4	4.6	23.2		23.2
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	14.5		3.5

Intersection Summary	
HCM 6th Ctrl Delay	64.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	548	0	228	82	1180	0	0	610	161
Future Volume (veh/h)	0	0	0	548	0	228	82	1180	0	0	610	161
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1841	1811	0	0	1811	1841
Adj Flow Rate, veh/h				577	0	0	86	1242	0	0	642	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				5	0	5	4	6	0	0	6	4
Cap, veh/h				732	0		411	2743	0	0	1745	
Arrive On Green				0.22	0.00	0.00	0.06	0.55	0.00	0.00	0.37	0.00
Sat Flow, veh/h				3374	0	1547	1753	5107	0	0	4926	1560
Grp Volume(v), veh/h				577	0	0	86	1242	0	0	642	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1753	1648	0	0	1558	1560
Q Serve(g_s), s				11.7	0.0	0.0	2.0	10.8	0.0	0.0	7.2	0.0
Cycle Q Clear(g_c), s				11.7	0.0	0.0	2.0	10.8	0.0	0.0	7.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				732	0		411	2743	0	0	1745	
V/C Ratio(X)				0.79	0.00		0.21	0.45	0.00	0.00	0.37	
Avail Cap(c_a), veh/h				1656	0		675	5060	0	0	3231	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				26.7	0.0	0.0	11.8	9.6	0.0	0.0	16.5	0.0
Incr Delay (d2), s/veh				1.9	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				7.9	0.0	0.0	1.2	4.9	0.0	0.0	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.7	0.0	0.0	12.1	9.7	0.0	0.0	16.6	0.0
LnGrp LOS				C	A		B	A	A	A	B	
Approach Vol, veh/h					577	A		1328			642	A
Approach Delay, s/veh					28.7			9.8			16.6	
Approach LOS					C			A			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.1	36.0		23.2		49.1
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	15.0	50.0		35.5		74.0
Max Q Clear Time (g_c+I1), s	4.0	9.2		13.7		12.8
Green Ext Time (p_c), s	0.1	3.5		2.0		8.2

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	128.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	251	0	198	0	0	0	0	1011	811	158	1000	0
Future Vol, veh/h	251	0	198	0	0	0	0	1011	811	158	1000	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	4	0	0	0	0	6	5	5	6	0
Mvmt Flow	267	0	211	0	0	0	0	1076	863	168	1064	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1830	-	532	-	0	0	1076	0	0
Stage 1	1400	-	-	-	-	-	-	-	-
Stage 2	430	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.18	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.94	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 113	0	417	0	-	-	351	-	0
Stage 1	~ 134	0	-	0	-	-	-	-	0
Stage 2	565	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 59	0	417	-	-	-	351	-	-
Mov Cap-2 Maneuver	~ 59	0	-	-	-	-	-	-	-
Stage 1	~ 134	0	-	-	-	-	-	-	-
Stage 2	294	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 975.4	0	3.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	59	417	351	-
HCM Lane V/C Ratio	-	-	4.526	0.505	0.479	-
HCM Control Delay (s)	-		$ 1727.4	22.1	24.3	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	29.4	2.8	2.5	-

Notes

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

Appendix N

Design Year 2034 HCS Outputs

HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2034
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2387	4800	0.50	70.0	17.1	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	2387	496	4800	2000	0.50	0.25	56.8	56.8	21.0	23.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	1891	4800	0.39	69.7	13.5	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	3060	5207	0.59	56.6	18.0	B

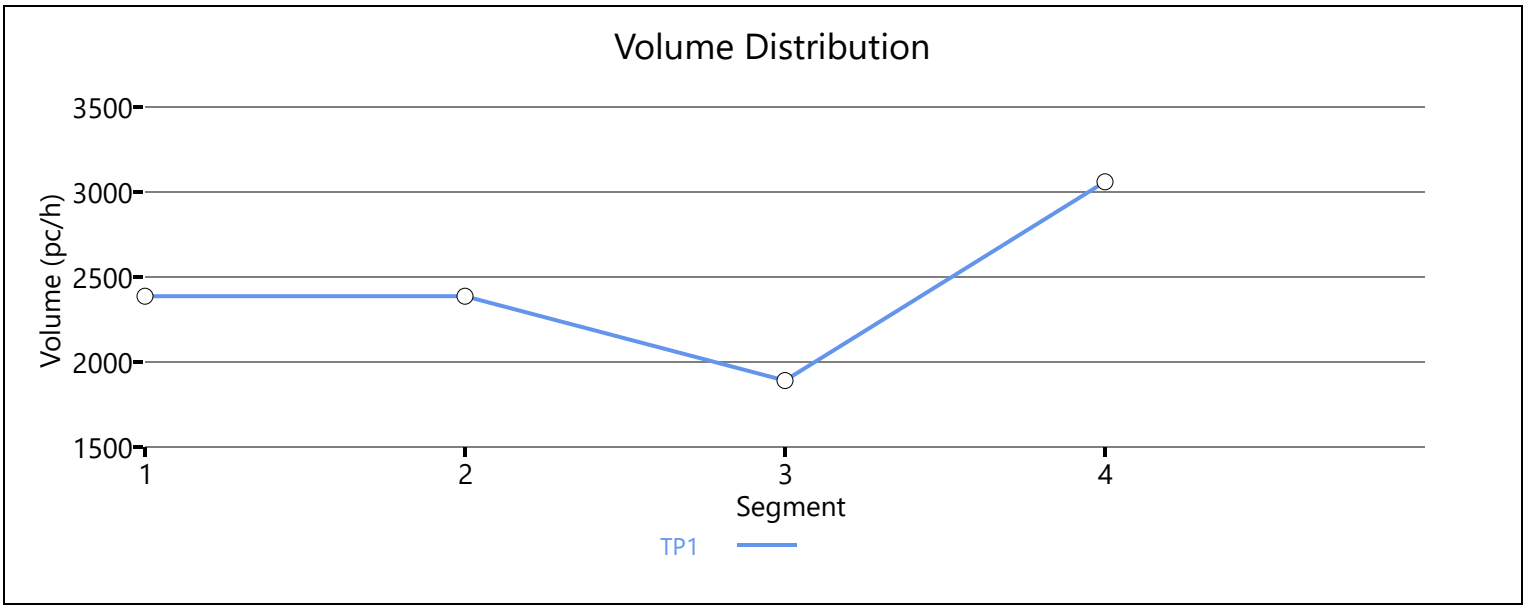
Facility Time Period Results

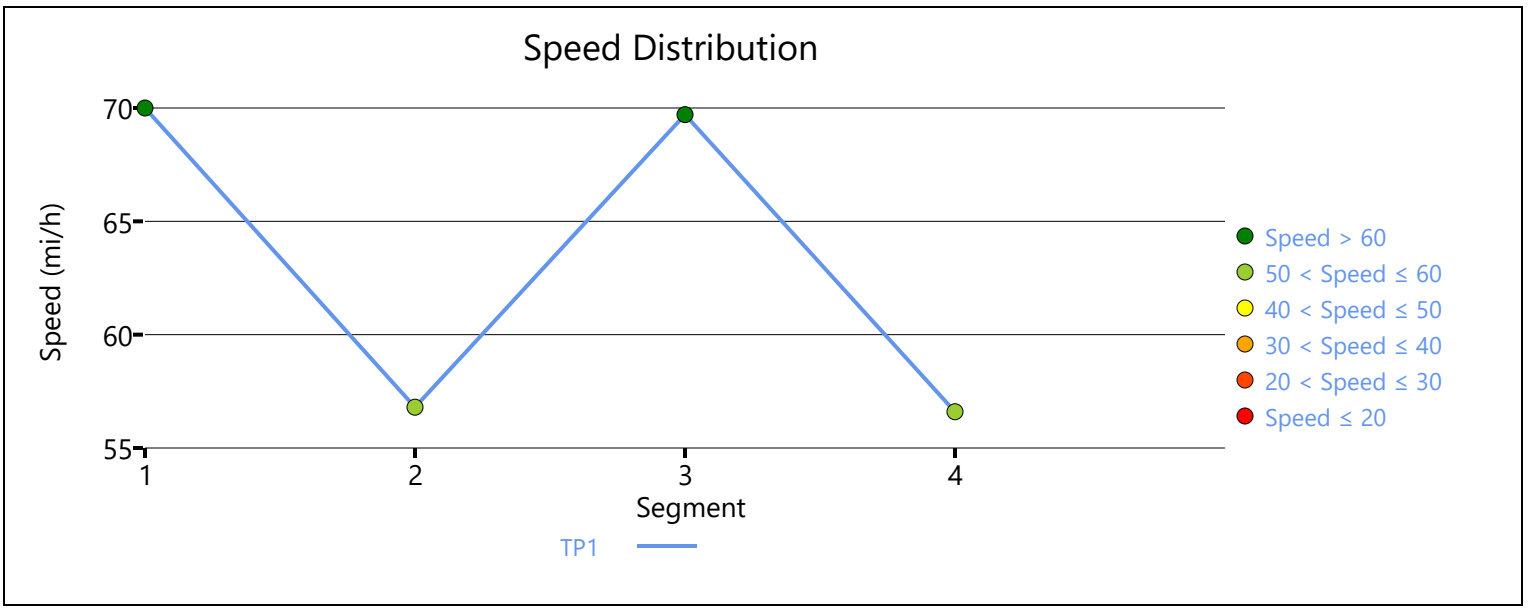
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.3	17.1	15.3	2.50	B

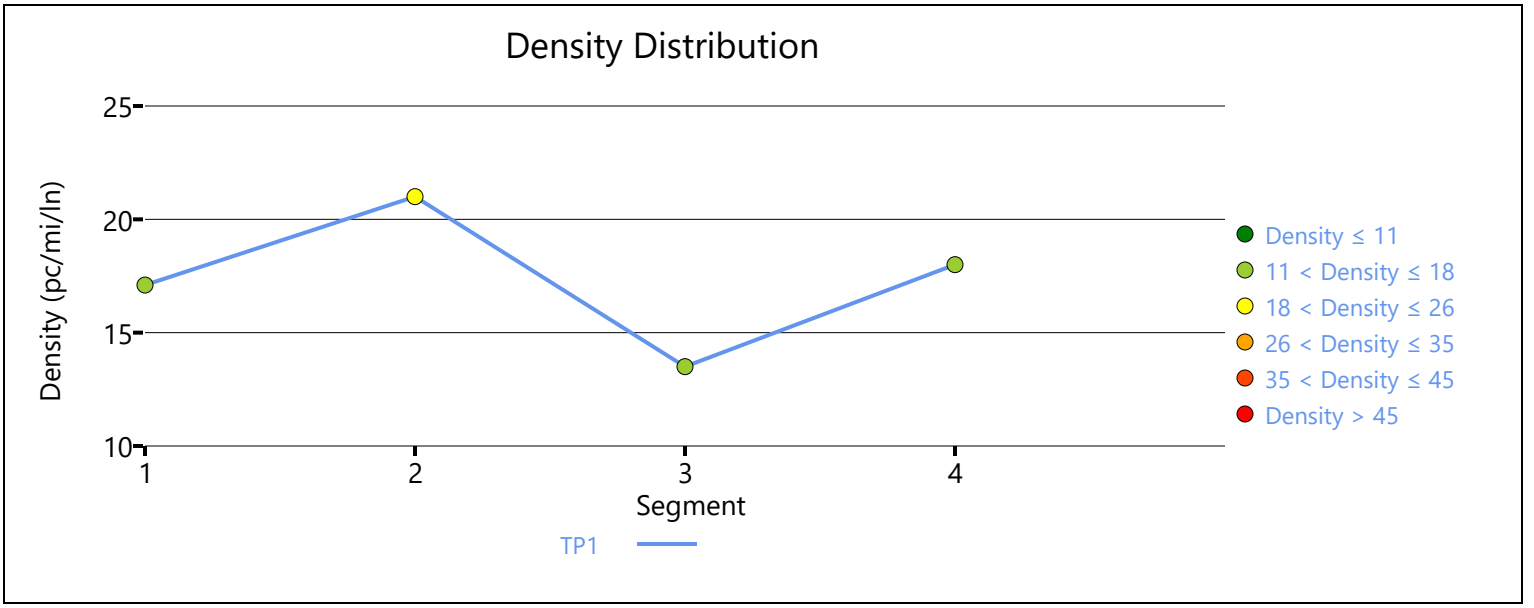
Facility Overall Results			
Space Mean Speed, mi/h	63.3	Density, veh/mi/ln	15.3
Average Travel Time, min	2.50	Density, pc/mi/ln	17.1

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2034
Jurisdiction	Manatee	Time Period Analyzed	AM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2727	4800	0.57	72.5	18.8	C

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	3946	1219	4800	2000	0.82	0.61	59.8	59.8	33.0	30.7	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	3945	4800	0.82	63.1	31.3	D

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	3945	1504	4800	2000	0.82	0.75	54.2	54.2	36.4	36.1	E

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	2441	4800	0.51	69.7	17.4	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.920	0.920	3129	688	4800	2000	0.65	0.34	59.6	59.6	26.2	26.2	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.920	3129	4800	0.65	68.5	22.8	C

Facility Time Period Results

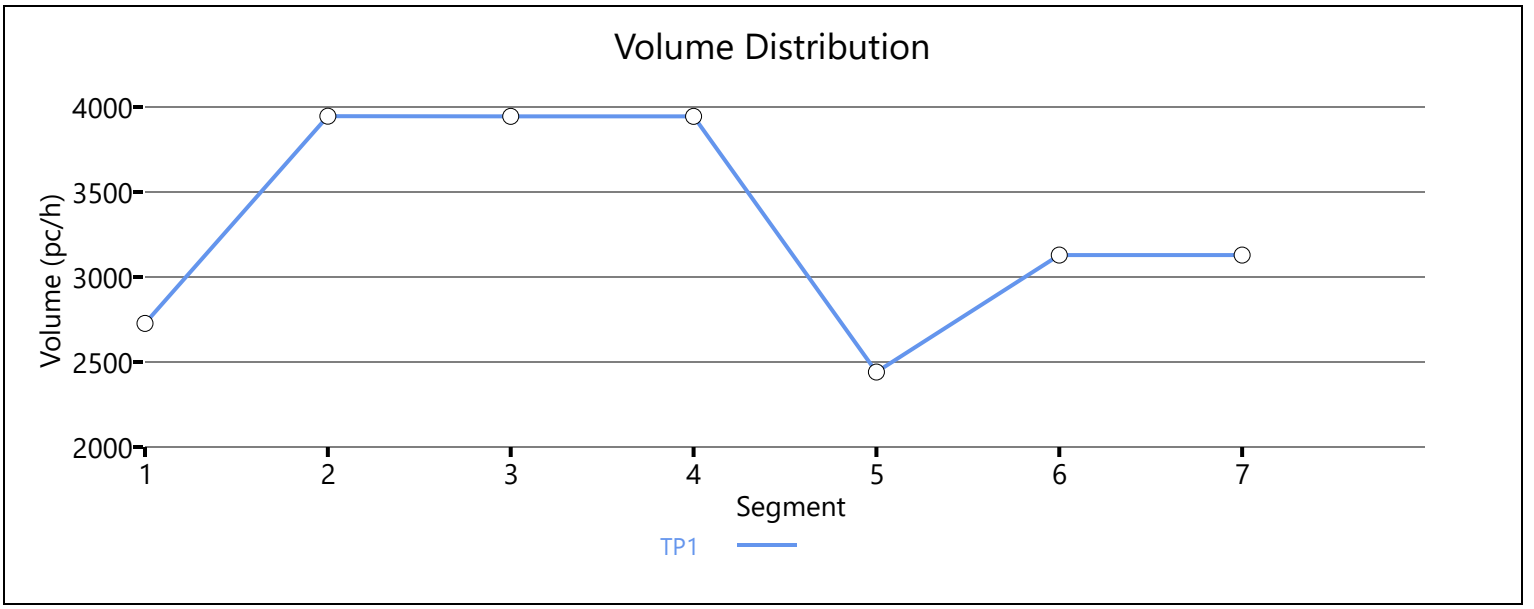
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	65.8	23.2	21.4	3.30	C

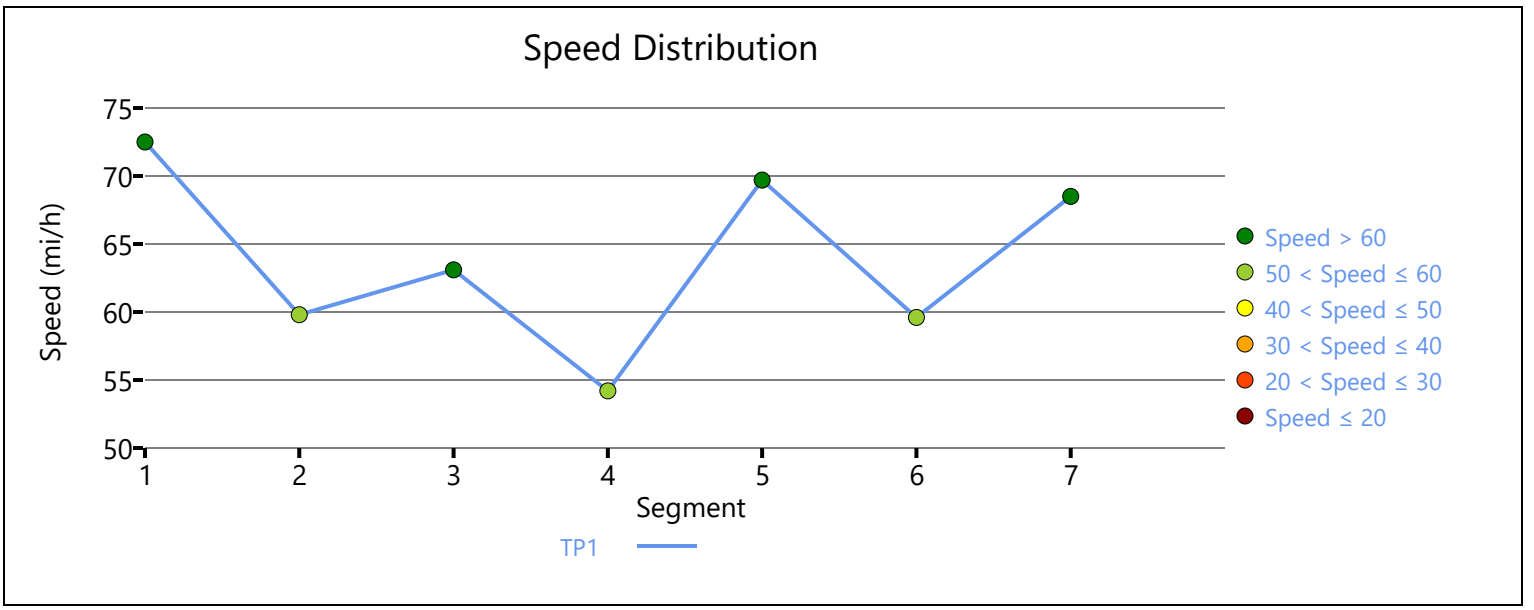
Facility Overall Results

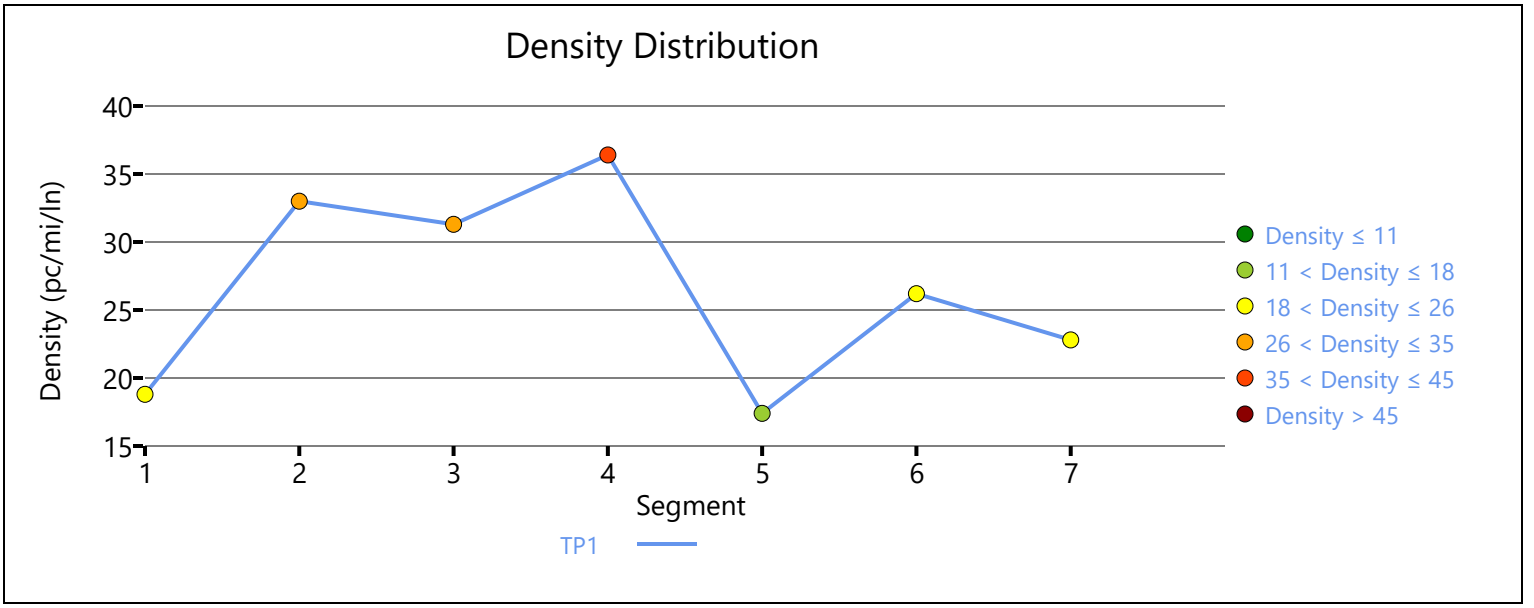
Space Mean Speed, mi/h	65.8	Density, veh/mi/ln	21.4
Average Travel Time, min	3.30	Density, pc/mi/ln	23.2

Messages

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/11/2021
Agency	VHB	Analysis Year	2034
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Eastbound I-275 at US 41		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	4
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.61		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	West of US 41	5280	2
2	Diverge	Diverge	I-275 EB Off Ramp to US 41	1500	2
3	Basic	Basic	I-275	3200	2
4	Weaving	Weaving	I-275 EB On Ramp to US 41 to Off Ramp to I-275	3800	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	3096	4800	0.65	68.6	22.6	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	3096	642	4800	2000	0.65	0.32	56.4	56.4	27.4	29.4	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2454	4800	0.51	69.7	17.5	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	3911	5240	0.75	53.7	24.3	C

