STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

OFFICE OF PLANNING AND ENVIRONMENTAL MANAGEMENT



SR 9 (I-95) & SW 10th Street (SR 869) SYSTEMS INTERCHANGE MODIFICATION REPORT Sample Road to Hillsboro Boulevard

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 4 3400 WEST COMMERCIAL BOULEVARD FORT LAUDERDALE, FL 33309

September 2020



Interstate 95 and SW 10th Street (S.R. 869) Systems Interchange Modification Report

Sample Road to Hillsboro Boulevard

Financial Project No: 436964-1-22-02

Systems Interchange Modification Report

Determination of Engineering and Operational Acceptability

Acceptance of this document indicates successful completion of the review and the Interchange Access. Request is considered acceptable for engineering and operations. Approval is contingent upon compliance with applicable Federal requirements, specifically the National Environmental Policy Act (NEPA) or Department Project Development and Environment (PD&E) Procedures. Completion of NEPA/PD&E process is considered acceptance of the general project and concepts described in the environmental document.

Requestor		
	Robert E. Bostian, Jr., PE	Date
	FDOT District 4	
District Interchange Review Coordinator		
	Cesar Martinez, PE	Date
	FDOT District 4 Project Development Manager	
System Management Administrator		
	Jenna Bowman, PE	Date
	Systems Implementation Manager – FDOT Central Office	
District Transportation Engineer		
-	Chad Thompson	Date
	Federal Highway Administration	



QUALITY CONTROL CERTIFICATION FOR INTERCHANGE ACCESS REQUEST SUBMITTAL

Submittal Date:	September 1	14, 2020					
FM Number:	<u>436964-1-2</u>	<u>2-02</u>					
Project Title: Hillsboro Bouley) Systems	s Interchang	e Modifi	ication Re	port – Sample	e Road to
District: <u>Four</u>							
Requestor: <u>Rober</u>	rt E. Bostian, J	r. P.E.	_		Phone: <u>954</u>	-777-4427	
District IRC: <u>Cesa</u>	r Martinez, P.E	<u>.</u>	_		Phone: <u>95</u> 4	<u>4-777-4653</u>	
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<u>Status of Document</u> (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)

Draft Submittal

Quality Control (QC) Statement

This document has been prepared following FDOT Procedure Topic 525-030-260 (New or Modified Interchanges) and complies with the FHWA's 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:	
IRC:	Date:	



Engineer's Certification

I, Pramod Choudhary, PE, PTOE, PE number 61641, certify that I currently hold an active Professional Engineer's License in the State of Florida and I am competent through education or experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. I further certify that this report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

Project Description: SR 9 (I-95) Systems Interchange Modification Report – Sample Road to Hillsboro Boulevard

Pramod Choudhary, P.E., PTOE Florida Registration P.E. No. 61641 AECOM Technical Services, Inc. Orlando, Florida 32801



TABLE OF CONTENTS

ЕХ	XECUTIVE SUMMARYX
1	PROJECT OVERVIEW
	1.1 Introduction1-1
	1.2 Purpose and Need for Project1-1
	1.3 Planned and Programmed Transportation Projects
	1.3.1 FDOT Plans and Projects
	1.4 Requestor Information1-5
2	METHODOLOGY
	2.1 Area of Influence
	2.1.1 I-95 Mainline
	2.1.2 Along Crossroads
	2.2 Analysis Years
	2.3 Travel Demand Forecasting
	2.3.1 Selected Travel Model
	2.3.2 Model Validation Methodology
	2.3.4 Adjustment Procedures
	2.4 Traffic Factors
	2.5 Traffic Operational Analysis2-12
	2.5.1 Measures of Effectiveness (MOEs)2-13
3	EXISTING CONDITIONS
	3.1 Existing Road Characteristics
	3.1.1 SR 9/I-95 from north of Palmetto Park Road to south of Yamato Road
	(SR 794)
	3.1.2 Sample Road, SW 10 th Street, and Hillsboro Boulevard
	3.2 Existing Traffic Data 3-20 3.2.1 Existing Traffic Volumes 3-20
	 3.3 Existing Traffic Operational Analysis
	3.3.2 Existing Traffic Intersection Operational Analysis — 1-95
	3.4 Existing Crash Data 3-29
1	FUTURE NO-BUILD CONDITIONS
4	TOTORE NO-DUILD CONDITIONS



	4.1Future Land Use
	4.1.2 SW 10 th Street Interchange
	4.1.5 Sample Road Interchange
	 4.2 Land Use Change
	4.9 Future Traffic Forecast
	4.4.1 2020 & 2040 No-Build – Freeway Analysis – I-95
	4.4.2 2020 & 2040 No-Build - Intersection Analysis
5	FUTURE BUILD CONDITIONS
	5.1 Build Alternative – Transportation Network
	5.2 Future Build Alternative Traffic Forecast
	5.3 Development and Screening of Build Alternatives
	5.4 Build 1 Alternative – Traffic Operational Analysis
	5.4.1 2020 & 2040 – Freeway Analysis – I-95
	5.4.2 2020 & 2040 - Intersection Analysis
	 5.5 Build 2 Alternative – Traffic Operational Analysis
	5.5.2 2020 & 2040 - Intersection Analysis - 1.95
	5.6 Build 2A Alternative – Traffic Operational Analysis
	5.6.1 2020 & 2040 – Freeway Analysis – I-95 5-94
	5.6.2 2020 & 2040 - Intersection Analysis
	5.6.3 VISSIM Analysis of 2040 No-Build and Build 2A Alternatives
	5.7 Safety Analysis of the 2040 No-Build and Build Alternatives
	5.7.2 Crash Reduction Analysis
(
6	OTHER CONSIDERATIONS
	6.1 Potential Design Exceptions and Variations
7	PROJECT JUSTIFICATION
	7.1 FHWA's Policy on Access to the Interstate System
8	CONCEPTUAL FUNDING
9	CONCLUSION AND RECOMMENDATION



List of Tables

Table 2.1: Proposed Study Intersections	2-6
Table 2.2: Existing Traffic Factor Values.	2-12
Table 3.1: 2016 Existing – Hillsboro Boulevard Intersection Analysis Results	3-26
Table 3.2: 2016 Existing – SW 10 th Street Intersection Analysis Results	3-27
Table 3.3: 2016 Existing – Sample Road Intersection Analysis Results	3-28
Table 3.4: 2016 Existing - Off-Ramp Signals Queuing Analysis Results	3-29
Table 3.5: Crash Data Summary – 2013-2015	
Table 3.6: Crash Rate Comparison – 2013-2015	3-34
Table 4.1: 2020 No-Build – Hillsboro Boulevard Intersection Analysis Results	
Table 4.2: 2020 No-Build - SW 10 th Street Intersection Analysis Results	4-49
Table 4.3: 2020 No-Build – Sample Road Intersection Analysis Results	
Table 4.4: 2040 No-Build – Hillsboro Boulevard Intersection Analysis Results	
Table 4.5: 2040 No-Build - SW 10 th Street Intersection Analysis Results	4-52
Table 4.6: 2040 No-Build – Sample Road Intersection Analysis Results	
Table 4.7: 2040 No-Build – Off-Ramp Signals Queuing Analysis Results	
Table 5.1: 2020 Build 1 – Hillsboro Boulevard Intersection Analysis Results	
Table 5.2: 2020 Build 1 – SW 10 th Street Intersection Analysis Results	
Table 5.3: 2020 Build 1 – Sample Road Intersection Analysis Results	
Table 5.4: 2040 Build 1 – Hillsboro Boulevard Intersection Analysis Results	
Table 5.5: 2040 Build 1 – SW 10 th Street Intersection Analysis Results	
Table 5.6: 2040 Build 1 – Sample Road Intersection Analysis Results	
Table 5.7: 2040 Build 1 – Off-Ramp Signals Queuing Analysis Results	
Table 5.8: 2020 Build 2 – Hillsboro Boulevard Intersection Analysis Results	
Table 5.9: 2020 Build 2 – SW 10 th Street Intersection Analysis Results	5-88
Table 5.10: 2020 Build 2 – Sample Road Intersection Analysis Results	
Table 5.11: 2040 Build 2 – Hillsboro Boulevard Intersection Analysis Results	
Table 5.12: 2040 Build 2 – SW 10 th Street Intersection Analysis Results	
Table 5.13: 2040 Build 2 – Sample Road Intersection Analysis Results	
Table 5.14: 2040 Build 2 – Off-Ramp Signals Queuing Analysis Results	5-93
Table 5.15: 2020 Build 2A - Hillsboro Boulevard Intersection Analysis Results	
Table 5.16: 2020 Build 2A – SW 10 th Street Intersection Analysis Results	
Table 5.17: 2020 Build 2A – Sample Road Intersection Analysis Results	
Table 5.18: 2040 Build 2A – Hillsboro Boulevard Intersection Analysis Results	
Table 5.19: 2040 Build 2A – SW 10 th Street Intersection Analysis Results	
Table 5.20: 2040 Build 2A – Sample Road Intersection Analysis Results	
Table 5.21: 2040 Build 2A – Off-Ramp Signals Queuing Analysis Results	5-105
Table 5.22: 2040 Comparison of SYNCHRO and VISSIM Results - SW 10 th	
Street Interchange Ramp Approaches	
Table 5.23: 2040 Network-Wide Output (VISSIM)	
Table 5.24: Crash Reduction Analysis Summary	
Table 9.1: 2040 Comparison of No-Build and Build Alternatives - Intersection	
Analysis Results	
Table 9.2: 2040 No-Build & Build - Off-Ramp Signals Queuing Analysis Results	9-123



List of Figures

Figure 1.1:	Project Location Map	. 1-2
Figure 2.1:	Area of Influence	2-7
	2016 Existing Roadway & Intersection Lane Configuration	
Figure 3.2:	Aerial View – Hillsboro Boulevard (SR 810)	3-17
	Aerial View – SW 10 th Street (SR 869)	
Figure 3.4:	Aerial View – Sample Road (SR 834)	3-19
	2016 Existing Volumes	
Figure 3.6:	2016 Existing Year Freeway Analysis Results – Northbound	3-23
	2016 Existing Year Freeway Analysis Results - Southbound	
Figure 3.8:	FDOT CARS High Crash Locations 2013 - 2015	3-32
-	City of Deerfield Beach Future Land Use Map	
	City of Pompano Beach Future Land Use Map	
•	No-Build Roadway & Intersection Lane Configuration	
	2020 & 2040 No-Build AADT Volumes	
•	2020 No-Build Peak Hour Volumes	
•	2040 No-Build Peak Hour Volumes	
	2020 No-Build Freeway Analysis Results - Northbound	
	2020 No-Build Freeway Analysis Results - Southbound	
	2040 No-Build Freeway Analysis Results – Northbound	
0	2040 No-Build Freeway Analysis Results - Southbound	
-	Build 1 – Roadway and Intersection Lane Configurations	
•	Build 2 & Build 2A – Roadway and Intersection Lane Configurations	
	2020 & 2040 Build 1 AADT Volumes	
	2020 & 2040 Build 2 AADT Volumes	
•	2020 & 2040 Build 2A AADT Volumes	
	2020 Build 1 Peak Hour Volumes	
-	2040 Build 1 Peak Hour Volumes	
•	2020 Build 2 Peak Hour Volumes	
•	2040 Build 2 Peak Hour Volumes	
	2020 Build 2A Peak Hour Volumes	
	2040 Build 2A Peak Hour Volumes	
	2020 Build 1 Freeway Analysis Results - Northbound	
	2020 Build 1 Freeway Analysis Results - Southbound	
	2040 Build 1 Freeway Analysis Results - Northbound	
-	2040 Build 1 Freeway Analysis Results - Southbound	
-	2020 Build 2 Freeway Analysis Results - Northbound	
•	2020 Build 2 Freeway Analysis Results - Southbound	
	2040 Build 2 Freeway Analysis Results - Northbound	
	2040 Build 2 Freeway Analysis Results - Southbound	
	2020 Build 2A Freeway Analysis Results - Northbound	
-	2020 Build 2A Freeway Analysis Results - Southbound	
	2040 Build 2A Freeway Analysis Results - Northbound	
0	2040 Build 2A Freeway Analysis Results - Southbound	



APPENDICES

Appendix A:	Amended Methodology Letter of Understanding (MLOU)
Appendix B:	Raw Traffic Data & Signal Timing Data
Appendix C:	2016 Existing Freeway HCS Operational Analysis
Appendix D:	2016 Existing Synchro Intersection Analysis
Appendix E:	2013-2015 Historical Crash Maps and Statistical Summaries
Appendix F:	Travel Demand Forecast - SW 10 th Street PD&E PTFM, January 2019
Appendix G:	2020 & 2040 No-Build Freeway HCS Operational Analysis
Appendix H:	2020 & 2040 No-Build Synchro Intersection Analysis
Appendix I:	May 26, 2020 Supplemental Traffic & June 29, 2018 Alternatives Analysis
	Memo
Appendix J:	Build 1, Build 2, and Build 2A Conceptual and Signing Plans
Appendix K:	2020 & 2040 Build 1 Freeway HCS Operational Analysis
Appendix L:	2020 & 2040 Build 1 Synchro Intersection Analysis
Appendix M:	2020 & 2040 Build 2 Freeway HCS Operational Analysis
Appendix N:	2020 & 2040 Build 2 Synchro Intersection Analysis
Appendix O:	2020 & 2040 Build 2A Freeway HCS Operational Analysis
Appendix P:	2020 & 2040 Build 2A Synchro Intersection Analysis
Appendix Q:	2040 No-Build and Build Safety Analysis



EXECUTIVE SUMMARY

The primary purpose of the I-95 Systems Interchange Modification Report (SIMR) project is to identify the long-term needs of I-95 interchange at SW 10th Street (SR 869) and the adjacent interchanges at Hillsboro Boulevard (SR 810) and Sample Road (SR 834) through 2040 and to develop design concepts to address traffic spillbacks onto I-95, improve interchange operations, reduce congestion, and enhance safety. This SIMR evaluates the traffic operations of the No-Build, Build 1, Build 2 and Build 2A alternatives.

The information and analysis indicate that several of the merge, diverge and weaving areas have been designated as High Crash Locations at some point within the last three years of analysis (2013-2015). Similarly, the No-Build Alternative is projected to experience operational failures at multiple merge, diverge and weave locations along I-95 within the study interchanges. It is important to note that all three Build alternatives have similar interchange modifications and differ only in their forecast traffic volumes depending on the direct-connect ramps between I-95 Express Lanes and SW 10th Street connector lanes. Build 1 has no direct-connect ramps, Build 2 has direct-connect ramps terminating west of Military Trail, and Build 2A has direct-connect ramps connecting to Sawgrass Expressway (Please refer to Conceptual Plans in Appendix J). The following modifications have been made to the SW 10th Street interchange configuration:

- Southbound Ramp Terminal at SW 10th Street:
 - The traffic signal for the westbound left-turn from SW 10th Street traffic to southbound I-95 has been eliminated and combined with the I-95 southbound offramp signal.
 - The existing single westbound left turn lane has been converted into dual westbound left-turn lanes and the storage has been extended approximately 250 feet east of the northbound off-ramp signal.
 - A barrier separation has been provided between the eastbound through lanes and the eastbound to northbound right turn movement to eliminate weaving and allow for concurrent movement of the southbound left turn and eastbound right turn movement. The single lane eastbound to northbound loop ramp has been widened to provide for two lanes.
 - The existing single free-flow southbound right turn lane has been widened to provide for signal controlled dual right-turn lanes to improve operations and safety in the westbound direction. The free-flow right turn movements are always a safety concern for the pedestrians in the cross-walk. Also, due to the proximity of the signalized intersection at Newport Center Drive, the free-flow right turn induces weaving with the westbound traffic. This condition is likely to become worse with the introduction of the access to the westbound connector lanes immediately west of the Newport Center Drive.



- Northbound Ramp Terminal at SW 10th Street:
 - The westbound to northbound left-turn movement has been converted to a freeflow westbound to northbound right turn movement. This eliminates the westbound left turn phase and provides more green time to the eastbound movement.
 - The northbound off-ramp has been widened to provide for triple left turn and triple right turn lanes.
 - ➤ The eastbound to northbound loop ramp and the westbound to northbound slip ramp will merge together before merging with the I-95 mainline traffic.

Proposed modifications to the interchange are recommended to address projected deficiencies in the future. Listed below are specific modifications and projected benefits:

- The proposed Build 1, 2 and 2A alternatives with a 7,900 foot SB auxiliary lane on I-95 between the SB entrance ramp from SW 10th Street and the SB exit ramp to Sample Road creates a 4-lane mainline segment on SB I-95 and is projected to significantly improve the operations in the SB direction.
- The proposed NB braided ramps at the SW 10th Street interchange and the SB braided ramps at Hillsboro Boulevard not only reduce the number of merge and diverge points along I-95 but also provides for longer off-ramp storage lengths. Freeway analysis projects significant improvements over the No-Build conditions in the merge, diverge and mainline operations in both directions.
- As discussed above, the SW 10th Street interchange ramp terminal improvements proposed under the Build 1, 2 and 2A alternatives are projected to significantly improve the operations at the ramp terminals and potentially eliminate the possibility of off-ramp queues spilling on to the mainline.
- The proposed elimination of the SB on-ramp signal at SW 10th Street and the proposed improvements along SW 10th Street are expected to significantly improve the flow of traffic along the arterial, particularly at the interchange. The improved operations are projected to improve the safety along the corridor.
- The intersection of SW 10th Street and Newport Center Drive is located less than 900 feet west of the SB off-ramp terminal and the westbound queues affect the ramp operations. In order to provide more green time for the east-west movements at this intersection, the northbound and southbound approaches have been modified to allow only right turn movements. Triple right turn lanes have been provided on the northbound and southbound approaches. The northbound and southbound through and left turn movements have been reassigned based on their destination to SW 12th Avenue/Newport Center Drive local road.



These improvements address the traffic operation deficiencies by eliminating or improving the failing conditions within the interchange influence area and improving safety by reducing congestion and improving operating conditions along SW 10th Street and Hillsboro Boulevard. A traditional crash reduction analysis shows that the proposed improvements are likely to reduce approximately 42 crashes per year resulting in an annual safety benefit of more than six (6) million dollars.

Considering the overall operations along I-95, ramp terminals, and along Hillsboro Boulevard and SW 10th Street, all three Build alternatives are projected to provide better operating conditions than the No-Build. However, the operational improvements under the Build 2 and Build 2A alternatives are better than Build 1. The MOEs for Build 2 and Build 2A are very similar despite the highest traffic demand under Build 2A. In terms of Strategic Intermodal System (SIS) connectivity, Build 2A provides better connectivity. Build 2A provides a direct and logical system-to-system connection between Sawgrass Expressway and I-95 and Florida's Turnpike. VISSIM analysis conducted under the SW 10th Street Connector PD&E Study confirms that the Build 2A alternative is expected to provide better operations than the No-Build alternative in 2040.

The Federal Highway Administration's (FHWA's) newly adopted policy on *Access to the Interstate System* became effective on May 22, 2017 and replaces the policy of August 27, 2009 on *Access to the Interstate System*, published at 74 Federal Register 43743. The changes in this policy are made to ensure this policy focuses on safety, operational, and engineering issues. The consideration of social, economic, and environmental impacts discussed in the 2009 policy are removed from this policy. However, the removal from this policy does not eliminate the need to consider those matters. Those issues will be addressed under the National Environmental Policy Act and other statutes and regulations applicable to the approval process.

This policy is effective as of May 22, 2017.

It is in the national interest to preserve and enhance the Interstate System to meet the needs of the 21st Century by assuring that it provides the highest level of service in terms of safety and mobility. Full control of access along the Interstate mainline and ramps, along with control of access on the crossroad at interchanges, is critical to providing such service. Therefore, the Federal Highway Administration's (FHWA) decision to approve new or revised access points to the Interstate System under Title 23, United States Code (U.S.C.), Section 111, must be supported by substantiated information justifying and documenting that decision. The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the following requirements:



Considerations and Requirements

An operational and safety analysis has concluded that the proposed change in access 1. 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)).

The operational analysis conducted for the SIMR confirmed that the proposed interchange modifications are not expected to have any significant adverse impacts on safety and operations on the interstate facility (I-95). The proposed elimination of the loop ramp in the northeast quadrant of the Hillsboro Boulevard interchange will remove the weaving movement between the ramp terminals and thereby improve the safety and flow of traffic along Hillsboro Boulevard. The proposed improvements along SW 10th Street under the Build alternatives are expected to significantly improve the operations at the NB off-ramp terminal intersection from LOS E and F to LOS B. The 2040 No-Build queuing results for the NB off-ramp at SW 10th Street show the queues to be exceeding the available storage lengths which could adversely impact the flow of traffic along I-95. The proposed improvements under the 2040 Build conditions are projected to significantly increase the available storage length for this ramp and should prevent the queue from adversely affecting the operations along I-95. The comparison between No-Build and Build Alternative 2A shows that the annual travel time saving is approximately \$98 million. Compared to the No-Build Alternative, the Build Alternative 2A is expected to reduce the total delay by 75% and 92% and increase the average speed by 50% and 413% during the AM and PM peak hours, respectively. The Build Alternative 2A is projected to significantly improve the LOS at the intersections along SW 10th Street from LOS E and F to LOS D or better. The projected failing conditions under the No-Build Alternative are expected to increase future crash



risk within the project corridor. This potential for increased crash risk is alleviated by the capacity improvements proposed in the Build Alternatives.

Many of the improvements proposed for this project are unconventional and unique. The limitations in the Highway Safety Manual (HSM) analysis methodology fail to capture the benefits of the proposed operational and capacity improvements proposed under the Build alternatives and consequently fail to quantify the crash reduction in a meaningful way for this project. Therefore, a traditional crash reduction analysis was conducted to estimate the potential safety benefits of the proposed freeway, interchange, and arterial improvements. The analysis shows that the proposed improvements are likely to reduce approximately 42 crashes per year resulting in an annual safety benefit of more than six (6) million dollars.

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.

This SIMR does not propose any new interchanges along I-95. These existing interchanges provide access to public roads only. The improvements proposed at the interchanges will maintain full access to the existing cross streets and accommodate all movements.



1 PROJECT OVERVIEW

1.1 Introduction

At the request of the Department and as part of Financial Project ID 436964-1, a traffic analysis was undertaken to identify the long-term needs of the project area through 2040 and to develop design concepts to address traffic spillbacks onto I-95, improve interchange operations, reduce congestion, and enhance safety at the study interchange of I-95 at SW 10th Street (SR 869) and adjacent interchanges at Hillsboro Boulevard (SR 810) and Sample Road (SR 834). The study area is located within the City of Deerfield Beach in northeast Broward County, Florida. The project area includes I-95 (SR 9) from south of Sample Road (SR 834) (MP 21.601) to north of Hillsboro Boulevard (SR 810) (MP 24.641). **Figure 1.1** provides a Project Location Map. This System Interchange Modification Report (SIMR) provides the justification documentation for the proposed interchange access modifications to the SW 10th Street and Hillsboro Boulevard interchanges along I-95.

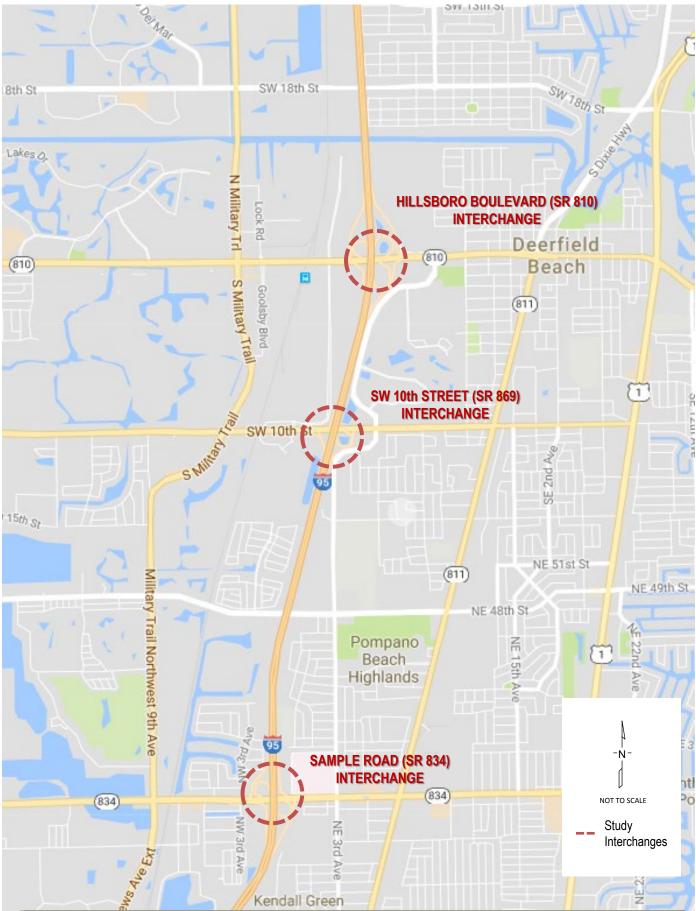
1.2 Purpose and Need for Project

The purpose of this project is to eliminate various existing operational and safety deficiencies along I-95 between and including the interchanges at SW 10th Street and Hillsboro Boulevard, and also on SW 10th Street and Hillsboro Boulevard in the vicinity of I-95. The primary need for the project is based on capacity/operational and safety issues, with secondary considerations for the needs of evacuation and emergency services, transportation demand, system linkage, modal interrelationships, and social demands and economic development.

1.3 Planned and Programmed Transportation Projects

Applicable Master Plans, Strategic Intermodal System (SIS) Plans, Florida Department of Transportation's (FDOT's) Five (5) Year Work Program, interchange planning and safety studies performed by FDOT District Four and future projects identified in the Palm Beach Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP), Palm Beach MPO 2040 Long Range Transportation Plan (LRTP), local government comprehensive plans, and active Development of Regional Impact (DRI) applications were reviewed to identify any planned and programmed improvements within the study limits of the SIMR. Additionally, the I-95 Express Lanes Phase 3 Design was also reviewed to identify planned and programmed improvements within the SIMR limits. The SIMR improvements will be developed to be consistent with these plans or steps will be taken to achieve consistency.







1.3.1 FDOT Plans and Projects

The I-95 Express Phase 3B-2 project from Stirling Road to Linton Boulevard is currently under preliminary design and will be let in FY 2019 as a Design-Build project. This project will introduce 2 tolled, express lanes in place of the existing High Occupancy Vehicle lane. The I-95 Corridor Design Consultant (CDC) is analyzing this project to ensure its compatibility with the I-95 SIMR.

In addition, there is an ongoing SW 10th Street Connector PD&E Study (FPID 439891-1) which is studying the feasibility of connecting the existing Sawgrass Expressway from Florida's Turnpike to I-95 through managed lanes. Every effort has been taken to maintain consistency between this SIMR and the ongoing PD&E Study.

The following FDOT planned projects have been identified within the SIMR study limits:

I-95 Interchange Improvements from Hillsboro Boulevard to SW 10th Street

Financial Number: 430932-1-52-01 Project Length: 1.5 miles Project Limits: I-95 from the Hillsboro Boulevard entrance ramp to SW 10th Street Start Date: January 5, 2015 Completed: Spring 2018 Contractor: Community Asphalt Corp. Estimated Construction Cost: \$4.5 million Scope of Work:

This is 1 of 5 interchange improvements throughout Broward and Palm Beach Counties. Work at this location included the following:

- Added SB auxiliary lane on I-95 from eastbound Hillsboro Boulevard to I-95 southbound entrance ramp to the SW 10th Street exit ramp.
- Widened the SB I-95 exit-ramp to provide a two-lane exit from I-95 with free-flow southbound right turn and two exclusive southbound left turn lanes at the SW 10th Street SB off-ramp terminal.
- The free-flow southbound right turn lane was extended to the Newport Center Drive intersection as an exclusive westbound right turn lane.
- Utility relocation, milling and resurfacing of existing pavement, bridge widening, and installation of barrier walls, curbs, sidewalks, guardrail, drainage, overhead signs, signing and pavement marking, signals, lighting and retaining walls.



Hillsboro Boulevard Improvements Project in Deerfield Beach

Financial Number: 430602-1-52-01 Project Length: 2.32 miles Project Limits: Hillsboro Boulevard from Military Trail to US 1 in Deerfield Beach Start Date: January 3, 2017 Completion Date: Early 2018 Contractor: General Asphalt Co. Estimated Construction Cost: \$9.4 million Scope of Work:

The improvements under this project consisted of the following:

- Improved the off-ramp from NB I-95 to EB Hillsboro Boulevard including the addition of a new signalized intersection and second lane to increase capacity.
- Relocated and upgraded drainage structures, upgraded crosswalk ramps to meet ADA requirements, constructed new stamped asphalt crosswalks from east of Natura Boulevard to US 1.
- Upgraded existing pedestrian signals to countdown timers, upgraded signalized intersections to mast arms, and installed new decorative lighting.
- Constructed new medians east of SE 2nd Avenue, removed old asphalt and resurfaced the roadway, upgraded signs and pavement markings to reflect the new roadway configuration as follows: (1) Military Trail to Dixie Highway three 11-foot lanes in each direction (2) NE / SE 2nd Avenue to US 1 two 11-foot lanes in each direction with a bike lane or sharrows in each direction as follows: (i) Military Trail to NW/SW 2nd Terrace 4-foot bike lane (ii) NW / SW 2nd Terrace to NE / SE 2nd Avenue Sharrow symbols to designate that the outside travel lane will be shared with vehicles (iii) NE / SE 2nd Avenue to US 1 7-foot bike lane.

Sample Road Interchange Ramp Improvements:

Financial Number: 436958-1-52-01 Project Length: 1.12 miles Project Limits: I-95/SR-9 @ Sample Road Interchange

The improvements under this project consisted of the following:

- Combine the WB to SB loop on-ramp from Sample Road with the EB to SB slip on-ramp from Sample Road to create a single on-ramp merge on the mainline.
- Combine the EB to NB loop on-ramp from Sample Road with the WB to NB slip on-ramp from Sample Road to create a single on-ramp merge on the mainline.



1.4 Requestor Information

This I-95 Systems Interchange Modification Report (SIMR) has been prepared for the Florida Department of Transportation, District Four. For information on the SIMR, please contact the Department's Project Manager at the following address:

Robert E. Bostian, Jr., PE, Project Manager FDOT- District 4

3400 West Commercial Boulevard Fort Lauderdale, FL 33309-3421

Phone: (954) 777-4427

E-mail: Robert.Bostian@dot.state.fl.us

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2 METHODOLOGY

The methodology applied for the I-95 SIMR is documented in the Methodology Letter of Understanding (MLOU) dated November 2019 which includes Amendments #1 and #2 to the original MLOU signed in May 2017. The MLOU was approved by FDOT District 4, Systems Implementation Office of FDOT Central Office, and Federal Highway Administration (FHWA). The MLOU outlines the criteria, assumptions, processes, analyses and documentation requirements for the project. The project has changed from being a programmatic project to a non-programmatic project due to the system-to-system connection between I-95 and Sawgrass Expressway. The approved MLOU is included in **Appendix A** for ease of reference. The following summarizes some of the more prominent topics covered under the MLOU.

2.1 Area of Influence

2.1.1 I-95 Mainline

The Area of Influence (AOI) along I-95 (SR 9) will include the freeway merge/diverge ramps at the adjacent interchanges to the south and north of SW 10th Street including ingress/egress ramps to/from I-95 Express lanes. For existing conditions, the adjacent interchange south of SW 10th Street is Sample Road (SR 834) and the adjacent interchange north of SW 10th Street is Hillsboro Boulevard (SR 810). **Figure 2.1** provides a graphical representation of the AOI.

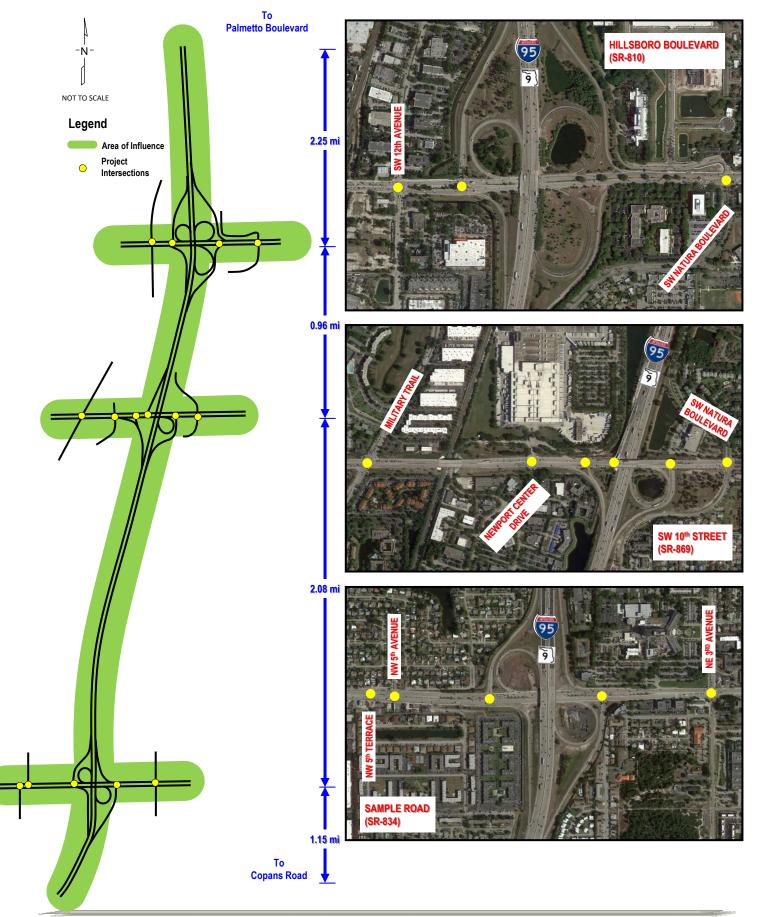
2.1.2 Along Crossroads

The AOI will include the intersections identified in **Table 2.1** below.

Interchange	List of Intersections			
	I-95 NB off ramp at Sample Road			
	• I-95 SB off ramp at Sample Road			
Sample Road (SR 834)	• Sample Road at NW 5 th Terrace			
	• Sample Road at NW 5 th Avenue			
	• Sample Road at NE 3 rd Avenue			
	• I-95 NB off ramp at SW 10 th Street			
	• I-95 SB off ramp at SW 10 th Street			
SW 10 th Street (SR 869)	• SW 10 th Street at S. Military Trail			
	• SW 10 th Street at Newport Center Drive			
	• SW 10 th Street at Natura Boulevard			
	• I-95 NB off ramp at Hillsboro Boulevard			
Hillsboro Boulevard (SR 810)	• I-95 SB off ramp at Hillsboro Boulevard			
	• Hillsboro Boulevard at SW 12 th Avenue			
	Hillsboro Boulevard at Natura Boulevard/Fairway Drive			

 Table 2.1: Proposed Study Intersections

Figure 2.1: Area of Influence





2.2 Analysis Years

The analysis years for the project were determined as follows:

For Traffic Forecasting:

- Base year 2005
- Horizon year 2035

For Traffic Operational Analysis:

- Existing year 2016
- Opening year 2020
- Design year 2040

2.3 Travel Demand Forecasting

2.3.1 Selected Travel Model

The modeling effort was coordinated between FDOT District 4 and Florida's Turnpike to produce a consistent traffic forecasts for various traffic studies on major corridors - I-95, SW 10th Express Lanes Street, Sawgrass Expressway Widening, and Florida's Turnpike Widening. The travel demand forecasts for the SW 10th Street SIMR were prepared by Florida's Turnpike in conjunction with the SW 10th Street PD&E and Sawgrass Widening PD&E studies. At the beginning of the forecast effort in late-2016, the Florida's Turnpike developed the project-level SERPM 6.54 FTE for use in this study. The SERPM 6.54 FTE included network and socioeconomic data updates consistent with SERPM 7. District 4 approved the use of the SERPM 6.54 model at the onset of the project since the effort was being conducted by the Florida's Turnpike. Additionally, District 4 conducted a reasonability test comparing SERPM 7 with SERPM 6.54 in anticipation of future questions. As documented in the SW 10th Street Subarea Model validation dated December 2017, the comparative analysis found the models to be relatively similar indicating reliability of forecasted volume along the corridor.

The project traffic forecasts for this study were developed through a multi-step process. With the need to estimate dynamically tolled express lane traffic for the Build scenarios, the methodology used two modeling tools:

- SERPM Travel demand model
- Express Lanes Time-of-Day Model

Forecasted AADT and EL hourly traffic were derived from these two models. This information was used to derive future year directional design hour traffic (DDHV). Model-generated origin-destination trip matrices also provided inputs to operational simulation models for the No-Build and Build scenarios.



As mentioned above, the study used the FTE version of the Southeast Regional Planning Model (SERPM-FTE) 6.5.4, which has been used for various studies, including the I-95 Express Lanes Traffic and Revenue study and the Sawgrass Expressway Widening PD&E study. The SERPM covers a three-county region in Southeast Florida: Palm Beach, Broward, and Miami-Dade. SERPM-FTE includes model network enhancements such as the recoding of interchange configurations along the major freeway networks in Southeast Florida and updates to the future land use data to reflect the best known information at the time. The SERPM produces travel demand forecasts at a daily level and by three time periods: AM Peak (6:30 AM – 9:30 AM), PM Peak (3:30 PM – 6:30 PM), and off-peak (remainder of the day).

The Express Lane Time of day (ELToD) model works in conjunction with the SERPM and is designed to take daily and peak period subarea trip tables and produce traffic estimates by hour, by direction, for both the general purpose lanes (GPLs) and ELs for each roadway segment. The model is considered state-of-the-practice for forecasting travel demand on Express Toll lanes in Florida.

2.3.2 Model Validation Methodology

The model development for this project consisted of enhancing the local subarea by recoding intersection configurations, splitting Traffic Analysis Zones (TAZs), and adding local streets important to local circulation around the study corridor. Within the subarea, the highway network coding was reviewed and corrected as needed using aerial imagery. The SERPM was validated to 2010 traffic conditions in an iterative fashion by first adjusting link speeds at the regional level and using the Cube Analyst process at the subarea level.

A Cube Analyst process was used at the subarea level to adjust the origin-destination matrices to obtain a better correlation between observed counts and model estimates. The Cube Analyst process is a matrix estimator that uses a seed origin-destination matrix along with link level traffic counts to develop an origin-destination matrix in an iterative fashion that corresponds to model-estimated volumes which closely match the provided link counts.

The adjustments to origin-destination tables by the Cube Analyst process were calculated by subtracting the original subarea origin-destination table from the adjusted origin-destination table by time period. This adjustment (also known as validation Delta) was applied to the future year model estimated origin-destination tables.

2.3.3 Project Traffic Forecast Development Methodology

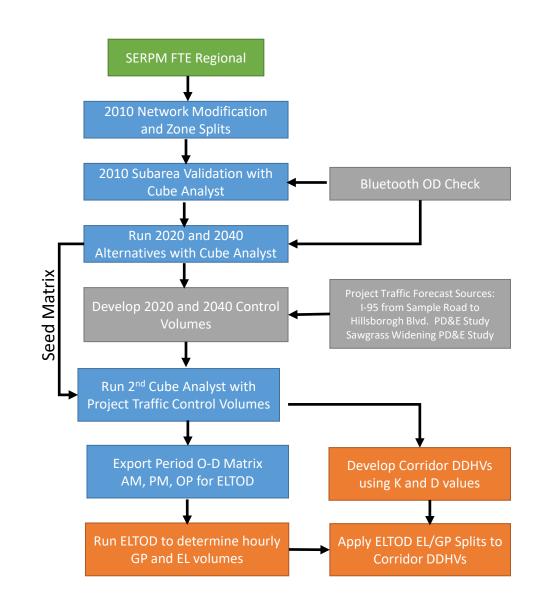
The development of the project traffic forecast was a multi-step effort involving a combination of internal modeling procedures and post-model evaluation. **Figure 2.2** illustrates the process beginning with the regional model. After the SERPM-FTE project model was validated against the 2010 traffic conditions, the future year model runs were conducted for the 2020 and 2040



No-Build and Build alternatives. The results of the future year Build scenarios were checked against the Bluetooth Origin-Destination data to see if the traffic between the Turnpike and I-95 Corridors that diverted to the SW 10th Street from the other interchanges was reasonable.

The traffic forecasting methodology used for each approach of each intersection was based on the 2016 AADT (from the field), and 2010 and 2040 SERPM model volumes. The recommended 2040 AADTs were calculated by applying the model growth rate to the 2016 AADT. For all the roadway links, the 2016 and 2040 AADT have been compared, and a minimum compound growth rate of 0.5% has been adopted. Then the 2020 and 2030 volumes were interpolated using 2016 AADT and recommended 2040 volumes.

Figure 2.2: Project Traffic Forecast Development Process





Once the No-Build forecast was determined for 2040, the Build project forecast was determined by applying the model differences to the No-Build project forecast. For example, 2040 Build 2 project traffic forecasts = 2040 No-Build project traffic + (2040 Build 2 Model – 2040 No-Build Model). The Build 2A project traffic was determined by taking the difference between the Build 2 and Build 2A model values and adding this impact layer to the Build 2 project forecast. This process was also used to develop 2020 and 2040 Build 2 and Build 2A forecast volumes along I-95 mainline, all ramps, and arterials.

Once project traffic forecast volumes were established as control values, a second Cube Analyst step was implemented to adjust the initial trip tables to match with the forecast values at selected links in the subarea. The final adjusted trip tables were assigned to the subarea networks for each scenario to produce the 2020 and 2040 forecasts on all links with and without control totals. Finally, the second Cube Analyst assignment results were checked, smoothed, and rounded to produce the project forecast AADTs.

The final forecasted AADTs from the subarea model, along with K-factors and D-factors, were used to develop corridor-level directional design hour volume (DDHV). For express lane locations, the Subarea model peak period trip tables were then exported to ELToD to determine hourly traffic for the general purpose and express toll lanes.

2.3.4 Adjustment Procedures

If the model growth rate was less than the recommended 0.5% growth rate, a 0.5% growth rate was utilized. Otherwise, the growth factor calculated based on the model volumes was used. Then the 2020 and 2030 volumes were interpolated using 2016 AADT and recommended 2040 volumes. For the roadway segments where the 2040 model volumes are lower than the 2010 model volumes, or are not included in the model network, the future 2020, 2030, and 2040 AADTs were calculated using 2016 AADT and a compound growth factor of 0.5%.

The No-Build scenario for the I-95 PD&E study and the SW 10th Street PD&E study is the same. Hence, there is a need to achieve a consistent project forecast between the two projects. The forecast approach discussed with FDOT District 4 and Turnpike staff was to determine a project forecast for the No-Build scenario consistent with the I-95 PD&E study and pivot from these forecasts using the impacts identified from the SW 10th Street PD&E model. The methodology outlined in the Traffic Data Collection and Traffic Projections Report for the I-95 PD&E study was to apply a growth rate of 0.5 percent or model growth (whichever is greater) to the 2016 traffic volumes. Since the SW 10th Street Study I-95 study limits extend beyond the I-95 PD&E study limits (from Sample Road to Hillsboro Boulevard), a 0.5 percent growth rate was applied for the interchanges south of Sample Road, and the raw subarea SW 10th Street model results were used north of Hillsboro.



2.4 Traffic Factors

The directional design hour volumes (DDHV) development process for the I-95 IMR involved the application of the standard procedure of adjusting the Annual Average Daily Traffic (AADT) volumes with the Standard K and D30 traffic factors. However, it was adjusted to produce AM and PM peak hour volumes along the different corridors as follows:

- Standard K was applied to the highest peak hour period between AM or PM; the other period K factor was determined as a ratio based on existing counts.
- I-95 mainline Calculated K = 7.0% was proposed
- Standard K = 8.0 was applied to I-95 ramps and along the crossing corridors between the I-95 Ramps. Other K factors were based on existing and historical counts. D factors were calculated by link for each peak period based on existing and historical data.
- 24T and DHTf were calculated for each intersection or link based on existing and historical data. A minimum DHTf factor of 2.0% was used.
- PHF for Existing Year Analysis was based on existing counts. PHF for Future Year Analyses: PHF=0.95 for I-95 Mainline; PHF=0.92 for ramp movements and cross streets.
- TMTool, rounding and balancing were conducted; therefore, the final K and D may not match the initial values.

Roadway	K%	D%	24T%	DHTf ⁽¹⁾ %	PHF ⁽²⁾
I-95 Mainline	7.0	50.5 to 56.7	4.0 to 6.0	2.0 to 3.0	0.85 to 0.99
I-95 Ramps	8.0	100	4.0 to 6.0	2.0 to 3.0	0.85 to 0.99
SW 10 th Street	5.7 to 12.8	50.0 to 83.4	3.0 to 8.0	2.0 to 3.0	0.93 to 0.97
Hillsboro Boulevard	3.6 to 9.0	50.0 to 93.3	3.0 to 9.0	2.0	0.94 to 0.96
Sample Road	3.9 to 9.5	50.7 to 71.2	3.0 to 7.0	2.0 to 3.0	0.92 to 0.96

The proposed Traffic factors for this SIMR are summarized on Table 2.2

Table 2.2: Existing Traffic Factor Values

Source: AECOM preliminary calculations based on existing and historical volume data.

(1) A minimum DHT_f factor of 2.0% will be used.

(2) PHF for Future Year Analyses: PHF=0.95 for I-95 Mainline; PHF=0.92 for ramp movements and cross streets.

2.5 Traffic Operational Analysis

Traffic operational analyses were performed for the Existing Conditions and future No-Build and Build Alternatives. Analyses were performed using the Highway Capacity Software (HCS2010), Version 6.9 and Synchro Version 9. In order to maintain consistency between the three projects viz. SW 10th Street Connector PD&E (439891-1), I-95/SW 10th Street SIMR (436964-1) and Sawgrass Expressway PD&E, within the study area, Synchro 9 was used for all three projects. HCS2010 was used for operational analyses of freeway segments - mainline, ramps, merge,



diverge and weaving segments. Synchro analyses were performed for adjacent signalized intersections and interchange ramp terminal intersections. Synchro software results were reported utilizing the HCM 2000 module outputs. It is important to note that HCM2000 delays can be reported for unconventional intersection designs and signal timings. HCM 2010 fails to provide this information. In order to maintain consistency between the SW 10th Street Connector PD&E Study, I-95/SW 10th Street SIMR and Sawgrass Expressway PD&E Study, HCM 2000 was reported for all intersections.

The HCS and Synchro operations analyses were performed for the following conditions:

- Existing year 2016 conditions, AM and PM peak hours
- Year 2020 conditions for No-Build, Build 1, Build 2, and Build 2A Alternatives, AM and PM peak hours
- Year 2040 conditions for No-Build, Build 1, Build 2, and Build 2A Alternatives, AM and PM peak hours
- Existing year Synchro analysis was conducted using the existing signal timing data
- All future year Synchro analysis for both the No-Build and Build conditions included signal optimization.

2.5.1 Measures of Effectiveness (MOEs)

Analyses of the interchange ramp terminals and adjacent intersections were conducted using Synchro 9 software and results were reported utilizing the HCM 2000 output. Since HCM methodology does not report queues, 95th percentile queues were obtained from Synchro report.