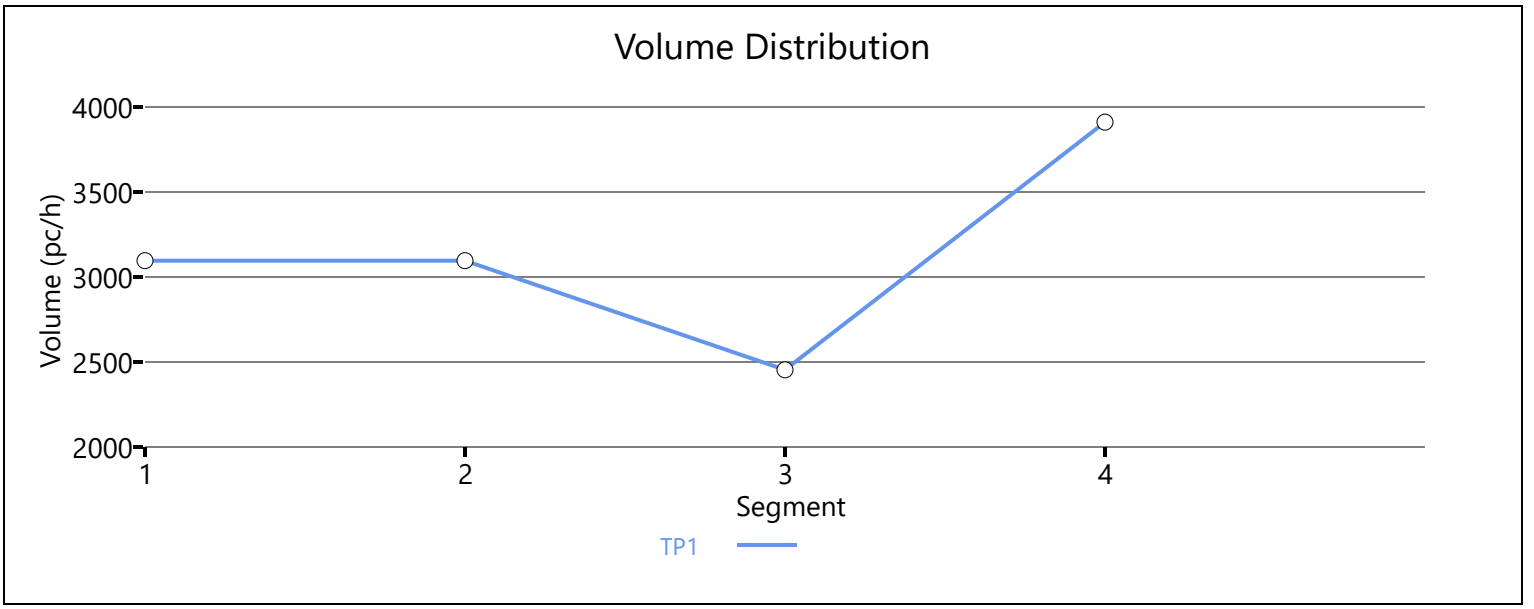
Facility Time Period Results

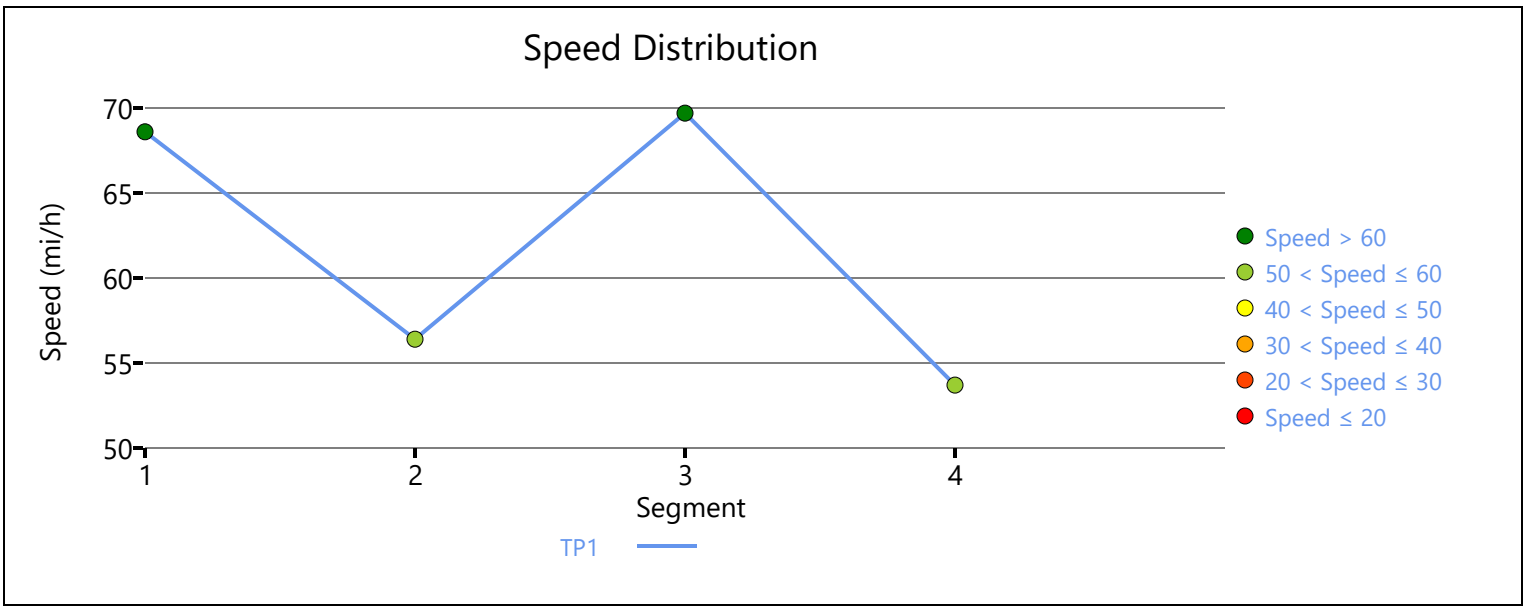
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	61.6	22.6	20.4	2.50	C

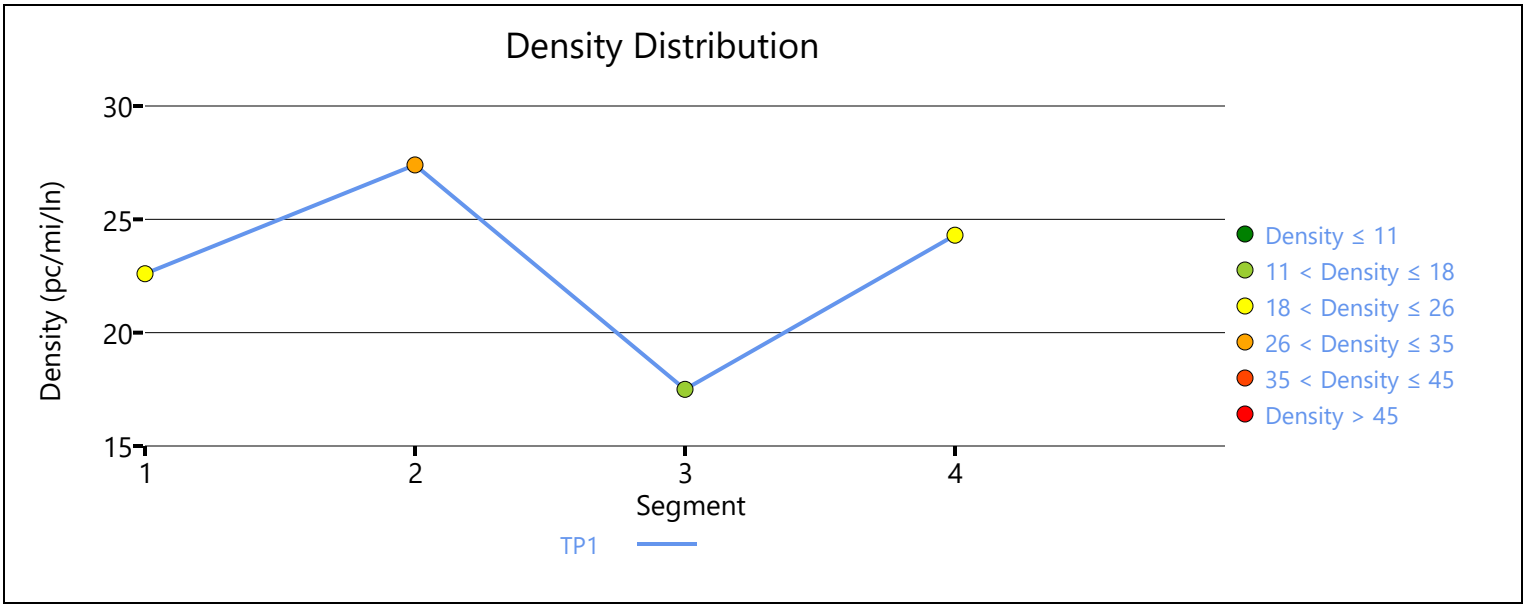
Facility Overall Results			
Space Mean Speed, mi/h	61.6	Density, veh/mi/ln	20.4
Average Travel Time, min	2.50	Density, pc/mi/ln	22.6

Messages	
WARNING 1	Beginning and ending the facility with a basic freeway segment is highly recommended. Use caution when interpreting results of a Freeway Facility without a basic segment bounding the beginning and end of the facility.
INFORMATION 1	Density for segment 3 in time period 1 is within 0.5 pc/mi/ln of LOS boundary. Be cautious when comparing LOS results.

Comments







HCS7 Freeway Facilities Report

Project Information

Analyst	TS	Date	11/12/2021
Agency	VHB	Analysis Year	2034
Jurisdiction	Manatee	Time Period Analyzed	PM Peak
Project Description	Westbound I-275 at US 41	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.67		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-75 NB to I-275 WB	5280	2
2	Merge	Merge	From I-75 SB to I-275 WB	1500	2
3	Basic	Basic	East of US 41	900	2
4	Diverge	Diverge	I-275 WB off Ramp to US 41	1500	2
5	Basic	Basic	I-275	3500	2
6	Merge	Merge	I-275 WB on Ramp from US 41	1500	2
7	Basic	Basic	West of US 41	5200	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2082	4764	0.44	68.2	15.3	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	3013	931	4800	2000	0.63	0.47	63.9	63.9	23.6	23.6	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	3014	4800	0.63	68.9	21.9	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	3014	1137	4800	2000	0.63	0.57	55.2	55.2	27.3	28.1	D

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	1876	4800	0.39	69.7	13.4	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.920	0.920	2361	485	4800	2000	0.49	0.24	60.9	60.9	19.4	20.3	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.920	2362	4800	0.49	70.0	16.9	B

Facility Time Period Results

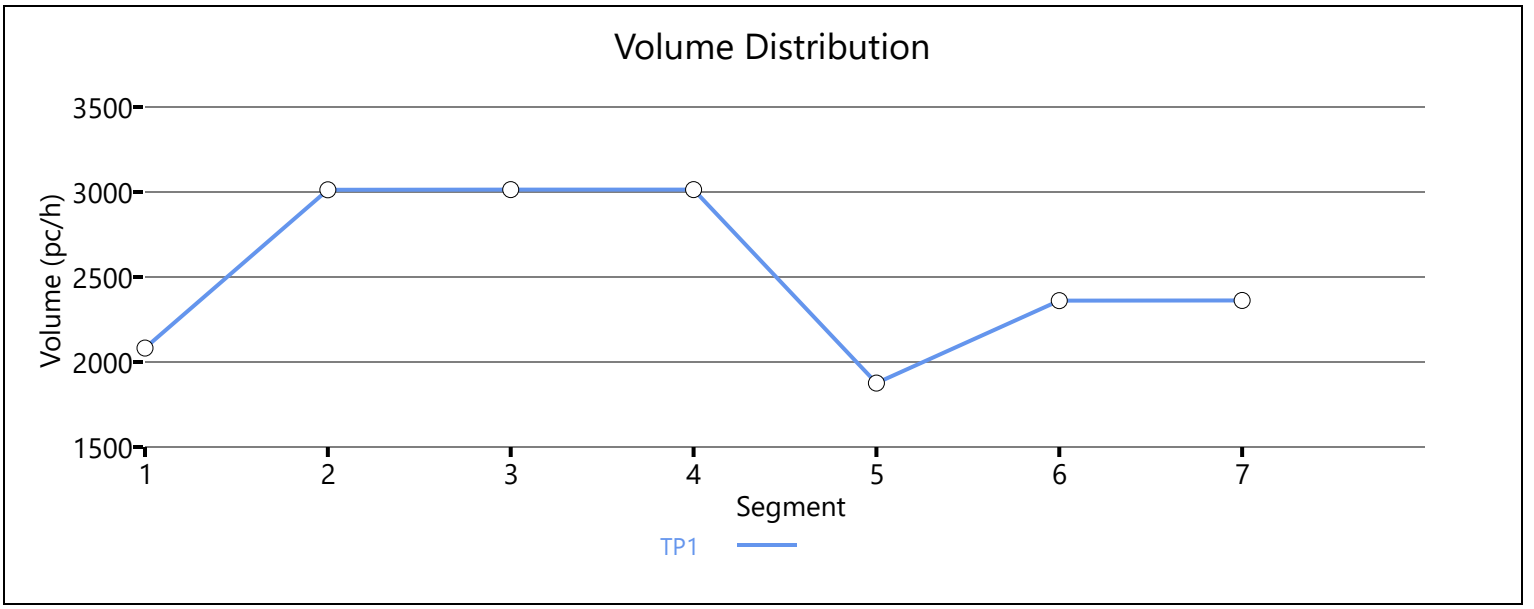
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.3	17.6	16.2	3.30	B

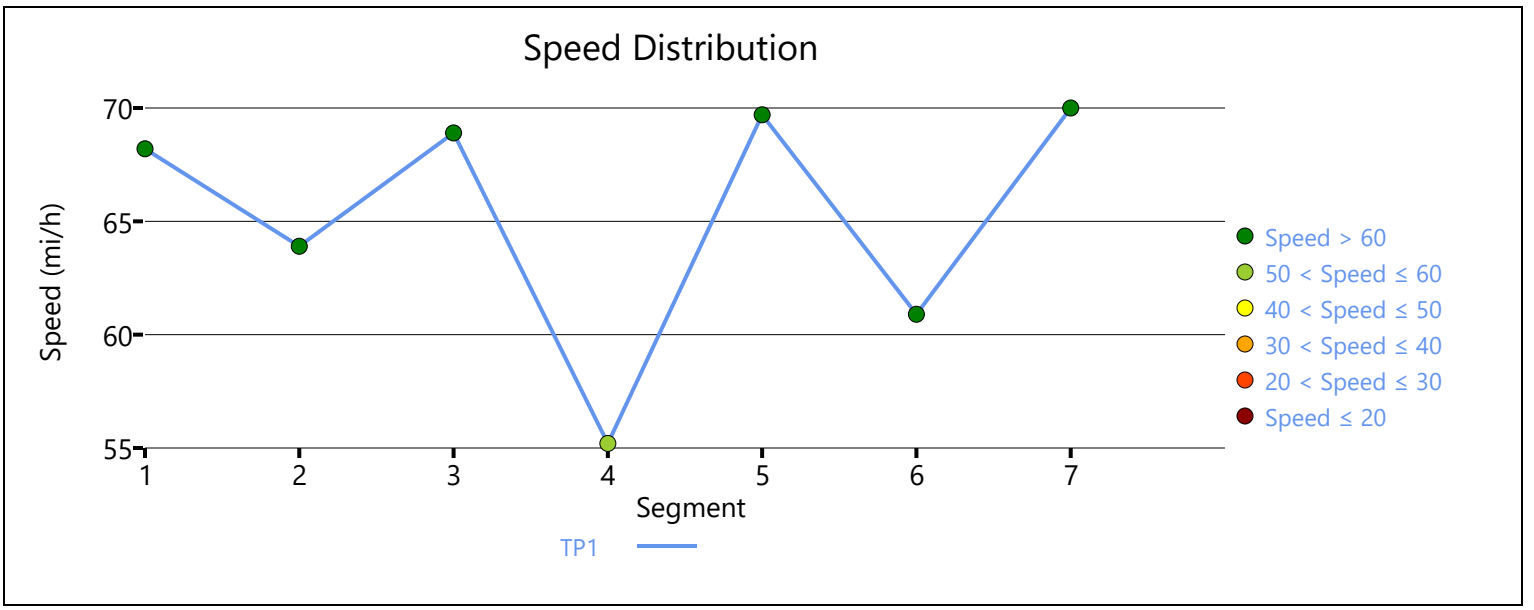
Facility Overall Results

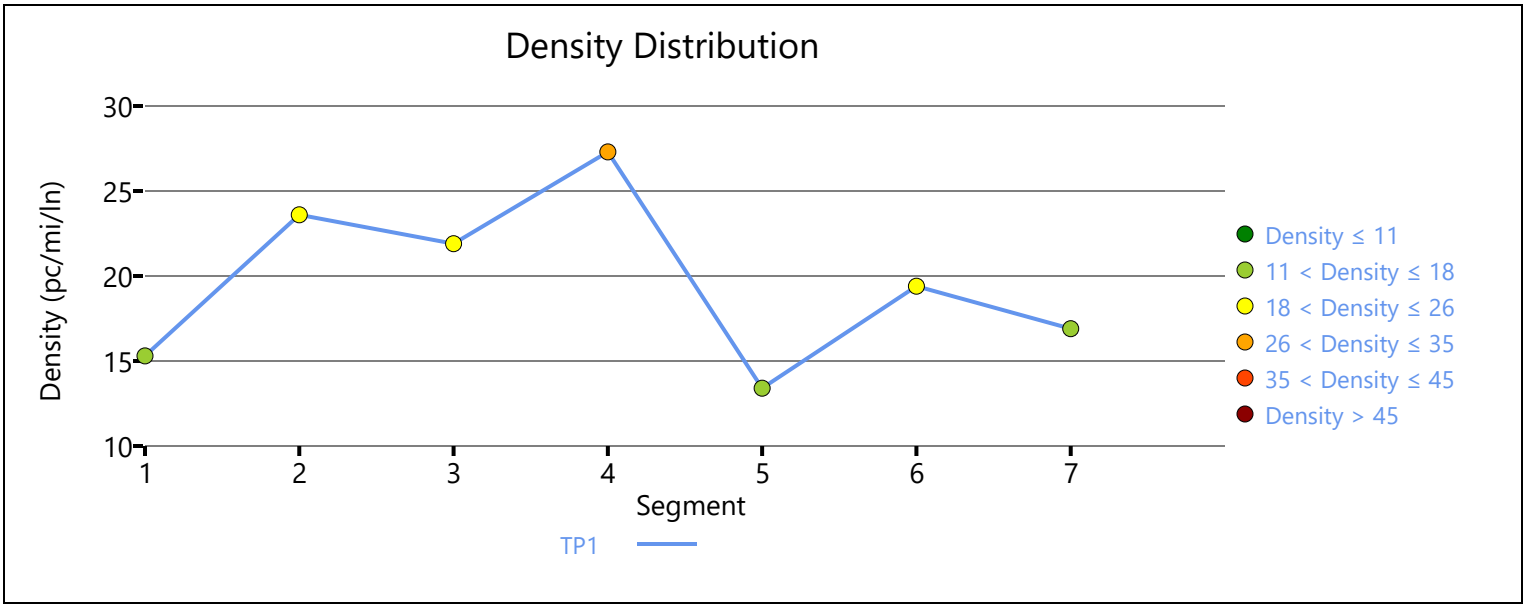
Space Mean Speed, mi/h	66.3	Density, veh/mi/ln	16.2
Average Travel Time, min	3.30	Density, pc/mi/ln	17.6

Messages

Comments







Appendix O

Design Year 2034 No-Build Synchro Outputs

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2034 No-Build AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	32	27	445	35	501	18	1001	216	273	1663	44
Future Volume (veh/h)	44	32	27	445	35	501	18	1001	216	273	1663	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1752	1870	1796	1841	1796	1811	1856	1678	1811	1841
Adj Flow Rate, veh/h	46	33	28	464	36	522	19	1043	225	284	1732	46
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
Percent Heavy Veh, %	0	4	10	2	7	4	7	6	3	15	6	4
Cap, veh/h	49	305	259	460	33	477	31	1335	610	195	1691	767
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.02	0.39	0.39	0.12	0.49	0.49
Sat Flow, veh/h	865	920	780	1341	99	1438	1711	3441	1572	1598	3441	1560
Grp Volume(v), veh/h	46	0	61	464	0	558	19	1043	225	284	1732	46
Grp Sat Flow(s),veh/h/ln	865	0	1700	1341	0	1537	1711	1721	1572	1598	1721	1560
Q Serve(g_s), s	0.0	0.0	3.7	45.3	0.0	49.0	1.6	39.3	15.1	18.0	72.6	2.3
Cycle Q Clear(g_c), s	49.0	0.0	3.7	49.0	0.0	49.0	1.6	39.3	15.1	18.0	72.6	2.3
Prop In Lane	1.00		0.46	1.00		0.94	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	0	564	460	0	510	31	1335	610	195	1691	767
V/C Ratio(X)	0.94	0.00	0.11	1.01	0.00	1.09	0.61	0.78	0.37	1.46	1.02	0.06
Avail Cap(c_a), veh/h	49	0	564	460	0	510	58	1388	635	195	1691	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.9	0.0	34.2	53.6	0.0	49.4	72.0	39.7	32.3	64.9	37.6	19.7
Incr Delay (d2), s/veh	108.2	0.0	0.1	43.9	0.0	67.9	17.4	3.4	0.8	232.5	28.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	2.8	31.0	0.0	38.9	1.5	23.1	9.6	30.9	45.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	182.1	0.0	34.3	97.5	0.0	117.3	89.3	43.1	33.1	297.3	65.8	19.7
LnGrp LOS	F	A	C	F	A	F	F	D	C	F	F	B
Approach Vol, veh/h		107			1022			1287			2062	
Approach Delay, s/veh		97.9			108.3			42.0			96.6	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.0	65.3		56.4	10.7	80.6		56.4
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	18.0	59.6		49.0	5.0	72.6		49.0
Max Q Clear Time (g_c+I1), s	20.0	41.3		51.0	3.6	74.6		51.0
Green Ext Time (p_c), s	0.0	11.8		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	83.6
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	972	0	329	190	946	0	0	1180	405
Future Volume (veh/h)	0	0	0	972	0	329	190	946	0	0	1180	405
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1826	1811	0	0	1811	1841
Adj Flow Rate, veh/h				1012	0	0	198	985	0	0	1229	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				5	0	5	5	6	0	0	6	4
Cap, veh/h				1142	0		267	2473	0	0	1487	
Arrive On Green				0.34	0.00	0.00	0.09	0.50	0.00	0.00	0.32	0.00
Sat Flow, veh/h				3374	0	1547	1739	5107	0	0	4926	1560
Grp Volume(v), veh/h				1012	0	0	198	985	0	0	1229	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1739	1648	0	0	1558	1560
Q Serve(g_s), s				29.0	0.0	0.0	7.5	12.7	0.0	0.0	24.9	0.0
Cycle Q Clear(g_c), s				29.0	0.0	0.0	7.5	12.7	0.0	0.0	24.9	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1142	0		267	2473	0	0	1487	
V/C Ratio(X)				0.89	0.00		0.74	0.40	0.00	0.00	0.83	
Avail Cap(c_a), veh/h				1534	0		325	3046	0	0	1873	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				32.0	0.0	0.0	23.8	16.0	0.0	0.0	32.2	0.0
Incr Delay (d2), s/veh				5.2	0.0	0.0	7.1	0.1	0.0	0.0	2.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				17.5	0.0	0.0	5.8	7.6	0.0	0.0	13.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.1	0.0	0.0	30.9	16.0	0.0	0.0	34.7	0.0
LnGrp LOS				D	A		C	B	A	A	C	
Approach Vol, veh/h					1012	A		1183			1229	A
Approach Delay, s/veh					37.1			18.5			34.7	
Approach LOS					D			B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.6	41.5		42.1		60.1
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	13.0	41.0		46.5		63.0
Max Q Clear Time (g_c+I1), s	9.5	26.9		31.0		14.7
Green Ext Time (p_c), s	0.2	5.7		3.6		5.9