FDOT Topic No. 000-525-006-c provides Level of Service (LOS) Targets for the State Highway System (SHS). The following LOS criteria are considered acceptable for the SIMR. The following LOS criteria were considered for the I-95 IMP analysis since the study area is considered to be an "Urbanized Areas over 500,000".

- SIS Facilities LOS D
- Other State Roads LOS D

It should be noted that the traffic operational objectives were to maintain or improve the No-Build operations; therefore, the Build Alternatives may not meet the Department's LOS D target in urbanized areas because of the design constraints.

In addition to the signalized intersection LOS criteria stated above, operational analysis criteria also included the following:

- Density (passenger cars/mile/lane) for HCS analysis
- Delay (seconds per vehicle)



- Maximum volume-to-capacity (v/c) ratio: Where possible, each intersection movement was designed to have a v/c ratio of 1.0 or less.
- Interchange off-ramp queue lengths: The 95th percentile queue was utilized to determine the required storage length for all interchange off-ramp queue lengths. Since HCM methodology does not report queues, 95th percentile queues were obtained from Synchro report. The 95th percentile queue was calculated utilizing Synchro queue results which are reported in feet by lane. In order to obtain the total queue length, Synchro reported queue length was multiplied by the number of turn lanes and the lane utilization factor.

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3 EXISTING CONDITIONS

3.1 Existing Road Characteristics

The general characteristics of the roadway facilities located within the project limits are described in the sections below. The data below is based on information gathered from the FDOT's Roadway Characteristics Inventory, Straight Line Diagrams (SLDs), Broward County MPO, Broward County Traffic and Engineering Division and field reviews. The existing roadway and intersection lane configurations are depicted in **Figure 3.1**. The Aerial views of the interchanges are presented in **Figures 3.2 through 3.4**.

3.1.1 SR 9/I-95 from north of Palmetto Park Road to south of Yamato Road (SR 794)

Facility Type: Freeway, Limited Access, SIS Facility
Functional Classification: Urban Principal Arterial - Interstate
Access Management Classification (FDOT): Class 1
Typical Section:
North of Sample Road to North of Hillsboro Boulevard Interchange:
Northbound and Southbound: 3 GP, 1 HOV / BW

South of Sample Road Interchange:

Northbound and Southbound: 1 AUX, 3 GP, 1 HOV / BW

Note: AUX-Auxiliary Lane/GP-General Purpose Lane/HOV-High Occupancy Vehicle Lane/BW-Barrier Wall Median

Posted Speed Limit: 65 mph

3.1.2 Sample Road, SW 10th Street, and Hillsboro Boulevard

Facility Type: Arterial Functional Classification: Urban Principal Arterial - Other Access Management Classification (FDOT): Class 5 Typical Section: EB & WB: 3 Lanes/ Raised Median Posted Speed Limit: 45 mph

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Figure 3.1: 2016 Existing Roadway and Intersection Lane Configurations

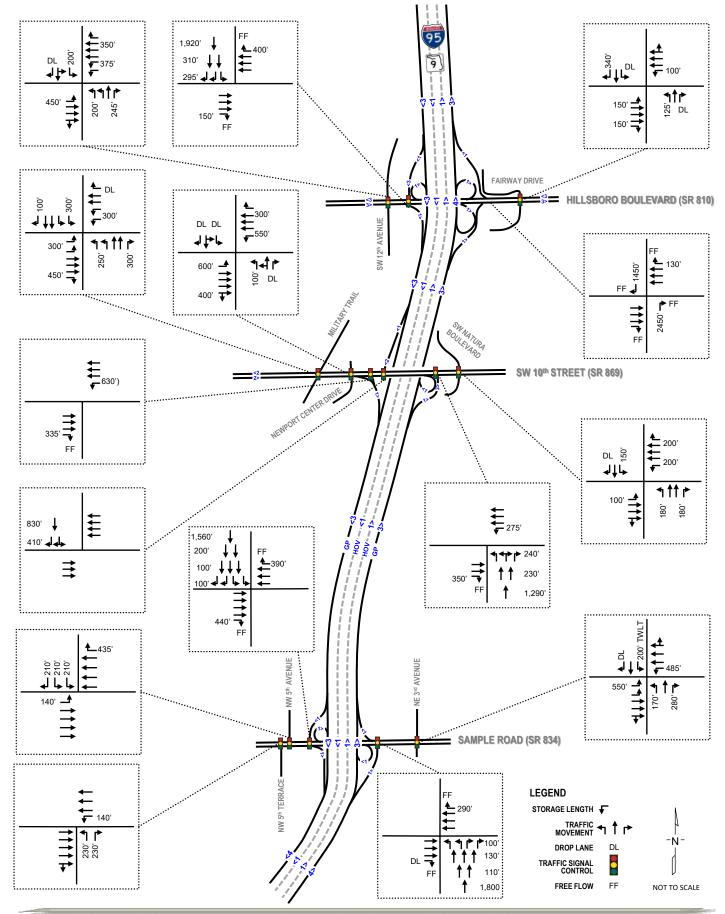


Figure 3.2: Aerial View - Hillsboro Boulevard (SR 810)

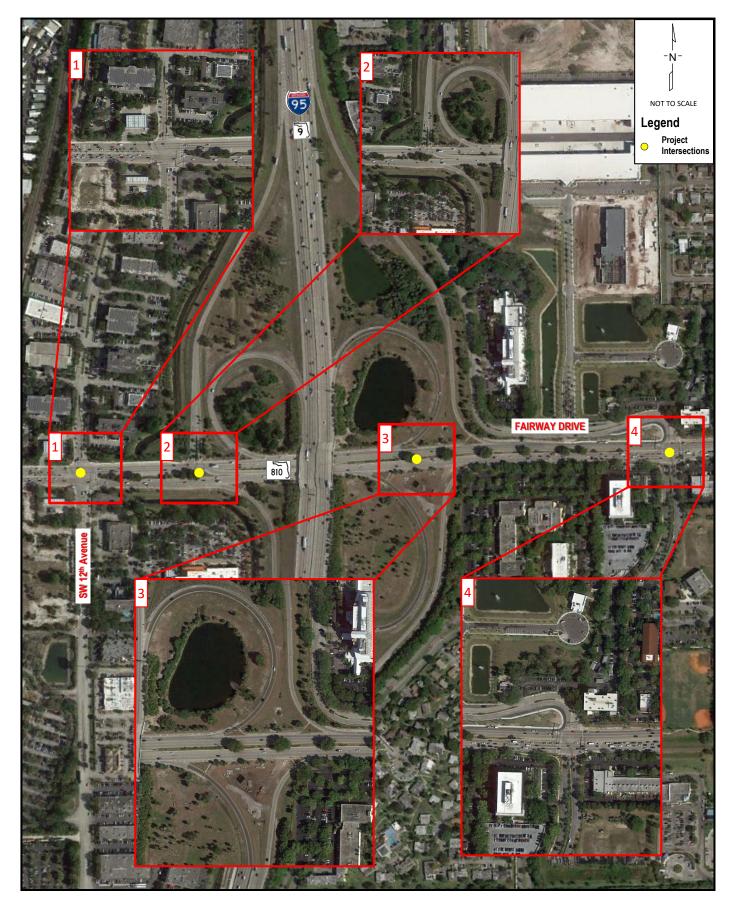


Figure 3.3: Aerial View - SW 10th Street (SR 869)

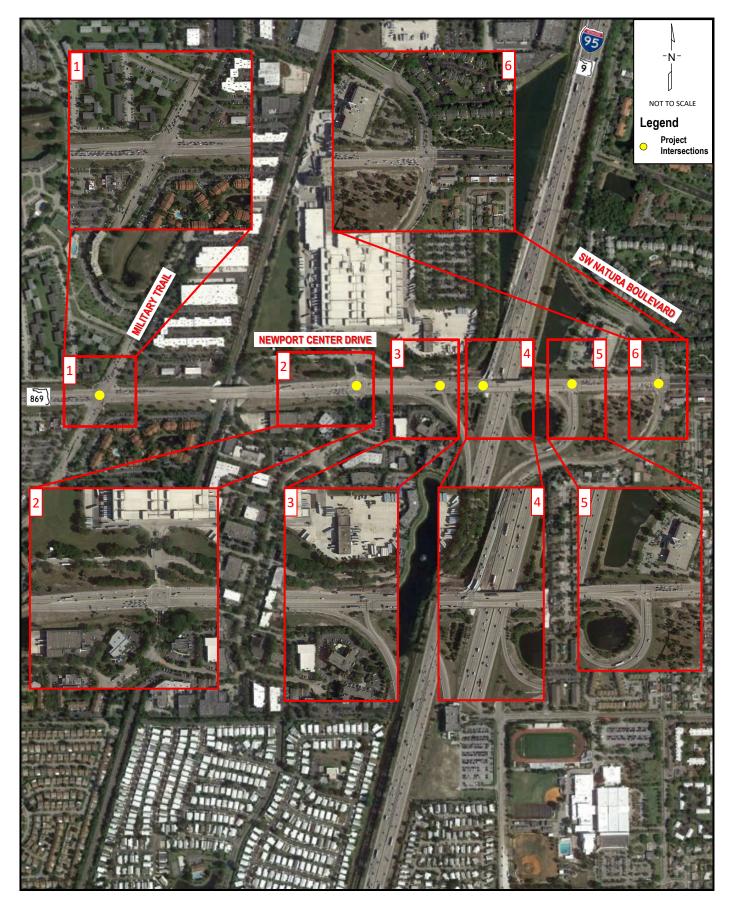


Figure 3.4: Aerial View – Sample Road (SR 834)





3.2 Existing Traffic Data

FDOT District 4 provided existing 2016 volumes that had been summarized in the *Traffic Data* Collection & Traffic Projections for I-95 PD&E Study from SW 10th Street to Hillsboro Boulevard, dated May 19, 2016. The data collection effort was completed March 8 through March 10, 2016.

As part of the SW 10th Street Connector PD&E Study (FPID 439891-1), a comparison of these volumes with volumes from previous studies revealed significant differences. In most cases, the District's March 2016 data showed lower volumes. In order to address the discrepancies and to supplement existing data, additional 4-hour turning movement counts were conducted at 16 locations and 2-day to 7-day directional machine counts were collected at 3 locations. These additional counts were collected by Florida's Turnpike Enterprise (FTE) between October 18 and October 25, 2016. The locations and summaries are documented in the *SW 10th Street PD&E Project Traffic Forecast Memorandum dated January 2019* prepared by FTE and included in Appendix F.

The additional counts verified that the March 2016 data presented lower volumes. Therefore, adjustments were made to develop balanced existing 2016 traffic volumes throughout the study area. I-95 ramp volumes were adjusted to volumes obtained as part of the Broward County Interchange Master Plan reports.

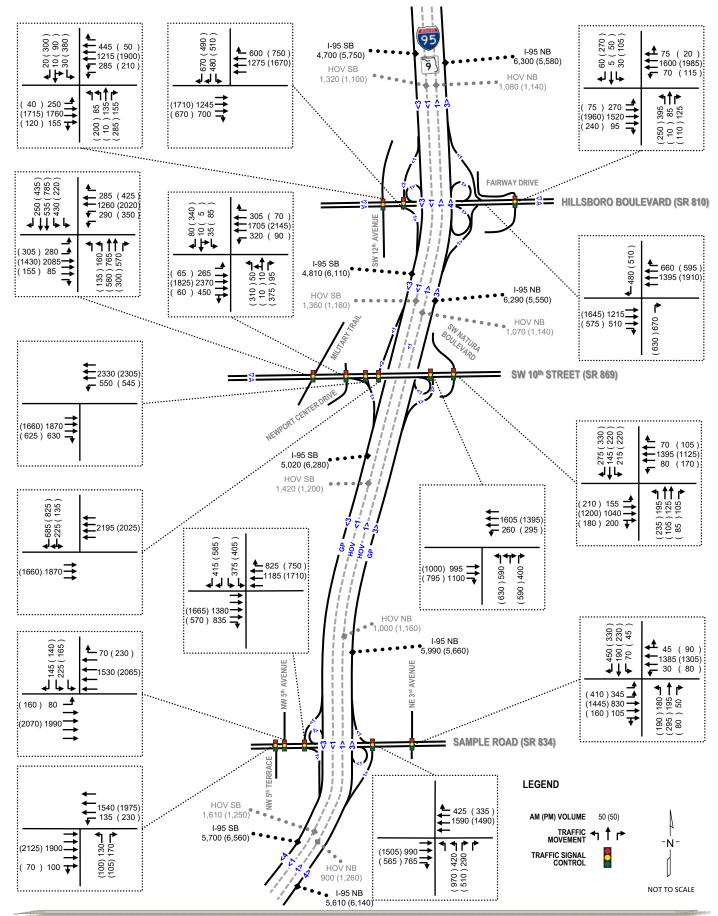
3.2.1 Existing Traffic Volumes

Figure 3.5 presents a summary of the balanced 2016 existing traffic volumes. The raw traffic counts and the existing signal timing is provided in **Appendix B**. These volumes are consistent with the ongoing SW 10th Street Connector PD&E Study.

3.3 Existing Traffic Operational Analysis

A traffic operational analysis was conducted to evaluate the existing conditions in the study area. Major analysis parameters include volume, design hour truck percentage, peak hour factor (PHF) and roadway geometry. The existing intersection PHFs were used for the intersection analysis. Design Hour Truck (DHT) values were calculated based on historical data from the FDOT count sites within the study area, mechanical classification counts and turning movement counts conducted as part of the I-95 PD&E Study data collection efforts. Peak hour values from mechanical counts were calculated as half the daily value in accordance with the FDOT Project Traffic Forecasting Handbook. The calculated DHT used for the I-95 mainline was 3.0%. The calculated DHT used was 2.0% for the ramps and for the interchange cross-streets.

Figure 3.5: 2016 Existing Volumes





3.3.1 Existing Traffic Freeway Operational Analysis – I-95

The measure of effectiveness used to estimate the LOS was density and volume to capacity ratio. The LOS for each freeway segment was determined using the corresponding HCS Freeways, Weaving or Ramps modules when applicable.

The HOV lane and corresponding volumes were excluded for the HCS analysis in order to be able to analyze the operating conditions of the general purpose lanes. The HOV lane demand was based on the data collection and analysis documented in the 2010 I-95 High-Occupancy Vehicle Lane Monitoring Report, dated May 2011. The report documents that the HOV northbound lane demand is approximately 16% of the total traffic for the AM and PM peak hours and the HOV southbound lane demand is approximately 16% and 18% for AM and PM peak hours, respectively. The percentile demand was applied to the provided existing volumes.

The mainline/basic, weaving, and ramp merge/diverge analysis results are summarized on **Figures 3.6** and **3.7** for Northbound and Southbound directions, respectively. Documentation of the existing traffic freeway operational analysis is provided in **Appendix C**. The results indicate that eight (8) of the sixteen (16) northbound freeway segments in the study area operate at LOS E or F during one or both of the peak hours and three (3) of the fifteen (15) southbound freeway segments in the study area operate at LOS E only during the PM peak hour.

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Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)]		
Basic Freeway	6,300 (5,580)	E (39.1)	D (30.4)	1 1 2 1 3 1 1 2 1 3 1 2 1 3		4,
Merge from Hillsboro Boulevard WB	6,310 (5,580)	<mark>E</mark> (35.9)	D (30.8)	¹ 1 1 2 3 1 2 3	525'	1,
Basic Freeway	5,650 (4,985)	D (32.3)	C (25.7)		Entry from Hillsboro Blvd WB 660 (595) vph Exit to Hillsboro Blvd WB 480 (510) vph	2,
Weave - Entry Hillsboro Blvd EB to Exit Hillsboro Blvd WB	6,130 (5,495)	D (30.6)	C (27.1)	² 11213	790'	<u> </u>
Basic Freeway	5,620 (4,920)	D (32.0)	C (25.3)	² <u>1 2 3</u>	Entry from Hillsboro Blvd EB 510 (575) vph Exit to Hillsboro Blvd EB 19 670 (630) vph	1
Diverge to Hillsboro Boulevard EB	6,290 (5,550)	<mark>E</mark> (37.6)	D (33.7)		220'	1
Basic Freeway	6,290 (5,550)	<mark>E</mark> (39.0)	D (29.9)	1 020(1)140) 1 2 3 1 2 3		(
Merge from SW 10th Street EB & WB	6,360 (5,530)	D (31.4)	C (25.8)	₽ <u>1,2,3</u>	1,345'	1
Basic Freeway	5,000 (4,440)	D (27.0)	C (22.3)		Entry from SW 10th St EB & WB 1,360 (1,090) vph Exit to SW 10th St EB & WB 990 (1,220) vph	1
Diverge to SW 10th Street EB & WB	5,990 (5,660)	E (36.4)	E (35.7)	₽ 1 2 3	250'	1
Basic Freeway	5,990 (5,660)	<mark>E</mark> (35.6)	D (32.4)		Ĵ	4
Merge from Sample Road WB	6,090 (5,560)	F (36.6)	D (30.4)	5 1 2 3	620'	1
Basic Freeway	5,665 (5,225)	<mark>E</mark> (39.5)	D (29.1)		Entry from Sample Rd WB 425 (335) vph	<u>. </u>
Merge from Sample Road EB	5,665 (5,225)	D (33.3)	C (27.5)	≩ 1 1 2 1 3] ↓	1
Basic Freeway	4,900 (4,660)	D (30.7)	C (24.9)		Entry from Sample Rd EB 765 (565) vph Exit to Sample Rd EB & WB 710 (1480) vph	1
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	5,610 (6,140)	C (27.4)	D (32.5)	(0971)006	1,820'	2

Figure 3.6: 2016 Existing Year Freeway Analysis Results - Northbound

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

Figure 3.7: 2016 Existing Year Freeway Analysis Results - Southbound

		0 (5,750)		Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)
6,025'			1,320 (1,100)	Basic Freeway	4,700 (5,750)	C (24.5)	D (32.6)
1,500'		<u>1 2 3</u>	ЛОН	Diverge to Hillsboro Boulevard EB & WB	4,700 (5,750)	C (20.0)	C (24.0)
2,175'	Exit to Hillsboro Blvd EB & WB 1,150 (1,000) vph Entry from Hillsboro Blvd WB 600 (750) vph	<u>1 2 3</u>	ЛОН	Basic Freeway	3,550 (4,750)	B (17.9)	C (24.8)
1,500'	945'	1 2 3	ЛОН	Merge from Hillsboro Boulevard WB	4,150 (5,500)	C (22.3)	D (29.5)
580'	Entry from Hillsboro Blvd EB 700 (670) vph	1 2 3 5	ЛОН	Basic Freeway	4,150 (5,500)	C (21.1)	D (30.4)
1,500'	600′ ↓	1 2 3 6	ЛОН	Merge from Hillsboro Boulevard EB	4,850 (6,170)	D (28.3)	D (34.0)
330'	180'	<u>1 2 3</u>	1,360 (1,160)	Diverge to SW 10th Street EB & WB	4,810 (6,110)	D (31.9)	E (37.4)
2,210'	Exit to SW 10th St EB & WB 910 (960) vph Entry from SW 10th St EB & WB 1,180 (1,170) vph	1 2 3	ЛОН	Basic Freeway	3,900 (5,150)	C (19.7)	D (27.7)
1,500'		<u>1 2 3</u>	ЛОН	Merge from SW 10th Street EB & WB	5,080 (6,320)	C (24.9)	D (34.1)
5,000'		<u>1 2 3</u> 1 2 3 1 0 1 0	1,420 (1,200)	Basic Freeway	5,020 (6,280)	D (27.1)	E (38.9)
1,500'	250'	<u>1, 2, 3</u>	ЛОН	Diverge to Sample Road EB & WB	5,020 (6,280)	D (31.8)	E (36.6)
1,660'	Exit to Sample Rd EB & WB 790 (990) vph Entry from Sample Rd WB 825 (750) vph	<u>1 2 3</u>	ЛОН	Basic Freeway	4,230 (5,290)	C (21.6)	D (27.5)
1,500'	990'	<u>1 2 3</u>	ЛОН	Merge from Sample Road WB	5,055 (6,040)	C (27.7)	D (31.1)
900'	Entry from Sample Rd EB 835 (570) vph	<u>1 2 3</u>	ЛОН	Basic Freeway	5,055 (6,040)	D (27.0)	D (33.6)
1,720'	1,410	2'3'4 15	1,610 (1,250)	Weave - Entry Sample Road EB to Exit Copans Road WB	5,700 (6,560)	D (30.0)	D (33.8)



3.3.2 Existing Traffic Intersection Operational Analysis

Intersection analysis for ramp-terminals and adjacent intersections was performed using existing turning movement volumes, existing lane geometry, and signal timing observations and information obtained from Broward County. Analyses of the interchange ramp terminals and adjacent intersections were conducted using Synchro 9 software and results were reported utilizing the HCM 2000 output. The intersection analyses are presented in **Appendix D**.

Tables 3.1 through **3.3** provide a detailed summary of the results of the signalized intersection analyses for the AM and PM peak hours for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. The results include delays (in seconds per vehicle) and Level of Service (LOS) by movement, approach, and the overall intersection. The volume to capacity (v/c) ratios and 95th percentile queue lengths have also been summarized by movement. The intersection analysis results indicate the following:

- Hillsboro Boulevard: One of the three signalized intersections operates at LOS E during the AM peak hour. The I-95 southbound off-ramp approach operates at LOS E during both peak hours.
- SW 10th Street: Two of the six signalized intersections operate at LOS F during one or both peak hours. The I-95 northbound and southbound off-ramp approaches operate at LOS F during both peak hours.
- Sample Road: All five signalized intersections operate at LOS D or better during both peak hours. The I-95 northbound and southbound off-ramp approaches operate at LOS D or better during both peak hours.

Table 3.4 summarizes the results of the off-ramp signals back of queue analyses for the AM and PM peak hours. HCM methodology does not provide queue lengths, therefore, the 95th percentile queues were obtained from Synchro reports. The Synchro reported queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. The results present the queue length in feet for each lane group movement. The available storage length was calculated from the stop bar at the ramp terminal intersection to the gore with I-95 mainline minus 615 feet for the required stopping distance for a design speed of 70 mph per FDOT's 2016 GreenBook (Table 3-22), and accounting for the changes in number of lanes. The analysis and field observations show that queues on the northbound and southbound off-ramps at SW 10th Street interchange exceed the available storage lengths and back up to the I-95 mainline through lanes during one or both peak hours. These queues exceeding the available storage are shown in red.