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1751.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	296	0	133	0	0	0	0	840	706	305	1847	0
Future Vol, veh/h	296	0	133	0	0	0	0	840	706	305	1847	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	0	0	0	0	0	6	5	5	6	0
Mvmt Flow	315	0	141	0	0	0	0	894	751	324	1965	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	2971	-	983	-	0	0	894	0	0
Stage 1	2613	-	-	-	-	-	-	-	-
Stage 2	358	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.1	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.9	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 26	0	216	0	-	-	431	-	0
Stage 1	~ 22	0	-	0	-	-	-	-	0
Stage 2	616	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 6	0	216	-	-	-	431	-	-
Mov Cap-2 Maneuver	~ 6	0	-	-	-	-	-	-	-
Stage 1	~ 22	0	-	-	-	-	-	-	-
Stage 2	~ 153	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 16828.6	0	4.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	6	216	431	-
HCM Lane V/C Ratio	-	-	52.482	0.655	0.753	-
HCM Control Delay (s)	-	-	$ 24368.3	48.6	34.7	-
HCM Lane LOS	-	-	F	E	D	-
HCM 95th %tile Q(veh)	-	-	41.5	4	6.2	-

Notes

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

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2034 No-Build PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	31	42	198	41	303	35	1666	366	376	1022	60
Future Volume (veh/h)	90	31	42	198	41	303	35	1666	366	376	1022	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1870	1900	1796	1900	1811	1856	1841	1811	1870
Adj Flow Rate, veh/h	95	33	44	208	43	319	37	1754	385	396	1076	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	3	2	0	7	0	6	3	4	6	2
Cap, veh/h	160	225	300	410	59	441	48	1340	612	253	1745	804
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.03	0.39	0.39	0.14	0.51	0.51
Sat Flow, veh/h	1020	738	984	1322	195	1445	1810	3441	1572	1753	3441	1585
Grp Volume(v), veh/h	95	0	77	208	0	362	37	1754	385	396	1076	63
Grp Sat Flow(s),veh/h/ln	1020	0	1723	1322	0	1640	1810	1721	1572	1753	1721	1585
Q Serve(g_s), s	13.3	0.0	4.7	19.7	0.0	28.6	3.0	56.6	28.8	21.0	32.6	3.0
Cycle Q Clear(g_c), s	41.9	0.0	4.7	24.5	0.0	28.6	3.0	56.6	28.8	21.0	32.6	3.0
Prop In Lane	1.00		0.57	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	0	526	410	0	500	48	1340	612	253	1745	804
V/C Ratio(X)	0.59	0.00	0.15	0.51	0.00	0.72	0.77	1.31	0.63	1.56	0.62	0.08
Avail Cap(c_a), veh/h	193	0	581	452	0	553	100	1340	612	253	1745	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	0.0	36.7	45.6	0.0	45.0	70.3	44.4	35.9	62.2	25.7	18.4
Incr Delay (d2), s/veh	4.9	0.0	0.2	1.4	0.0	4.7	21.9	144.5	2.9	271.9	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.6	0.0	3.6	10.8	0.0	17.8	2.9	72.4	16.5	43.7	18.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	0.0	36.9	47.0	0.0	49.8	92.2	188.9	38.8	334.1	26.6	18.5
LnGrp LOS	E	A	D	D	A	D	F	F	D	F	C	B
Approach Vol, veh/h		172			570			2176			1535	
Approach Delay, s/veh		54.5			48.8			160.7			105.6	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.0	64.6		51.7	11.9	81.7		51.7
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	21.0	56.6		49.0	8.0	69.6		49.0
Max Q Clear Time (g_c+I1), s	23.0	58.6		43.9	5.0	34.6		30.6
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	16.5		4.0

Intersection Summary	
HCM 6th Ctrl Delay	123.3
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	651	0	343	107	1322	0	0	888	317
Future Volume (veh/h)	0	0	0	651	0	343	107	1322	0	0	888	317
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1841	1811	0	0	1811	1841
Adj Flow Rate, veh/h				685	0	0	113	1392	0	0	935	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				5	0	5	4	6	0	0	6	4
Cap, veh/h				841	0		315	2640	0	0	1658	
Arrive On Green				0.25	0.00	0.00	0.06	0.53	0.00	0.00	0.35	0.00
Sat Flow, veh/h				3374	0	1547	1753	5107	0	0	4926	1560
Grp Volume(v), veh/h				685	0	0	113	1392	0	0	935	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1753	1648	0	0	1558	1560
Q Serve(g_s), s				14.6	0.0	0.0	2.9	13.9	0.0	0.0	12.3	0.0
Cycle Q Clear(g_c), s				14.6	0.0	0.0	2.9	13.9	0.0	0.0	12.3	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				841	0		315	2640	0	0	1658	
V/C Ratio(X)				0.81	0.00		0.36	0.53	0.00	0.00	0.56	
Avail Cap(c_a), veh/h				1574	0		554	4810	0	0	3071	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				26.9	0.0	0.0	14.3	11.5	0.0	0.0	19.8	0.0
Incr Delay (d2), s/veh				2.0	0.0	0.0	0.7	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				9.4	0.0	0.0	1.8	6.8	0.0	0.0	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.9	0.0	0.0	15.0	11.6	0.0	0.0	20.0	0.0
LnGrp LOS				C	A		B	B	A	A	C	
Approach Vol, veh/h					685	A		1505			935	A
Approach Delay, s/veh					28.9			11.9			20.0	
Approach LOS					C			B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.6	36.0		26.5		49.6
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	15.0	50.0		35.5		74.0
Max Q Clear Time (g_c+I1), s	4.9	14.3		16.6		15.9
Green Ext Time (p_c), s	0.2	5.4		2.4		9.8

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	14344

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	346	0	215	0	0	0	0	1083	976	296	1243	0
Future Vol, veh/h	346	0	215	0	0	0	0	1083	976	296	1243	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Free	-	-	Yield	-	-	Free
Storage Length	0	-	170	-	-	-	-	-	600	440	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	0	4	0	0	0	0	6	5	5	6	0
Mvmt Flow	368	0	229	0	0	0	0	1152	1038	315	1322	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	2413	-	661	-	0	0	1152	0	0
Stage 1	1952	-	-	-	-	-	-	-	-
Stage 2	461	-	-	-	-	-	-	-	-
Critical Hdwy	5.78	-	7.18	-	-	-	5.4	-	-
Critical Hdwy Stg 1	6.68	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.08	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.84	-	3.94	-	-	-	3.15	-	-
Pot Cap-1 Maneuver	~ 54	0	343	0	-	-	322	-	0
Stage 1	~ 60	0	-	0	-	-	-	-	0
Stage 2	545	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 1	0	343	-	-	-	322	-	-
Mov Cap-2 Maneuver	~ 1	0	-	-	-	-	-	-	-
Stage 1	~ 60	0	-	-	-	-	-	-	-
Stage 2	~ 12	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$, 106297.1	0	15.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	1	343	322	-
HCM Lane V/C Ratio	-	-	368.085	0.667	0.978	-
HCM Control Delay (s)	-	$ 1	72327.5	34.2	81.5	-
HCM Lane LOS	-	-	F	D	F	-
HCM 95th %tile Q(veh)	-	-	48.7	4.6	10.4	-

Notes

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

Appendix P

Opening Year 2024 Build Synchro Outputs

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2024 Build AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	30	25	423	33	416	17	953	194	158	1327	36
Future Volume (veh/h)	42	30	25	423	33	416	17	953	194	158	1327	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1752	1870	1796	1841	1796	1811	1856	1678	1811	1841
Adj Flow Rate, veh/h	44	31	26	441	34	433	18	993	202	165	1382	38
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
Percent Heavy Veh, %	0	4	10	2	7	4	7	6	3	15	6	4
Cap, veh/h	85	306	257	462	37	472	30	1364	624	187	1706	773
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.02	0.40	0.40	0.12	0.50	0.50
Sat Flow, veh/h	941	925	776	1346	112	1427	1711	3441	1572	1598	3441	1560
Grp Volume(v), veh/h	44	0	57	441	0	467	18	993	202	165	1382	38
Grp Sat Flow(s),veh/h/ln	941	0	1701	1346	0	1539	1711	1721	1572	1598	1721	1560
Q Serve(g_s), s	5.9	0.0	3.5	46.1	0.0	43.7	1.6	36.7	13.3	15.3	50.8	1.9
Cycle Q Clear(g_c), s	49.6	0.0	3.5	49.6	0.0	43.7	1.6	36.7	13.3	15.3	50.8	1.9
Prop In Lane	1.00		0.46	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	0	562	462	0	509	30	1364	624	187	1706	773
V/C Ratio(X)	0.52	0.00	0.10	0.95	0.00	0.92	0.60	0.73	0.32	0.88	0.81	0.05
Avail Cap(c_a), veh/h	85	0	562	462	0	509	57	1364	624	298	1706	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.5	0.0	34.8	53.4	0.0	48.2	73.2	38.4	31.3	65.2	31.9	19.5
Incr Delay (d2), s/veh	7.4	0.0	0.1	30.7	0.0	21.9	17.5	3.4	1.4	16.7	4.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	0.0	2.6	28.1	0.0	26.8	1.5	21.9	8.9	11.2	28.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.9	0.0	34.9	84.1	0.0	70.1	90.7	41.8	32.7	81.9	36.2	19.7
LnGrp LOS	E	A	C	F	A	E	F	D	C	F	D	B
Approach Vol, veh/h		101			908			1213			1585	
Approach Delay, s/veh		54.5			76.9			41.0			40.5	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.5	67.5		57.0	10.6	82.4		57.0
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	28.0	49.0		49.6	5.0	72.0		49.6
Max Q Clear Time (g_c+I1), s	17.3	38.7		51.6	3.6	52.8		51.6
Green Ext Time (p_c), s	0.3	7.2		0.0	0.0	14.1		0.0

Intersection Summary			
HCM 6th Ctrl Delay			49.7
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	0	80	0	0	0	0	720	691	218	1441	0
Future Volume (veh/h)	151	0	80	0	0	0	0	720	691	218	1441	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1900				0	1811	1826	1826	1811	0
Adj Flow Rate, veh/h	161	0	0				0	766	0	232	1533	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	0	0				0	6	5	5	6	0
Cap, veh/h	187	0					0	3008		556	3874	
Arrive On Green	0.11	0.00	0.00				0.00	0.67	0.00	0.04	0.52	0.00
Sat Flow, veh/h	1753	0	1610				0	4817	1547	1739	5107	0
Grp Volume(v), veh/h	161	0	0				0	766	0	232	1533	0
Grp Sat Flow(s),veh/h/ln	1753	0	1610				0	1503	1547	1739	1648	0
Q Serve(g_s), s	13.6	0.0	0.0				0.0	10.2	0.0	5.9	27.9	0.0
Cycle Q Clear(g_c), s	13.6	0.0	0.0				0.0	10.2	0.0	5.9	27.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	187	0					0	3008		556	3874	
V/C Ratio(X)	0.86	0.00					0.00	0.25		0.42	0.40	
Avail Cap(c_a), veh/h	579	0					0	3008		794	3874	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.67	0.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	0.75	0.75	0.00
Uniform Delay (d), s/veh	65.9	0.0	0.0				0.0	10.0	0.0	6.9	14.3	0.0
Incr Delay (d2), s/veh	11.1	0.0	0.0				0.0	0.2	0.0	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.7	0.0	0.0				0.0	5.6	0.0	3.5	15.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.1	0.0	0.0				0.0	10.2	0.0	7.2	14.6	0.0
LnGrp LOS	E	A					A	B		A	B	
Approach Vol, veh/h		161	A					766	A		1765	A
Approach Delay, s/veh		77.1						10.2			13.6	
Approach LOS		E						B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		126.5			17.5	109.1		23.5				
Change Period (Y+Rc), s		9.0			9.0	9.0		7.5				
Max Green Setting (Gmax), s		84.0			29.0	46.0		49.5				
Max Q Clear Time (g_c+I1), s		29.9			7.9	12.2		15.6				
Green Ext Time (p_c), s		11.4			0.6	4.2		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	714	0	202	181	690	0	0	945	311
Future Volume (veh/h)	0	0	0	714	0	202	181	690	0	0	945	311
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1826	1811	0	0	1811	1841
Adj Flow Rate, veh/h				744	0	0	189	719	0	0	984	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				5	0	5	5	6	0	0	6	4
Cap, veh/h				827	0		382	3188	0	0	2418	
Arrive On Green				0.25	0.00	0.00	0.13	1.00	0.00	0.00	0.52	0.00
Sat Flow, veh/h				3374	0	1547	1739	5107	0	0	4926	1560
Grp Volume(v), veh/h				744	0	0	189	719	0	0	984	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1739	1648	0	0	1558	1560
Q Serve(g_s), s				32.0	0.0	0.0	7.8	0.0	0.0	0.0	19.3	0.0
Cycle Q Clear(g_c), s				32.0	0.0	0.0	7.8	0.0	0.0	0.0	19.3	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				827	0		382	3188	0	0	2418	
V/C Ratio(X)				0.90	0.00		0.49	0.23	0.00	0.00	0.41	
Avail Cap(c_a), veh/h				1293	0		497	3188	0	0	2418	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.94	0.94	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				54.8	0.0	0.0	14.7	0.0	0.0	0.0	22.1	0.0
Incr Delay (d2), s/veh				5.8	0.0	0.0	0.9	0.2	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				20.1	0.0	0.0	4.6	0.1	0.0	0.0	11.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.6	0.0	0.0	15.7	0.2	0.0	0.0	22.6	0.0
LnGrp LOS				E	A		B	A	A	A	C	
Approach Vol, veh/h					744	A		908			984	A
Approach Delay, s/veh					60.6			3.4			22.6	
Approach LOS					E			A			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.1	86.6		44.3		105.7
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	20.0	47.0		57.5		76.0
Max Q Clear Time (g_c+I1), s	9.8	21.3		34.0		2.0
Green Ext Time (p_c), s	0.3	5.4		2.8		4.0

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2024 Build PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	29	40	173	39	233	33	1517	348	289	851	57
Future Volume (veh/h)	72	29	40	173	39	233	33	1517	348	289	851	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1870	1900	1796	1900	1811	1856	1841	1811	1870
Adj Flow Rate, veh/h	76	31	42	182	41	245	35	1597	366	304	896	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	3	2	0	7	0	6	3	4	6	2
Cap, veh/h	142	179	243	329	58	345	46	1603	732	234	1974	909
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.03	0.47	0.47	0.13	0.57	0.57
Sat Flow, veh/h	1093	731	991	1327	236	1410	1810	3441	1572	1753	3441	1585
Grp Volume(v), veh/h	76	0	73	182	0	286	35	1597	366	304	896	60
Grp Sat Flow(s),veh/h/ln	1093	0	1722	1327	0	1646	1810	1721	1572	1753	1721	1585
Q Serve(g_s), s	10.2	0.0	5.0	18.8	0.0	23.8	2.9	69.4	24.3	20.0	22.5	2.5
Cycle Q Clear(g_c), s	34.1	0.0	5.0	23.8	0.0	23.8	2.9	69.4	24.3	20.0	22.5	2.5
Prop In Lane	1.00		0.58	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	0	422	329	0	403	46	1603	732	234	1974	909
V/C Ratio(X)	0.53	0.00	0.17	0.55	0.00	0.71	0.76	1.00	0.50	1.30	0.45	0.07
Avail Cap(c_a), veh/h	232	0	562	437	0	538	84	1603	732	234	1974	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	0.0	44.7	54.1	0.0	51.8	72.6	39.9	27.9	65.0	18.4	14.2
Incr Delay (d2), s/veh	4.4	0.0	0.3	2.1	0.0	3.7	21.7	21.6	2.4	162.9	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	0.0	3.9	10.6	0.0	15.4	2.9	41.3	14.2	29.4	13.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	0.0	44.9	56.1	0.0	55.5	94.4	61.6	30.3	227.9	19.2	14.3
LnGrp LOS	E	A	D	E	A	E	F	E	C	F	B	B
Approach Vol, veh/h		149			468			1998			1260	
Approach Delay, s/veh		58.6			55.7			56.4			69.3	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	77.9		44.1	11.8	94.0		44.1
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	20.0	57.6		49.0	7.0	70.6		49.0
Max Q Clear Time (g_c+I1), s	22.0	71.4		36.1	4.9	24.5		25.8
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	14.4		3.4

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	0	198	0	0	0	0	1011	811	158	1000	0
Future Volume (veh/h)	251	0	198	0	0	0	0	1011	811	158	1000	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1841				0	1811	1826	1826	1811	0
Adj Flow Rate, veh/h	267	0	0				0	1076	0	168	1064	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	0	4				0	6	5	5	6	0
Cap, veh/h	294	0					0	2767		385	3573	
Arrive On Green	0.17	0.00	0.00				0.00	0.61	0.00	0.02	0.24	0.00
Sat Flow, veh/h	1753	0	1560				0	4817	1547	1739	5107	0
Grp Volume(v), veh/h	267	0	0				0	1076	0	168	1064	0
Grp Sat Flow(s),veh/h/ln	1753	0	1560				0	1503	1547	1739	1648	0
Q Serve(g_s), s	22.4	0.0	0.0				0.0	18.2	0.0	5.0	26.5	0.0
Cycle Q Clear(g_c), s	22.4	0.0	0.0				0.0	18.2	0.0	5.0	26.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	294	0					0	2767		385	3573	
V/C Ratio(X)	0.91	0.00					0.00	0.39		0.44	0.30	
Avail Cap(c_a), veh/h	497	0					0	2767		544	3573	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	61.3	0.0	0.0				0.0	14.7	0.0	11.1	25.9	0.0
Incr Delay (d2), s/veh	12.9	0.0	0.0				0.0	0.4	0.0	0.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.3	0.0	0.0				0.0	9.8	0.0	3.4	16.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	0.0	0.0				0.0	15.1	0.0	11.8	26.1	0.0
LnGrp LOS	E	A					A	B		B	C	
Approach Vol, veh/h		267	A					1076	A		1232	A
Approach Delay, s/veh		74.2						15.1			24.1	
Approach LOS		E						B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		117.4			16.3	101.0		32.6				
Change Period (Y+Rc), s		9.0			9.0	9.0		7.5				
Max Green Setting (Gmax), s		91.0			21.0	61.0		42.5				
Max Q Clear Time (g_c+I1), s		28.5			7.0	20.2		24.4				
Green Ext Time (p_c), s		6.6			0.3	6.5		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			25.6									
HCM 6th LOS			C									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	548	0	228	82	1180	0	0	610	161
Future Volume (veh/h)	0	0	0	548	0	228	82	1180	0	0	610	161
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1841	1811	0	0	1811	1841
Adj Flow Rate, veh/h				577	0	0	86	1242	0	0	642	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				5	0	5	4	6	0	0	6	4
Cap, veh/h				653	0		524	3443	0	0	2822	
Arrive On Green				0.19	0.00	0.00	0.06	1.00	0.00	0.00	0.60	0.00
Sat Flow, veh/h				3374	0	1547	1753	5107	0	0	4926	1560
Grp Volume(v), veh/h				577	0	0	86	1242	0	0	642	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1753	1648	0	0	1558	1560
Q Serve(g_s), s				25.0	0.0	0.0	2.8	0.0	0.0	0.0	9.5	0.0
Cycle Q Clear(g_c), s				25.0	0.0	0.0	2.8	0.0	0.0	0.0	9.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				653	0		524	3443	0	0	2822	
V/C Ratio(X)				0.88	0.00		0.16	0.36	0.00	0.00	0.23	
Avail Cap(c_a), veh/h				1248	0		666	3443	0	0	2822	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.86	0.86	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				58.8	0.0	0.0	9.8	0.0	0.0	0.0	13.6	0.0
Incr Delay (d2), s/veh				4.2	0.0	0.0	0.1	0.3	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				16.2	0.0	0.0	1.7	0.1	0.0	0.0	5.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				63.0	0.0	0.0	10.0	0.3	0.0	0.0	13.8	0.0
LnGrp LOS				E	A		A	A	A	A	B	
Approach Vol, veh/h					577	A		1328			642	A
Approach Delay, s/veh					63.0			0.9			13.8	
Approach LOS					E			A			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.9	99.6		36.5		113.5
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	17.0	52.0		55.5		78.0
Max Q Clear Time (g_c+I1), s	4.8	11.5		27.0		2.0
Green Ext Time (p_c), s	0.1	3.5		2.1		8.2

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Notes

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

Appendix Q

Design Year 2034 Build Synchro Output

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2034 Build AM (Prot-Only)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	32	27	445	35	501	18	1001	216	273	1663	44
Future Volume (veh/h)	44	32	27	445	35	501	18	1001	216	273	1663	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1752	1870	1796	1841	1796	1811	1856	1678	1811	1841
Adj Flow Rate, veh/h	46	33	28	464	36	522	19	1043	225	284	1732	46
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
Percent Heavy Veh, %	0	4	10	2	7	4	7	6	3	15	6	4
Cap, veh/h	48	300	255	453	32	470	31	1138	520	298	1717	779
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.02	0.33	0.33	0.19	0.50	0.50
Sat Flow, veh/h	865	920	780	1341	99	1438	1711	3441	1572	1598	3441	1560
Grp Volume(v), veh/h	46	0	61	464	0	558	19	1043	225	284	1732	46
Grp Sat Flow(s),veh/h/ln	865	0	1700	1341	0	1537	1711	1721	1572	1598	1721	1560
Q Serve(g_s), s	0.0	0.0	3.8	45.2	0.0	49.0	1.7	43.7	16.8	26.4	74.9	2.3
Cycle Q Clear(g_c), s	49.0	0.0	3.8	49.0	0.0	49.0	1.7	43.7	16.8	26.4	74.9	2.3
Prop In Lane	1.00		0.46	1.00		0.94	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	0	555	453	0	502	31	1138	520	298	1717	779
V/C Ratio(X)	0.96	0.00	0.11	1.03	0.00	1.11	0.61	0.92	0.43	0.95	1.01	0.06
Avail Cap(c_a), veh/h	48	0	555	453	0	502	57	1138	520	298	1717	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.0	0.0	35.3	54.8	0.0	50.5	73.1	48.2	39.2	60.3	37.6	19.4
Incr Delay (d2), s/veh	114.4	0.0	0.1	48.9	0.0	74.2	17.7	12.9	2.6	39.3	23.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.9	0.0	2.8	32.0	0.0	40.2	1.6	27.2	10.9	19.6	44.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	189.4	0.0	35.4	103.6	0.0	124.7	90.8	61.2	41.8	99.7	61.4	19.5
LnGrp LOS	F	A	D	F	A	F	F	E	D	F	F	B
Approach Vol, veh/h		107			1022			1287			2062	
Approach Delay, s/veh		101.6			115.1			58.2			65.7	
Approach LOS		F			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	36.0	57.6		56.4	10.7	82.9		56.4
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	28.0	49.6		49.0	5.0	72.6		49.0
Max Q Clear Time (g_c+I1), s	28.4	45.7		51.0	3.7	76.9		51.0
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	0	133	0	0	0	0	840	706	305	1847	0
Future Volume (veh/h)	296	0	133	0	0	0	0	840	706	305	1847	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1900				0	1811	1826	1826	1811	0
Adj Flow Rate, veh/h	315	0	0				0	894	0	324	1965	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	0	0				0	6	5	5	6	0
Cap, veh/h	342	0					0	1958		349	3436	
Arrive On Green	0.20	0.00	0.00				0.00	0.43	0.00	0.07	0.23	0.00
Sat Flow, veh/h	1753	0	1610				0	4817	1547	1739	5107	0
Grp Volume(v), veh/h	315	0	0				0	894	0	324	1965	0
Grp Sat Flow(s),veh/h/ln	1753	0	1610				0	1503	1547	1739	1648	0
Q Serve(g_s), s	26.4	0.0	0.0				0.0	21.0	0.0	27.8	52.9	0.0
Cycle Q Clear(g_c), s	26.4	0.0	0.0				0.0	21.0	0.0	27.8	52.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	342	0					0	1958		349	3436	
V/C Ratio(X)	0.92	0.00					0.00	0.46		0.93	0.57	
Avail Cap(c_a), veh/h	532	0					0	1958		383	3436	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	0.47	0.47	0.00
Uniform Delay (d), s/veh	59.2	0.0	0.0				0.0	29.9	0.0	69.0	38.0	0.0
Incr Delay (d2), s/veh	15.5	0.0	0.0				0.0	0.8	0.0	15.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	18.9	0.0	0.0				0.0	11.9	0.0	18.8	28.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.7	0.0	0.0				0.0	30.7	0.0	84.9	38.3	0.0
LnGrp LOS	E	A					A	C		F	D	
Approach Vol, veh/h		315	A					894	A		2289	A
Approach Delay, s/veh		74.7						30.7			44.9	
Approach LOS		E						C			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		113.2			39.1	74.1		36.8				
Change Period (Y+Rc), s		9.0			9.0	9.0		7.5				
Max Green Setting (Gmax), s		88.0			33.0	46.0		45.5				
Max Q Clear Time (g_c+I1), s		54.9			29.8	23.0		28.4				
Green Ext Time (p_c), s		15.2			0.3	4.7		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			44.0									
HCM 6th LOS			D									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	972	0	329	190	946	0	0	1180	405
Future Volume (veh/h)	0	0	0	972	0	329	190	946	0	0	1180	405
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1826	1811	0	0	1811	1841
Adj Flow Rate, veh/h				1012	0	0	198	985	0	0	1229	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				5	0	5	5	6	0	0	6	4
Cap, veh/h				1095	0		219	2795	0	0	1772	
Arrive On Green				0.32	0.00	0.00	0.13	0.57	0.00	0.00	0.38	0.00
Sat Flow, veh/h				3374	0	1547	1739	5107	0	0	4926	1560
Grp Volume(v), veh/h				1012	0	0	198	985	0	0	1229	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1739	1648	0	0	1558	1560
Q Serve(g_s), s				43.4	0.0	0.0	16.8	16.2	0.0	0.0	33.2	0.0
Cycle Q Clear(g_c), s				43.4	0.0	0.0	16.8	16.2	0.0	0.0	33.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1095	0		219	2795	0	0	1772	
V/C Ratio(X)				0.92	0.00		0.90	0.35	0.00	0.00	0.69	
Avail Cap(c_a), veh/h				1293	0		232	2795	0	0	1772	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.77	0.77	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				48.9	0.0	0.0	64.7	17.7	0.0	0.0	39.2	0.0
Incr Delay (d2), s/veh				10.1	0.0	0.0	27.9	0.3	0.0	0.0	2.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				26.5	0.0	0.0	13.2	9.3	0.0	0.0	18.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				59.0	0.0	0.0	92.5	18.0	0.0	0.0	41.5	0.0
LnGrp LOS				E	A		F	B	A	A	D	
Approach Vol, veh/h					1012	A		1183			1229	A
Approach Delay, s/veh					59.0			30.4			41.5	
Approach LOS					E			C			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.9	65.9		56.2		93.8
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	20.0	47.0		57.5		76.0
Max Q Clear Time (g_c+I1), s	18.8	35.2		45.4		18.2
Green Ext Time (p_c), s	0.1	5.1		3.3		5.9

Intersection Summary	
HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary
41: US 41 & 73rd St/Erie Rd

2034 Build PM (Prot-Only)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	31	42	198	41	303	35	1666	366	376	1022	60
Future Volume (veh/h)	90	31	42	198	41	303	35	1666	366	376	1022	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1870	1900	1796	1900	1811	1856	1841	1811	1870
Adj Flow Rate, veh/h	95	33	44	208	43	319	37	1754	385	396	1076	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	3	2	0	7	0	6	3	4	6	2
Cap, veh/h	157	225	300	407	59	440	48	1375	629	245	1766	813
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.03	0.40	0.40	0.14	0.51	0.51
Sat Flow, veh/h	1020	738	984	1322	195	1445	1810	3441	1572	1753	3441	1585
Grp Volume(v), veh/h	95	0	77	208	0	362	37	1754	385	396	1076	63
Grp Sat Flow(s),veh/h/ln	1020	0	1723	1322	0	1640	1810	1721	1572	1753	1721	1585
Q Serve(g_s), s	13.8	0.0	4.9	20.4	0.0	29.6	3.0	60.0	29.2	21.0	33.2	3.0
Cycle Q Clear(g_c), s	43.3	0.0	4.9	25.3	0.0	29.6	3.0	60.0	29.2	21.0	33.2	3.0
Prop In Lane	1.00		0.57	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	0	524	407	0	499	48	1375	629	245	1766	813
V/C Ratio(X)	0.60	0.00	0.15	0.51	0.00	0.73	0.77	1.28	0.61	1.61	0.61	0.08
Avail Cap(c_a), veh/h	180	0	563	437	0	536	97	1375	629	245	1766	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	0.0	38.0	47.2	0.0	46.6	72.6	45.0	35.8	64.5	25.9	18.5
Incr Delay (d2), s/veh	5.8	0.0	0.2	1.4	0.0	5.0	22.5	129.6	4.4	294.2	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	0.0	3.8	11.1	0.0	18.4	3.0	70.6	17.0	45.3	19.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.8	0.0	38.2	48.6	0.0	51.6	95.0	174.6	40.2	358.7	27.4	18.7
LnGrp LOS	E	A	D	D	A	D	F	F	D	F	C	B
Approach Vol, veh/h		172			570			2176			1535	
Approach Delay, s/veh		56.7			50.5			149.5			112.5	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.0	68.0		53.0	12.0	85.0		53.0
Change Period (Y+Rc), s	8.0	8.0		7.4	8.0	8.0		7.4
Max Green Setting (Gmax), s	21.0	56.6		49.0	8.0	69.6		49.0
Max Q Clear Time (g_c+I1), s	23.0	62.0		45.3	5.0	35.2		31.6
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	16.3		3.9

Intersection Summary	
HCM 6th Ctrl Delay	120.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	0	215	0	0	0	0	1083	976	296	1243	0
Future Volume (veh/h)	346	0	215	0	0	0	0	1083	976	296	1243	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1841				0	1811	1826	1826	1811	0
Adj Flow Rate, veh/h	368	0	0				0	1152	0	315	1322	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	0	4				0	6	5	5	6	0
Cap, veh/h	390	0					0	1858		340	3300	
Arrive On Green	0.22	0.00	0.00				0.00	0.41	0.00	0.06	0.22	0.00
Sat Flow, veh/h	1753	0	1560				0	4817	1547	1739	5107	0
Grp Volume(v), veh/h	368	0	0				0	1152	0	315	1322	0
Grp Sat Flow(s),veh/h/ln	1753	0	1560				0	1503	1547	1739	1648	0
Q Serve(g_s), s	31.0	0.0	0.0				0.0	30.3	0.0	27.0	34.3	0.0
Cycle Q Clear(g_c), s	31.0	0.0	0.0				0.0	30.3	0.0	27.0	34.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	390	0					0	1858		340	3300	
V/C Ratio(X)	0.94	0.00					0.00	0.62		0.93	0.40	
Avail Cap(c_a), veh/h	427	0					0	1858		371	3300	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	57.4	0.0	0.0				0.0	34.8	0.0	69.1	32.8	0.0
Incr Delay (d2), s/veh	28.4	0.0	0.0				0.0	1.6	0.0	23.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.2	0.0	0.0				0.0	16.2	0.0	20.4	20.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.8	0.0	0.0				0.0	36.4	0.0	92.5	33.1	0.0
LnGrp LOS	F	A					A	D		F	C	
Approach Vol, veh/h		368	A					1152	A		1637	A
Approach Delay, s/veh		85.8						36.4			44.5	
Approach LOS		F						D			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		109.1			38.3	70.8		40.9				
Change Period (Y+Rc), s		9.0			9.0	9.0		7.5				
Max Green Setting (Gmax), s		97.0			32.0	56.0		36.5				
Max Q Clear Time (g_c+I1), s		36.3			29.0	32.3		33.0				
Green Ext Time (p_c), s		9.0			0.3	6.5		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	651	0	343	107	1322	0	0	888	317
Future Volume (veh/h)	0	0	0	651	0	343	107	1322	0	0	888	317
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1826	0	1826	1841	1811	0	0	1811	1841
Adj Flow Rate, veh/h				685	0	0	113	1392	0	0	935	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				5	0	5	4	6	0	0	6	4
Cap, veh/h				766	0		133	3278	0	0	2462	
Arrive On Green				0.23	0.00	0.00	0.15	1.00	0.00	0.00	0.53	0.00
Sat Flow, veh/h				3374	0	1547	1753	5107	0	0	4926	1560
Grp Volume(v), veh/h				685	0	0	113	1392	0	0	935	0
Grp Sat Flow(s),veh/h/ln				1687	0	1547	1753	1648	0	0	1558	1560
Q Serve(g_s), s				29.5	0.0	0.0	9.4	0.0	0.0	0.0	17.8	0.0
Cycle Q Clear(g_c), s				29.5	0.0	0.0	9.4	0.0	0.0	0.0	17.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				766	0		133	3278	0	0	2462	
V/C Ratio(X)				0.89	0.00		0.85	0.42	0.00	0.00	0.38	
Avail Cap(c_a), veh/h				1248	0		199	3278	0	0	2462	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.63	0.63	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				56.2	0.0	0.0	62.7	0.0	0.0	0.0	21.0	0.0
Incr Delay (d2), s/veh				5.3	0.0	0.0	12.9	0.3	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				18.7	0.0	0.0	7.0	0.1	0.0	0.0	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.5	0.0	0.0	75.6	0.3	0.0	0.0	21.4	0.0
LnGrp LOS				E	A		E	A	A	A	C	
Approach Vol, veh/h					685	A		1505			935	A
Approach Delay, s/veh					61.5			5.9			21.4	
Approach LOS					E			A			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.4	88.0		41.5		108.5
Change Period (Y+Rc), s	9.0	9.0		7.5		9.0
Max Green Setting (Gmax), s	17.0	52.0		55.5		78.0
Max Q Clear Time (g_c+I1), s	11.4	19.8		31.5		2.0
Green Ext Time (p_c), s	0.1	5.3		2.5		9.9

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

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

Appendix R

Crash Data

Signal 4 Data

HSMV_Re	Agency_Report_Number	Reporting_Agency	Crash_Date	Crash_Time	City	County	Crash_Street	Intersecting_Street	Offset_Distance	Offset_Direction	Crash_Type	Vehicles	Non_Motorists	Fatalities	Injuries	Alcohol_Related	Distraction_Related	Drug_Related	Estimated_Damages	Weather_Condition	Light_Condition	Crash_Type_Detailed	Crash_Type_Dir	Crash_Severity	Within_City_Limits	Manner_of_Collision	First_Harmful_Event	First_HE_Location	First_HE_Relation_to_Jct	First_HE_Within_Interchange	Type_of_I	Road_Sys	Type_of_S	Road_Surf	Contrib_Circum_Road1	Contrib_Circum_Env1	School_Bus_Related	Work_Zone_Related	Mopeds	Motorcycles	Passengers	Bicyclists	Pedestrians	Fatalities_Unrestrained	Injuries_Unrestrained	Possible_Injuries	Non_Incapacitating_Injuries	Incapacitating_Injuries	Fatalities_30_Days	KABCO	Non_Traffic_Fatalities	Transported_by_EMS	Transported_by_Law_Enforcement	Transported_by_Other	Citations	Property_Dmg_Amt	Vehicle_Dmg_Amt
8.5E+07	FMRC15OFF000075	FHP	2/7/2015	1:00 PM	Palmetto	Manatee	I-275	U.S. 41	100	South	Rollover	1	0	0	3	N	N	N	$7,000	Clear	Daylight	Rollover	S	Injury	N	Other	Overturn/Rollover	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	3	0	0	0	C	0	$3	$0	0	0	0	7000
8.8E+07	FHPF18OFF070721	FHP	10/31/2018	8:20 AM	Unincorporated	Manatee	I-275 (STATE ROAD 93) N/B EXIT RAMP	US 41 (STATE ROAD 45)	150	South	Rear End	2	0	0	0	N	N	N	$4,500	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4500
8.8E+07	FHPF19OFF055049	FHP	11/2/2019	4:50 PM	Unincorporated	Manatee	I 275 (STATE ROAD 93)	US 41 (STATE ROAD 45)	5280	North	Other	2	0	0	0	N	N	N	$1,500	Clear	Daylight	Other	S	Property Damage Only	N	Other	Other Non-Fixed Object	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1500
8.8E+07	FHPF19OFF032133	FHP	6/22/2019	10:00 AM	Unincorporated	Manatee	I 275	US 41	20	West	Rear End	2	0	0	0	N	N	N	$2,500	Clear	Daylight	Rear End	E	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	2500
8.8E+07	FHPF21OFF009586	FHP	2/28/2021	4:30 PM	Unincorporated	Manatee	73RD ST E	US 41 (SR 45)	141	West	Rollover	2	0	0	2	N	N	N	$11,500	Clear	Daylight	Rollover	E	Injury	N	Other	Overturn/Rollover	Shoulder	Non-Junction	N	Not at Int	Local	Unpaved	Dry	None	None	N	N	0	3	1	0	0	0	0	0	1	1	0	A	0	$1	$0	1	0	0	11500
8.5E+07	FHPF15OFF029208	FHP	5/8/2015	7:47 AM	Palmetto	Manatee	73RD ST E	US 41	25	West	Rear End	2	0	0	0	N	N	N	$600	Clear	Daylight	Rear End	E	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	County	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	600
8.6E+07	2016-028277	Manatee Co SO	9/23/2016	10:50 PM	Unincorporated	Manatee	TAMIAMI TRL	S I-275	0		Other	1	0	0	0	N	N	N	$0	Clear	Dark - Lighted	Single Vehicle	S	Property Damage Only	N		Other Non-Fixed Object	On Roadway	Non-Junction		Other	U.S.		Dry	Debris			N	0	2	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	0
8.8E+07	FHPF20OFF000616	FHP	1/4/2020	12:59 PM	Unincorporated	Manatee	US 41 (SR 45)	I 275	528	North	Rear End	2	0	0	0	N	N	N	$9,000	Rain	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Through Roadway	Y	Not at Int	U.S.	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	5	0	0	0	0	0	0	0	0	O	0	$0	$0	0	3	0	9000
8.5E+07	FHPF15OFF012879	FHP	2/28/2015	8:36 PM	Palmetto	Manatee	US 41 (SR 45)	I-275 (SR 93A)	200	North	Other	2	0	0	0	N	N	N	$3,000	Cloudy	Dark - Unknown Lighting	Other	S	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Crossover-Related	N	T-Intersec	U.S.	Unpaved	Wet	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	3000
8.8E+07	FHPF19OFF055817	FHP	11/7/2019	7:03 AM	Unincorporated	Manatee	US-41 (SR45)	I-275 (SR93)	80	North	Sideswipe	2	0	0	0	N	N	N	$1,200	Clear	Daylight	Same Direction Sideswipe	S	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1200
8.5E+07	FHPF15OFF011919	FHP	2/25/2015	7:50 AM	Palmetto	Manatee	US-41 / SR-45	I-275 / SR-93	0		Left Turn	2	0	0	0	N	N	N	$1,650	Fog, Smog, Smoke	Daylight	Left Rear	W	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Way	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	4	0	1650
8.8E+07	2018-006791	Manatee Co SO	3/11/2018	9:20 AM	Palmetto	Manatee	US 41 N	73RD ST E	50	South	Sideswipe	2	0	0	0	N	N	N	$700	Clear	Daylight	Same Direction Sideswipe	S	Property Damage Only	Y	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Through Roadway	N	Four-Way	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	700
9E+07	2020027809	Manatee Co SO	11/6/2020	12:00 PM	Unincorporated	Manatee	TAMIAMI TRL	73RD ST E	0		Other	2	0	0	0	N	N	N	$500	Clear	Daylight	Backed Into	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Other	N	Four-Way	U.S.	Unpaved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	500
8.8E+07	FHPF19OFF035290	FHP	7/11/2019	12:30 AM	Unincorporated	Manatee	UNITED STATES HIGHWAY 41	INTERSTATE 275	25	North	Rear End	2	0	0	1	Y	N	N	$14,000	Cloudy	Dark - Lighted	Rear End	S	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	2	0	14000
8.5E+07	FHPF16OFF002221	FHP	1/11/2016	7:20 AM	Palmetto	Manatee	US 41 (STATE ROAD 45)	73RD ST EAST	80	North	Rear End	2	0	0	1	N	N	N	$5,000	Clear	Daylight	Rear End	S	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	1	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	0	5000
8.7E+07	2017001091	Manatee Co SO	1/12/2017	8:45 AM	Unincorporated	Manatee	TAMIAMI TRL	S I-275	0		Rear End	2	0	0	0	N	N	N	$0	Clear	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction		Other	U.S.		Dry	None			N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	0
8.5E+07	FHPF15OFF044871	FHP	7/18/2015	10:24 AM	Palmetto	Manatee	US-41 (STATE ROAD 45)	73RD STREET EAST (69TH STREET E)	1584	South	Rear End	2	0	0	0	N	N	N	$5,000	Rain	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	2	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	5000
8.5E+07	FHPF15OFF072237	FHP	11/18/2015	12:00 PM	Palmetto	Manatee	US-41	I-275NB MM2	500	West	Rear End	2	0	0	0	N	N	N	$2,000	Clear	Daylight	Rear End	W	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	T-Intersec	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.5E+07	FHPF15OFF020785	FHP	4/1/2015	6:00 PM	Palmetto	Manatee	US-41 (STATE ROAD 45)	I-275 (STATE ROAD 93)	120	South	Rear End	2	0	0	0	N	Y	N	$2,500	Clear	Daylight	Rear End	E	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	Median	Entrance/Exit Ramp	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2500
8.8E+07	FHPF21OFF018064	FHP	4/16/2021	8:35 AM	Unincorporated	Manatee	US 41 (STATE ROAD 45)	85TH ST EAST	0		Right Turn	2	0	0	1	N	N	N	$3,600	Clear	Daylight	Right/Through	E	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	N	Four-Way	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	0	3600
8.8E+07	FHPF19OFF039535	FHP	8/4/2019	12:07 PM	Unincorporated	Manatee	US 41 (SR 45	69 ST E	10	South	Rear End	2	0	0	0	N	N	N	$1,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Four-Way	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1000
8.5E+07	FHPF15OFF012243	FHP	2/26/2015	2:05 PM	Palmetto	Manatee	U.S. 41	69TH ST E	0		Rear End	2	0	0	0	N	N	N	$2,000	Cloudy	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Four-Way	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	2000
8.5E+07	FHPF17OFF001879	FHP	1/8/2017	8:11 PM	Palmetto	Manatee	US 41 (STATE ROAD 45)	73RD STREET E	0		Angle	2	0	0	0	N	Y	N	$1,700	Clear	Dark - Not Lighted	Right Angle	NE	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	N	Four-Way	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	1700
8.8E+07	FHPF20OFF046776	FHP	10/29/2020	2:24 PM	Unincorporated	Manatee	US 41	69 ST E	150	South	Rear End	2	0	0	1	N	N	N	$8,000	Cloudy	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	0	0	8000
9E+07	2021001344	Manatee Co SO	1/15/2021	7:45 AM	Palmetto	Manatee	TAMIAMI TRL	N I-275	86	South	Sideswipe	3	0	0	1	N	Y	N	$12,000	Clear	Daylight	Same Direction Sideswipe	N	Injury	Y	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Other	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	1500	10500
885XXXXX	FHPXXXXXXXXXXX	FHP	6/27/2021	3:05 PM	Unincorporated	Manatee	US 41 (STATE ROAD 45)	69TH ST EAST	150	South	Rear End	2	0	0	0	N	N	N	$4,500	Rain	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4500
9E+07	2021-004970	Manatee Co SO	2/22/2021	10:21 PM	Palmetto	Manatee	TAMIAMI TRL	ORANGE GROVE BLVD	142	South	Off Road	1	0	0	0	N	N	N	$1,000	Rain	Dark - Not Lighted	Off Road	N	Property Damage Only	Y		Other Fixed Object	Off Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1000
8.5E+07	FHPF17OFF018984	FHP	3/21/2017	4:31 PM	Palmetto	Manatee	US 41 (SR 45)	INTERSTATE 275 (SR 93A)	800	South	Sideswipe	2	0	0	0	N	N	N	$1,500	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1500
8.5E+07	FHPF16OFF023803	FHP	4/8/2016	11:01 AM	Palmetto	Manatee	I 75 (STATE ROAD 93)	US 41 (STATE ROAD 45)	500	North	Off Road	2	0	0	2	N	N	N	$6,500	Clear	Daylight	Off Road	N	Injury	N	Other	Guardrail Face	Shoulder	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	2	0	0	0	C	0	$0	$0	0	0	500	6000
8.5E+07	FHPF18OFF060905	FHP	9/17/2018	8:57 AM	Unincorporated	Manatee	I-275 (SR 93)	US 19 (SR 55)	1320	East	Rear End	2	0	0	0	N	N	N	$2,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.8E+07	FHPF19OFF053172	FHP	10/23/2019	6:56 AM	Unincorporated	Manatee	I-275 (SR-93)	MM2	700	South	Sideswipe	2	0	0	0	N	N	N	$1,750	Clear	Dark - Lighted	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1750
8.8E+07	FHPF19OFF006915	FHP	2/6/2019	8:33 AM	Unincorporated	Manatee	I-275 (SR-93)	MM4	100	South	Other	1	0	0	1	N	N	N	$2,000	Clear	Daylight	Single Vehicle	N	Injury	N	Other	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	0	1000	1000
8.2E+07	FHPF16OFF026193	FHP	4/18/2016	9:40 AM	Palmetto	Manatee	I-275 (SR 93)	US 41 (SR 45)	2640	East	Rear End	2	0	0	1	N	N	N	$2,200	Clear	Daylight	Rear End	E	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	1	0	2200
8.5E+07	FHPF15OFF073187	FHP	11/22/2015	12:50 AM	Palmetto	Manatee	I-275 (STATE ROAD 93)	US-41 (STATE ROAD 45)	7920	North	Off Road	1	0	0	0	N	N	N	$4,000	Rain	Dark - Unknown Lighting	Off Road	S	Property Damage Only	N	Other	Concrete Traffic Barrier	Shoulder	Non-Junction	N	Not at Int	Interstate	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	3	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	4000
8.5E+07	FHPF15OFF041593	FHP	7/2/2015	7:00 PM	Palmetto	Manatee	I-275	U.S. 41	5280	North	Rear End	2	0	0	2	N	N	N	$20,600	Clear	Daylight	Rear End	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	2	0	0	0	C	0	$2	$0	0	1	600	20000
8.5E+07	FHPF16OFF045639	FHP	7/8/2016	8:40 AM	Palmetto	Manatee	I-275 (SR-93A)	US-41 (SR-45)	5280	West	Off Road	1	0	0	0	N	N	N	$7,500	Clear	Daylight	Off Road	W	Property Damage Only	N	Other	Guardrail Face	Shoulder	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	7500
8.8E+07	FHPF18OFF079799	FHP	12/10/2018	9:55 AM	Unincorporated	Manatee	I 275 (STATE ROAD 93)	US 41 (STATE ROAD 45)	2640	North	Rear End	2	0	0	1	N	N	N	$5,000	Clear	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	0	0	5000
8.7E+07	FHPF18OFF055415	FHP	8/23/2018	7:07 AM	Palmetto	Manatee	I-275 N	US 41	15840	North	Rear End	2	0	0	0	N	N	N	$2,000	Rain	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.7E+07	FHPF18OFF030601	FHP	5/5/2018	11:55 AM	Palmetto	Manatee	I 275 EXIT RAMP	US 41 (STATE ROAD 45)	80	East	Rear End	2	0	0	0	N	N	N	$5,000	Clear	Daylight	Rear End	W	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	N	Not at Int	Interstate	Unpaved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	5000
8.8E+07	FHPF19OFF035098	FHP	7/9/2019	5:55 PM	Unincorporated	Manatee	INTERSTATE 275 (STATE ROAD 93A)	US HIGHWAY 41 (STATE ROAD 45)	200	North	Rear End	2	0	0	0	N	N	N	$8,000	Rain	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	8000
8.7E+07	FHPF18OFF011423	FHP	2/17/2018	7:00 PM	Palmetto	Manatee	US-41 (STATE ROAD 45)	73ST E	150	West	Rear End	2	0	0	1	N	N	N	$200	Clear	Dark - Lighted	Rear End	E	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	4	0	0	0	0	0	0	1	0	A	0	$1	$0	0	0	0	200
8.8E+07	FHPF21OFF016431	FHP	4/7/2021	12:40 PM	Unincorporated	Manatee	73RD ST E	US-41 (SR-45)	20	West	Rear End	2	0	0	1	N	N	N	$5,000	Clear	Daylight	Rear End	E	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Local	Unpaved	Dry	None	None	N	N	0	0	1	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	0	5000
8.7E+07	FHPF18OFF043475	FHP	6/30/2018	12:20 PM	Palmetto	Manatee	I 275 EXIT RAMP	US 41 (STATE ROAD 45)	30	West	Rear End	3	0	0	4	N	N	N	$6,500	Rain	Daylight	Rear End	E	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Unpaved	Wet	None	None	N	N	0	0	6	0	0	0	0	4	0	0	0	C	0	$0	$0	0	1	0	6500
8.6E+07	FHPF17OFF038934	FHP	6/8/2017	3:35 PM	Palmetto	Manatee	US 41 (SR 45)	INTERSTATE 275 (SR 93A)	0		Left Turn	2	0	0	0	N	N	N	$6,000	Clear	Daylight	Left Entering	N	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Way	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	6000
8.5E+07	FHPF15OFF050805	FHP	8/14/2015	8:23 AM	Palmetto	Manatee	US 41	STATE ROAD 93 (I-275)	100	North	Left Turn	2	0	0	2	N	N	N	$5,000	Cloudy	Daylight	Left Rear	W	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection	Y	Other	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	2	0	A	0	$2	$0	0	1	0	5000
8.3E+07	FHPF16OFF085772	FHP	12/29/2016	8:28 AM	Palmetto	Manatee	SR-45	SR 93A	0		Angle	2	0	0	0	N	N	N	$4,000	Cloudy	Daylight	Right Angle	SE	Property Damage Only	N	Other	Motor Vehicle in Transport	On Roadway	Intersection	Y	Other	State	Curb	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4000
8.8E+07	FHPF20OFF036941	FHP	8/31/2020	6:20 AM	Unincorporated	Manatee	US 41 (STATE RIAD 45)	I 275 (STATE ROAD 93)	100	North	Rear End	2	0	0	1	N	N	N	$5,100	Clear	Dawn	Rear End	S	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	0	5100
8.8E+07	FHPF20OFF023684	FHP	6/6/2020	3:04 PM	Unincorporated	Manatee	US-41 (SR-45)	73RD STREET EAST	50	North	Unknown	3	0	0	1	N	N	N	$3,600	Cloudy	Daylight	Unknown		Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Paved	Wet	None	None	N	N	0	0	3	0	0	0	0	0	1	0	0	B	0	$0	$0	0	2	0	3600
8.7E+07	FHPF18OFF019407	FHP	3/20/2018	8:28 PM	Palmetto	Manatee	US HIGHWAY 41 (STATE ROAD 45)	73RD STREET EAST	50	North	Rear End	2	0	0	0	Y	N	N	$6,000	Cloudy	Dark - Lighted	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	State	Paved	Wet	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	O	0	$0	$0	0	4	0	6000