Table 3.1: 2016 Existing – Hillsboro Boulevard Intersection Analysis Results

								AM Mor	vomant/An	proach LOS	(Delay)					Intersection
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound	vement/Ap	1	Northbound	1		Southbound		AM LOS
Aiteriai	Intersections	(MOE)	Location	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	F (128.2)	C (23.2)	Tugit	F (80.8)	B (14.4)	A (7.6)	E (66.2)	F (81.7)	D (51.8)	E (74.4)	E (74.4)	D (53.8)	(2011)
		LOS (Delay)	Approach	1 (120.2)	D (35.3)		1 (00.0)	C (22.5)	11 (7.0)	L (00.2)	E (65.8)	D (31.0)		E (67.7)	D (55.0)	
	SW 12th Avenue	Volume to Capacity ratio	Movement	1.02	0.67		0.70	0.44	0.39	0.25	0.74	0.22	0.27	0.28	0.01	C (32.8)
		· · ·	Movement	#479	665		m198	305	m159	72	218	101	55	57	0	-
			Movement		A (0.1)	A (0.8)		B (14.3)					F (80.4)		E (59.4)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.3)			B (14.3)				<u> </u>		E (68.2)		
Hillsboro Blvd.	ramp	Volume to Capacity ratio			0.26	0.47		0.41					0.95		0.84	C (22.2)
		Queue Length 95th (ft)	Movement		0	71		m262					#733		480	
		LOS (Dalary)	Movement	F (144.2)	B (18.5)	B (13.3)	E (72.8)	C (21.1)		F (518.7)	E (70.9)	E (66.8)	E (69.7)	E (74.0)	E (73.8)	
	SW Natura	LOS (Delay)	Approach		D (36.3)			C (23.2)			F (362.5)			E (72.5)		E (77 A)
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	1.10	0.48	0.06	0.53	0.59		1.97	0.53	0.08	0.27	0.07	0.07	E (77.4)
		Queue Length 95th (ft)	Movement	m#505	455	m21	130	494		#784	152	68	60	20	4	
M Peak																
								PM Mov	vement/Ap	proach LOS	5 (Delay)					Intersectio
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	1		Southbound	l	PM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement	E (71.1)	C (34.6)		F (89.3)	B (19.9)	A (1.7)	E (76.2)	E (66.8)	F (87.2)	F (84.2)	F (84.7)	E (63.1)	
	SW 12th Avenue	LOS (Delay)	Approach		D (35.4)			C (26.2)			F (82.4)			E (76.1)		D (42.0)
	Sw 12th Avenue	Volume to Capacity ratio	Movement	0.34	0.77		0.62	0.74	0.03	0.70	0.07	0.87	0.85	0.86	0.73	D (42.0
		Queue Length 95th (ft)	Movement	86	772		173	838	m3	156	32	339	361	371	244	
		LOS (Delay)	Movement		A (0.1)	A (0.6)		B (18.8)					E (71.1)		D (44.3)	
Hillsboro Blvd.	I-95 Southbound Off-	EOS (Being)	Approach		A (0.3)			B (18.8)						E (58.0)		B (17.8)
Thissoft Dive.	ramp	Volume to Capacity ratio			0.36	0.45		0.57					0.92		0.56	D (17.0)
		Queue Length 95th (ft)	Movement		0	0		500					#738		312	
		LOS (Delay)	Movement	E (75.3)	C (22.7)	B (13.0)	F (81.2)	C (24.0)		E (74.6)	E (63.4)	E (63.6)	E (62.2)	E (72.0)	E (77.2)	-
	SW Natura		Approach		C (23.4)			C (27.1)			E (71.0)			E (72.9)		C (32.4)
	Blvd/Fairway Drive	1 5	Movement	0.54	0.70	0.23	0.71	0.70		0.85	0.05	0.07	0.46	0.41	0.59	
			Movement	m126	667	m115	197	730		#333	31	61	145	97	155	
/nchro Version 9.2.9 <u>OS notes:</u> elay is in sec/veh uni	hro Version 9.2.914.6. HCM 2000 MOEs reported. notes:			~: Volume #: 95th per	odology doe exceeds capa centile volun	acity, queue	is theoretica	lts are from S lly infinite	Synchro rep	oort outputs						

	Signal Controlled	Mesure of Effectiveness						AM Mo	vement/Ap	proach LOS	5 (Delay)					Intersect
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound]	Northbound	d		Southbound	d	AM LO
	inter sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	F (94.3)	D <mark>(55.0)</mark>	C (27.4)	F (176.5)	D (52.5)	C (34.3)	F (81.3)	F (88.0)	F (235.0)	F (150.0)		D (52.6)	
	South Military Trail		Approach		E (58.6)	1		E (69.2)			F (143.3)			F (89.2)	1	F (84
		1 2	Movement	0.83	0.94	0.06	1.13	0.86	0.30	0.58	0.95	1.33	1.09	0.58	0.32	
		Queue Length 95th (ft)	Movement	#248	952	23	#318	837	182	140	#625	#1012	#426	380	188	
	East Newport Center	LOS (Delay)	Movement	E (70.1)	C (23.5) C (27.5)		F (172.5)	B (10.9) C (33.5)	B (14.3)	E (75.0)	E (74.9) E (73.6)	E (72.8)	E (75.2)	E (74.5) E (73.4)	E (72.6)	
	Drive	Volume to Capacity ratio	Approach Movement	0.95	0.75		1.17	0.51	0.21	0.39	0.38	0.06	0.38	0.33	0.06	C (3
	Dire	Queue Length 95th (ft)	Movement	#361	707		#618	328	41	73	72	9	58	58	0.00	-
			Movement		D (35.1)	A (0.6)	E (65.9)	A (0.2)		,5	72	-	20		Ű	
	I-95 Southbound On-	LOS (Delay)	Approach		C (26.4)	()		B (12.8)								5.4
	ramp	Volume to Capacity ratio	Movement		0.71	0.42	0.88	0.48								B (1
SW 10th Street		Queue Length 95th (ft)	Movement		554	0	m470	m0								1
SW 10th Street		LOS (Delay)	Movement		A (4.1)			A (5.4)					F (156.9)		F (191.3)	i i
	I-95 Southbound Off-	LOS (Delay)	Approach		A (4.1)			A (5.4)			-			F (173.8)		D (3
	ramp	Volume to Capacity ratio	Movement		0.61			0.57					1.17		1.25	D (3
		Queue Length 95th (ft)	Movement		5			m75					#795		#846	
		LOS (Delay)	Movement		C (25.3)	A (2.5)	F (221.0)	C (24.8)		F (104.7)		F (143.2)				-
	I-95 Northbound		Approach		B (13.4)	0.55	1.20	D (52.2)		1.02	F (116.7)				1	D (4
	Ramps	1 5	Movement		0.54	0.75	1.30	0.70		1.03		1.10				Ì
		Queue Length 95th (ft)	Movement	D (15.7)	m348	m1066	m#547	m300	D (12.9)	#551		#653	E (00.9)	E (757)	E (9(0)	
	EAU Desservels Devis	LOS (Delay)	Movement Approach	B (15.7)	B (17.7) B (17.5)		B (10.5)	B (18.1) B (17.5)	B (12.8)	F (160.8)	E (64.6) F (108.3)	E (62.6)	F (99.8)	E (75.7) F (88.3)	F (86.0)	-
	FAU Research Park Boulevard	Volume to Capacity ratio	Approach Movement	0.56	0.41		0.30	0.49	0.05	1.11	0.32	0.07	0.92	0.70	0.78	D (3
	Doulevalu	1 5	Movement	m143	m353		50	402	13	#350	98	58	#298	229	245	1
1 Peak		Quede Lengur / Sur (It)	Wovement	iii io	mooo		20	102	10		,0	50			2.0	
I I Cak								PM Mo	vomont/An	proach LOS	(Dolov)					Interse
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	d		Southbound	h	PM I
meriai	Intersections	(MOE)	Location	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through		(Del
			Movement	F (178.1)	D (44.3)	C (31.6)	E (67.1)	F (169.1)	D (53.6)	F (100.6)	E (68.2)	E (59.8)	F (81.2)	E (67.2)	0	(
		LOS (Delay)	Approach	- (-,)	E (64.9)	0 (01:0)		F (138.7)	- ()	- ()	E (70.0)	- (-,)	(011-)	E (69.4)	- (0.00)	-
	South Military Trail	Volume to Capacity ratio	Movement	1.14	0.69	0.10	0.77	1.24	0.47	0.77	0.74	0.41	0.66	0.83	0.77	F (9
		Queue Length 95th (ft)	Movement	#332	615	24	m267	m#1715	m407	#142	434	223	181	555	492	1
		LOS (Delay)	Movement	E (62.9)	B (15.4)		F (94.2)	B (19.0)	A (4.7)	E (73.4)	E (73.7)	F (108.9)	E (70.7)	E (70.6)	F (195.3)	•
	East Newport Center	LOS (Delay)	Approach		B (17.0)			C (21.5)			F (92.7)			F (169.1)		D (4
	Drive	Volume to Capacity ratio		0.62	0.60		0.61	0.80	0.05	0.62	0.62	0.92	0.24	0.24	1.17	D (1
		Queue Length 95th (ft)	Movement	m87	158		175	560	6	278	284	#443	102	102	#548	
		LOS (Delay)	Movement		C (33.5)	A (0.6)	D (40.4)	A (0.2)								_
	I-95 Southbound On-	× • • •	Approach		C (24.5)			A (7.9)			r	r		1	r	В (1
	ramp	Volume to Capacity ratio			0.78	0.42	0.67	0.48								Ì
SW 10th Street		Queue Length 95th (ft)	Movement		301	m51	m416	m0				1	E (102 ()		E (200 5)	
	I-95 Southbound Off-	LOS (Delay)	Movement Approach		A (5.0) A (5.0)			A (8.9) A (8.9)					F (183.6)	F (196.3)	F (209.5)	
	ramp	Volume to Capacity ratio	Movement		0.55			0.53			[1	1.22	F (190.5)	1.28	D (4
	rump	Queue Length 95th (ft)	Movement		23			m86					#958		#1001	1
			Movement		D (40.6)	A (1.1)	E (70.4)	C (30.1)		F (272.2)		F (326.4)			11001	
	I-95 Northbound	LOS (Delay)	Approach		C (23.1)	()	2 (/ 0.1)	D (37.2)		1 (2/2:2)	F (289.3)	× /				-
	Ramps	Volume to Capacity ratio	Movement		0.63	0.53	0.75	0.57		1.42		1.52				F (9
		Queue Length 95th (ft)	Movement		m508	m467	472	479		#863		#984				1
			Movement	B (14.2)	B (19.4)		B (18.7)	B (19.4)	B (15.3)	F (317.2)	E (60.1)	E (58.7)	E (73.4)	F (87.7)	F (86.0)	
	FAU Research Park	LOS (Delay)	Approach		B (18.7)			B (19.0)	•`		F (202.0)			F (82.9)		D (4
	Boulevard	Volume to Capacity ratio	Movement	0.62	0.49		0.66	0.41	0.07	1.51	0.21	0.06	0.81	0.85	0.83	D (4
		Queue Length 95th (ft)	Movement	119	387		117	301	31	#454	85	38	301	#338	#338	
nchro Version 9.2.91 9 <u>S notes:</u> lay is in sec/veh unit	:Level of service (LOS)	reported. E reflecting at capacity ope F reflecting over capacity c	erations	Queue note: HCM metho ~: Volume of	odology doe	acity, queue	is theoretica		Synchro rep	port outputs						