8.8E+07	FHPF20OFF045762	FHP	10/23/2020	7:10 PM	Unincorporated	Manatee	US-41 (SR-45)	I-275 (SR-93A) MM2 ENTRANCE RAMP	0		Left Turn	2	0	0	3	N	Y	N	$15,000	Clear	Dark - Lighted	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	1	0	2	0	A	0	$2	$0	0	1	0	15000
8.5E+07	FHPF16OFF078199	FHP	11/26/2016	11:16 AM	Palmetto	Manatee	US HIGHWAY 41 (STATE ROAD 45)	73RD STREET EAST	20	North	Rear End	2	0	0	0	N	N	N	$200	Cloudy	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	200
8.8E+07	FHPF20OFF00064	FHP	7/21/2020	10:37 AM	Unincorporated	Manatee	US-41 N (SR 45)	69TH ST E	40	South	Sideswipe	2	0	0	0	N	N	N	$13,500	Clear	Daylight	Same Direction Sideswipe	W	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	13500
8.7E+07	FHPF18OFF047378	FHP	7/18/2018	1:33 PM	Palmetto	Manatee	US 41 (STATE ROAD 45)	I-275 (STATE ROAD 93)	800	North	Rear End	2	0	0	0	N	N	N	$2,300	Clear	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	1800	500
8.8E+07	FHPF20OFF032044	FHP	7/31/2020	9:29 AM	Unincorporated	Manatee	US 41	I 275	2640	North	Rear End	2	0	0	0	N	Y	N	$1,500	Clear	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1500
8.6E+07	FHPF17OFF039480	FHP	6/10/2017	11:55 PM	Bradenton	Manatee	US 41 (SR 45)	69TH STREET WEST	1320	North	Sideswipe	2	0	0	0	N	N	N	$1,500	Cloudy	Dark - Lighted	Same Direction Sideswipe	S	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Curb	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1500
8.7E+07	FHPF18OFF020100	FHP	3/23/2018	3:51 PM	Unincorporated	Manatee	US 41 (SR 45)	I 75 (SR 75)	100	South	Other	2	0	0	0	N	N	N	$500	Clear	Daylight	Other	N	Property Damage Only	N	Other	Other Non-Collision	On Roadway	Intersection-Related	Y	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	2	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	500
8.7E+07	FHPF18OFF052985	FHP	8/12/2018	12:00 PM	Palmetto	Manatee	US 41 (SR 45	I 275 (SR 93)	100	South	Rear End	2	0	0	3	N	N	N	$13,000	Clear	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	4	0	0	0	0	0	0	1	0	2	0	A	0	$2	$0	0	1	0	13000
8.5E+07	FHPF15OFF049598	FHP	8/8/2015	3:12 PM	Palmetto	Manatee	US-41	69TH ST E	20	South	Rear End	2	0	0	0	N	N	N	$5,000	Rain	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	5000
8.5E+07	FHPF16OFF008931	FHP	2/9/2016	8:05 AM	Palmetto	Manatee	US-41 (SR-45)	I-275	100	North	Sideswipe	2	0	0	0	N	N	N	$5,020	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	5020
8.7E+07	FHPF18OFF035322	FHP	5/25/2018	2:25 PM	Palmetto	Manatee	US-41 (SR 45)	69TH ST E	0		Left Turn	2	0	0	4	N	N	N	$26,000	Cloudy	Daylight	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	N	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	0	1	2	2	0	0	B	0	$2	$0	0	1	0	26000
8.8E+07	FHPF19OFF017058	FHP	3/31/2019	7:22 AM	Unincorporated	Manatee	US HIGHWAY 41	INTERSTATE 275 NB EXIT RAMP	0		Left Turn	2	0	0	4	N	Y	N	$10,000	Clear	Daylight	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	4	0	0	0	C	0	$0	$0	0	1	0	10000
8.8E+07	FHPF20OFF023392	FHP	6/4/2020	7:43 PM	Unincorporated	Manatee	US-41 NORTH (STATE ROAD 45)	COUNTY ROAD 10 (69TH STREET EAST)	100	South	Rear End	2	0	0	0	N	Y	N	$725	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	725
8.7E+07	2017-002139	Manatee Co SO	1/22/2017	7:51 PM	Unincorporated	Manatee	US-41 N	69TH ST E	285	North	Rear End	2	0	0	0	N	N	N	$0	Rain	Dark - Lighted	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction		Not at Int	County		Wet	Road Surface Condition			N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	0
8.8E+07	FHPF20OFF047089	FHP	10/31/2020	11:55 AM	Unincorporated	Manatee	69TH ST EAST	US 41 (STATE ROAD 45)	0		Left Turn	2	0	0	0	N	N	N	$4,000	Cloudy	Daylight	Left Entering	W	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	N	Four-Wav	Local	Unpaved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4000
8.6E+07	FHPF17OFF063483	FHP	9/19/2017	3:17 PM	Palmetto	Manatee	US-41 (SR 45)	I 275 (SR 93)	1320	South	Rear End	2	0	0	2	N	N	N	$10,000	Clear	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Railway Grade Crossing	N	Not at Int	State	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	2	0	0	0	C	0	$0	$0	0	1	0	10000
8.8E+07	FHPF19OFF040500	FHP	8/9/2019	4:00 PM	Unincorporated	Manatee	US-41(SR45)	I275(SR93)	300	North	Sideswipe	2	0	0	0	N	N	N	$1,500	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Through Roadway	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1500
8.8E+07	FHPF20OFF014085	FHP	3/22/2020	9:51 AM	Unincorporated	Manatee	US-41 (SR-55)	I-275 (SR-93)	0		Rollover	1	0	0	1	N	N	N	$10,000	Clear	Daylight	Rollover	S	Injury	N	Other	Overturn/Rollover	On Roadway	Entrance/Exit Ramp	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	1	0	0	B	0	$0	$0	0	1	0	10000
8.5E+07	FHPF15OFF002494	FHP	1/13/2015	8:16 AM	Palmetto	Manatee	US 41 (STATE ROAD 45)	69TH STREET EAST	250	North	Rear End	2	0	0	1	N	N	N	$17,500	Clear	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	1	0	0	B	0	$1	$0	0	1	0	17500
884XXXXX	FHPXXXXXXXXXXX	FHP	6/2/2021	11:14 AM	Unincorporated	Manatee	I 275 NORTHBOUND EXIT RAMP	US 41 (STATE ROAD 45)	30	East	Rear End	2	0	0	0	N	N	N	$4,000	Clear	Daylight	Rear End	W	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4000
8.8E+07	FHPF20OFF056229	FHP	12/26/2020	3:15 PM	Unincorporated	Manatee	I-275 (SR-93)	US-41 (SR-43)	50	East	Rear End	2	0	0	0	N	N	N	$200	Clear	Daylight	Rear End	W	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	200
8.4E+07	2015011236	Manatee Co SO	4/10/2015	7:05 PM	Unincorporated	Manatee	ON RAMP TO I 75 SOUTH	US 41 NORTH	0	North	Rollover	1	0	0	1	N	N	N	$8,000	Clear	Daylight	Rollover	N	Injury	N	Other	Overturn/Rollover	Unknown	Non-Junction	N	Other	Interstate	Paved	Dry	Other	Other	N	N	0	0	0	0	0	0	0	0	0	0	1	0	0	B	0	$0	$0	0	0	0	8000
8.8E+07	FHPF18OFF078792	FHP	12/6/2018	11:24 AM	Unincorporated	Manatee	SR-93	US-41 (SR 45)	200	South	Rollover	1	0	0	1	N	N	N	$2,500	Clear	Daylight	Rollover	S	Injury	N	Other	Overturn/Rollover	Gore	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	0	0	2500
8.7E+07	FHPF17OFF069748	FHP	10/16/2017	6:47 AM	Palmetto	Manatee	I-275 NB (SR 93) EXIT RAMP	US 41 (SR 45)	20	East	Rear End	3	0	0	1	N	N	N	$9,500	Cloudy	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	1	0	9500
8.5E+07	FHPF15OFF030503	FHP	5/14/2015	7:06 AM	Palmetto	Manatee	I-275 / SR-93 SOUTHBOUND ENTRANCE RAMP	US-41 / SR-45	1041	East	Rear End	2	0	0	0	N	N	N	$2,000	Clear	Dawn	Rear End	E	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Unpaved	Dry	None	Glare	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	3	0	2000
8.5E+07	FHPF16OFF030057	FHP	5/4/2016	12:54 PM	Palmetto	Manatee	I-275 (SR 93) MM3	US 41 (SR 45)	7920	West	Off Road	1	0	0	0	N	N	N	$10,000	Rain	Daylight	Off Road	E	Property Damage Only	N	Other	Concrete Traffic Barrier	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	10000
8.8E+07	FHPF18OFF084272	FHP	12/30/2018	2:40 AM	Unincorporated	Manatee	INTERSTATE 275 (STATE ROAD 93)	MM2	2640	West	Off Road	1	0	0	0	N	N	N	$15,000	Clear	Dark - Lighted	Off Road	N	Property Damage Only	N	Other	Guardrail Face	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	5000	10000
8.8E+07	FHPF21OFF011280	FHP	3/9/2021	6:50 PM	Unincorporated	Manatee	I-275 (SR-93A)	MM2	0		Other	1	0	0	0	N	N	N	$1,000	Clear	Dark - Not Lighted	Single Vehicle	E	Property Damage Only	N	Other	Other Non-Fixed Object	On Roadway	Through Roadway	N	Not at Int	Interstate	Paved	Dry	Obstruction in Roadway	Physical Obstruction(s)	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1000
8.8E+07	FHPF20OFF038888	FHP	9/11/2020	12:30 PM	Unincorporated	Manatee	INTERSTATE 275	US 41 (SR-45)	800	West	Sideswipe	2	0	0	0	N	N	N	$2,000	Cloudy	Daylight	Same Direction Sideswipe	S	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	Gore	Non-Junction	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	2000
8.7E+07	FHPF17OFF079011	FHP	11/22/2017	10:19 PM	Palmetto	Manatee	I-275 (SR 93)	US 41 (SR 45)	15840	North	Rear End	3	0	0	0	N	N	N	$14,500	Clear	Dark - Lighted	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	14500
8.5E+07	FHPF16OFF077404	FHP	11/22/2016	11:27 PM	Palmetto	Manatee	INTERSTATE 275 (STATE ROAD 93A)	US 41 (STATE ROAD 45A)	5280	North	Animal	1	0	0	0	N	N	N	$4,000	Clear	Dark - Not Lighted	Animal	N	Property Damage Only	N	Other	Animal	On Roadway	Non-Junction	N	Not at Int	Interstate	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	4000
8.6E+07	FHPF17OFF080017	FHP	11/27/2017	11:57 AM	Palmetto	Manatee	INTERSTATE 275 (STATE ROAD 93A)	US HIGHWAY 41 (STATE ROAD 45)	2640	North	Sideswipe	2	0	0	0	N	N	N	$2,300	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2300
8.5E+07	FHPF16OFF045051	FHP	7/5/2016	4:30 PM	Palmetto	Manatee	I275 (STATE ROAD 93)	US 41 (STATE ROAD 45)	1584	South	Other	1	0	0	1	N	N	N	$6,000	Clear	Daylight	Single Vehicle	N	Injury	N	Other	Other Non-Fixed Object	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	0	1000	5000
8.6E+07	FHPF17OFF067488	FHP	10/6/2017	4:19 PM	Palmetto	Manatee	I-275 (SR 93)	US 41 (SR 45)	200	North	Off Road	1	0	0	0	N	N	N	$5,500	Clear	Daylight	Off Road	N	Property Damage Only	N	Other	Cable Barrier	Off Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	5500
8.7E+07	FHPF18OFF056682	FHP	8/28/2018	6:44 PM	Palmetto	Manatee	INTERSTATE 275	US HIGHWAY 41 (STATE ROAD 45)	2640	West	Other	1	0	0	1	N	N	N	$2,000	Rain	Daylight	Single Vehicle	E	Injury	N	Other	Other Non-Collision	Off Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	0	0	2000
8.8E+07	FHPF19OFF059834	FHP	11/30/2019	10:22 AM	Unincorporated	Manatee	I-275 (SR-93)	US-41 (SR-45)	500	West	Off Road	1	0	0	1	N	N	N	$8,500	Clear	Daylight	Off Road	E	Injury	N	Other	Ditch	Off Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	1	0	0	B	0	$0	$0	0	0	1000	7500
8.6E+07	FHPF17OFF069658	FHP	10/15/2017	6:23 PM	Palmetto	Manatee	INTERSTATE 275 (STATE ROAD 93A)	US HIGHWAY 41 (STATE ROAD 45)	10560	North	Other	1	0	0	1	N	N	N	$8,500	Rain	Daylight	Single Vehicle	N	Injury	N	Other	Other Non-Collision	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	0	500	8000
8.6E+07	FHPF17OFF069640	FHP	10/15/2017	5:55 AM	Palmetto	Manatee	INTERSTATE 275 (STATE ROAD 93A)	US HIGHWAY 41 (STATE ROAD 45)	10560	North	Other	2	0	0	3	N	N	N	$16,500	Rain	Daylight	Other	N	Injury	N	Angle	Other Non-Collision	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Wet	None	None	N	N	0	0	1	0	0	0	0	0	0	3	0	0	0	C	0	$0	$0	0	0	500	16000
8.7E+07	FHPF18OFF021526	FHP	3/29/2018	6:13 AM	Palmetto	Manatee	I-275 (SR 93)	US 41 (SR 45)	1056	South	Sideswipe	2	0	0	0	N	N	N	$3,500	Clear	Dawn	Same Direction Sideswipe	S	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	Y	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	3500
8.6E+07	FHPF17OFF045268	FHP	7/4/2017	9:40 PM	Palmetto	Manatee	I 275 (STATE ROAD 93)	US 41 (STATE ROAD 45)	10560	North	Sideswipe	2	0	0	2	N	N	Y	$6,500	Clear	Dark - Not Lighted	Same Direction Sideswipe	S	Injury	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	0	0	1	0	1	0	A	0	$2	$0	0	4	0	6500
8.5E+07	FHPF15OFF035115	FHP	6/3/2015	8:30 AM	Palmetto	Manatee	I-275	U.S. 41	1320	North	Other	2	0	0	0	N	N	N	$1,200	Clear	Daylight	Other	S	Property Damage Only	N	Other	Struck by Falling, Shifting Cargo	On Roadway	Entrance/Exit Ramp	Y	Not at Int	Interstate	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1200
8.5E+07	FHPF17OFF000591	FHP	1/3/2017	4:10 PM	Palmetto	Manatee	I275 (STATE ROAD 93) EXIT RAMP	US 41 (STATE ROAD 45)	75	South	Rear End	2	0	0	0	N	N	N	$6,500	Cloudy	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	6500
8.9E+07	2019013609	Manatee Co SO	5/17/2019	4:00 PM	Unincorporated	Manatee	S TAMIAMI TRL		0		Rear End	2	0	0	0	N	N	N	$0	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	In Parking Lane or Zone	Non-Junction	N	Not at Int	Parking Lo	Unpaved	Dry	Other	None	N	N	0	0	2	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	0
8.8E+07	FHPF20OFF035130	FHP	8/19/2020	7:53 AM	Unincorporated	Manatee	US-41 (SR 45)	ENTRANCE RAMP NB 275 (SR 93)	0		Left Turn	2	0	0	1	N	N	N	$23,000	Cloudy	Daylight	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Unpaved	Wet	None	Weather Conditions	N	N	0	0	0	0	0	0	0	0	0	0	1	0	0	B	0	$1	$0	0	1	7500	15500
8.8E+07	FHPF21OFF006233	FHP	2/9/2021	12:45 PM	Unincorporated	Manatee	US-41	INTERSTATE 275	250	North	Rear End	2	0	0	0	N	N	N	$3,000	Cloudy	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	3000
8.7E+07	FHPF18OFF032504	FHP	5/13/2018	2:18 PM	Palmetto	Manatee	US 41 (SR 45)	73RD ST E	0		Left Turn	2	0	0	5	N	Y	N	$16,000	Cloudy	Daylight	Left Entering	S	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	N	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	5	0	0	0	C	0	$0	$0	0	1	0	16000
8.8E+07	FHPF20OFF009722	FHP	2/24/2020	5:10 PM	Unincorporated	Manatee	US-41 (SR-45)	73RD ST E	150	North	Rear End	3	0	0	2	N	N	N	$5,000	Clear	Daylight	Rear End	S	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Curb	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	2	0	0	B	0	$0	$0	0	0	0	5000
8.5E+07	FHPF16OFF019170	FHP	3/20/2016	5:40 PM	Palmetto	Manatee	US-41 (SR-45) I-275(SR-93)	I-275 (SR-93)	500	North	Rear End	2	0	0	0	N	N	N	$4,800	Cloudy	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	3	0	4800
8.5E+07	FHPF16OFF003639	FHP	1/17/2016	12:20 PM	Palmetto	Manatee	US 41 (STATE ROAD 45)	I-275 NB EXIT RAMP	0		Rear End	2	0	0	0	N	N	N	$150	Clear	Daylight	Rear End	W	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Other	U.S.	Paved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	150
8.7E+07	FHPF18OFF048708	FHP	7/24/2018	1:53 PM	Palmetto	Manatee	US-41 (SR 45)	I 275 (SR 93)	600	South	Left Turn	2	0	0	0	N	N	N	$1,250	Clear	Daylight	Left Leaving	E	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1250
8.5E+07	FHPF16OFF060688	FHP	9/11/2016	12:00 PM	Palmetto	Manatee	I-275 SB EXIT RAMP MM2	US 41 (STATE ROAD 45)	0		Rear End	2	0	0	0	N	Y	N	$1,000	Clear	Daylight	Rear End	E	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	Interstate	Unpaved	Dry	None	None	N	N	0	0	4	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	1000
8.8E+07	FHPF20OFF053555	FHP	12/10/2020	8:02 AM	Unincorporated	Manatee	US-41 (SR-45)	CR-10 (69TH ST E)	250	South	Rear End	2	0	0	0	N	N	N	$3,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	3000
8.8E+07	FHPF18OFF077524	FHP	11/30/2018	1:45 PM	Unincorporated	Manatee	US 41 (STATE ROAD 45)	69TH ST E	30	South	Rear End	2	0	0	1	N	N	N	$4,000	Clear	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	2	1	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	2	0	4000
8.4E+07	2015006373	Manatee Co SO	2/27/2015	7:00 PM	Unincorporated	Manatee	US 41 N		0		Rear End	2	0	0	0	N	N	N	$10,000	Clear	Dusk	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	N	Not at Int	U.S.	Paved	Dry	Obstruction in Roadway	Physical Obstruction(s)	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	10000
8.8E+07	FHPF19OFF006705	FHP	2/5/2019	6:07 AM	Unincorporated	Manatee	US-41 (SR-45)	69TH STREET E	40	South	Rear End	2	0	0	1	N	N	N	$7,500	Cloudy	Dark - Lighted	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	1	0	7500
8.8E+07	FHPF20OFF024139	FHP	6/9/2020	2:04 PM	Unincorporated	Manatee	US-41 (SR-45)	I-275 (SR-93)	50	North	Sideswipe	2	0	0	0	N	N	N	$2,000	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Crossover-Related	Y	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.5E+07	FHPF16OFF076815	FHP	11/20/2016	2:30 PM	Bradenton	Manatee	US 41 (SR 45)	73RD STREET EAST	0		Pedestrian	1	1	0	1	N	N	N	$0	Clear	Daylight	Pedestrian	E	Injury	N	Other	Pedestrian	On Roadway	Intersection	N	Four-Wav	State	Unpaved	Dry	None	None	N	N	0	0	0	0	1	0	1	0	0	0	1	0	0	B	0	$1	$0	0	0	0	0
8.5E+07	FHPF15OFF067882	FHP	10/30/2015	7:00 PM	Palmetto	Manatee	US-41	I-275NB MM5	0		Left Turn	2	0	0	2	N	N	N	$8,000	Clear	Dark - Lighted	Left Leaving	W	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection-Related	Y	T-Intersec	U.S.	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	0	0	2	0	0	0	C	0	$2	$0	0	1	0	8000
8.7E+07	FHPF18OFF044148	FHP	7/3/2018	1:00 PM	Palmetto	Manatee	US-41 SR 45	69TH ST E	25	South	Sideswipe	2	0	0	0	N	N	N	$4,000	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	4000
8.5E+07	FHPF15OFF012241	FHP	2/26/2015	1:40 PM	Palmetto	Manatee	U.S. 41	69TH ST E	0		Rear End	2	0	0	1	N	N	N	$4,400	Cloudy	Daylight	Rear End	N	Injury	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Four-Wav	U.S.	Unpaved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	2	0	4400
8.5E+07	FHPF15OFF010605	FHP	2/19/2015	3:01 PM	Palmetto	Manatee	US-41 / SR-45	CR-10 / 69TH ST E	20	South	Rear End	2	0	0	0	N	N	N	$2,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	3	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.7E+07	FHPF17OFF084919	FHP	12/17/2017	10:05 AM	Palmetto	Manatee	US 41 (SR 45)	I-275 (SR 93) EXIT RAMP	0		Left Turn	2	0	0	1	N	N	N	$6,800	Cloudy	Daylight	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	1	0	0	0	C	0	$0	$0	0	1	0	6800
9E+07	2020-018737	Manatee Co SO	7/25/2020	2:20 PM	Unincorporated	Manatee	TAMIAMI TRL	69TH ST E	356	South	Rear End	2	0	0	0	N	N	N	$5,100	Cloudy	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Through Roadway	N	Not at Int	Local	Paved	Dry	None	None	N	N	0	0	2	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	5100
8.7E+07	2017-024142	Manatee Co SO	8/26/2017	12:15 AM	Unincorporated	Manatee	US 41 N	73RD ST E	15	South	Rear End	2	0	0	0	N	N	N	$3,000	Rain	Dark - Not Lighted	Rear End		Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Intersection-Related	N	Four-Wav	U.S.	Unpaved	Wet	Road Surface Condition	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	3000
8.8E+07	FHPF18OFF064717	FHP	10/3/2018	5:25 PM	Unincorporated	Manatee	US-41 (SR-45)	I-275	0		Left Turn	2	0	0	1	N	N	N	$20,000	Clear	Daylight	Left Entering	N	Injury	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	1	0	A	0	$1	$0	0	0	0	20000
8.5E+07	FHPF15OFF076510	FHP	12/6/2015	2:46 PM	Palmetto	Manatee	US 45 (SR 45)	69TH ST E	50	South	Rear End	2	0	0	0	N	N	N	$3,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Unpaved	Dry	None	None	N	N	0	0	4	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	3000
8.8E+07	FHPF19OFF054106	FHP	10/28/2019	2:30 PM	Unincorporated	Manatee	US-41 (SR-45)	69TH ST E	300	South	Rear End	2	0	0	0	N	N	N	$1,000	Clear	Daylight	Rear End	N	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1000
8.8E+07	2018-007219	Manatee Co SO	3/15/2018	1:30 PM	Unincorporated	Manatee	US 41 B	69TH ST	700	South	Rear End	2	0	0	0	N	N	N	$5,000	Clear	Daylight	Rear End	S	Property Damage Only	N	Front to Rear	Motor Vehicle in Transport	On Roadway	Railway Grade Crossing	N	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	5000
8.8E+07	FHPF19OFF039240	FHP	8/2/2019	4:35 PM	Unincorporated	Manatee	UNITED STATES 41 (STATE ROAD 45)	INTERSTATE 275	100	South	Left Turn	2	0	0	0	N	N	N	$18,000	Rain	Daylight	Left Entering	N	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Intersection	Y	Four-Wav	U.S.	Paved	Wet	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	18000
8.8E+07	FHPF20OFF045281	FHP	10/21/2020	7:20 AM	Unincorporated	Manatee	US-41 (SR-45)	I-275 (SR-93)	400	South	Left Turn	2	0	0	0	N	N	N	$5,500	Clear	Dawn	Left Entering	S	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Entrance/Exit Ramp	Y	Not at Int	U.S.	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	5500
8.8E+07	FHPF19OFF052540	FHP	10/19/2019	10:00 AM	Unincorporated	Manatee	US-41 (STATE ROAD 45)	I-275 (STATE ROAD 93)	528	South	Off Road	1	0	0	0	N	N	N	$3,000	Rain	Daylight	Off Road	N	Property Damage Only	N	Other	Guardrail End	Shoulder	Entrance/Exit Ramp	Y	Not at Int	U.S.	Paved	Wet	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	2000	1000
8.5E+07	FMRC15OFF000466	FHP	9/18/2015	4:10 PM	Palmetto	Manatee	I275 NB	EXIT 2	200	East	Sideswipe	2	0	0	0	N	N	N	$2,000	Clear	Daylight	Same Direction Sideswipe	N	Property Damage Only	N	Sideswipe, Same Direction	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2000
8.8E+07	FHPF21OFF007384	FHP	2/15/2021	3:51 PM	Unincorporated	Manatee	I-275 (SR-93)	MM2	500	West	Sideswipe	2	0	0	0	N	N	N	$2,500	Clear	Daylight	Same Direction Sideswipe	E	Property Damage Only	N	Angle	Motor Vehicle in Transport	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	0	2500
8.5E+07	FHPF16OFF033279	FHP	5/17/2016	6:44 PM	Palmetto	Manatee	I-275 (STATE ROAD 93) SB MM 2	US 41 (STATE ROAD 45)	5280	West	Off Road	2	0	0	0	N	N	N	$10,000	Rain	Daylight	Off Road	E	Property Damage Only	N	Other	Concrete Traffic Barrier	Shoulder	Non-Junction	N	Not at Int	Interstate	Paved	Wet	Road Surface Condition	Weather Conditions	N	N	0	0	1	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	2	0	10000
8.7E+07	FHPF18OFF009292	FHP	2/9/2018	5:21 PM	Palmetto	Manatee	INTERSTATE 275 (STATE ROAD 93)	US-19 (STATE ROAD 55)	2640	South	Off Road	1	0	0	0	N	N	N	$22,000	Clear	Daylight	Off Road	N	Property Damage Only	N	Other	Cable Barrier	Median	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	1	2000	20000
8.8E+07	FHPF20OFF044183	FHP	10/13/2020	6:55 PM	Unincorporated	Manatee	INTERSTATE 275 (STATE ROAD 93)	US 41 (STATE ROAD 45)	1320	East	Other	1	0	0	0	N	N	N	$1,000	Clear	Dusk	Single Vehicle	W	Property Damage Only	N	Other	Other Non-Collision	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1000
8.6E+07	FHPF17OFF063940	FHP	9/21/2017	3:20 PM	Palmetto	Manatee	I-275 SB (SR 93A)	US-41 (SR-45)	5280	East	Off Road	1	0	0	0	N	N	N	$1,000	Clear	Daylight	Off Road	N	Property Damage Only	N	Other	Other Fixed Object	On Roadway	Non-Junction	N	Not at Int	Interstate	Paved	Dry	None	None	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	$0	$0	0	0	0	1000

CARS Data

Crash Number	ID / 10	S4 vs Cars	Location Mile Post	Roadway Id	Crash Date	Crash Year	On Road	Intersecting Road	First Harmful Event	Manner Of Collision	Light Condition	Weather Condition	Surface Condition	Junction	Site Location	Alcohol Drugs Involvement	Number of Fatalities	Number of Injured	Total Crash Damage Amount	Crash Status
851974200	85197420	#N/A	4.766	13030000	10/14/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Driveway/Alley Access Related	Driveway Access	No		1	500	Q/C Completed - Loc Verified
872148070	87214807	#N/A	4.785	13030000	5/30/2018	2018	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Intersection-Related	Influenced By Intersection	No			500	Q/C Completed - Loc Verified
848605670	84860567	#N/A	4.789	13030000	4/8/2015	2015	69TH ST E	US 41	Culvert	Other (See Narrative)	Dark-Not Lighted	Clear	Dry	Non-Junction	Influenced By Intersection	No				Q/C Completed - Loc Verified
885056540	88505654	#N/A	4.941	13030000	6/20/2021	2021	US 41	73RD ST E/ERIE RD	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	800	Q/C Completed - Loc Verified
868221200	86822120	#N/A	4.952	13030000	6/17/2017	2017	US 41	I 275	Motor Vehicle In Transport	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
882202970	88220297	#N/A	5.091	13030000	2/17/2020	2020	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No	1	1		Q/C Completed - Loc Verified
854996590	85499659	#N/A	5.107	13030000	4/22/2017	2017	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
855385090	85538509	#N/A	5.116	13030000	6/6/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Rain	Wet	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No		2		Q/C Completed - Loc Verified
849031220	84903122	#N/A	5.378	13030000	5/2/2015	2015	US 41	I 275	Motor Vehicle In Transport	Other (See Narrative)	Daylight	Clear	Dry	Intersection	Not At Intersection/Rrx/Bridge	No			300	Q/C Completed - Loc Verified
859036390	85903639	#N/A	5.556	13030000	9/20/2016	2016	US 41	ROCK PAYNE RD	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	At Intersection	No		1		Q/C Completed - Loc Verified
839574850	83957485	#N/A	5.561	13030000	2/25/2015	2015	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		1		Q/C Completed - Loc Verified
845683990	84568399	#N/A	5.561	13030000	2/12/2015	2015	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Non-Junction	At Intersection	No				Q/C Completed - Loc Verified
851403120	85140312	#N/A	5.561	13030000	6/29/2015	2015	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
852806210	85280621	#N/A	5.561	13030000	3/7/2016	2016	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
852995760	85299576	#N/A	5.561	13030000	5/8/2016	2016	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
863379890	86337989	#N/A	5.561	13030000	1/27/2016	2016	US 41	85 ST E	Motor Vehicle In Transport	Other (See Narrative)	Dark-Lighted	Rain	Wet	Intersection-Related	At Intersection	No			904	Q/C Completed - Loc Verified
854847170	85484717	#N/A	5.561	13030000	3/8/2017	2017	85 ST E	US 41	Other Fixed Object (Wall, Buil	Other (See Narrative)	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No			600	Q/C Completed - Loc Verified
871823750	87182375	#N/A	5.561	13030000	4/4/2018	2018	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		3		Q/C Completed - Loc Verified
871861430	87186143	#N/A	5.561	13030000	3/23/2018	2018	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		3		Q/C Completed - Loc Verified
880146400	88014640	#N/A	5.561	13030000	10/14/2018	2018	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	Driveway Access	No				Q/C Completed - Loc Verified
881515140	88151514	#N/A	5.561	13030000	7/6/2019	2019	US 41	85 ST E/ROCK PAYNE	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		2		Q/C Completed - Loc Verified
882015360	88201536	#N/A	5.561	13030000	9/21/2019	2019	US 41	85 ST E/ROCK PAYNE	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		1	250	Q/C Completed - Loc Verified
886133460	88613346	#N/A	5.561	13030000	11/22/2019	2019	US 41	85 ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		1		Q/C Completed - Loc Verified
884643770	88464377	88464377	4.789	13030000	2/28/2021	2021	73RD ST	US 41	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		2	500	Q/C Completed - Loc Verified
884462570	88446257	88446257	5.108	13030000	1/31/2021	2021	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		1	250	Q/C Completed - Loc Verified
884375160	88437516	88437516	5.315	13030000	12/19/2020	2020	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Intersection	At Intersection	Alc	1			Q/C Completed - Loc Verified
884338780	88433878	88433878	4.789	13030000	12/31/2020	2020	US 41	73RD ST	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		3		Q/C Completed - Loc Verified
883850700	88385070	88385070	5.282	13030000	10/23/2020	2020	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Intersection	At Intersection	No		3		Q/C Completed - Loc Verified
883812490	88381249	88381249	5.047	13030000	9/14/2020	2020	I 275	SR 45	Traffic Sign Support	Other (See Narrative)	Dark-Not Lighted	Cloudy	Wet	Non-Junction	Entrance Ramp	No			700	Q/C Completed - Loc Verified
883812260	88381226	88381226	5.087	13030000	8/19/2020	2020	US 41	SR 93	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Wet	Intersection	At Intersection	No		1		Q/C Completed - Loc Verified
883532380	88353238	88353238	4.789	13030000	6/28/2020	2020	US 41	73RD ST E/ERIE RD	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		2	500	Q/C Completed - Loc Verified
882631960	88263196	88263196	4.804	13030000	12/18/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No			450	Q/C Completed - Loc Verified
882537960	88253796	88253796	5.108	13030000	1/15/2020	2020	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No		2	150	Q/C Completed - Loc Verified
882414140	88241414	88241414	5.108	13030000	11/30/2019	2019	I 275	US 41	Ditch	Other (See Narrative)	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No		1	500	Q/C Completed - Loc Verified
882394330	88239433	88239433	5.336	13030000	11/7/2019	2019	US 41	I 275	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			200	Q/C Completed - Loc Verified
882015560	88201556	88201556	5.221	13030000	10/19/2019	2019	US 41	I 275	Guardrail End	Other (See Narrative)	Daylight	Rain	Wet	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
881947140	88194714	88194714	5.378	13030000	8/9/2019	2019	US 41	I 275	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Clear	Dry	Through Roadway	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
881732810	88173281	88173281	4.77	13030000	8/16/2019	2019	US 41	ERIE RD	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
881643330	88164333	88164333	5.218	13030000	7/11/2019	2019	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Cloudy	Dry	Intersection-Related	Not At Intersection/Rrx/Bridge	Alc		1		Q/C Completed - Loc Verified
881568120	88156812	88156812	4.787	13030000	12/30/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	Influenced By Intersection	No				Q/C Completed - Loc Verified
881568050	88156805	88156805	4.781	13030000	12/6/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Dark-Not Lighted	Clear	Dry	Intersection-Related	Influenced By Intersection	No				Q/C Completed - Loc Verified
881567790	88156779	88156779	5.323	13030000	8/31/2019	2019	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No				Q/C Completed - Loc Verified
881523180	88152318	88152318	4.789	13030000	6/29/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
881261800	88126180	88126180	4.855	13030000	4/17/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
881209900	88120990	88120990	5.321	13030000	5/24/2019	2019	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Intersection	At Intersection	No		1		Q/C Completed - Loc Verified
881103520	88110352	88110352	5.047	13030000	7/9/2019	2019	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Entrance/Exit Ramp	Entrance Ramp	No				Q/C Completed - Loc Verified
881065230	88106523	88106523	5.321	13030000	3/31/2019	2019	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		4		Q/C Completed - Loc Verified
881049440	88104944	88104944	4.789	13030000	3/17/2019	2019	US 41	69TH ST E	Overturn/Rollover	Other (See Narrative)	Dark-Not Lighted	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
880996120	88099612	88099612	5.308	13030000	3/24/2019	2019	US 41	I 275	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
880719130	88071913	88071913	5.321	13030000	2/13/2019	2019	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No				Q/C Completed - Loc Verified
880717670	88071767	88071767	4.781	13030000	2/5/2019	2019	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Cloudy	Dry	Intersection-Related	Influenced By Intersection	No		1	500	Q/C Completed - Loc Verified
880638770	88063877	88063877	5.283	13030000	10/31/2019	2019	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
880315240	88031524	88031524	4.783	13030000	11/30/2018	2018	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No		1		Q/C Completed - Loc Verified
880160570	88016057	88016057	5.205	13030000	10/3/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		1		Q/C Completed - Loc Verified
880156640	88015664	88015664	5.425	13030000	11/19/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	Influenced By Intersection	No		1	800	Q/C Completed - Loc Verified
875526000	87552600	87552600	4.969	13030000	3/15/2018	2018	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Railway Grade Crossing	Railroad Crossing	No				Q/C Completed - Loc Verified
872885960	87288596	87288596	5.087	13030000	9/27/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		3		Q/C Completed - Loc Verified
872879090	87287909	87287909	5.444	13030000	9/3/2018	2018	US 41	I 275	Guardrail Face	Other (See Narrative)	Daylight	Cloudy	Wet	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No			800	Q/C Completed - Loc Verified
872825140	87282514	87282514	4.789	13030000	8/23/2018	2018	69TH ST E	US 41	Motor Vehicle In Transport	Front To Rear	Dawn	Cloudy	Wet	Intersection-Related	Influenced By Intersection	No		5		Q/C Completed - Loc Verified
872706030	87270603	87270603	4.791	13030000	9/17/2018	2018	US 41	69TH ST E	Other Non-Fixed Object	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No			500	Q/C Completed - Loc Verified
872662280	87266228	87266228	5.173	13030000	8/12/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No		3		Q/C Completed - Loc Verified
872618830	87261883	87261883	4.789	13030000	7/12/2018	2018	69TH ST E	US 41	Motor Vehicle In Transport	Front To Front	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No				Q/C Completed - Loc Verified
872529260	87252926	87252926	5.047	13030000	7/26/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Lighted	Cloudy	Dry	Intersection	At Intersection	No		1	500	Q/C Completed - Loc Verified
872516520	87251652	87251652	4.787	13030000	9/21/2018	2018	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Dusk	Cloudy	Dry	Non-Junction	Influenced By Intersection	No				Q/C Completed - Loc Verified
872415370	87241537	87241537	5.087	13030000	7/24/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No			250	Q/C Completed - Loc Verified
872383550	87238355	87238355	5.087	13030000	6/30/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Entrance/Exit Ramp	Exit Ramp	No		4	500	Q/C Completed - Loc Verified
872257630	87225763	87225763	5.302	13030000	6/25/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
872235320	87223532	87223532	4.789	13030000	5/25/2018	2018	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Dry	Intersection	At Intersection	No		4		Q/C Completed - Loc Verified
872115000	87211500	87211500	5.321	13030000	5/5/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No				Q/C Completed - Loc Verified
872084550	87208455	87208455	5.087	13030000	5/16/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	At Intersection	No				Q/C Completed - Loc Verified
872084030	87208403	87208403	4.789	13030000	5/13/2018	2018	US 41	73RD ST	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Dry	Intersection	At Intersection	No		5		Q/C Completed - Loc Verified
872011280	87201128	87201128	5.245	13030000	4/6/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
871986480	87198648	87198648	5.302	13030000	3/23/2018	2018	US 41	I 275	Other Non-Collision	Other (See Narrative)	Daylight	Clear	Dry	Intersection-Related	Influenced By Intersection	No			500	Q/C Completed - Loc Verified
871857180	87185718	87185718	5.087	13030000	3/22/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No		2	500	Q/C Completed - Loc Verified
871823290	87182329	87182329	5.321	13030000	2/18/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No		1	500	Q/C Completed - Loc Verified
871819950	87181995	87181995	5.321	13030000	4/12/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Exit Ramp	No		2	500	Q/C Completed - Loc Verified
871695230	87169523	87169523	4.761	13030000	2/17/2018	2018	US 41	73RD ST E/ERIE RD	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	200	Q/C Completed - Loc Verified
871588170	87158817	87158817	5.282	13030000	1/11/2018	2018	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Fog, Smog, Smoke	Dry	Intersection	At Intersection	No		2		Q/C Completed - Loc Verified
871578110	87157811	87157811	4.821	13030000	2/1/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Railway Grade Crossing	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
871555650	87155565	87155565	4.798	13030000	3/20/2018	2018	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Cloudy	Wet	Non-Junction	Influenced By Intersection	Alc				Q/C Completed - Loc Verified
871474650	87147465	87147465	5.087	13030000	2/2/2018	2018	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Entrance/Exit Ramp	At Intersection	No				Q/C Completed - Loc Verified
871289420	87128942	87128942	5.274	13030000	12/5/2017	2017	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Not Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		3	500	Q/C Completed - Loc Verified
871253220	87125322	87125322	5.282	13030000	12/17/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Dry	Intersection	At Intersection	No		1	800	Q/C Completed - Loc Verified
871252840	87125284	87125284	5.321	13030000	12/1/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	At Intersection	No		2		Q/C Completed - Loc Verified
871245840	87124584	87124584	4.789	13030000	12/26/2017	2017	US 41	73RD ST E/ERIE RD	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Dry	Intersection	At Intersection	No		8		Q/C Completed - Loc Verified
871073110	87107311	87107311	5.087	13030000	10/16/2017	2017	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Entrance/Exit Ramp	Exit Ramp	No		1	500	Q/C Completed - Loc Verified
871062920	87106292	87106292	5.246	13030000	11/13/2017	2017	US 41	I 275	Pedestrian	Other (See Narrative)	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
871034560	87103456	87103456	4.751	13030000	12/14/2018	2018	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Dusk	Cloudy	Wet	Intersection-Related	Influenced By Intersection	No			500	Q/C Completed - Loc Verified
868220930	86822093	86822093	5.321	13030000	6/12/2017	2017	US 41	I 275	Motor Vehicle In Transport	Other (See Narrative)	Dark-Lighted	Rain	Wet	Intersection	At Intersection	No		2		Q/C Completed - Loc Verified
868220560	86822056	86822056	5.296	13030000	6/5/2017	2017	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	Alc		1		Q/C Completed - Loc Verified
859042200	85904220	85904220	4.789	13030000	7/14/2017	2017	73RD ST	US 41	Not Coded	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	Drg			100	Q/C Completed - Loc Verified