Table 3.2: 2016 Existing – SW 10th Street Intersection Analysis Results

MOCE)Los thoundLot thoughNorthound<	Artenul Intersections (ADD) Lablorul Vertinouit Number of the interval int	Arterial								AM Mo	vement/Ap	proach LOS	(Delay)					Intersecti
(MOC)IcffThroughRightLeffThroughRightLeffThroughRightLeffThroughRight(Delay)LOS (Delay)MovementB (15.0)E (74.2)A. (1.6)E (74.2)A. (1.6)E (74.2)E (64.3)E (64.3)E (64.3)Delay// OutputMovementB (15.0)A. (1.6)CF. (71.1)E (64.3)CDelay<	Intervan Intervant Intervant <thintervant< th=""> Intervant <th< th=""><th></th><th>Signal Controlled</th><th>Mesure of Effectiveness</th><th>Location</th><th></th><th>Eastbound</th><th></th><th></th><th>Westbound</th><th></th><th></th><th>Northbound</th><th>1</th><th></th><th>Southbound</th><th>1</th><th>AM LO</th></th<></thintervant<>		Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	1		Southbound	1	AM LO
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Net bit Terme USADD 2007 Opproach 0 0 0 0		Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
Approach B (15.0) A (7.5) B (7.1) C (7.1)	No. 30 Terme No. 30 Terme<			LOS (Delay)	Movement		B (15.0)		E (74.2)	A (1.6)		E (79.8)		E (64.4)				
	Number of the legacy mane of locane legacy mane locane		NW 5th Terrace	LOS (Delay)	Approach		B (15.0)			A (7.5)			E (71.1)					R (16.1
LOS (Delay) Movement E (59.1) A (1.7) B (18.6) C (32.8) C E (71.4) E (64.3) B (15.9) B (15.9) <th< td=""><td>NW Shi Avenia No. Mescament 1 (</td><td></td><td>INW JUI TEITACE</td><td>Volume to Capacity ratio</td><td>Movement</td><td></td><td>0.45</td><td></td><td>0.66</td><td>0.41</td><td></td><td>0.73</td><td></td><td>0.12</td><td></td><td></td><td></td><td>Б (10.1</td></th<>	NW Shi Avenia No. Mescament 1 (INW JUI TEITACE	Volume to Capacity ratio	Movement		0.45		0.66	0.41		0.73		0.12				Б (10.1
LOS (Delay) Approach A (4.0) B (19.2) Image: Control of the cont	NW 5h Venue International (No (Nais)) Approach A (40) No R (9.2) No No F (6.8) No No F (6.8) No No F (6.8) No No F (6.8) No			Queue Length 95th (ft)	Movement		329		191	33		213		74				
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	No Sh Avenue Approach A (4.0) B (12.2) C C E (20.3) E (20.3) <the (20.3)<="" th=""> E (20.3) E (20.3)<td></td><td></td><td>LOS (Dalari)</td><td>Movement</td><td>E (59.1)</td><td>A (1.7)</td><td></td><td></td><td>B (18.6)</td><td>C (32.8)</td><td></td><td></td><td></td><td>E (71.4)</td><td></td><td>E (64.3)</td><td></td></the>			LOS (Dalari)	Movement	E (59.1)	A (1.7)			B (18.6)	C (32.8)				E (71.4)		E (64.3)	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: stand base in the		NW 5th Avenue	LOS (Delay)	Approach		A (4.0)			B (19.2)						E (68.6)		R (15)
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Sample Rad LOS (Delay) ram Morement Approach (Daga Largh 55n (H) Quae		Nw Jui Avenue	Volume to Capacity ratio	Movement	0.56	0.42			0.39	0.05				0.65		0.10	В (15.)
LOS (Delay) Approach A (6.3) A (9.6) Image: C (27.7) B (11.3) /olume to Capacity ratio Movement 0.37 0.56 0.40 Image: C (27.7) B (11.3) Queue Length 95th (ft) Movement 198 366 225 Image: C (27.7) B (11.3) LOS (Delay) Movement 198 366 225 Image: C (27.7) B (10.3) LOS (Delay) Movement A (8.7) A (6.1) A (0.3) C (29.4) C (28.2) Image: C (27.7) B (10.3) /olume to Capacity ratio Movement A (8.7) A (6.1) A (0.3) C (29.4) C (28.2) Image: C (27.7) B (10.3) /olume to Capacity ratio Movement 0.32 0.51 0.28 0.60 0.51 Image: C (28.2) Image: C (28.7) B (10.3) LOS (Delay) Movement 0.32 0.51 0.28 0.60 0.51 Image: C (88.5) F (95.8) LOS (Delay) Movement E (61.9) B (19.7) E (74.4) D (36.9)	Sample Road Index (relation) Apgroadsh (regater) failed (regater) fa			Queue Length 95th (ft)	Movement	155	46			362	43				169		68	
ApproachApproachA (6.3)A (9.5)A (9.6) $()()()()()())$ B (11.7)/olume to Capacity ratioMovement0.370.560.400.4000.480.680.65Queue Length 95th (f)Movement198366225001180.510 $A(S,T)$ A (6.1)A (0.3)C (29.4)C (28.2)000000 $Approach$ A (8.7)A (4.9)C (28.9)C (28.9)00 </td <td>Sample Read LPS soluble and Part of the Cape (r) and Movement (P) and Movement (P) and P) and P</td> <td></td> <td></td> <td>LOS (Dalari)</td> <td>Movement</td> <td></td> <td>A (9.4)</td> <td>A (1.3)</td> <td></td> <td>A (9.6)</td> <td></td> <td></td> <td></td> <td></td> <td>C (26.2)</td> <td></td> <td>C (29.1)</td> <td></td>	Sample Read LPS soluble and Part of the Cape (r) and Movement (P) and Movement (P) and P) and P			LOS (Dalari)	Movement		A (9.4)	A (1.3)		A (9.6)					C (26.2)		C (29.1)	
Volume to Capacity ratio Movement 0.37 0.56 0.40 Image: Comparison of Compa	Image Volume to Capacity ratio Movement 0 0.37 0.36 0.40 0 0 0 0.08 0.08 Quee Length 56 (I) Movement 18 66 225 18 <td>Comunito Dica d</td> <td>I-95 Southbound Off-</td> <td>LOS (Delay)</td> <td>Approach</td> <td></td> <td>A (6.3)</td> <td></td> <td></td> <td>A (9.6)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>C (27.7)</td> <td>•</td> <td>D (11)</td>	Comunito Dica d	I-95 Southbound Off-	LOS (Delay)	Approach		A (6.3)			A (9.6)						C (27.7)	•	D (11)
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Sample Road	ramp	Volume to Capacity ratio	Movement		0.37	0.56		0.40					0.48		0.65	В (11
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ $			Queue Length 95th (ft)	Movement		198	366		225					118		151	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				Movement		A (8.7)			A (6.1)	A (0.3)	C (29.4)		C (28.2)				
$\frac{1}{100} + \frac{1}{100} + \frac{1}$	$ \begin{tabular}{ $		I-95 Northbound	LOS (Delay)	Approach					A (4.9)			C (28.9)					D (10)
Queue Length 95th (ft)Movement191100m0137109Image: constraint of the state of the	$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$			Volume to Capacity ratio	<u> </u>					0.51	0.28	0.60		0.51				B (10.
$\frac{\text{Movement}}{\text{LOS (Delay)}} \xrightarrow{\text{Movement}} E (61.9) B (19.7) \\ \frac{\text{Movement}}{\text{Approach}} = C (31.0) \\ \hline D (37.7) \\ \hline D (52.2) \\ \hline D (52.2) \\ \hline D (52.2) \\ \hline C (52.2) \\ \hline F (84.1) \\ $	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		_	^ ·	Movement		191			100	m0	137		109				
LOS (Delay) Approach C (31.0) D (37.7) D (52.2) F (84.1) D (45.4) Volume to Capacity ratio Movement 0.75 0.37 0.36 0.68 0.66 0.53 0.03 0.28 0.69 0.90 Queue Length 95th (ft) Movement 256 308 70 621 211 268 0 91 277 #365 PM Movement/Approach LOS (Delay) Intersect Mesure of Effectiveness (MOE) Location Eastbound Westbound Northbound Southbound PM LO LOS (Delay) Movement B (17.2) F (80.8) A (0.8) F (80.0) E (67.2) Intersect	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				Movement	E (61.9)	B (19.7)		E (74.4)	D (36.9)		D (48.3)	E (56.3)	D (49.7)	D (51.6)	E (68.5)	F (95.8)	
Volume to Capacity ratio Movement 0.75 0.37 0.36 0.68 0.66 0.53 0.03 0.28 0.69 0.90 D (45.0) Queue Length 95th (ft) Movement 256 308 70 621 211 268 0 91 277 #365 D (45.0) Mesure of Effectiveness (MOE) Location Eastbound Westbound Northbound Southbound PM LO LOS (Delay) Movement B (17.2) F (80.8) A (0.8) F (80.0) E (67.2) Intersect Intersect	NE 3rd Avenue Volume to Capacity ratio Movement 0.75 0.37 0.36 0.68 0.66 0.53 0.03 0.28 0.69 0.90 Queue Lengh 95h (ft) Movement 256 308 70 621 211 268 0 91 277 9355 Arterial Mester of Effectivenes (MOE) Locatio Locatio Effectivenes Locatio Festovenet Volume to Capacity ratio Movement B (17.2) Festovenet Volume to Capacity ratio Movement B (17.2) Festovenet Volume to Capacity ratio Movement B (17.2) Kestovenet E (80.0)			LOS (Delay)						3 6			<u> </u>					
Queue Length 95th (ft)Movement25630870621211268091277#365Mesure of Effectiveness (MOE)IntersectLocationEastboundWestboundNorthboundSouthboundPM LOLOS (Delay)MovementB (17.2)F (80.8)A (0.8)F (80.0)F (80.0)E (67.2)Intersect	Net of the set of the		NE 3rd Avenue	Volume to Capacity ratio		0.75			0.36			0.66		0.03	0.28		0.90	D (45.
Intersect Location Eastbound Northbound Southbound PM Movement/Approach LOS (Delay) Location Eastbound Westbound Northbound Southbound PM LOC Location Location Eastbound Westbound Northbound Southbound PM LOC LOS (Delay) Movement B (17.2) F (80.8) A (0.8) F (80.0) E (67.2) Intersect PM LOC	M Peak Signal Controlled Intersections Mesure of Effectiveness (MOE) Location Eastbound Wordenett/Approach LOS (Delay) Northbound Southbound F (80.0) Eastbound Northbound Northbound <td></td> <td></td> <td>^ · ·</td> <td></td>			^ · ·														
Mesure of Effectiveness (MOE) Location Eastbound Westbound Northbound Southbound PM LO Loft Through Right Left Through Right Left Through Right Left Through Right Delay LOS (Delay) Movement B (17.2) F (80.8) A (0.8) F (80.0) E (67.2) E (67.2) E (67.2) E (67.2)	Arterial IntersectionsNersion of Effectiveness (MOF)LocationIntersectionInter	/ Peak		Queue Dengin yeur (10)					, ,							_,,		
Mesure of Effectiveness (MOE) Location Eastbound Westbound Northbound Southbound PM LO Loft Through Right Left Through Right Left Through Right Left Through Right Delay LOS (Delay) Movement B (17.2) F (80.8) A (0.8) F (80.0) E (67.2) E (67.2) E (67.2)	Arterial Signal Controlled Intersections Mesure of Effectivenes (MOE) Location Eastbound Westbound Northbound Right Left Through Right Left <t< td=""><td>1 I Can</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>DM Ma</td><td></td><td>and a sh I OS</td><td>(Dalaar)</td><td></td><td></td><td></td><td></td><td>Tradaruma ad</td></t<>	1 I Can								DM Ma		and a sh I OS	(Dalaar)					Tradaruma ad
Image: MOE Left Through Right Left<	Intersections(MOE)LeftThroughRightRightLeftThroughRightLeftThroughRightLeftThroughRightLeftThroughRightLeftThroughRightThroughRightThrough <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>vement/AD</td><td>proach LUS</td><td>(Delay)</td><td></td><td></td><td></td><td></td><td></td></t<>										vement/AD	proach LUS	(Delay)					
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(JS (Delay)	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		U		Location	L.C		D' -14	T - C	Westbound								
	$ Sample Road \\ NW 5h Terrace \\ NW 5h Terrace \\ \hline Volume to Capacity ratio \\ Queue Length 95h (ft) \\ Queue Length 95h (ft) \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ Probe \\ \hline Volume to Capacity ratio \\ Movement \\ \hline Volume to Capacity ratio \\ Movement \\ \hline Volume to Capacity ratio \\ Movement \\ \hline Volume to Capacity ratio \\ Probe \\ \hline Volume to Capacity ratio \\ Probe \\ \hline Volume to Capacity ratio \\ \hline Movement \\ \hline Volume to Capacity ratio \\ \hline Movement \\ \hline Movement \\ \hline Volume to Capacity ratio \\ \hline Movement \\ \hline Movement \\ \hline Volume to Capacity ratio \\ \hline Movement \\ \hline Movement \\ \hline Volume to Capacity ratio \\ \hline Movement \\$		U			Left	Through	Right		Westbound Through		Left		Right				
	$ Sample Road \ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		U	(MOE)	Movement	Left	Through B (17.2)	Right		Westbound Through A (0.8)		Left	Through	Right				
	$ Sample Road \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay)	Movement Approach	Left	Through B (17.2) B (17.2)	Right	F (80.8)	Westbound Through A (0.8) A (9.1)		Left F (80.0)	Through	Right E (67.2)				(Delay
	$ Sample Road \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement	Left	Through B (17.2) B (17.2) 0.50	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49		Left F (80.0) 0.68	Through	Right E (67.2) 0.07				(Delay
	$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement		Through B (17.2) B (17.2) 0.50 369	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26	Right	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left		Right	(Delay
LOS (Delay) Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4)	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Movement		Through B (17.2) B (17.2) 0.50 369 A (1.4)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6)	Right	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left	Through	Right	(Delay)
Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4) LOS (Delay) Approach A (6.1) B (11.6) C (20.4) E (69.8) E (69.8)	Sample RoadI-95 Southbound Off rampLOS (Delay)MovementB (18.8)A (0.6)B (15.3)Image: Constraint of the state of the s		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6)	Right C (20.4)	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9)	Through	Right E (67.4)	(Delay) B (15.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Sample RoadI-95 Southbound Off- rampLOS (Delay)ApproachB (14.2)B (15.3)C (30.1)B (0.460.81B (0.460.81 <t< td=""><td></td><td>Intersections NW 5th Terrace</td><td>(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio</br></td><td>Movement Approach Movement Movement Approach Movement</td><td>E (67.7)</td><td>Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41</td><td>Right</td><td>F (80.8)</td><td>Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51</td><td>Right C (20.4) 0.15</td><td>Left F (80.0) 0.68</td><td>Through</td><td>Right E (67.2) 0.07</td><td>Left E (71.9) 0.58</td><td>Through</td><td>Right E (67.4) 0.09</td><td>(Delay) B (15.9</td></t<>		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio 	Movement Approach Movement Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58	Through	Right E (67.4) 0.09	(Delay) B (15.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Sample Road1-95 Southbound Off rampVolume to Capacity ratioMovement 0.46 0.38 0.59 0.59 0.59 0.64 0.46 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.81 0.66 0.81 0.66 0.81 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.81 0.66 0.64 0.64 0.66 0		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through	Right E (67.4) 0.09 69	(Delay) B (15.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \frac{1}{10000000000000000000000000000000000$		Intersections NW 5th Terrace NW 5th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8)		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3)	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through E (69.8)	Right E (67.4) 0.09 69	(Delay) B (15.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Arterial	Intersections NW 5th Terrace NW 5th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3)	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127 C (24.7)	Through E (69.8)	Right E (67.4) 0.09 69 C (33.9)	(Delay B (15.9 B (12.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	I-95 Northbound RampsLOS (Délay)ApproachC (22.6)B (10.7)D (42.0)C (22.6)C (Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.9 B (12.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	I-95 Northbound RampsApproachC (22.6)B (10.7)D (42.0)C (22.6)C (22.	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306	Right C (20.4) 0.15 m50	Left F (80.0) 0.68 171	Through	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.9 B (12.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	RampsVolume to Capacity ratioMovement 0.57 0.56 0.22 0.98 0.64 0.64 0.64 0.64 Queue Length 95th (ft)Movement 467 0 171 0 $#392$ 189 0.64 <	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1)	Right C (20.4) 0.15 m50	Left F (80.0) 0.68 171	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.9 B (12.9
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1)	Right C (20.4) 0.15 m50 A (0.2)	Left F (80.0) 0.68 171 	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.) B (12.) B (17.)
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	NE 3rd Avenue LOS (Delay) Approach D (45.1) D (40.6) E (55.5) E (64.9)	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) C (22.6)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1) B (10.7)	Right C (20.4) 0.15 m50 A (0.2)	Left F (80.0) 0.68 171 	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.) B (12.) B (17.)
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	NF 3rd Avenue Approach D (45.1) D (40.6) E (55.5) E (64.9) D (Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) C (57	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1) B (10.7) 0.56	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Delay B (15.) B (12.) B (17.)
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	NE Sid Avenue Volume to Conceitu ratio Movement 0.70 0.67 0.56 0.68 0.72 0.70 0.05 0.25 0.78 0.27 D	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7) 0.80 #296	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) C (57 467	A (0.6)	F (80.8) 0.81 #369	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.7) 0.59 m306 B (10.7) 0.56 171	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) 0.58 127 C (24.7) 0.46 129 	Through E (69.8) C (30.1)	Right E (67.4) 0.09 69 C (33.9) 0.81 #228	(Delay B (15.) B (12.) B (17.)
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	0.19 0.07 0.08 0.72 0.70 0.05 0.25 0.78 0.57	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound Ramps	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7) 0.80 #296	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) C.57 467 D (39.7)	A (0.6)	F (80.8) 0.81 #369	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1) B (10.7) 0.56 171 D (38.7)	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 	Through E (73.4) C (7	Right E (67.2) 0.07 60	Left E (71.9) 0.58 127 C (24.7) 0.46 129 	Through E (69.8) C (30.1) E (75.0)	Right E (67.4) 0.09 69 C (33.9) 0.81 #228	(Delay B (15.) B (12.) B (17.) C (24.)
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Queue Length 95th (ft) Movement 291 629 143 582 219 396 0 63 331 150	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound Ramps	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7) 0.80 #296	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) 0.57 467 D (39.7) D (45.1)	A (0.6)	F (80.8) 0.81 #369 	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (15.3) B (15.3) B (15.3) B (13.1) B (10.7) 0.56 171 D (38.7) D (40.6)	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 D (50.8) 0.98 #392 D (52.0)	Through E (73.4) E (73.4) D (42.0) E (60.0) E (55.5)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) O.58 127 C (24.7) O.46 129 D (52.5)	Through E (69.8) C (30.1) E (75.0) E (64.9)	Right E (67.4) 0.09 69 C (33.9) 0.81 #228 E (59.5)	(Delay B (15. B (12. B (17. C (24.
	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement	Left	Through B (17.2) B (17.2) 0.50	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49		Left F (80.0) 0.68	Through	Right E (67.2) 0.07				
	$ Sample Road \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay)	Movement Approach	Left	Through B (17.2) B (17.2)	Right	F (80.8)	Westbound Through A (0.8) A (9.1)		Left F (80.0)	Through	Right E (67.2)				
$V_{\text{ucuc Lengin your (II)}}$ [Novement] 309 #309 20 1/1 00 00	$ Sample Road \ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement	Left	Through B (17.2) B (17.2) 0.50	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49		Left F (80.0) 0.68	Through	Right E (67.2) 0.07				(Delay)
Movement $F(67.7) = A(1.4)$ $B(10.6) = C(20.4)$ $F(71.9) = F(67.4)$	$ Sample Road \\ NW Sth AVenue \\ \hline Volume to Capacity ratio \\ Queue Length 95th (ft) \\ numere \\ ramp \\ \hline Volume to Capacity ratio \\ Nevenent \\ ramp \\ \hline Volume to Capacity ratio \\ Nevenent \\ Nevenent \\ \hline Volume to Capacity ratio \\ Nevenent \\ Nevenent \\ \hline Volume to Capacity ratio \\ \hline Nevenent \\ \hline Volume to Ca$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement		Through B (17.2) B (17.2) 0.50 369	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26	Right	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left		Right	(Delay
LOS (Delay) Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4)	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Intersections	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Movement		Through B (17.2) B (17.2) 0.50 369 A (1.4)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6)	Right	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left	Through	Right	(Delay
Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4) LOS (Delay) Approach A (6.1) B (11.6) E (69.8) E (69.8) B (12.2)	Sample RoadI-95 Southbound Off- rampLOS (Delay)Movement ApproachB (18.8) B (14.2)A (0.6)B (15.3)Image: Constraint of the constraint of t		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Movement		Through B (17.2) B (17.2) 0.50 369 A (1.4)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6)	Right C (20.4)	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left	Through	Right	(Delay B (15.)
Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4) LOS (Delay) Approach A (6.1) B (11.6) E (69.8) E (69.8) B (12.2)	Sample RoadI-95 Southbound Off rampLOS (Delay)MovementB (18.8)A (0.6)B (15.3)Image: Constraint of the state of the s		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6)	Right C (20.4)	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9)	Through	Right E (67.4)	(Delay B (15.)
Movement E (67.7) A (1.4) B (10.6) C (20.4) E (71.9) E (67.4) LOS (Delay) Approach A (6.1) B (11.6) E (69.8) E (69.8) B (12	Sample RoadI-95 Southbound Off- rampLOS (Delay)ApproachB (14.2)B (15.3)C (30.1)A (0.2)C (30.1)A (0.2)C (30.1)A (0.2)A (0.4)A (0.4) </td <td></td> <td>Intersections NW 5th Terrace</td> <td>(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)</br></td> <td>Movement Approach Movement Movement Approach</td> <td>E (67.7)</td> <td>Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1)</td> <td>Right</td> <td>F (80.8)</td> <td>Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6)</td> <td>Right C (20.4)</td> <td>Left F (80.0) 0.68</td> <td>Through</td> <td>Right E (67.2) 0.07</td> <td>Left E (71.9)</td> <td>Through</td> <td>Right E (67.4)</td> <td>(Delay B (15.</td>		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio 	Movement Approach Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1)	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6)	Right C (20.4)	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9)	Through	Right E (67.4)	(Delay B (15.
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Sample RoadI-95 Southbound Off- rampLOS (Delay)ApproachB (14.2)B (15.3)C (30.1)A (0.2)C (30.1)A (0.2)C (30.1)A (0.2)A (0.4)A (0.4) </td <td></td> <td>Intersections NW 5th Terrace</td> <td>(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio</br></td> <td>Movement Approach Movement Movement Approach Movement</td> <td>E (67.7)</td> <td>Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41</td> <td>Right</td> <td>F (80.8)</td> <td>Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51</td> <td>Right C (20.4) 0.15</td> <td>Left F (80.0) 0.68</td> <td>Through</td> <td>Right E (67.2) 0.07</td> <td>Left E (71.9) 0.58</td> <td>Through</td> <td>Right E (67.4) 0.09</td> <td>(Delay B (15.</td>		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio 	Movement Approach Movement Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58	Through	Right E (67.4) 0.09	(Delay B (15.
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Sample RoadI-95 Southbound Off- rampLOS (Delay)ApproachB (14.2)B (15.3)C (30.1)A (0.2)C (30.1)A (0.460.81B (14.2)ApproachC (20.1)ApproachApproachC (20.1)ApproachApproachC (20.1)ApproachApproachC (20.1)ApproachApproachApproachApproachApproachApproachC (20.1)ApproachApproachApproachC (20.1)ApproachApproachC (20.1)ApproachApproachC (20.1)ApproachC (20.1)ApproachApproachApproachApproachC (21.1)ApproachD (40.1)D (40.0)E (60.0)D (47.1)D (52.5)E (64.9)ApproachApproachC (40.1)D (40.6)E		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41	Right	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58	Through	Right E (67.4) 0.09	(Delay B (15
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Sample RoadI-95 Southbound Off rampVolume to Capacity ratioMovement 0.46 0.38 0.59 0.59 0.59 0.66 0.46 0.81 0.66 0.66 0.64 0.66 0.66 0.66 0.66 0.66 0.66 0.66 0.64 0.66 0		Intersections NW 5th Terrace	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through	Right E (67.4) 0.09 69	(Delay B (15
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Intersections NW 5th Terrace	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through	Right E (67.4) 0.09 69	(Delay B (15
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \frac{1}{10000000000000000000000000000000000$		Intersections NW 5th Terrace NW 5th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8)		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3)	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through E (69.8)	Right E (67.4) 0.09 69	(Dela B (15
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Arterial	Intersections NW 5th Terrace NW 5th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8)		F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3)	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127	Through E (69.8)	Right E (67.4) 0.09 69	(Dela B (15 B (12
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3)	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) 0.58 127 C (24.7)	Through E (69.8)	Right E (67.4) 0.09 69 C (33.9)	(Dela B (15 B (12
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	I-95 Northbound RampsLOS (Delay)ApproachC (22.6)B (10.7)D (42.0)Image: C (22.6)C (22.6)	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Dela B (15 B (12
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	I-95 Northbound RampsI-05 (Delay)ApproachC (22.6)B (10.7) $D (42.0)$ Image: C (4.0)C (20.0)C (4.0)C (4.0)Image: C (4.0)C	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59	Right C (20.4) 0.15	Left F (80.0) 0.68	Through	Right E (67.2) 0.07	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Dela B (15 B (12
$\frac{\text{LOS (Delay)}}{\text{LOS (Delay)}} \begin{array}{ c c c c c c c } \hline \text{Movement} & E (67.7) & A (1.4) & B (10.6) & C (20.4) & E (71.9) & E (67.4) \\ \hline \text{Approach} & A (6.1) & B (11.6) & E (69.8) & E (69.8) \\ \hline \text{Outure to Capacity ratio} & \text{Movement} & 0.80 & 0.41 & 0.51 & 0.15 & 0.58 & 0.09 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & \#296 & 34 & 264 & m50 & 127 & 69 \\ \hline \text{LOS (Delay)} & \hline \text{Movement} & B (18.8) & A (0.6) & B (15.3) & C (24.7) & C (33.9) \\ \hline \text{Approach} & B (14.2) & B (15.3) & C (30.1) & C (30.1) & B (17.2) & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 404 & 34 & m306 & 0 & 0.58 & 0.69 & 0 & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 404 & 34 & m306 & 0 & 0.58 & 0.69 & 0 & 0.66 & 0.81 \\ \hline \text{Movement} & \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.46 & 0.81 \\ \hline \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.558 & 0.60 & 0.46 & 0.81 \\ \hline \text{Movement} & \text{Queue Length 95th (ft)} & \text{Movement} & 0.46 & 0.38 & 0.59 & 0 & 0.558 & 0.5$	RampsVolume to Capacity ratioMovement 0.57 0.56 0.22 0.98 0.64 a <td>Arterial</td> <td>Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-</td> <td>(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)</td> <td>Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement</td> <td>E (67.7)</td> <td>Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404</td> <td>A (0.6)</td> <td>F (80.8)</td> <td>Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306</td> <td>Right C (20.4) 0.15 m50</td> <td>Left F (80.0) 0.68 171</td> <td>Through</td> <td>Right E (67.2) 0.07 60</td> <td>Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46</td> <td>Through E (69.8)</td> <td>Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81</td> <td>(Dela B (15 B (12</td>	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306	Right C (20.4) 0.15 m50	Left F (80.0) 0.68 171	Through	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Dela B (15 B (12
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Queue Length 95th (ft) Movement 467 171 0 #392 189 Image: Constraint of the state of the	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (67.7)	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6)	A (0.6)	F (80.8)	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1)	Right C (20.4) 0.15 m50	Left F (80.0) 0.68 171	Through E (73.4)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) 0.58 127 C (24.7) 0.46	Through E (69.8)	Right E (67.4) E (67.4) 0.09 69 C (33.9) 0.81	(Dela B (15 B (12
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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1.2 Start to the Values to Consolity ratio Maximum $10.70 \\ 0.67 \\ 0.56 \\ 0.56 \\ 0.68 \\ 0.72 \\ 0.70 \\ 0.05 \\ 0.05 \\ 0.25 \\ 0.70 \\ 0.27 \\ 0.$	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7) 0.80 #296	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) C.57 467 D (39.7)	A (0.6)	F (80.8) 0.81 #369	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (11.6) 0.51 264 B (15.3) B (15.3) 0.59 m306 B (13.1) B (10.7) 0.56 171 D (38.7)	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 	Through E (73.4) C (7	Right E (67.2) 0.07 60	Left E (71.9) 0.58 127 C (24.7) 0.46 129 	Through E (69.8) C (30.1) E (75.0)	Right E (67.4) 0.09 69 C (33.9) 0.81 #228	(Dela B (15 B (12 B (17
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0.79 0.07 0.08 0.72 0.70 0.05 0.25 0.78 0.57	Arterial	Intersections NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound Ramps	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement	E (67.7) 0.80 #296	Through B (17.2) B (17.2) 0.50 369 A (1.4) A (6.1) 0.41 34 B (18.8) B (14.2) 0.46 404 C (22.6) 0.57 467 D (39.7) D (45.1)	A (0.6)	F (80.8) 0.81 #369 	Westbound Through A (0.8) A (9.1) 0.49 26 B (10.6) B (15.3) B (15.3) B (15.3) B (13.1) B (10.7) 0.56 171 D (38.7) D (40.6)	Right C (20.4) 0.15 m50 A (0.2) 0.22	Left F (80.0) 0.68 171 D (50.8) 0.98 #392 D (52.0)	Through E (73.4) E (73.4) D (42.0) E (60.0) E (55.5)	Right E (67.2) 0.07 60	Left E (71.9) E (71.9) O.58 127 C (24.7) O.46 129 D (52.5)	Through E (69.8) C (30.1) E (75.0) E (64.9)	Right E (67.4) 0.09 69 C (33.9) 0.81 #228 E (59.5)	(Dela) B (15 B (12 B (17 C (24

Table 3.3: 2016 Existing – Sample Road Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard



Intersection	Annreach	Movement	Available	Que	eue (ft)
Intersection	Approach	wovement	Storage (ft)	AM	РМ
Lillabora Daulaward at LOE SD Off Dama	Southbound	L (EB)	1,255	#733	#738
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	R (WB)	1,550	845	549
CW 10th Street at LOE SD Off Dama	Southbound	L (EB)	310	#795	#958
SW 10 th Street at I-95 SB Off-Ramp	Southbound	R (WB)	720	#846	#1001
SW 10 th Street at I-95 NB Off-Ramp	Northbound	L (WB)	925	#802	#1,256
		R (EB)	925	#862	#1,299
Sample Road at I-95 SB Off-Ramp	Southbound	L (EB)	1,010	229	250
	Southbound	R (WB)	1,010	266	#401
Sample Boad at LOS NB Off Bamp	Northbound	L (WB)	1,095	266	#760
Sample Road at I-95 NB Off-Ramp	DINOGUNION	R (EB)	1,095	192	333

Table 3.4: 2016 Existing – Off-Ramp Signals Queuing Analysis Results

Queue Notes:

Queue lengths exceeding the available storage are shown in Red.

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310+ (295*2)] = 1,552.5$ feet rounded to 1,550 feet.

3.4 Existing Crash Data

Crash data was collected from the FDOT Crash Analysis Reporting System (CARS) for the three most recent years (from January 2013 to December 2015). Crash data along I-95 was collected between MP 21.000 and MP 25.317 including ramp segments and terminals. It was further segregated by interchange: Sample Road (SR 834) from MP 21.000 – MP 22.623; SW 10th Street (SR 869) from MP 22.623 – MP 24.150; and Hillsboro Boulevard (SR 810) from MP 24.150 – MP 25.317. Crash data for Sample Road (between NW 5th Terrace and NE 3rd Avenue), SW 10th Street (between Military Trail and SW Natura Boulevard), and Hillsboro Boulevard (between SW 12th Avenue and SW Natura Boulevard) was also obtained from the FDOT CARS. Historical Crash Maps and statistical summaries are included in **Appendix E**. **Table 3.5** presents the aggregated summary for I-95.

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	Hillsbo	ro Blvd Inter	change	SW 10th	n Street Inte	rchange	Sample	e Road Inter	change
Crash Type	Crashes	Annual Avg	Percent	Crashes	Annual Avg	Percent	Crashes	Annual Avg	Percent
Rear End	393	131	63.2%	269	90	53.6%	308	103	53.8%
Head On	2	1	0.3%	2	1	0.4%	6	2	1.0%
Angle/Left/Right Turns	17	6	2.7%	23	8	4.6%	21	7	3.7%
Sideswipe	71	24	11.4%	79	26	15.7%	94	31	16.4%
Peds & Bicycle	1	0	0.2%	2	1	0.4%	0	0	0.0%
Fixed Object	69	23	11.1%	74	25	14.7%	64	21	11.2%
Others	69	23	11.1%	53	18	10.6%	79	26	13.8%
Total Crashes	622	207	100.0%	502	167	100.0%	572	191	100.0%
PDO Crashes	386	129	62.1%	317	106	63.1%	366	122	64.0%
Injury Crashes	234	78	37.6%	184	61	36.7%	205	68	35.8%
Fatal Crashes	2	1	0.3%	1	0	0.2%	1	0	0.2%
Daylight	445	148	71.5%	324	108	64.5%	396	132	69.2%
Dark	152	51	24.4%	153	51	30.5%	148	49	25.9%
Dawn/Dusk	25	8	4.0%	24	8	4.8%	28	9	4.9%
Unknown	0	0	0.0%	1	0	0.2%	0	0	0.0%
Dry	457	152	73.5%	365	122	72.7%	426	142	74.5%
Wet	165	55	26.5%	136	45	27.1%	146	49	25.5%
Others	0	0	0.0%	1	0	0.2%	0	0	0.0%
	Hillsbo	ro Blvd Inter	change	SW 10th	n Street Inte	rchange	Sample	e Road Inter	change
Contributing Causes	Crashes	Annual Avg	Percent	Crashes	Annual Avg	Percent	Crashes	Annual Avg	Percent
No Contributing Action	64	21	10.3%	69	23	13.7%	90	30	15.7%
Careless Driving	319	106	51.3%	226	75	45.0%	249	83	43.5%
Failed to Yield ROW	5	2	0.8%	4	1	0.8%	5	2	0.9%
Improper Turn	1	0	0.2%	1	0	0.2%	0	0	0.0%
Drove Too Fast for Conditions	32	11	5.1%	16	5	3.2%	18	6	3.1%
Others	201	67	32.3%	186	62	37.1%	210	70	36.7%

 Table 3.5: Crash Data Summary – 2013-2015

Of the 1,696 reported crashes from 2013 through 2015, 970 (57%) were rear end crashes followed by 244 (14%) side-swipe crashes and 207 (12%) crashes involving fixed objects. Based on crash severity, of the 1,696 reported crashes, 1,069 (63%) were property damage only crashes, 623 (37%) were injury type crashes, and 4 (0%) were fatal crashes. There were a total of 530 (31%) night/dusk/dawn crashes reported, which is lower than the statewide average for all roadways of 34 percent; and 447 (26%) of the total crashes occurred under wet/slippery pavement conditions, which is higher than the statewide average for all roadways of 13 percent. Among the contributing causes documented in the crash data, Careless Driving (794 - 49%) and All Other (597 – 35%) were among the highest. There were 3 crashes involving pedestrians and bicycles. These types of crashes are atypical since pedestrians and bicycles are not allowed in access controlled facilities. It is important to note that the percentages for the major crash types and the contributing factors are almost similar across the three interchanges.



A High Crash Location List review was also conducted. The high crash location lists were obtained from FDOT District 4 Traffic Operations. The data was extracted from CARS, which uses crash coefficient levels over 99.95 % and crash rates over 1.00 to establish and rank high crash locations. The high crash locations within the 3-year analysis period for I-95 and Arterials based on the lists provided by FDOT are depicted on **Figure 3.8**. These locations are listed below and the years are identified within the parentheses.

High Crash Spots along I-95 from Sample Road to Hillsboro Boulevard (2013-2015)

- MP 21.280 NB I-95 Off-Ramp to EB & WB Sample Road (2014)
- MP 21.330 SB I-95 On-Ramp from EB Sample Road (2013, 2014)
- MP 21.522 NB I-95 On-Ramp from EB Sample Road (2014)
- MP 21.910 NB I-95 On-Ramp from WB Sample Road (2014, 2015)
- MP 24.400 SB I-95 On-Ramp from EB Hillsboro Boulevard (2013, 2014, 2015)
- MP 24.711 SB I-95 On-Ramp from WB Hillsboro Boulevard (2013, 2014, 2015)
- MP 24.732 NB I-95 Off-Ramp to WB Hillsboro Boulevard (2013, 2015)

High Crash Spots along SW 10th Street from Military Trail to Natura Boulevard (2013-2015)

- MP 1.427 at Military Trail (2013, 2014, 2015)
- MP 1.955 at WB exit to SB I-95 (2013)
- MP 2.01 at Natura Boulevard (2013, 2015)

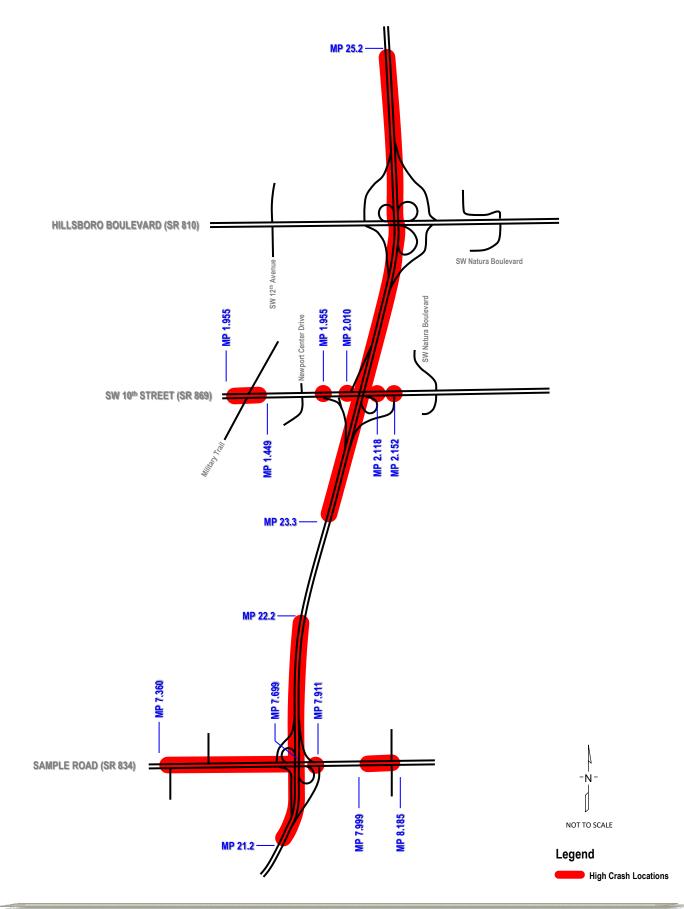
High Crash Spots along Sample Road from NW 5th Terrace to NE 3rd Avenue (2013-2015)

- MP 7.410 at NW 5th Terrace (2013, 2014, 2015)
- MP 7.443 at the Driveway between NW 5th Terrace and NW 5th Avenue (2013, 2014)
- MP 7.459 at NW 5th Avenue (2013, 2014)
- MP 7.659 at SB I-95 Off-Ramp terminal (2015)
- MP 7.911 east of NB I-95 Off-Ramp terminal (2015)
- MP 8.135 at NE 3rd Avenue (2013, 2014)

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Figure 3.8: FDOT CARS High Crash Locations 2013 – 2015





Safety can be assessed by tracking either the raw frequency of crashes or by calculating crash rates, which are normalized by exposure. Using both crash frequencies and crash rates in analysis provides a more comprehensive assessment of a roadway. Crash frequencies are able to convey the magnitude of the crash problem. While the crash rates are better for identifying crash risk, average crash rates can be calculated for a large subset of roadways (i.e. all 4-lane divided urban arterials within the State or District), The average crash rate is used to calculate the critical crash rate, which establishes a threshold for comparison.

The safety ratio is based on the crash rate (based on total number of crashes). A safety ratio equal to or greater than one is considered high crash locations. The level of statistical significance indicates the confidence level at which the study intersection can be considered as a High Crash Location when compared to similar locations. The level of statistical significance is calculated using the formula below. The threshold value for an abnormally high crash location in an urban area is 99.95%.

Level of Statistical Significance =
$$\frac{ACR - A + \frac{1}{2M}}{\sqrt{\frac{A}{M}}}$$

Where:

- ACR = Actual crash rate for the study location (crashes per million entering vehicles)
- A = Districtwide average crash rate for highway category being tested (crashes per million entering vehicles)
- M = Average vehicle exposure (million entering vehicles) = [(ADT * 365 * L) / 1,000,000]
 - L = Length of the Segment for Segment Analysis, 1 for Spot Analysis

Table 3.6 provides a comparison of the crash rates at the I-95 interchanges and along the crossstreets within the Area of Influence. It can be observed that all three interchanges within the Area of Influence have a crash ratio of more than 1.0 indicating higher than average crash rate for similar facilities. The crash ratio for the cross-streets (Hillsboro Boulevard, SW 10th Street and Sample Road) is below 1.0 indicating lower than average crash rate for similar facilities. The proposed interchange improvements are expected to significantly improve the safety and operations at the interchanges.

Section 5.7 of this report documents the safety analyses that were conducted using the Highway Safety Manual (HSM) methodology and the traditional Crash Reduction Analysis to determine the benefits of the proposed improvements under the Build alternatives.



Crast Rate	I-95 & Hills	boro Blvd Int	erchange	1-95 & SW 1	LOth Street II	nterchange	I-95 & San	nple Road In	terchange
Clast Nate	2013	2014	2015	2013	2014	2015	2013	2014	2015
Number of Crashes	190	188	244	148	187	167	178	183	211
Average Daily Traffic (ADT)	200,000	200,000	200,000	202,024	204,186	209,176	196,757	198,248	204,150
Actual Crash Rate (ACR)	2.230	2.207	2.864	1.314	1.643	1.432	1.527	1.558	1.745
District 4 Average Crash Rate (A)	0.934	0.942	0.934	0.934	0.942	0.934	0.934	0.942	0.934
Average Vehicle Exposure (M)	85.191	85.191	85.191	112.599	113.804	116.585	116.558	117.441	120.937
Critical Crash Rate (CCR)	1.272	1.282	1.273	1.229	1.236	1.225	1.224	1.232	1.219
Safety Ratio	1.753	1.722	2.250	1.070	1.329	1.170	1.248	1.265	1.431
Statistical Significance	12.440	12.091	18.483	4.229	7.762	5.612	6.678	6.935	9.267
Confidence Level	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%	99.99%
Statewide Averge Crash Rate	0.887	0.908	0.992	0.887	0.908	0.992	0.887	0.908	0.992
				0					
		d from SW 1			reet from M	•	Sample Ro	ad from NW	5th Terr to
Crast Rate		V Natura Blvo	I		SW Natura B			NE 3rd Ave	
Number of Creek er	2013	2014	2015	2013	2014	2015	2013	2014	2015
Number of Crashes	25	39	38	57	72	88	71	92	88
Average Daily Traffic (ADT)	52,520	48,228	47,944	46,125	50,280	49,701	51,778	56,287	55,727
Actual Crash Rate (ACR)	1.876	3.188	3.124	4.369	5.062	6.259	4.554	5.428	5.244
District 4 Average Crash Rate (A)	3.751	4.195	4.827	3.751	4.195	4.827	3.751	4.195	4.827
Average Vehicle Exposure (M)	13.323	12.234	12.162	13.048	14.223	14.059	15.592	16.949	16.781
Critical Crash Rate (CCR)	5.460	6.082	6.859	5.478	5.947	6.720	5.334	5.803	6.562
Safety Ratio	0.344	0.524	0.456	0.798	0.851	0.931	0.854	0.935	0.799
Statistical Significance	-3.463	-1.651	-2.637	1.223	1.661	2.505	1.701	2.537	0.833
Confidence Level	50.00%	50.00%	50.00%	85.00%	95.00%	99.00%	95.00%	99.00%	75.00%
Statewide Averge Crash Rate	4.089	4.538	4.869	4.089	4.538	4.869	4.089	4.538	4.869
ADT – Average Daily Traffic									
ACR – Actual Crash Rate = No. of c	rashes in a ye	ar / Average	Vehicle Exp	osure (M)					
M – Average Vehicle Exposure (m	illion vehicles	s or million v	ehicles mile	s) = [(ADT * 3	365 * L) / 1,00	0,000]			
	L = Length of	the Segment	for Segmen	t Analysis, 1	for Spot Ana	lysis			
A – Average Crash Rate	Ŭ		-						
CCR – Critical Crash Rate = A + K *	(SQRT[A/M])	(1/[2 * M])							
(Ref: FDOT Highway Safety Impro		1	es)						
K = 3.291 for Urban, 1.960 for Subu									
Safety Ratio = ACR/CCR									
Level of statistical significance = (ACR - A + (1/2	M))/SQRT(A/	/M)						
Confidence Level = Percent proba		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		high for the	location und	der study, us	ing the distr	ict-wide ave	rage as a b
·	, CL Threshold	1	, 	_			_		

Table 3.6: Crash Rate Comparison – 2013-2015



4 FUTURE NO-BUILD CONDITIONS

4.1 Future Land Use

As previously stated, the three interchanges are located within the City of Deerfield Beach and the City of Pompano Beach. **Figure 4.1** presents the City of Deerfield Beach Future Land Use Map. The City of Pompano Beach Future Land Use Map is presented in **Figure 4.2**. The zoning maps show the following zone classifications for each interchange:

4.1.1 Hillsboro Boulevard Interchange

The City of Deerfield Beach Future Land Use Map shows the northwest quadrant of the Hillsboro Boulevard Interchange as Industrial and Commercial while the northeast quadrant is shown as Industrial, Commercial, Recreation Open Space and Employment Center. The southeast quadrant shows as Commercial, Residential Moderate (10 DU/AC) and Recreation Open Space. The southwest quadrant shows as Commercial, Industrial and the York Residential Transit Oriented Development.

4.1.2 SW 10th Street Interchange

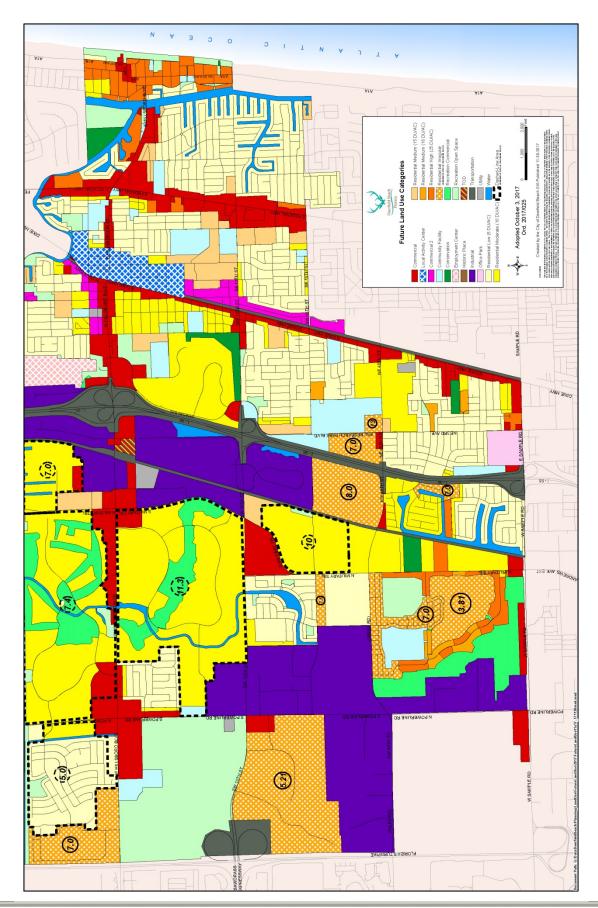
The City of Deerfield Beach Future Land Use Map shows the area west of the SW 10th Street interchange as Industrial. The northeast quadrant of the interchange is shown as Residential Moderate (10 DU/AC), Commercial and Conservation. The southeast quadrant shows as Community Facility, Recreation Open Space, Residential Low (5 DU/AC), Residential Moderate (10 DU/AC), and Residential Medium (15 DU/AC).

4.1.3 Sample Road Interchange

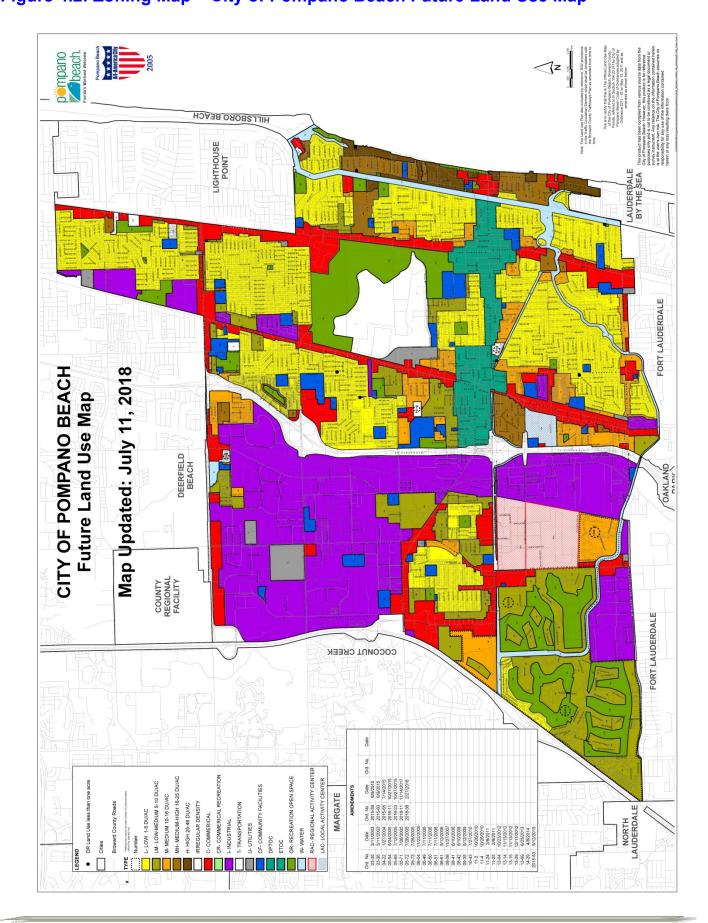
The City of Deerfield Beach Future Land Use Map shows the northwest quadrant of the interchange as Low Density Residential Low (5 DU/AC) and the northeast quadrant as Community Facility, Office Park and Commercial. The City of Pompano Boulevard Future Land Use Map shows the Southeast quadrant as Commercial, Community Facilities and Residential – Low (1-5 DU/AC), Low-Medium (5-10 DU/AC) and Medium (10-16 DU/AC). The Southeast quadrant shows as Commercial and Residential – Medium (10-16 DU/AC) and Medium High (16-25 DU/AC).

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Figure 4.1: Zoning Map – City of Deerfield Beach Future Land Use Map









4.2 Land Use Change

No significant future land use changes were identified in the project area. For traffic projection purposes, the base SERPM Version 6.5 model utilizes MPO developed 2005 base year and 2035 LRTP horizon year data; therefore, TAZ data for the 2010 and 2040 analysis years were interpolated/extrapolated from the available 2005 and 2035 data. The interpolated 2010 and extrapolated 2040 TAZ data developed for the I-95 PD&E Study (Stirling Road to Linton Boulevard) was used for this project. The 2040 TAZ data was developed by extrapolation of the MPO-approved 2035 TAZ data, via benchmarking the County Control totals to Bureau of Economic and Business Research (BEBR) projections, consistent with previous revisions of the I-95 Corridor Planning Study (CPS) Model.

4.3 No-Build Alternative – Transportation Network

The future year No-Build Alternative network includes the existing (2015/2016) roadway conditions plus all funded and committed projects within the study corridor as described in Section 1.3-Planned and Programmed Transportation Projects of this SIMR. **Figure 4.3** presents the Future No-Build Alternative Lane Configuration.

4.4 Future Traffic Forecast

As mentioned previously, traffic forecasting was a coordinated effort between FDOT District 4 and the Turnpike. In order to maintain consistency with the on-going SW 10th Street Connector PD&E Study, traffic projections for both the No-Build and Build conditions were obtained from the recently published *SW 10th Street Connector PD&E Study Project Traffic Forecast Memorandum (PTFM)* dated January 2019 (FPID 439891-1). Section 4 of the PTFM provides a detailed description of the modeling methodology and the development of the Directional Design Hour volumes (DDHVs). The complete document is included in **Appendix F**. **Figure 4.4** depicts the Opening Year 2020 and Design Year 2040 No-Build AADTs. **Figures 4.5** and **4.6** present the No-Build Peak Hour Volumes for Opening Year 2020 and Design Year 2040, respectively.

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Figure 4.3: No-Build Roadway and Intersection Lane Configurations

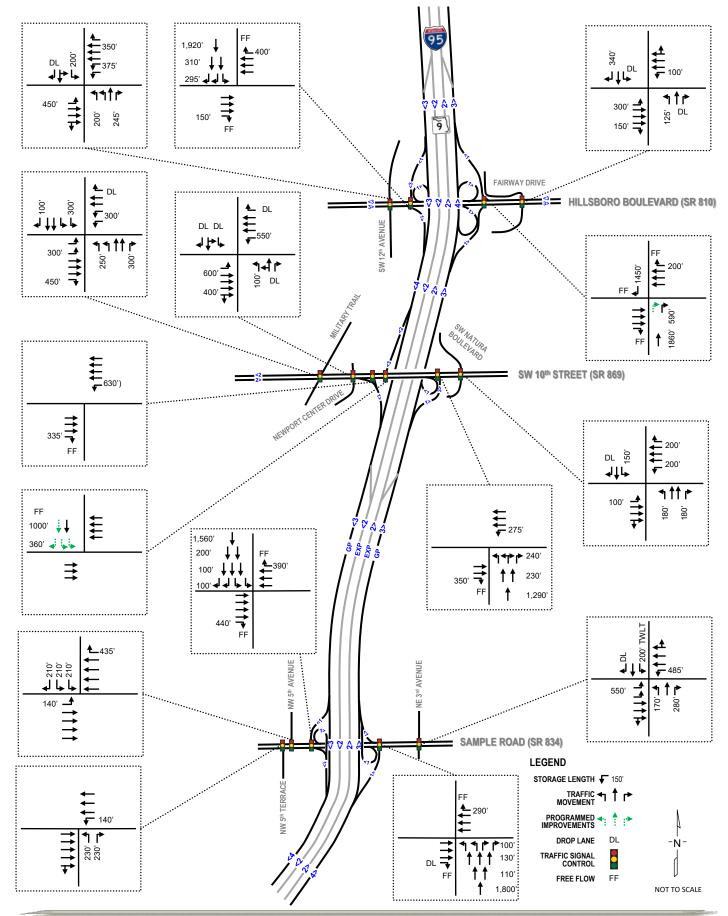


Figure 4.4: 2020 & 2040 No-Build AADT Volumes

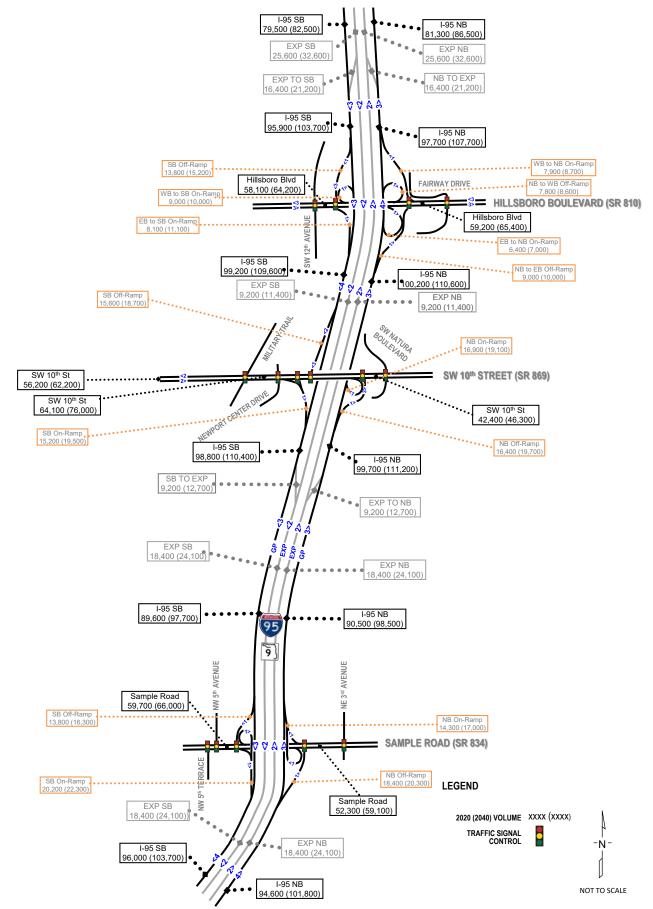


Figure 4.5: 2020 No-Build Peak Hour Volumes

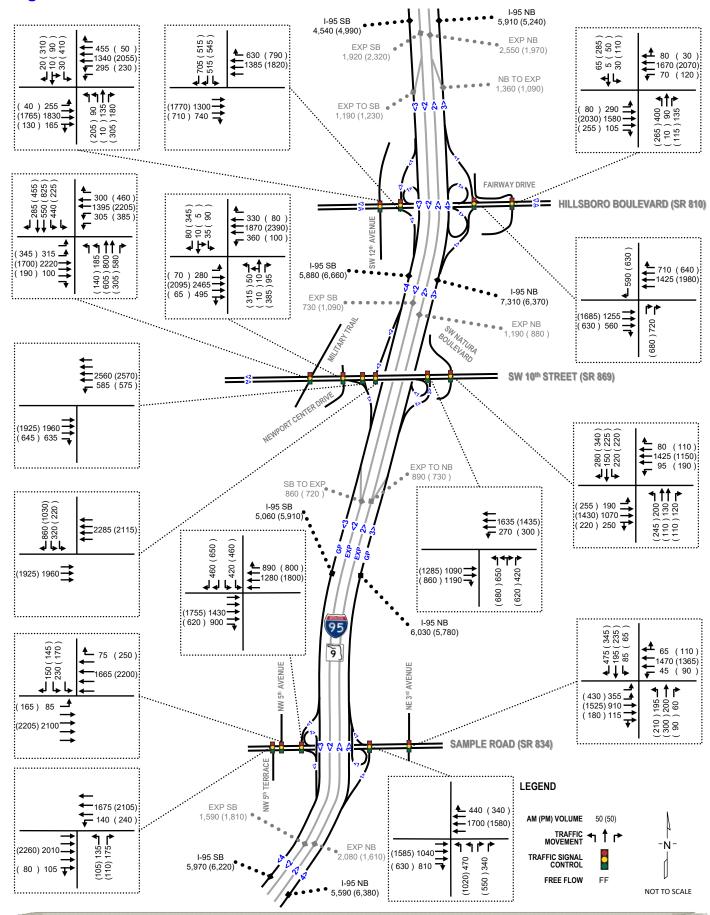
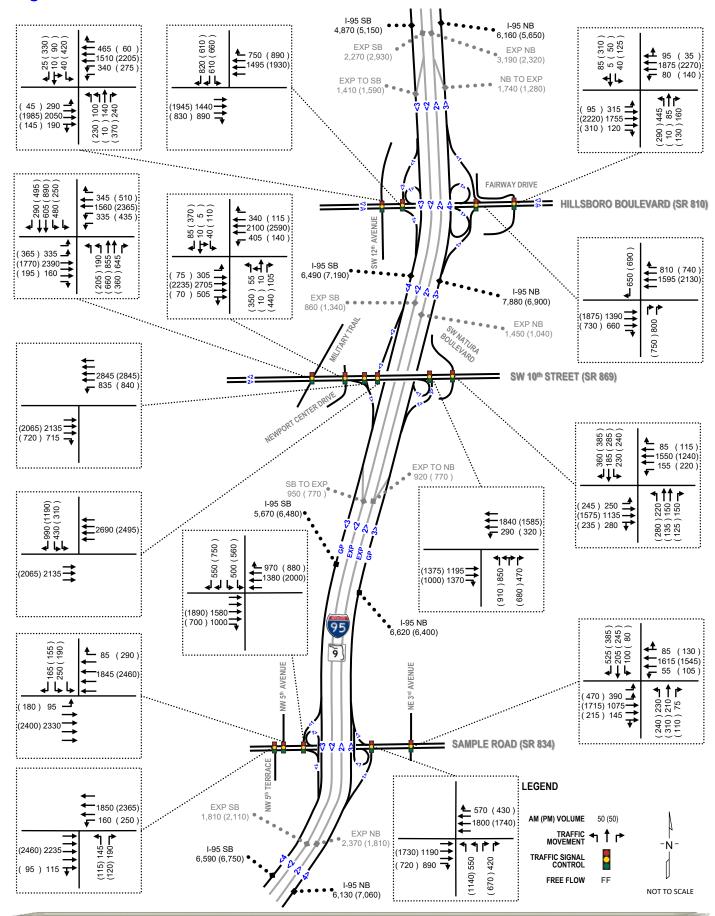


Figure 4.6: 2040 No-Build Peak Hour Volumes





4.4.1 2020 & 2040 No-Build – Freeway Analysis – I-95

The No-Build analysis includes the implementation of I-95 Express Lanes. The mainline/basic, weaving, and ramp merge/diverge analysis results for Opening Year 2020 are summarized and depicted on **Figures 4.7** and **4.8** for the NB and SB directions, respectively. The Design Year 2040 analysis results are summarized and depicted on **Figures** in **4.9** and **4.10** for the NB and SB directions, respectively. Documentation of the 2020 and 2040 No-Build Alternative traffic freeway operational analysis is provided in **Appendix G**. The Design Year 2040 No-Build Alternative analysis indicates that 15 of the 16 freeway segments in the NB direction are projected to operate at LOS E or F during one or both peak hours. Similarly, 9 of the 14 freeway segments in the SB direction are projected to operate at LOS E or F during one or both peak hours.