855994500	85599450	85599450	4.942	13030000	9/19/2017	2017	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Railway Grade Crossing	Railroad Crossing	No			2			Q/C Completed - Loc Verified
855644470	85564447	85564447	5.108	13030000	9/4/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	At Intersection	No						Q/C Completed - Loc Verified
855406900	85540690	85540690	4.789	13030000	7/5/2017	2017	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No						Q/C Completed - Loc Verified
855406570	85540657	85540657	5.108	13030000	6/19/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Dawn	Cloudy	Dry	Intersection	At Intersection	No			2			Q/C Completed - Loc Verified
855268480	85526848	85526848	5.108	13030000	6/8/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No						Q/C Completed - Loc Verified
855203440	85520344	85520344	5.321	13030000	6/12/2017	2017	I 275	US 41	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	Exit Ramp	No					500	Q/C Completed - Loc Verified
854851320	85485132	85485132	5.047	13030000	4/5/2017	2017	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Entrance Ramp	No			4		500	Q/C Completed - Loc Verified
854847130	85484713	85484713	4.789	13030000	3/4/2017	2017	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	At Intersection	No			3			Q/C Completed - Loc Verified
854525470	85452547	85452547	4.836	13030000	12/28/2016	2016	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			1		500	Q/C Completed - Loc Verified
854468450	85446845	85446845	4.842	13030000	12/28/2017	2017	US 41	69TH ST E	Ditch	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	Drg	1				700	Q/C Completed - Loc Verified
854386500	85438650	85438650	5.125	13030000	3/5/2017	2017	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No						Q/C Completed - Loc Verified
854310060	85431006	85431006	5.183	13030000	1/13/2017	2017	US 41	I 275	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No						Q/C Completed - Loc Verified
854217720	85421772	85421772	4.789	13030000	1/8/2017	2017	US 41	73RD ST	Motor Vehicle In Transport	Angle	Dark-Not Lighted	Clear	Dry	Intersection	At Intersection	No					700	Q/C Completed - Loc Verified
854198850	85419885	85419885	4.931	13030000	12/6/2016	2016	US 41	73RD ST	Other Non-Collision	Other (See Narrative)	Dark-Lighted	Fog, Smog, Smoke	Wet	Non-Junction	Railroad Crossing	Alc	1				500	Q/C Completed - Loc Verified
854198650	85419865	85419865	4.793	13030000	11/26/2016	2016	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Non-Junction	At Intersection	No					200	Q/C Completed - Loc Verified
854142110	85414211	85414211	4.804	13030000	11/5/2016	2016	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Dusk	Clear	Dry	Intersection-Related	Influenced By Intersection	No			2		100	Q/C Completed - Loc Verified
854141820	85414182	85414182	5.361	13030000	10/13/2016	2016	US 41	85 ST E	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No						Q/C Completed - Loc Verified
854032780	85403278	85403278	4.789	13030000	11/20/2016	2016	US 41	73RD ST	Pedestrian	Other (See Narrative)	Daylight	Clear	Dry	Intersection	At Intersection	Alc			1			Q/C Completed - Loc Verified
853930810	85393081	85393081	4.793	13030000	10/5/2016	2016	US 41	73RD ST	Motor Vehicle In Transport	Front To Front	Dark-Lighted	Clear	Dry	Intersection-Related	At Intersection	No						Q/C Completed - Loc Verified
853782080	85378208	85378208	4.827	13030000	10/6/2016	2016	US 41	69TH ST E	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No					500	Q/C Completed - Loc Verified
853759550	85375955	85375955	4.827	13030000	9/14/2016	2016	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No						Q/C Completed - Loc Verified
853368720	85336872	85336872	5.293	13030000	7/4/2016	2016	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Clear	Dry	Intersection-Related	Influenced By Intersection	No			1			Q/C Completed - Loc Verified
853356220	85335622	85335622	5.33	13030000	7/27/2016	2016	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	At Intersection	No			2		650	Q/C Completed - Loc Verified
853355920	85335592	85335592	4.751	13030000	6/25/2016	2016	US 41	69TH ST E	Other Non-Collision	Other (See Narrative)	Daylight	Cloudy	Wet	Non-Junction	Influenced By Intersection	No			1			Q/C Completed - Loc Verified
852968820	85296882	85296882	5.321	13030000	4/12/2016	2016	I 275	US 41	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No						Q/C Completed - Loc Verified
852922500	85292250	85292250	5.416	13030000	3/20/2016	2016	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Non-Junction	Bridge	No					800	Q/C Completed - Loc Verified
852820910	85282091	85282091	5.321	13030000	3/22/2016	2016	I 275	SR 45	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	Exit Ramp	No			3			Q/C Completed - Loc Verified
852806100	85280610	85280610	5.087	13030000	3/2/2016	2016	I 275	SR 45	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No			1			Q/C Completed - Loc Verified
852718960	85271896	85271896	4.751	13030000	3/1/2016	2016	US 41	73RD ST	Motor Vehicle In Transport	Front To Front	Dark-Not Lighted	Clear	Dry	Non-Junction	Influenced By Intersection	No			1			Q/C Completed - Loc Verified
852609950	85260995	85260995	5.435	13030000	2/19/2016	2016	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			2		600	Q/C Completed - Loc Verified
852609480	85260948	85260948	5.34	13030000	2/9/2016	2016	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No					20	Q/C Completed - Loc Verified
852343140	85234314	85234314	4.804	13030000	1/11/2016	2016	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No			1			Q/C Completed - Loc Verified
852214620	85221462	85221462	5.118	13030000	11/18/2015	2015	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Intersection-Related	At Intersection	No						Q/C Completed - Loc Verified
852165400	85216540	85216540	4.78	13030000	12/6/2015	2015	SR 45	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	At Intersection	No						Q/C Completed - Loc Verified
851997960	85199796	85199796	5.118	13030000	12/18/2015	2015	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Not Lighted	Cloudy	Dry	Intersection	At Intersection	No					500	Q/C Completed - Loc Verified
851935730	85193573	85193573	5.118	13030000	10/30/2015	2015	US 41	I 275	Motor Vehicle In Transport	Angle	Dark-Lighted	Clear	Dry	Intersection-Related	At Intersection	No			2			Q/C Completed - Loc Verified
851784240	85178424	85178424	4.77	13030000	9/1/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Non-Junction	Influenced By Intersection	No						Q/C Completed - Loc Verified
851783900	85178390	85178390	4.785	13030000	8/8/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Non-Junction	Influenced By Intersection	No						Q/C Completed - Loc Verified
851546440	85154644	85154644	5.135	13030000	10/15/2015	2015	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No			1			Q/C Completed - Loc Verified
851479760	85147976	85147976	4.791	13030000	9/20/2015	2015	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	At Intersection	No					200	Q/C Completed - Loc Verified
851437030	85143703	85143703	4.789	13030000	8/16/2015	2015	US 41	73RD ST	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Wet	Intersection	At Intersection	No					500	Q/C Completed - Loc Verified
851378060	85137806	85137806	4.751	13030000	9/6/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Intersection-Related	Influenced By Intersection	No			4			Q/C Completed - Loc Verified
851293940	85129394	85129394	5.223	13030000	8/14/2015	2015	US 41	SR 93	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection	At Intersection	No			2			Q/C Completed - Loc Verified
851189240	85118924	85118924	5.321	13030000	6/14/2015	2015	I 275	US 41	Motor Vehicle In Transport	Front To Front	Dark-Lighted	Clear	Dry	Intersection	Exit Ramp	No			5			Q/C Completed - Loc Verified
851188300	85118830	85118830	5.039	13030000	5/25/2015	2015	US 41	73RD ST	Tree (Standing)	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			1			Q/C Completed - Loc Verified
851186020	85118602	85118602	5.061	13030000	8/18/2015	2015	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	At Intersection	No			1			Q/C Completed - Loc Verified
851148930	85114893	85114893	5.087	13030000	7/1/2015	2015	I 275	SR 45	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection	Exit Ramp	No					500	Q/C Completed - Loc Verified
851098630	85109863	85109863	5.461	13030000	5/21/2015	2015	US 41	85 ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No						Q/C Completed - Loc Verified
849012780	84901278	84901278	4.789	13030000	5/8/2015	2015	73RD ST	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	At Intersection	No					600	Q/C Completed - Loc Verified
848704340	84870434	84870434	4.789	13030000	2/26/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	Influenced By Intersection	No						Q/C Completed - Loc Verified
848704330	84870433	84870433	4.789	13030000	2/26/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Intersection-Related	Influenced By Intersection	No			1		400	Q/C Completed - Loc Verified
848693470	84869347	84869347	5.401	13030000	4/21/2015	2015	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Cloudy	Dry	Intersection-Related	Bridge	No					500	Q/C Completed - Loc Verified
848693160	84869316	84869316	5.087	13030000	3/19/2015	2015	I 275	SR 45	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Intersection	Exit Ramp	No			1		500	Q/C Completed - Loc Verified
848692960	84869296	84869296	5.192	13030000	2/25/2015	2015	SR 45	SR 93	Motor Vehicle In Transport	Angle	Daylight	Fog, Smog, Smoke	Dry	Intersection	Not At Intersection/Rrx/Bridge	No					650	Q/C Completed - Loc Verified
848686010	84868601	84868601	5.087	13030000	4/16/2015	2015	I 275	US 41	Motor Vehicle In Transport	Angle	Dusk	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No			2			Q/C Completed - Loc Verified
848685880	84868588	84868588	5.321	13030000	4/8/2015	2015	I 275	US 41	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No						Q/C Completed - Loc Verified
848676160	84867616	84867616	5.558	13030000	7/11/2015	2015	US 41	85 ST E	Motor Vehicle In Transport	Front To Rear	Dark-Not Lighted	Clear	Dry	Non-Junction	At Intersection	Alc			1		500	Q/C Completed - Loc Verified
848599050	84859905	84859905	5.321	13030000	4/1/2015	2015	I 275	SR 45	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No					500	Q/C Completed - Loc Verified
845701380	84570138	84570138	4.791	13030000	2/6/2015	2015	US 41	73RD ST	Traffic Signal Support	Other (See Narrative)	Daylight	Clear	Dry	Intersection-Related	At Intersection	No					500	Q/C Completed - Loc Verified
845613610	84561361	84561361	4.836	13030000	1/13/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Wet	Non-Junction	Influenced By Intersection	No			1		500	Q/C Completed - Loc Verified
845565380	84556538	84556538	4.785	13030000	2/19/2015	2015	US 41	69TH ST E	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Intersection-Related	At Intersection	No						Q/C Completed - Loc Verified
845460830	84546083	84546083	4.798	13030000	1/15/2015	2015	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Daylight	Rain	Wet	Intersection	At Intersection	No			1		500	Q/C Completed - Loc Verified
845460820	84546082	84546082	4.889	13030000	1/15/2015	2015	US 41	73RD ST	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			2			Q/C Completed - Loc Verified
845240400	84524040	84524040	5.087	13030000	1/3/2015	2015	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No					800	Q/C Completed - Loc Verified
839574940	83957494	83957494	5.087	13030000	2/27/2015	2015	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Dusk	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No						Q/C Completed - Loc Verified

Crash Number	ID / 10	S4 vs Cars	Location Mile Post	Roadway Id	Crash Date	Crash Year	On Road	Intersecting Road	First Harmful Event	Manner Of Collision	Light Condition	Weather Condition	Surface Condition	Junction	Site Location	Alcohol Drugs Involvement	Number of Fatalities	Number of Injured	Total Crash Damage Amount	Crash Status
852408610	85240861	#N/A	1.5	13175000	1/21/2016	2016	I 275	MILE MARKER 1	Motor Vehicle In Transport	Sideswipe, Same Direction	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
882131850	88213185	#N/A	1.5	13175000	11/24/2019	2019	I 275	MILE MARKER 1	Traffic Sign Support	Other (See Narrative)	Dark-Lighted	Cloudy	Dry	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
855918390	85591839	#N/A	1.507	13175000	9/28/2017	2017	I 275	ELLENTON GILLETTE RD	Motor Vehicle In Transport	Sideswipe, Same Direction	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
851278270	85127827	#N/A	1.535	13175000	7/1/2015	2015	I 275	US 19	Motor Vehicle In Transport	Front To Rear	Dark-Not Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		2		Q/C Completed - Loc Verified
872416800	87241680	#N/A	1.535	13175000	6/3/2018	2018	I 275	US 19	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		2	500	Q/C Completed - Loc Verified
854032180	85403218	#N/A	1.553	13175000	9/25/2016	2016	I 275	US 19	Motor Vehicle In Transport	Sideswipe, Same Direction	Dark-Lighted	Cloudy	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No			750	Q/C Completed - Loc Verified
884783430	88478343	#N/A	1.995	13175000	3/8/2021	2021	I 275	US 19	Fence	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			300	Q/C Completed - Loc Verified
852349920	85234992	#N/A	2	13175000	12/27/2015	2015	I 275	MM 2	Other Non-Fixed Object	Other (See Narrative)	Dusk	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			600	Q/C Completed - Loc Verified
837465570	83746557	#N/A	2.035	13175000	10/26/2015	2015	I 275	US 19	Concrete Traffic Barrier	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		4		Q/C Completed - Loc Verified
845613820	84561382	#N/A	2.035	13175000	1/26/2015	2015	I 275	SR 55	Guardrail Face	Other (See Narrative)	Daylight	Cloudy	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
851433640	85143364	#N/A	2.353	13175000	8/8/2015	2015	I 275	US 19	Motor Vehicle In Transport	Sideswipe, Opposite Direction	Dark-Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			150	Q/C Completed - Loc Verified
854306390	85430639	#N/A	2.517	13175000	6/6/2017	2017	I 275	MILE MARKER 3	Bridge Rail	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
845613590	84561359	#N/A	2.535	13175000	1/12/2015	2015	I 275	SR 55	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Wet	Non-Junction	Toll Booth	No		1	500	Q/C Completed - Loc Verified
848672130	84867213	#N/A	2.535	13175000	2/27/2015	2015	I 275	US 19	Concrete Traffic Barrier	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
848799110	84879911	#N/A	2.535	13175000	4/12/2015	2015	I 275	US 19	Guardrail Face	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
851459160	85145916	#N/A	2.535	13175000	8/31/2015	2015	I 275	US 19	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Wet	Non-Junction	Toll Booth	No		2	300	Q/C Completed - Loc Verified
871065690	87106569	#N/A	2.535	13175000	11/29/2017	2017	I 275	US 19	Guardrail Face	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
851448660	85144866	#N/A	2.553	13175000	8/5/2015	2015	I 275	US 19	Motor Vehicle In Transport	Front To Rear	Dark-Lighted	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
853113510	85311351	#N/A	2.553	13175000	4/17/2016	2016	I 275	US 19	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
854080120	85408012	#N/A	2.553	13175000	10/12/2016	2016	I 275	US 19	Motor Vehicle In Transport	Sideswipe, Same Direction	Dawn	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
872148080	87214808	#N/A	2.553	13175000	5/30/2018	2018	I 275	US 19	Motor Vehicle In Transport	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	400	Q/C Completed - Loc Verified
853234460	85323446	#N/A	2.702	13175000	5/4/2016	2016	I 275	US 41	Bridge Rail	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
852995390	85299539	#N/A	2.729	13175000	4/11/2016	2016	I 275	US 19	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	300	Q/C Completed - Loc Verified
881532630	88153263	#N/A	2.767	13175000	7/11/2019	2019	I 275	MM 3	Motor Vehicle In Transport	Angle	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No			900	Q/C Completed - Loc Verified
883191650	88319165	#N/A	2.802	13175000	3/4/2020	2020	I 275	US 41	Other Non-Fixed Object	Other (See Narrative)	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
851635070	85163507	#N/A	2.83	13175000	8/28/2015	2015	I 275	MILE MARKER 3	Concrete Traffic Barrier	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
881899540	88189954	88189954	2.007	13175000	8/22/2019	2019	US 41	I 275	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Entrance/Exit Ramp	Entrance Ramp	No		1		Q/C Completed - Loc Verified
881775490	88177549	88177549	2.007	13175000	10/24/2019	2019	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Entrance Ramp	No		1	500	Q/C Completed - Loc Verified
881769530	88176953	88176953	2.007	13175000	8/2/2019	2019	US 41	I 275	Motor Vehicle In Transport	Angle	Daylight	Rain	Wet	Intersection	Entrance Ramp	No				Q/C Completed - Loc Verified
881523470	88152347	88152347	1.989	13175000	7/23/2019	2019	I 275	MM 2	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		3		Q/C Completed - Loc Verified
880995900	88099590	88099590	2.552	13175000	3/8/2019	2019	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
880348820	88034882	88034882	2.489	13175000	12/30/2018	2018	I 275	MILE MARKER 2	Guardrail Face	Other (See Narrative)	Dark-Lighted	Clear	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
872529640	87252964	87252964	2.757	13175000	8/28/2018	2018	SR 93	US 41	Other Non-Collision	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
872516480	87251648	87251648	2.757	13175000	9/13/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
872011620	87201162	87201162	2.084	13175000	5/14/2018	2018	I 275	MM 2	Motor Vehicle In Transport	Angle	Dark-Lighted	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
871986590	87198659	87198659	2.057	13175000	3/29/2018	2018	SR 93	US 41	Motor Vehicle In Transport	Sideswipe, Same Direction	Dawn	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			500	Q/C Completed - Loc Verified
871247010	87124701	87124701	2.552	13175000	12/7/2017	2017	I 275	US 41	Guardrail Face	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
871070970	87107097	87107097	2.307	13175000	11/8/2017	2017	I 275	US 41	Guardrail Face	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
868218590	86821859	86821859	2.567	13175000	4/19/2017	2017	I 275	US 41	Guardrail Face	Not Coded	Daylight	Clear	Dry	Non-Junction	Bridge	No				Q/C Completed - Loc Verified
855892070	85589207	85589207	2.802	13175000	11/27/2017	2017	I 275	US 41	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No			300	Q/C Completed - Loc Verified
855135140	85513514	85513514	2.238	13175000	5/12/2017	2017	I 275	US 41	Cable Barrier	Other (See Narrative)	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
854600270	85460027	85460027	1.91	13175000	1/29/2017	2017	I 275	US 41	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
854468180	85446818	85446818	2.533	13175000	12/29/2016	2016	I 275	US 41	Motor Vehicle In Transport	Angle	Daylight	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No		2		Q/C Completed - Loc Verified
854437940	85443794	85443794	2	13175000	1/28/2017	2017	I 275	MILE MARKER 2	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	A/D		2		Q/C Completed - Loc Verified
853759400	85375940	85375940	2.007	13175000	9/5/2016	2016	I 275	US 41	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Rain	Wet	Non-Junction	Exit Ramp	No				Q/C Completed - Loc Verified
853621060	85362106	85362106	1.802	13175000	9/23/2016	2016	I 275	US 41	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
853443740	85344374	85344374	1.857	13175000	7/7/2016	2016	SR 93	US 41	Motor Vehicle In Transport	Angle	Dark-Not Lighted	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		4		Q/C Completed - Loc Verified
852941440	85294144	85294144	2.007	13175000	4/1/2016	2016	I 275	US 41	Overturn/Rollover	Other (See Narrative)	Dark-Lighted	Cloudy	Dry	Entrance/Exit Ramp	Exit Ramp	No		1		Q/C Completed - Loc Verified
851952290	85195229	85195229	2.503	13175000	10/11/2015	2015	US 41	I 275	Motor Vehicle In Transport	Sideswipe, Same Direction	Dark-Not Lighted	Clear	Dry	Entrance/Exit Ramp	Exit Ramp	No				Q/C Completed - Loc Verified
851635110	85163511	85163511	2.038	13175000	8/30/2015	2015	I 275	MILE MARKER 2	Motor Vehicle In Transport	Front To Rear	Dark-Not Lighted	Cloudy	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	Alc				Q/C Completed - Loc Verified
851479530	85147953	85147953	2.219	13175000	9/6/2015	2015	I 275	US 41	Cable Barrier	Other (See Narrative)	Daylight	Rain	Wet	Non-Junction	Not At Intersection/Rrx/Bridge	No			800	Q/C Completed - Loc Verified
851185960	85118596	85118596	2.557	13175000	8/12/2015	2015	I 275	US 41	Guardrail End	Other (See Narrative)	Daylight	Clear	Dry	Entrance/Exit Ramp	Not At Intersection/Rrx/Bridge	No		1	500	Q/C Completed - Loc Verified
851098660	85109866	85109866	2.02	13175000	5/25/2015	2015	I 275	US 41	Other Non-Collision	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Entrance Ramp	No		1		Q/C Completed - Loc Verified
848870170	84887017	84887017	2.197	13175000	4/21/2015	2015	I 275	US 41	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
848846950	84884695	84884695	2.757	13175000	4/21/2015	2015	I 275	SR 45	Motor Vehicle In Transport	Front To Rear	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1		Q/C Completed - Loc Verified
848693150	84869315	84869315	2.257	13175000	3/19/2015	2015	SR 93	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Crossover-Related	Bridge	No			500	Q/C Completed - Loc Verified
845656440	84565644	84565644	2.157	13175000	2/16/2015	2015	I 275	US 41	Motor Vehicle In Transport	Sideswipe, Same Direction	Daylight	Cloudy	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No				Q/C Completed - Loc Verified
845406390	84540639	84540639	2.276	13175000	2/7/2015	2015	I 275	US 41	Overturn/Rollover	Other (See Narrative)	Daylight	Clear	Dry	Non-Junction	Bridge	No		3		Q/C Completed - Loc Verified
820302500	82030250	82030250	1.802	13175000	4/18/2016	2016	I 275	US 41	Motor Vehicle In Transport	Front To Rear	Daylight	Clear	Dry	Non-Junction	Not At Intersection/Rrx/Bridge	No		1	200	Q/C Completed - Loc Verified

Appendix S

CMF Clearinghouse Output Sheets

CMF / CRF Details

CMF ID: 316

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★★☆

Crash Modification Factor (CMF)	
Value:	0.86
Adjusted Standard Error:	0.38
Unadjusted Standard Error:	0.32

Crash Reduction Factor (CRF)	
Value:	14 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	38

Unadjusted Standard Error:	32

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	3-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

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This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 317

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★☆☆

Crash Modification Factor (CMF)	
Value:	0.66
Adjusted Standard Error:	
Unadjusted Standard Error:	0.45

Crash Reduction Factor (CRF)	
Value:	34 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	45

Applicability

Crash Type:	Angle
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	3-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse. The crash type was initially identified as "all" crashes for this CMF. This has been corrected to reflect Right-Angle crashes on January 7, 2021.

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CMF / CRF Details

CMF ID: 318

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★☆☆

Crash Modification Factor (CMF)	
Value:	1.5
Adjusted Standard Error:	
Unadjusted Standard Error:	0.51

Crash Reduction Factor (CRF)	
Value:	-50 *(This value indicates an **increase** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	51

Applicability

Crash Type:	Rear end
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	3-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse. The crash type was initially identified as "all" crashes for this CMF. This has been corrected to reflect Rear End crashes on January 7, 2021.

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CMF / CRF Details

CMF ID: 319

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★★☆

Crash Modification Factor (CMF)	
Value:	0.77
Adjusted Standard Error:	0.27
Unadjusted Standard Error:	0.22

Crash Reduction Factor (CRF)	
Value:	23 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	27

Unadjusted Standard Error:	22

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	4-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

---

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 320

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★★★

Crash Modification Factor (CMF)	
Value:	0.33
Adjusted Standard Error:	0.24
Unadjusted Standard Error:	0.2

Crash Reduction Factor (CRF)	
Value:	67 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	24

Unadjusted Standard Error:	20

Applicability

Crash Type:	Angle
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	4-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

---

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CMF / CRF Details

CMF ID: 321

Install a traffic signal

Description:

Prior Condition: ***No Prior Condition(s)***

Category: Intersection traffic control

Study: ***NCHRP Report 491: Crash Experience Warrant for Traffic Signals*, McGee et al., 2003**

Star Quality Rating:	★★★★☆

Crash Modification Factor (CMF)	
Value:	1.38
Adjusted Standard Error:	0.46
Unadjusted Standard Error:	0.39

Crash Reduction Factor (CRF)	
Value:	-38 *(This value indicates an **increase** in crashes)*
Adjusted Standard Error:	46

Unadjusted Standard Error:	39

Applicability

Crash Type:	Rear end
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	
If countermeasure is intersection-based	
Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	4-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	

Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

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This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 9404

Convert signal from span wire to mast arm

Description: Convert signals mounted on span wire to signals mounted on mast arm

Prior Condition: Signalized intersection with signals mounted on span wire.

Category: Intersection traffic control

Study: *Evaluating the Safety Effects of Span Wire to Mast Arm Signal Conversion*, Khattak and Fontaine, 2018

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	0.97
Adjusted Standard Error:	
Unadjusted Standard Error:	0.069

Crash Reduction Factor (CRF)	
Value:	3 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	6.9

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	All
Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Not specified
Intersection Geometry:	3-leg,4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	2874 to 46185 Annual Average Daily Traffic (AADT)
Minor Road Traffic Volume:	476 to 31443 Annual Average Daily Traffic (AADT)

Development Details

Date Range of Data Used:	
Municipality:	
State:	VA

Country:	United States
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Oct-27-2018
Comments:	This CMF applies to all crashes at signalized intersections.

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CMF / CRF Details

CMF ID: 9405

Convert signal from span wire to mast arm

Description: Convert signals mounted on span wire to signals mounted on mast arm

Prior Condition: Signalized intersection with signals mounted on span wire.

Category: Intersection traffic control

Study: *Evaluating the Safety Effects of Span Wire to Mast Arm Signal Conversion*, Khattak and Fontaine, 2018

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	0.98
Adjusted Standard Error:	
Unadjusted Standard Error:	0.119

Crash Reduction Factor (CRF)	
Value:	2 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	11.9

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	All
Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Not specified
Intersection Geometry:	3-leg,4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	2874 to 46185 Annual Average Daily Traffic (AADT)
Minor Road Traffic Volume:	476 to 31443 Annual Average Daily Traffic (AADT)

Development Details

Date Range of Data Used:	
Municipality:	
State:	VA

Country:	United States
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Oct-27-2018
Comments:	This CMF applies to all KABC crashes at signalized intersections.

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Appendix T

Cost Estimates & Design Concept

Date: 1/25/2022 10:31:20 AM

FDOT Long Range Estimating System - Production
R3: Project Details by Sequence Report

Project: 449720-1-52-01 **Letting Date:** 05/2022

Description: SIGNAL AND PED FACILITY INSTALLATIONS ON US 41 AT I-275

District: 01 **County:** 13 MANATEE **Market Area:** 10 **Units:** English

Contract Class: 9 **Lump Sum Project:** N **Design/Build:** Y **Project Length:** 1.000 MI

Project Manager: JMK-KAP-JAJ

Version 2 Project Grand Total **$2,121,434.14**

Description: US 41 and I-275 Interchange-Combined Estimate-Signals and Ped Facilities markups per PM from Version 1P - 1/20/22

Sequence: 1 MIS - Miscellaneous Construction **Net Length:** 0.000 MI 0 LF

Description: US 41 and I-275 Interchange-Combined Estimate-Signals and Ped Facilities

---

ROADWAY COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
107-1	LITTER REMOVAL	8.40 AC	$75.12	$631.01
107-2	MOWING	8.40 AC	$74.45	$625.38
110-1-1	CLEARING & GRUBBING	8.40 AC	$30,539.59	$256,532.56
120-1	REGULAR EXCAVATION	335.00 CY	$26.56	$8,897.60
120-6	EMBANKMENT	251.00 CY	$27.10	$6,802.10
327-70-11	MILLING EXIST ASPH PAVT,2 1/4" AVG DEPTH	2,605.00 SY	$6.83	$17,792.15
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	215.00 TN	$140.77	$30,265.55
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	104.00 TN	$233.75	$24,310.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,004.00 SY	$55.29	$55,511.16
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	100.00 SY	$66.59	$6,659.00
527-2	DETECTABLE WARNINGS	192.00 SF	$30.62	$5,879.04
570-1-2	PERFORMANCE TURF, SOD	201.00 SY	$8.21	$1,650.21
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	594.00 LF	$3.15	$1,871.10

711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	666.00 LF	$6.19	$4,122.54
711-14-160	THERMOPLASTIC, PREFORMED, WHITE, MESSAGE	2.00 EA	$185.94	$371.88
711-14-170	THERMOPLASTIC, PREFORMED, WHITE, ARROW	6.00 EA	$125.99	$755.94
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.26 GM	$4,886.16	$1,270.40
711-15-171	THERMOPLASTIC, STD-OP, WHITE, D, 6" MANG	0.02 GM	$2,266.98	$45.34
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.12 GM	$4,882.35	$585.88
711-17-1	THERMOPLASTIC, REMOVE	300.00 SF	$2.29	$687.00
	Roadway Component Total			$425,265.84

SHOULDER COMPONENT

User Input Data

Description	**Value**

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,500.00 LF	$2.63	$9,205.00
104-18	INLET PROTECTION SYSTEM	5.00 EA	$113.76	$568.80
	Shoulder Component Total			$9,773.80

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	8.00 AS	$358.91	$2,871.28
700-1-60	SINGLE POST SIGN, REMOVE	1.00 AS	$28.09	$28.09

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-50	SINGLE POST SIGN,	10.00 AS	$254.48	$2,544.80

	RELOCATE			
700-3-201	SIGN PANEL, F&I OM, UP TO 12 SF	2.00 EA	$676.36	$1,352.72
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF	8.00 EA	$4,944.27	$39,554.16
	Signing Component Total			$46,351.05

SIGNALIZATIONS COMPONENT

Signalization 1

Description	**Value**
Type	Miscellaneous
Multiplier	1
Description	

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	500.00 LF	$10.63	$5,315.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	700.00 LF	$21.59	$15,113.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00 PI	$7,104.55	$14,209.10
635-2-12	PULL & SPLICE BOX, F&I, 24" X 36"	30.00 EA	$1,392.75	$41,782.50
639-1-122	ELECTRICAL POWER SRV,F&I, UG,PUR CONT	2.00 AS	$2,830.89	$5,661.78
639-2-1	ELECTRICAL SERVICE WIRE, F&I	500.00 LF	$5.15	$2,575.00
639-3-11	ELEC SERV DISCON, F&I, POLE MNT	2.00 EA	$1,153.81	$2,307.62
641-2-12	PREST CNC POLE,F&I,TYP P-II SRV POLE	2.00 EA	$1,458.27	$2,916.54
641-2-80	PREST CNC POLE, REMOVE COMPLETE	4.00 EA	$7,811.40	$31,245.60
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	6.00 EA	$1,242.41	$7,454.46
646-1-12	ALUMINUM SIGNALS POLE, PED DETECT POST	16.00 EA	$1,260.62	$20,169.92
649-21-1	STEEL MAST ARM ASSEMBLY, F&I, 30'	1.00 EA	$38,627.23	$38,627.23
649-21-3	STEEL MAST ARM ASSEMBLY, F&I, 40'	1.00 EA	$39,392.67	$39,392.67

649-21-6	STEEL MAST ARM ASSEMBLY, F&I, 50'	3.00 EA	$47,936.26	$143,808.78
649-21-15	STEEL MAST ARM ASSEMBLY, F&I, 70'	1.00 EA	$53,756.51	$53,756.51
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	1.00 EA	$61,850.24	$61,850.24
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	19.00 AS	$1,034.33	$19,652.27
650-1-16	VEH TRAF SIGNAL,F&I ALUMINUM, 4 S 1 W	2.00 AS	$1,472.81	$2,945.62
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	16.00 AS	$590.78	$9,452.48
660-4-11	VEHICLE DETECTION SYSTEM- VIDEO, CABINET	6.00 EA	$16,504.69	$99,028.14
665-1-12	PEDESTRIAN DETECTOR, F&I, ACCESSIBLE	8.00 EA	$1,334.90	$10,679.20
670-5-110	TRAF CNTL ASSEM, F&I, NEMA	2.00 AS	$35,842.66	$71,685.32
684-1-1	MANAGED FIELD ETHERNET SWITCH, F&I	2.00 EA	$5,174.69	$10,349.38
685-1-11	UPS POWER SUPPLY, F&I, LINE INTERACTIVE	2.00 EA	$7,172.75	$14,345.50
	Signalizations Component Total			$724,323.86

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MAX

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	500.00 LF	$10.63	$5,315.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	700.00 LF	$21.59	$15,113.00
635-2-12	PULL & SPLICE BOX, F&I, 24" X 36"	30.00 EA	$1,392.75	$41,782.50
639-1-122	ELECTRICAL POWER SRV,F&I, UG,PUR CONT	1.00 AS	$2,830.89	$2,830.89
639-2-1	ELECTRICAL SERVICE WIRE, F&I	500.00 LF	$5.15	$2,575.00
639-3-11	ELEC SERV DISCON, F&I, POLE MNT	2.00 EA	$1,153.81	$2,307.62

715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,100.00 LF	$2.44	$5,124.00
715-4-11	LIGHT POLE COMPLETE, F&I- STD, 30'	8.00 EA	$5,777.41	$46,219.28
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	2.00 EA	$12,053.65	$24,107.30
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	8.00 EA	$627.04	$5,016.32
	Lighting Component Total			$150,390.91

Sequence 1 Total $1,356,105.46

Date: 1/25/2022 10:31:20 AM

FDOT Long Range Estimating System - Production
R3: Project Details by Sequence Report

Project: 449720-1-52-01 **Letting Date:** 05/2022

Description: SIGNAL AND PED FACILITY INSTALLATIONS ON US 41 AT I-275

District: 01 **County:** 13 MANATEE **Market Area:** 10 **Units:** English

Contract Class: 9 **Lump Sum Project:** N **Design/Build:** Y **Project Length:** 1.000 MI

Project Manager: JMK-KAP-JAJ

Version 2 Project Grand Total **$2,121,434.14**

Description: US 41 and I-275 Interchange-Combined Estimate-Signals and Ped Facilities markups per PM from Version 1P - 1/20/22

Project Sequences Subtotal **$1,356,105.46**

102-1	Maintenance of Traffic	15.00 %	$203,415.82
101-1	Mobilization	10.00 %	$155,952.13

Project Sequences Total **$1,715,473.41**

Project Unknowns	5.00 %	$85,773.67
Design/Build	15.00 %	$270,187.06

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)	LS	$50,000.00	$50,000.00
Project Non-Bid Subtotal				**$50,000.00**
Version 2 Project Grand Total				**$2,121,434.14**

EX. ASSEMBLIES, RELOCATE AS SHOWN

EXISTING R/W

INSTALL W11-2 (36"X36"), W16-7P (30"X18") SIGN ASSEMBLIES AS SHOWN (SEE NOTES, SHEET 2 FOR ADD'L ASSEMBLY PLACEMENT)

I-275 SB OFF-RAMP

I-275 SB OFF-RAMP

EX. ASSEMBLY, TO REMAIN

EX. ASSEMBLIES, RELOCATE AS SHOWN

EX. TO REMAIN

0 10 40 Feet

US 41 SB (SR 45) POSTED SPEED LIMIT: 60 MPH

3-SECT., 1-WAY

4-SECT., 1-WAY

LEFT TURN YIELD ON FLASHING YELLOW ARROW

EX. TO REMAIN

3-SECT., 1-WAY

US 41 NB (SR 45) POSTED SPEED LIMIT: 60 MPH

MATCH LINE SEE SHEET 2

INSTALL W11-2 (36"X36"), W16-7P (30"X18") SIGN ASSEMBLIES AS SHOWN (SEE NOTES, SHEET 2 FOR ADD'L ASSEMBLY PLACEMENT)

I-275 SB ON-RAMP

EX. ASSEMBLIES, RELOCATE AS SHOWN

I-275 SB ON-RAMP

EXISTING R/W

3-SECT., 1-WAY

LEGEND

MILLING & RESURFACING

SEE SHEET 2 FOR NOTES

449720-1-52-01 Signal and Ped Facility Installations on US 41 at I-275

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 1 OFFICE
P.O. BOX 1249
BARTOW, FL. 33831-1249
(863) 519-2300

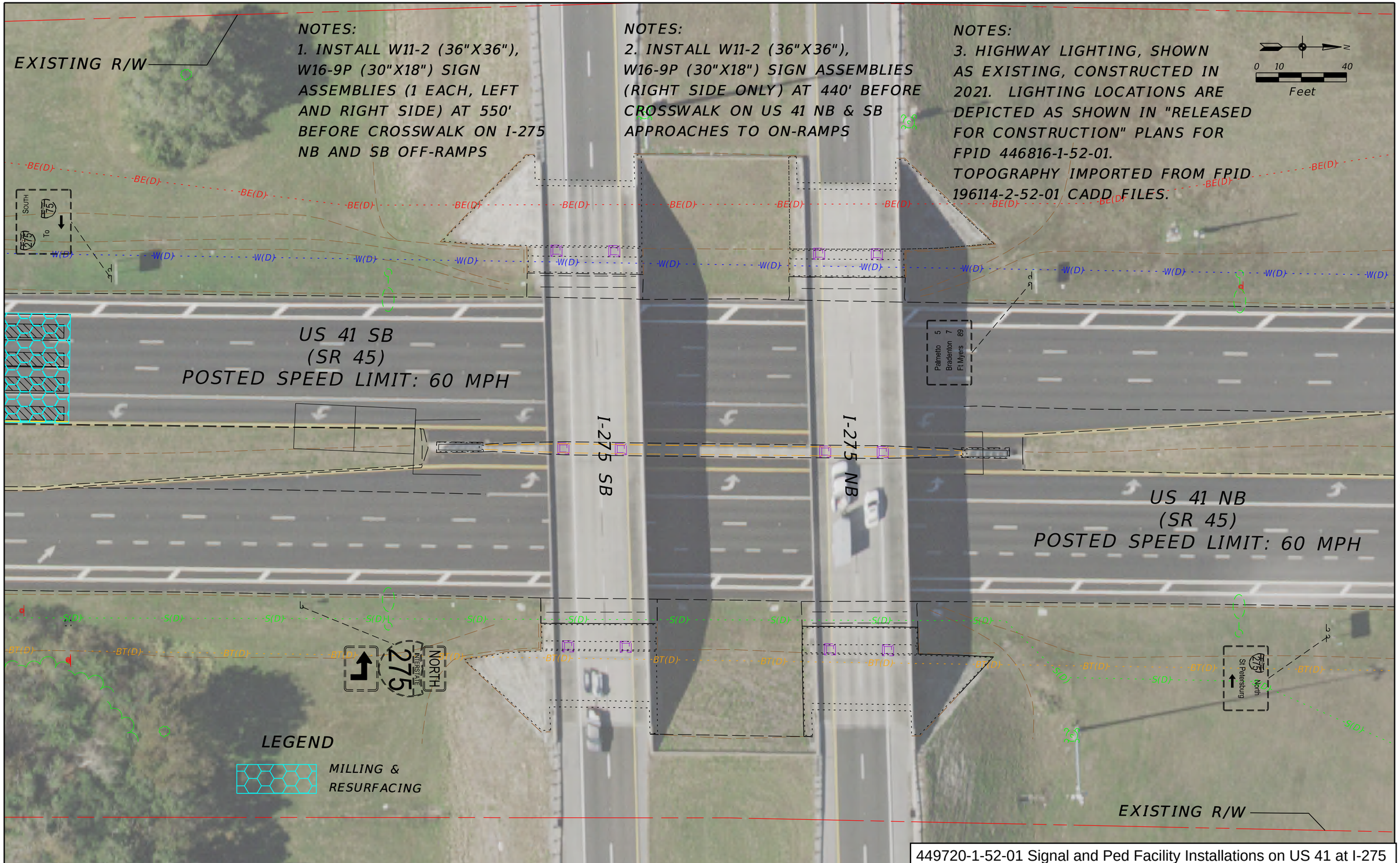
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	ROADWAY ID
45	MANATEE	13030000

SIGNAL & PED CONCEPT PLAN

SHEET NO. 1 OF 3

$USER$ $DATE$ $TIME$ $FILE$



449720-1-52-01 Signal and Ped Facility Installations on US 41 at I-275

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 1 OFFICE
P.O. BOX 1249
BARTOW, FL. 33831-1249
(863) 519-2300

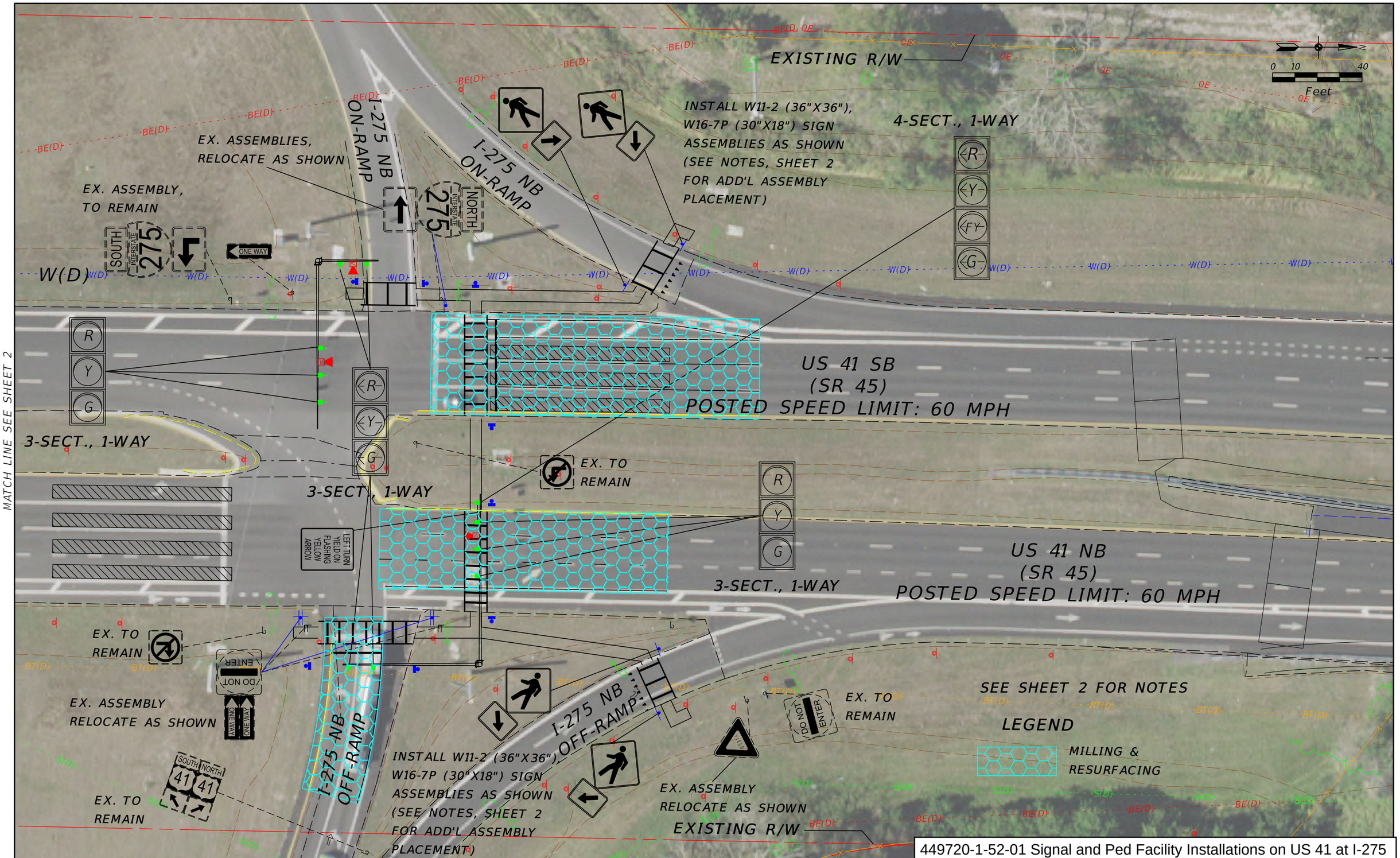
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	ROADWAY ID
45	MANATEE	13030000

SIGNAL & PED CONCEPT PLAN

SHEET NO.
2 OF 3

$USER$ $DATE$ $TIME$ $FILE$



449720-1-52-01 Signal and Ped Facility Installations on US 41 at I-275

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA
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ROAD NO.	COUNTY	ROADWAY ID
45	MANATEE	13030000

SIGNAL & PED CONCEPT PLAN

SHEET NO.
3 OF 3

$USER$ $DATE$ $TIME$ $FILE$