4.4.2 2020 & 2040 No-Build - Intersection Analysis

Intersection analysis for ramp-terminals and adjacent intersections was performed in a similar manner as for the existing conditions. The No-Build Alternative includes the existing intersection control and lane geometry. **Figure 4.3**, previously presented, presents the No-Build Alternative Lane Configuration and **Figures 4.5** and **4.6**, previously presented, show the AM and PM intersection volumes for 2020 and 2040 conditions, respectively. Signal timing was optimized to reflect routine maintenance operations. **Appendix H** presents the intersection analysis worksheets.

Tables 4.1 through **4.3** summarize the results of the 2020 No-Build signalized intersection analyses for the AM and PM peak hours for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. **Tables 4.4** through **4.6** summarize the results of the 2040 No-Build signalized intersection analyses for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. The results include delays (in seconds per vehicle) and Level of Service (LOS) by movement, approach, and the overall intersection. The volume to capacity (v/c) ratios and 95th percentile queue lengths have also been summarized by movement. The intersection analysis results indicate the following for the 2040 Design Year:

- Hillsboro Boulevard: Two of the three signalized intersections are expected to operate at LOS E during the AM or PM peak hours. The I-95 northbound and southbound off-ramp intersections are expected to operate at LOS C or better during both the AM and PM peak hours.
- SW 10th Street: Three of the six signalized intersections are expected to operate at LOS E or F during one or both peak hours. The I-95 northbound off-ramp approach is expected to operate at LOS F during both peak hours. The I-95 southbound off-ramp approach is expected to operate at LOS C or better during both peak hours.

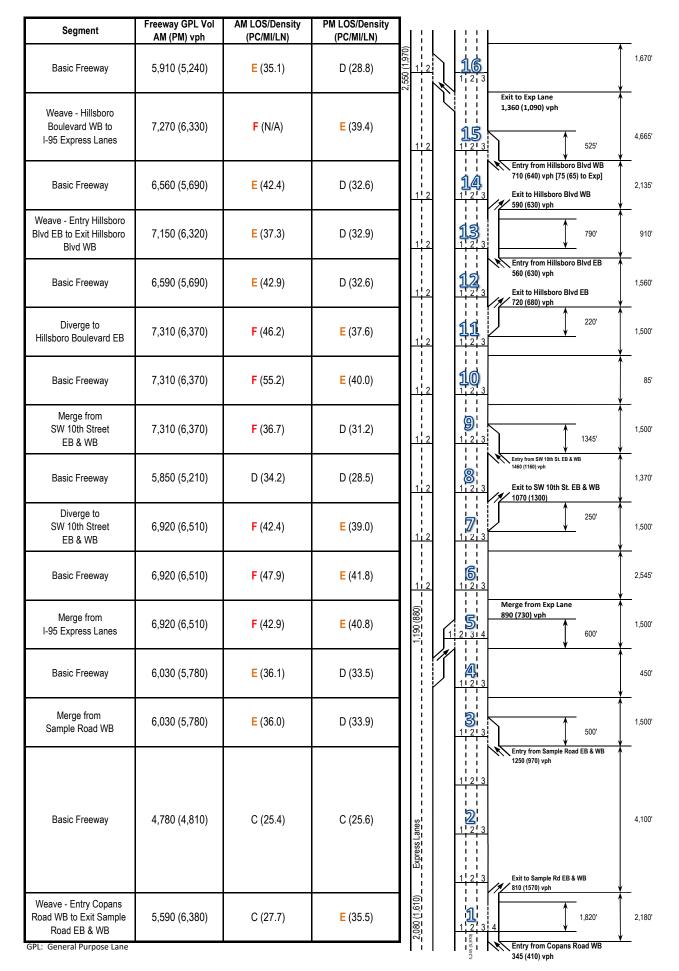


Figure 4.7: 2020 No-Build Freeway Analysis Results - Northbound

Freeway GPL Vol AM LOS/Density PM LOS/Density Segment (PC/MI/LN) (PC/MI/LN) AM (PM) vph 4,540 2 4,540 (4,990) C (23.9) D (27.1) 2,440 **Basic Freeway** 1 Merge From Exp Lane Weave 1,190 (1,230) vph [120 (125) Exit to Hillsboro] I-95 Express Lanes to 5,085' 5,730 (6,220) D (33.7) E (39.6) 2 Hillsboro Boulevard EB & WB Exit to Hillsboro Blvd EB & WB 1,220 (1,060) vph 11 2,175 **Basic Freeway** 4,510 (5,160) C (23.6) D (28.2) 3 Entry from Hillsboro Blvd WB 630 (790) vph 950' i 2 Merge from 1,500' 5,140 (5,950) C (27.3) D (31.9) 4 Hillsboro Boulevard WB 1 12 112 580 **Basic Freeway** 5,140 (5,950) D (28.0) E (35.2) 5 Entry from Hillsboro Blvd EB 740 (710) vph 1 110 1 Weave - Entry Hillsboro 1,830' Blvd EB to Exit SW 10th 5,880 (6,660) C (27.7) D (31.8) 6 Street EB & WB 060 1 Exit to SW 10th St EB & WB 1,180 (1,250) vph 2,210 **Basic Freeway** 4,700 (5,410) D (24.8) D (30.2) 7 1 Entry from SW 10th St EB & WB 1,220 (1,220) vph Merge from 1,470' 1 1,500' SW 10th Street 5,920 (6,630) D (30.3) D (33.5) 8 1 EB & WB L. 2 1 5,920 (6,630) D (34.9) 3,000 **Basic Freeway** E (43.4) 9 Т Diverge to Exit to Express 5,920 (6,630) E (41.1) 1,500' E (37.2) 10 I I-95 Express Lanes 300' 860 (720) vph 2 500 **Basic Freeway** 5,060 (5,910) D (27.4) D (34.8) 11 2 Diverge to 1,500' 5,060 (5,910) D (34.0) E (38.1) 12 Sample Road EB & WB 250' Exit to Sample Rd EB & WB 590 (1,810) 880 (1,110) vph 11213 112 4,060' **Basic Freeway** 4,180 (4,800) C (21.6) C (25.5) 13 Т Entry from Sample Rd EB & WB 1,790 (1,420) vph Weave - Entry Sample 5,970 (6,220) Road EB to Exit Copans F (N/A) D (34.8) 1,720' 1,650' 14 Road WB Exit to Copans Road WB

Figure 4.8: 2020 No-Build Freeway Analysis Results - Southbound

GPL: General Purpose Lane

605 (630) vph

Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)
Basic Freeway	6,160 (5,650)	E (37.8)	D (32.3)
Weave - Hillsboro Boulevard WB to I-95 Express Lanes	7,900 (6,930)	F (N/A)	F (N/A)
Basic Freeway	7,090 (6,190)	F (50.9)	E (37.8)
Weave - Entry Hillsboro Blvd EB to Exit Hillsboro Blvd WB	7,740 (6,880)	E (41.9)	E (37.1)
Basic Freeway	7,080 (6,150)	F (50.7)	E (37.4)
Diverge to Hillsboro Boulevard EB	7,880 (6,900)	F (51.5)	F (42.5)
Basic Freeway	7,880 (6,900)	F (70.0)	F (47.6)
Merge from SW 10th Street EB & WB	7,880 (6,900)	F (41.2)	F (34.2)
Basic Freeway	6,220 (5,580)	E (38.2)	D (31.6)
Diverge to SW 10th Street EB & WB	7,540 (7,170)	F (48.1)	F (44.7)
Basic Freeway	7,540 (7,170)	F (60.4)	F (52.4)
Merge from I-95 Express Lanes	7,540 (7,170)	F (47.3)	F (45.6)
Basic Freeway	6,620 (6,400)	E (43.3)	E (40.3)
Merge from Sample Road WB	6,620 (6,400)	<mark>E</mark> (39.5)	<mark>E</mark> (37.5)
Basic Freeway	5,160 (5,250)	D (28.2)	D (28.9)
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	6,130 (7,060)	D (31.6)	F (N/A)

Figure 4.9: 2040 No-Build Freeway Analysis Results - Northbound

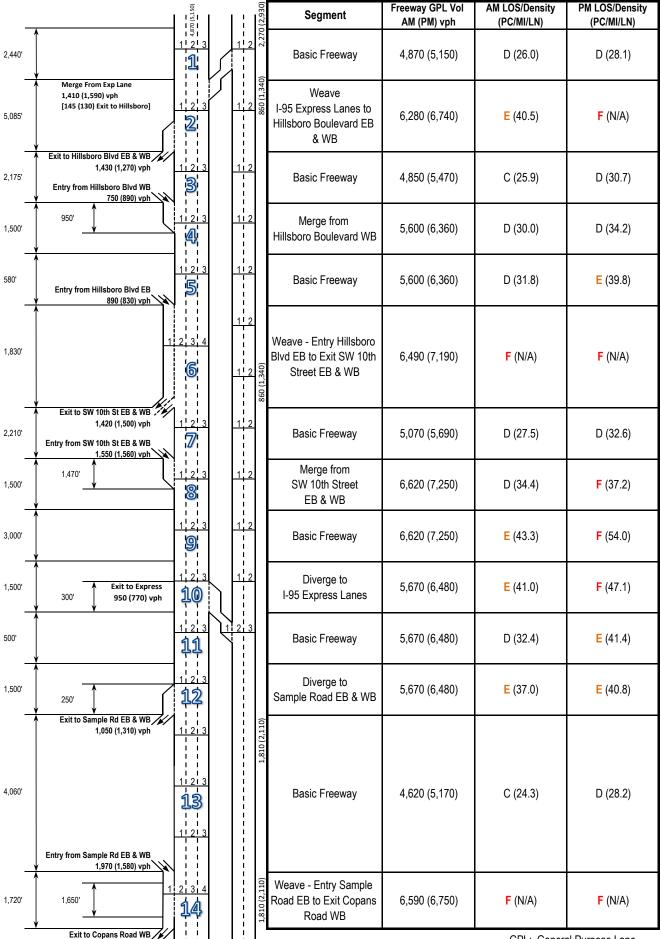


Figure 4.10: 2040 No-Build Freeway Analysis Results - Southbound

GPL: General Purpose Lane

705 (740) vph

								AM Mo	vement/Ap	proach LOS	(Delay)					Intersectio
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	1		Southbound		AM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	F (98.6)	C (22.5)		F (106.1)	B (18.2)	A (5.0)	E (74.6)	F (93.6)	E (59.7)	F (84.5)	F (84.4)	E (56.8)	
		LOS (Delay)	Approach		C (31.1)			C (27.7)			E (74.3)			E (75.2)		
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.90	0.68		0.90	0.51	0.40	0.28	0.77	0.12	0.31	0.30	0.01	C (33.8
		Queue Length 95th (ft)	Movement	#473	723		#290	443	102	85	247	67	63	63	0	
			Movement		A (0.1)	A (0.8)		B (16.7)					E (59.7)		D (50.9)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.4)			B (16.7)						D (54.6)		
	ramp	Volume to Capacity ratio	Movement		0.28	0.49		0.51					0.83		0.72	B (19.
U.11 DI 1		Queue Length 95th (ft)	Movement		0	62		515					653		448	
Hillsboro Blvd.			Movement		B (18.2)			A (0.1)				B (18.5)				
	105N (11 - 1000	LOS (Delay)	Approach		B (18.2)			A (0.1)			B (18.5)					
	I-95 Northbound Off- ramp	Volume to Capacity ratio	Movement		0.61			0.30				0.58				B (10.
		Queue Length 95th (ft)	Movement		280			m0				230				
			Movement	F (98.1)	B (12.9)	A (8.0)	F (86.8)	C (31.2)		F (414.1)	E (71.7)	E (68.5)	F (82.6)	F (83.3)	F (83.2)	
	CW/ NL 4	LOS (Delay)	Approach		C (25.2)	•		C (33.3)			F (290.0)			F (83.0)		
	SW Natura Blvd/Fairway Drive	Volume to Capacity ratio	Movement	0.96	0.51	0.07	0.61	0.69		1.73	0.40	0.09	0.40	0.07	0.05	Е (66.
		Queue Length 95th (ft)	Movement	#570	386	9	150	630		#924	177	72	70	22	0	
A Peak																
								PM Mo	vement/Ap	proach LOS	(Delay)					Intersect
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound			Northbound	1		Southbound		PM LO
	The sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
	LOS (Delay)	Movement	E (55.5)	C (32.4)		F (212.0)	C (25.8)	A (0.0)	D (54.6)	D (48.8)	F (155.2)	E (63.2)	E (63.9)	D (40.9)		
		LOS (Delay)	Approach		C (32.9)			D (43.6)			F (113.5)			D (54.9)		
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.42	0.86		1.25	0.93	0.03	0.64	0.06	1.14	0.84	0.84	0.52	D (48.
		Queue Length 95th (ft)	Movement	72	#701		m#213	#784	m0	124	26	#324	306	313	146	
		LOS (Delay)	Movement		A (0.1)	A (0.5)		B (16.3)					D (43.4)		C (28.7)	_
	I-95 Southbound Off-		Approach		A (0.2)	•		B (16.3)						D (36.2)		
	ramp	Volume to Capacity ratio	Movement		0.38	0.47		0.72					0.85		0.51	B (12.
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	m0		402					499		213	
innsoore Brva.		LOS (Delay)	Movement		B (16.0)			A (0.2)				B (17.5)				
	I-95 Northbound Off-		Approach		B (16.0)	•		A (0.2)			B (17.5)			1		
	ramp		Movement		0.76			0.42				0.68				A (9.0
		Queue Length 95th (ft)	Movement		275			m0				177				
		LOS (Delay)	Movement	F (84.3)	B (16.8)	B (10.2)	F (136.9)	C (21.5)		F (149.6)	D (44.2)	D (44.5)	D (42.5)	D (44.5)	E (62.2)	
	SW Natura		Approach		B (18.4)	1		C (27.7)			F (115.9)			E (55.3)		
	Blvd/Fairway Drive		Movement	0.81	0.77	0.24	1.01	0.78		1.14	0.04	0.08	0.44	0.19	0.78	C (32.
			Movement	m#103	540	m120	#234	660		#294	23	36	116	68	215	
	4.6. HCM 2000 MOEs r	reported.														
OS notes:				Queue notes												
lay is in sec/veh unit	S			HCM metho	odology does	not report qu	ieues, results	are from Syr	chro report	outputs						
lay is in sec/ven unit																
	Level of service (LOS):	E reflecting at capacity oper F reflecting over capacity of			exceeds capac entile volum			infinite								

Table 4.1: 2020 No-Build – Hillsboro Boulevard Intersection Analysis Results

m: Upstream metering is in effect

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

	Signal Contuellad	Magnus of Effectiveness						AM M	ovement/Ap	proach LOS	(Delay)					Intersect
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound			Northbound		1	Southbound	1	AM LO
	Intersections	(NICE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	F (179.1)	F (99.2)	C (25.5)	F (171.3)	D (52.7)	C (26.1)	E (71.0)	E (74.7)	F (166.2)	F (237.6)	D (48.8)	D (44.9)	
	South Military Trail	LOS (Delay)	Approach		F (106.0)			E (66.8)			F (108.1)			F (113.0)		F (97
	South Wintary Tran	Volume to Capacity ratio	Movement	1.18	1.11	0.07	1.20	1.01	0.33	0.67	0.96	1.20	1.34	0.62	0.39	r (97
		Queue Length 95th (ft)	Movement	#310	#1069	0	#301	#934	138	144	#578	#819	#429	339	197	
		LOS (Delay)	Movement	D (54.9)	B (11.8)		F (95.7)	B (14.2)	A (6.2)	E (72.4)	E (72.5)	E (69.5)	E (71.7)	E (71.4)	E (69.4)	
	East Newport Center	EOS (Delay)	Approach		B (15.5)			C (24.6)			E (70.6)			E (70.2)		C (21
	Drive	Volume to Capacity ratio	Movement	0.82	0.95		0.91	0.67	0.27	0.48	0.49	0.07	0.40	0.38	0.08	0 (21
		Queue Length 95th (ft)	Movement	m195	m285		#548	635	21	#77	#78	54	60	62	31	
		LOS (Delay)	Movement		B (15.5)	A (0.3)	E (60.5)	A (0.2)								
	I-95 Southbound On-	Eob (Beildy)	Approach		B (11.8)			B (11.4)			1			-		B (11
	ramp	Volume to Capacity ratio	Movement		0.76	0.44	1.00	0.43								Б (1
SW 10th Street		Queue Length 95th (ft)	Movement		m335	m0	#675	0								
SW Iou Succe		LOS (Delay)	Movement		B (12.4)			C (20.3)					E (55.2)		A (1.6)	
	I-95 Southbound Off-	EOD (Delay)	Approach		B (12.4)			C (20.3)						B (16.2)		B (10
	ramp	Volume to Capacity ratio	Movement		0.63			0.58					0.53		0.58	D (1)
		Queue Length 95th (ft)	Movement		179			289					159		0	
		LOS (Delay)	Movement		D (41.3)	A (3.9)	D (44.9)	B (18.0)		E (59.0)		E (76.0)				
	I-95 Northbound	EOS (Delay)	Approach		C (21.8)			C (21.8)			E (64.3)					C (30
	Ramps	Volume to Capacity ratio	Movement		0.94	0.82	0.66	0.63		0.85		0.90				0 (5
		Queue Length 95th (ft)	Movement		686	1090	m377	410		468		#586				
		LOS (Delay)	Movement	C (26.8)	C (22.4)		B (12.6)	C (22.2)	B (14.0)	D (35.6)	C (31.9)	C (30.7)	C (27.8)	D (36.2)	C (31.4)	
	FAU Research Park	EOD (Delay)	Approach		C (22.9)			C (21.2)			C (33.3)			C (31.3)		C (24
	Boulevard	Volume to Capacity ratio	Movement	0.74	0.66		0.44	0.76	0.05	0.74	0.40	0.08	0.68	0.67	0.52	C (2-
		Queue Length 95th (ft)	Movement	m98	440		44	285	0	#157	59	4	147	131	#136	
1 Peak																
								PM Mo	ovement/Ap	oroach LOS	(Delay)					Interse
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound			Southbound	il .	PM L
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Dela
			Movement	F (182.9)	C (34.3)	C (21.4)	D (53.7)	F (174.3)	C (25.9)	E (74.4)	F (95.2)	D (48.1)	F (143.1)	F (216.0)	F (119.5)	
		LOS (Delay)	Approach		E (56.2)			F (136.7)			E (78.7)			F (175.9)		F (11
	South Military Trail	Volume to Capacity ratio	Movement	1.22	0.81	0.13	0.79	1.32	0.48	0.76	1.02	0.42	1.08	1.34	1.05	F (11
		Queue Length 95th (ft)	Movement	#302	542	47	m177	m#1421	m137	#119	#433	160	#206	#650	#505	
			Movement	D (46.8)	B (10.8)		E (75.7)	D (35.6)	A (6.6)	E (61.8)	E (60.2)	F (154.0)	D (50.6)	D (50.6)	F (163.6)	
	East Newport Center	LOS (Delay)	Approach		B (11.9)			D (36.3)			F (111.4)			F (139.3)		
	Drive				0.80		0.60		0.06	0.72	0.71	1.13	0.23	0.23	1.14	D (43
		Volume to Capacity ratio	Movement	0.63	0.80		0.00	0.98		0.73	0.71	1.15	0.23	0.25		- (
			Movement Movement	0.63 m38	m211		159	0.98 #919	1	0.73 #260	#253	#461	85	85	#408	- (
		Queue Length 95th (ft)	Movement		m211	A (0.5)	159	#919	1						#408	- (
			Movement Movement		m211 B (13.8)	A (0.5)		#919 A (0.2)	1						#408	
	I-95 Southbound On-	Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach		m211 B (13.8) B (10.5)		159 F (97.6)	#919 A (0.2) B (18.0)	1						#408	
		Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement		m211 B (13.8) B (10.5) 0.71	0.44	159 F (97.6) 1.10	#919 A (0.2) B (18.0) 0.44	1						#408	
SW 10th Street	I-95 Southbound On-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement		m211 B (13.8) B (10.5) 0.71 m181		159 F (97.6)	#919 A (0.2) B (18.0) 0.44 0	1				85			B (14
SW 10th Street	I-95 Southbound On- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4)	0.44	159 F (97.6) 1.10	#919 A (0.2) B (18.0) 0.44 0 C (29.5)						85	#408 A (2.7)	B (1-
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4)	0.44	159 F (97.6) 1.10	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5)					85 D (43.5)		A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66	0.44	159 F (97.6) 1.10	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58					85 D (43.5) 0.33	85	A (2.7)	
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144	0.44 m11	159 F (97.6) 1.10 #615	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374		#260		#461	85 D (43.5)	85	A (2.7)	B (1-
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Movement Movement Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0)	0.44	159 F (97.6) 1.10	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) C (29.5) 0.58 m374 B (13.8)			#253		85 D (43.5) 0.33	85	A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Movement Movement Movement Approach		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0)	0.44 m11 A (1.3)	159 F (97.6) 1.10 #615 E (68.3)	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2)		#260		#461	85 D (43.5) 0.33	85	A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Movement Movement Approach Movement Approach Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61		#260 	#253	#461	85 D (43.5) 0.33	85	A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Movement Movement Approach Movement Movement Movement Movement	m38	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791	0.44 m11 A (1.3)	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157		#260 E (61.1) 0.95 #542	#253	#461	85 D (43.5) 0.33 66	85 A (9.9)	A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement Movement Movement Movement		m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6)	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9)	C (23.3)	#260 	#253 E (70.9) D (46.7)	#461	85 D (43.5) 0.33	85 A (9.9) E (73.5)	A (2.7)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Approach	m38	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7)	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0)	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4)	1 C (23.3)	#260 E (61.1) E (61.1) U U U U U U U U U U U U U U U U U U U	#253 E (70.9) D (46.7) E (57.6)	#461 F (92.3) 1.02 #664 D (45.7)	85 D (43.5) 0.33 66 D (42.3)	85 A (9.9) E (73.5) E (57.1)	A (2.7) 0.71 0 E (55.9)	B (14
SW 10th Street	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement Movement	m38	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7) 0.78	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0) 0.84	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4) 0.59	1 C (23.3)	#260 E (61.1) U U U U U U U U U U U U U U U U U U U	#253 E (70.9) D (46.7) E (57.6) 0.20	#461 F (92.3) 1.02 #664 D (45.7) 0.08	85 D (43.5) 0.33 66 D (42.3) 0.60	85 A (9.9) E (73.5) E (57.1) 0.85	A (2.7) 0.71 0 E (55.9) 0.64	B (1-
	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park Boulevard	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement Movement	m38	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7)	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0)	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4)	1 C (23.3)	#260 E (61.1) E (61.1) U U U U U U U U U U U U U U U U U U U	#253 E (70.9) D (46.7) E (57.6)	#461 F (92.3) 1.02 #664 D (45.7)	85 D (43.5) 0.33 66 D (42.3)	85 A (9.9) E (73.5) E (57.1)	A (2.7) 0.71 0 E (55.9)	B (1 B (1 D (4
nchro Version 9.2.9	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement Movement	m38 D (41.5) 0.76 m145	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7) 0.78 m287	0.44 m11 A (1.3) 0.59	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0) 0.84	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4) 0.59	1 C (23.3)	#260 E (61.1) U U U U U U U U U U U U U U U U U U U	#253 E (70.9) D (46.7) E (57.6) 0.20	#461 F (92.3) 1.02 #664 D (45.7) 0.08	85 D (43.5) 0.33 66 D (42.3) 0.60	85 A (9.9) E (73.5) E (57.1) 0.85	A (2.7) 0.71 0 E (55.9) 0.64	B (1-
nchro Version 9.2.9 <u>S notes:</u>	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park Boulevard I4.6. HCM 2000 MOEs 1	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement Movement	m38 D (41.5) D (41.5) 0.76 m145 Queue notes	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7) 0.78 m287	0.44 m11 A (1.3) 0.59 110	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0) 0.84 #249	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4) 0.59 375	1 C (23.3) 0.08 9	#260 E (61.1) 0.95 #542 E (67.9) 0.90 #306	#253 E (70.9) D (46.7) E (57.6) 0.20	#461 F (92.3) 1.02 #664 D (45.7) 0.08	85 D (43.5) 0.33 66 D (42.3) 0.60	85 A (9.9) E (73.5) E (57.1) 0.85	A (2.7) 0.71 0 E (55.9) 0.64	B (1 B (1 D (4
nchro Version 9.2.9	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park Boulevard I4.6. HCM 2000 MOEs r	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) EOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) reported.	Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement	m38 D (41.5) 0.76 m145 Queue notes HCM metho	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7) 0.78 m287 s: st	0.44 m11 A (1.3) 0.59 110 not report qu	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0) 0.84 #249 ueues, result:	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4) 0.59 375	1 C (23.3) 0.08 9	#260 E (61.1) 0.95 #542 E (67.9) 0.90 #306	#253 E (70.9) D (46.7) E (57.6) 0.20	#461 F (92.3) 1.02 #664 D (45.7) 0.08	85 D (43.5) 0.33 66 D (42.3) 0.60	85 A (9.9) E (73.5) E (57.1) 0.85	A (2.7) 0.71 0 E (55.9) 0.64	B (1 B (1 D (4
chro Version 9.2.9 <u>S notes:</u>	I-95 Southbound On- ramp I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park Boulevard I4.6. HCM 2000 MOEs r ts :Level of service (LOS)	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement	m38 D (41.5) 0.76 m145 Queue notes HCM metho ~: Volume e	m211 B (13.8) B (10.5) 0.71 m181 A (9.4) A (9.4) 0.66 144 E (76.0) D (46.0) 1.08 #791 B (10.6) B (14.7) 0.78 m287	0.44 m11 A (1.3) 0.59 110 not report queity, queue is	159 F (97.6) 1.10 #615 E (68.3) 0.94 m#442 D (55.0) 0.84 #249 ueues, result s theoretically	#919 A (0.2) B (18.0) 0.44 0 C (29.5) C (29.5) 0.58 m374 B (13.8) C (23.2) 0.61 157 C (30.9) C (33.4) 0.59 375	1 C (23.3) 0.08 9	#260 E (61.1) 0.95 #542 E (67.9) 0.90 #306	#253 E (70.9) D (46.7) E (57.6) 0.20	#461 F (92.3) 1.02 #664 D (45.7) 0.08	85 D (43.5) 0.33 66 D (42.3) 0.60	85 A (9.9) E (73.5) E (57.1) 0.85	A (2.7) 0.71 0 E (55.9) 0.64	B (1 B (1

Table 4.2: 2020 No-Build - SW 10th Street Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

								AMM	ovement/Ar	oproach LOS	(Delav)					Intersectio
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound	-	proach LOS	Northbound	1		Southbound		
Alterial	Intersections	(MOE)	Location	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	AM LOS (Delay)
			Movement	Len	B (16.2)	Kigiit	D (53.4)	A (1.2)	Kigitt	E (56.6)	Through	D (46.9)	Len	Through	Rigitt	(Delay)
		LOS (Delay)	Approach		B (16.2) B (16.2)		D (33.4)	A (1.2) A (5.2)		E (30.0)	D (51.1)	D (40.9)		1	ļ	-
	NW 5th Terrace	Volume to Capacity ratio	Movement		0.54		0.64	A (3.2)		0.67	D (31.1)	0.12				B (14.0
		Queue Length 95th (ft)	Movement		325		#155	27		170		64				-
		Queue Length 95th (It)	Movement	D (49.6)	A (2.0)		#155		A (5.9)	170		04	D (51.2)		D (47.0)	
		LOS (Delay)		D (49.0)	A (2.0) A (3.8)			A (9.3)	A (5.8)				D (31.2)	D (49.6)	D (47.0)	-
	NW 5th Avenue	Volume to Capacity ratio	Approach Movement	0.70	0.47			A (9.1) 0.45	0.05		1	1	0.59	D (49.0)	0.13	A (10.0
				#153	43			250	0.03 m6				130		64	_
		Queue Length 95th (ft)	Movement	#133		A (1.5)			IIIO						-	
	1050 11 1000	LOS (Delay)	Movement		A (5.2)	A (1.5)		A (7.6)					B (20.0)	C (21.0)	C (23.7)	
Sample Road	I-95 Southbound Off-		Approach		A (3.8)	0.00		A (7.6)			1	Г	0.52	C (21.9)	0.70	A (8.4)
	ramp	Volume to Capacity ratio	Movement		0.43	0.60		0.48					0.52		0.70	_
		Queue Length 95th (ft)	Movement		124	360		156					108		138	
		LOS (Delay)	Movement		A (5.1)			A (4.8)	A (0.2)	C (22.1)		C (21.3)				
	I-95 Northbound		Approach		A (5.1)			A (3.9)		_	C (21.8)			1	1	A (7.8)
	Ramps	Volume to Capacity ratio	Movement		0.38			0.62	0.29	0.63		0.56				_ ``
		Queue Length 95th (ft)	Movement		56			141	m0	124		104				
		LOS (Delay)	Movement	E (58.0)	B (18.6)		E (56.3)	D (38.8)		D (38.8)	D (37.7)	C (33.4)	C (32.9)	D (39.3)	E (70.7)	
	NE 3rd Avenue		Approach		C (28.7)			D (39.3)			D (37.6)			E (58.4)	•	D (39.1
	THE STATIVENUE	Volume to Capacity ratio	Movement	0.85	0.48		0.49	0.85		0.66	0.45	0.04	0.29	0.47	0.92	D (5).1
		Queue Length 95th (ft)	Movement	#229	279		79	#558		177	208	0	83	208	#438	
A Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	1		Southbound	1	PM LOS
	Intersections (MOE)	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement		B (18.4)		E (72.6)	A (1.3)	_	E (62.8)		D (53.2)				
		LOS (Delay)	Approach		B (18.4)			A (8.6)			E (57.9)				<u>!</u>	1
	NW 5th Terrace	Volume to Capacity ratio	Movement		0.60		0.87	0.57		0.65		0.08				B (15.4
		Queue Length 95th (ft)	Movement		395		#360	27		152		57				
			Movement	E (55.4)	A (1.6)			B (11.9)	A (10.0)	<u> </u>			E (56.7)		D (53.4)	
		LOS (Delay)	Approach	2 (0011)	A (5.3)			B (11.7)	11 (1010)		ļ	Į	2 (0011)	E (55.2)	5 (0011)	
	NW 5th Avenue	Volume to Capacity ratio	Movement	0.82	0.48			0.61	0.17			T	0.54		0.10	B (11.4
		Queue Length 95th (ft)	Movement	#278	35			336	m34				112		64	_
		Queue Lengin 75th (It)	Movement	11270	B (13.3)	A (0.7)		B (14.7)	mor				B (18.5)		C (26.3)	
	I-95 Southbound Off-	LOS (Delay)	Approach		B (10.1)	n(0.7)		B (14.7) B (14.7)					D (10.5)	C (23.1)	C (20.5)	_
Sample Road	ramp	Volume to Capacity ratio	Movement		0.57	0.41		0.73					0.46	0 (23.1)	0.81	B (14.4
	Tump	Queue Length 95th (ft)	Movement		357	18		330					116		#211	
		Queue Length 95th (It)				10			A (0.2)	D (20.5)		C (21.4)	110		#211	
		LOS (Delay)	Movement		B (12.5)			B (13.3)	A (0.2)	D (39.5)	D (2(7)	C (31.4)				
	I-95 Northbound Ramps		Approach		B (12.5)			B (11.0)	0.00	0.01	D (36.7)	0.54		1	r	B (19.3
	Kamps	Volume to Capacity ratio	Movement		0.64			0.64	0.23	0.81		0.54			-	-
		Queue Length 95th (ft)	Movement		239			m194	m0	451	D (52.1)	248	D (12.0)		D (72.2)	
		LOS (Delay)	Movement	E (73.7)	C (23.3)		E (76.7)	D (35.9)		F (81.4)	D (53.4)	D (39.0)	D (43.3)	E (57.5)	D (52.2)	4
	NE 3rd Avenue		Approach		C (33.4)			D (38.2)			E (61.4)			D (53.2)	1	D (40.9
		Volume to Capacity ratio	Movement	0.86	0.75		0.74	0.77		0.94	0.76	0.06	0.43	0.74	0.63	
		Queue Length 95th (ft)	Movement	#288	390		#171	#542		#210	342	0	74	279	223	
chro Version 9.2.9	14.6. HCM 2000 MOEs re	Queue Length 95th (ft)		#288	390		#171	#542		#210	342	0	74	279	223	

Table 4.3: 2020 No-Build – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

~: Volume exceeds capacity, queue is theoretically infinite

- #: 95th percentile volume exceeds capacity
- m: Upstream metering is in effect

								алт лт.	womant/An	nroach I OS	(Dolov)					Intersectio
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location	AM Movement/Approach LOS (Delay) Eastbound Westbound Northbound Southbound											-	
Arteriai				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	AM LOS (Delay)
			Movement	F (113.9)	C (26.3)	Kigiit	F (128.0)	C (21.7)	B (15.0)	E (74.4)	F (93.9)	E (61.4)	F (84.5)	F (84.4)	E (55.3)	(Delay
		LOS (Delay)	Approach	1 (113.9)	D (36.3)		1 (120.0)	D (36.0)	D (15.0)	E (/+.+)	E (73.6)	E (01.4)	1 (04.3)	E (74.7)	Е (33.3)	
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.97	0.77		1.02	0.59	0.42	0.30	0.77	0.30	0.36	0.35	0.02	D (40.0)
		Queue Length 95th (ft)	Movement	#583	914		#356	325	95	93	255	140	72	72	1	
			Movement	11505	A (0.1)	A (1.1)	11550	C (26.1)	,,,	,,,	255	110	D (52.9)	12	D (43.6)	C (20.4
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.5)	11 (1.1)		C (26.1)					D (32.9)	D (47.6)	D (15.0)	
	ramp	Volume to Capacity ratio	Movement		0.31	0.59		0.62					0.84	D (17.0)	0.71	
		Queue Length 95th (ft)	Movement		0	197		534					719		473	-
Hillsboro Blvd.			Movement		B (13.1)	171		A (0.1)				C (27.4)	112			
	I-95 Northbound Off-	LOS (Delay)	Approach		B (13.1)			A (0.1)			C (27.4)	0 (27.1)				
	ramp	Volume to Capacity ratio	Movement		0.58			0.34			- (_,)	0.77				B (10.
	1	Queue Length 95th (ft)	Movement		319			m0				268				1
	SW Natura Blvd/Fairway Drive	- - , , ,	Movement	F (136.8)	B (14.1)	A (4.2)	F (88.4)	C (32.7)		F (532.4)	E (72.4)	E (69.5)	F (84.2)	F (83.3)	F (83.3)	
		LOS (Delay)	Approach		C (31.2)	()		C (34.9)		- (00)	F (368.6)	- (****)	- (*)	F (83.6)	- (00.0)	F (80.0)
		Volume to Capacity ratio	Movement	1.07	0.57	0.08	0.64	0.76		1.99	0.39	0.11	0.52	0.07	0.06	
		Queue Length 95th (ft)	Movement	#653	449	8	167	739		#1063	169	79	85	22	0	
M Peak	1															
		Mesure of Effectiveness (MOE)		PM Movement/Approach LOS (Delay) Interse										Intersect		
Arterial	Signal Controlled Intersections		Location	Eastbound			Westbound			Northbound			Γ	Southbound	1	PM LO
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	E (69.3)	D (39.8)		F (228.0)	C (22.0)	A (0.3)	E (65.3)	E (56.5)	F (246.5)	F (84.7)	F (85.6)	E (65.3)	E (60.2)
	SW 12th Avenue		Approach		D (40.4)		- ()	D (43.8)	(••••)	_ (****)	F (175.0)	- ()	- (0)	E (77.4)	_ (((),()))	
		Volume to Capacity ratio	Movement	0.56	0.92		1.29	0.91	0.04	0.70	0.06	1.36	0.91	0.91	0.81	
		Queue Length 95th (ft)	Movement	#98	#897		m#254	#900	m0	157	29	#516	#415	#425	#333	
		- - , , ,	Movement		A (0.1)	A (0.5)		C (25.0)					D (50.4)		C (29.3)	B (16.7)
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.2)	()		C (25.0)						D (40.3)	()	
	ramp	Volume to Capacity ratio	Movement		0.42	0.55		0.83					0.90		0.53	
		Queue Length 95th (ft)	Movement		m0	m0		586					733		286	
Hillsboro Blvd.		.	Movement		B (15.2)			A (0.1)				C (24.1)				-
	I-95 Northbound Off- ramp	LOS (Delay)	Approach		B (15.2)			A (0.1)			C (24.1)	. ,		•		
		Volume to Capacity ratio	Movement		0.73			0.46				0.78				A (9.8)
		Queue Length 95th (ft)	Movement		273			m0				228				1
			Movement	F (115.6)	C (23.0)	B (11.9)	F (136.9)	C (28.7)		F (131.4)	D (48.5)	D (49.1)	D (46.9)	D (48.9)	E (73.9)	<u> </u>
	SW Natura	LOS (Delay)	Approach		C (25.0)	•		C (34.9)			F (104.6)			E (64.4)		D (29)
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	0.92	0.86	0.32	1.00	0.86		1.08	0.03	0.10	0.43	0.16	0.84	D (38.0)
		Queue Length 95th (ft)	Movement	m#160	#919	200	#290	#954		#351	25	56	144	75	291	1
nchro Version 9.2.9	14.6. HCM 2000 MOEs	reported.														
	14.6. HCM 2000 MOEs	reported.		Queue notes	<u>:</u>											
nchro Version 9.2.91 <u>DS notes:</u> elay is in sec/veh unit		reported.			_	not report q	ueues, result	s are from Sy	nchro report	outputs						

Table 4.4: 2040 No-Build – Hillsboro Boulevard Intersection Analysis Results

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

Arterial S E	Signal Controlled Intersections South Military Trail East Newport Center Drive	Mesure of Effectiveness (MOE) LOS (Delay) Volume to Capacity ratio	Location Movement	Left	Eastbound			Westbound			Northbound	1		Southbound	1	AM LO
E	South Military Trail	LOS (Delay)	Movement	Left			Westbound Northbound					-				1.0
E	East Newport Center	,	Movement		Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
E	East Newport Center	,		F (326.4)	F (148.6)	C (25.4)	F (294.3)	F (112.6)	D (48.0)	E (64.9)	E (68.2)	F (187.4)	F (332.8)	D (46.3)	D (41.1)	
E	East Newport Center	Volume to Capacity ratio	Approach		F (162.4)	T		F (129.8)	T		F (113.3)	1		F (145.2)	1	F (140.5
I	*		Movement	1.54	1.23	0.11	1.47	1.15	0.39	0.65	0.95	1.27	1.57	0.66	0.38	
I	*	Queue Length 95th (ft)	Movement	#342	#1151	37	#337	#1071	213	138	#574	#877	#462	352	178	
I	*	LOS (Delay)	Movement	E (60.2)	C (32.8)		F (114.4)	B (18.1)	A (6.5)	E (67.4)	E (67.4)	E (64.5)	E (66.8)	E (66.4)	E (64.4)	
	Drive		Approach		D (35.2)			C (30.4)			E (65.6)			E (65.2)		C (34.5
		Volume to Capacity ratio	Movement	0.90	1.05		1.04	0.77	0.28	0.49	0.49	0.07	0.42	0.39	0.08	-
		Queue Length 95th (ft)	Movement	m191	m222		#639	666	11	#80	#80	11	61	61	0	
		LOS (Delay)	Movement		B (14.6)	A (0.1)	F (156.0)	A (0.2)								-
	-95 Southbound On-		Approach		B (11.0)	0.40	1.26	D (35.6)			1	1		[C (2
	ramp		Movement		0.91	0.49	1.26	0.48								-
SW 10th Street		Queue Length 95th (ft)	Movement		m345	m0	#1253	0								
		LOS (Delay)	Movement		B (16.0)			B (17.1)					E (68.2)	G (22.2)	A (2.4)	-
1-	-95 Southbound Off-		Approach		B (16.0)			B (17.1)			1	r	0.05	C (22.3)	0.00	B (1
	ramp	Volume to Capacity ratio	Movement		0.67 256			0.67					0.85		0.68	-
		Queue Length 95th (ft)	Movement			1 (0.0	D (25.4)	m311		E (04.2)		E (122.0)	#241		0	
	I-95 Northbound Ramps	LOS (Delay)	Movement		F (129.3)	A (9.6)	D (35.4)	B (18.3)		F (94.3)	E (10(2))	F (132.9)				E (58.5)
		Walawa ta Canadita atia	Approach		E (65.4) 1.18	0.94	0.61	C (20.6)		1.05	F (106.3)	1.12				
		Volume to Capacity ratio	Movement			#1270	m239					#748				
		Queue Length 95th (ft)	Movement	$\mathbf{D}(\mathbf{A}(\mathbf{R}))$	#850	#1270		458 C (22.7)	D (12.0)	#638 E (57.5)	C (20.2)		C (24.7)	D (41.2)	D (50.1)	
	EAU Desserveb Derk	LOS (Delay)	Movement	D (46.8)	C (26.7)		B (14.9)		B (13.0)	E (57.5)	C (29.2)	C (28.1)	C (34.7)		D (50.1)	1
1	FAU Research Park Boulevard	Walawa ta Canadita atia	Approach	1.00	C (29.8) 0.75		0.62	C (21.6) 0.83	0.06	0.90	D (40.8) 0.41	0.10	0.78	D (43.4) 0.77	0.83	C (3
	Doulevard		Movement	m118	m351		#90	293	0.00	#200	62	16	#144	#178	#217	1
		Queue Length 95th (ft)	Movement	11110	111551		#90	293	0	#200	02	10	#144	#1/0	#217	
1 Peak																_
	Signal Controlled Intersections	Mesure of Effectiveness (MOE)		PM Movement/Approach LOS (Delay)								Interse				
Arterial			Location	T 6	Eastbound		T C	Westbound			Northbound	-		Southbound		PM L
			Management	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Del
	South Military Trail	LOS (Delay)	Movement	F (210.5)	D (38.7) E (64.2)	C (21.7)	D (43.0)	F (236.6) F (176.8)	B (13.3)	F (124.7)	F (124.7) F (101.5)	D (45.7)	F (144.3)	F (260.4) F (209.9)	F (152.3)	-
5		Volume to Capacity ratio	Approach Maximum	1.30	0.90	0.13	0.84	1.46	0.54	1.03	1.13	0.50	1.11	1.45	1.16	F (141
		Queue Length 95th (ft)	Movement Movement	#304	574	42	m165	m#1381	m124	#177	#461	178	#212	#668	#534	
		Queue Lengui 95th (It)	Movement	#304 E (55.7)	B (12.6)	42	F (80.9)	E (58.3)	A (5.2)	#1// E (61.0)	E (61.9)	F (214.6)	^{#212} D (49.7)	#008 D (49.7)	F (273.9)) E (64.:
E	East Newport Center	LOS (Delay)	Approach	L (33.1)	B (12.0) B (13.9)		1 (00.7)	E (57.3)	A (3.2)	L (01.0)	F (145.7)	1 (214.0)	D (4).7)	F (220.7)	1 (275.7)	
	Drive	Volume to Capacity ratio	**	0.62	0.86		0.78	1.06	0.09	0.77	0.78	1.30	0.34	0.34	1.42	
	Dire	Queue Length 95th (ft)	Movement	m30	m406		#222	#979	2	#272	#278	#517	94	96	#430	
			Movement	moo	B (14.7)	A (0.5)	F (237.2)	A (0.2)	2	11212	11270	11017	74	70	11450	_
Т	-95 Southbound On-	LOS (Delay)	Approach		B (11.0)	<i>I</i> I (0.5)	1 (237.2)	D (54.2)						l		
I	ramp	Volume to Capacity ratio	Movement		0.83	0.49	1.45	0.48								D (3
	1	Queue Length 95th (ft)	Movement		m256	m17	#1169	0								-
SW 10th Street			Movement		A (9.1)			C (20.2)					D (48.0)		A (4.8)	
T.	-95 Southbound Off-	LOS (Delay)	Approach		A (9.1)			C (20.2)					D (10.0)	B (13.7)	11 (1.0)	
1	ramp	Volume to Capacity ratio	Movement		0.67			0.65					0.61	_ ()	0.82	B (1
	1	Queue Length 95th (ft)	Movement		173			m283					133		0	-
			Movement		F (174.6)	A (1.9)	D (50.4)	B (16.5)		F (109.1)		F (148.9)				
	I-95 Northbound	LOS (Delay)	Approach		F (101.9)		()	C (22.2)			F (121.5)			I		
	Ramps	Volume to Capacity ratio			1.32	0.69	0.89	0.71		1.12		1.20				F (8
	· ·	Queue Length 95th (ft)	Movement		#864	150	M#371	m208		#681		#792	-			
			Movement	D (45.6)	B (10.5)		F (82.3)	C (32.8)	C (23.6)	F (105.6)	D (41.8)	D (40.7)	D (36.6)	F (84.4)	F (88.4)	
H	FAU Research Park	LOS (Delay)	Approach		B (14.7)			D (39.0)			E (74.6)			E (71.8)		
	Boulevard	Volume to Capacity ratio	**	0.83	0.92		0.97	0.69	0.08	1.06	0.23	0.09	0.61	0.95	0.93	D (3
		1 2	Movement	m110	m167		#303	379	34	#392	83	51	230	#414	#390	1
nchro Version 9.2.914.6 <u>OS notes:</u> elay is in sec/veh units		reported. E reflecting at capacity ope			odology does		ueues, result s theoreticall	s are from Sy	/nchro report	outputs						

m: Upstream metering is in effect

Table 4.5: 2040 No-Build - SW 10th Street Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

		M CECC (AM M	ovement/Ap	proach LOS	(Delay)					Intersectio
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location	Eastbound			Westbound				Northbound			Southbound		
	Intel sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement		B (16.9)		E (70.6)	A (1.5)		E (57.1)		D (46.4)				
	NW 5th Terrace	LOS (Delay)	Approach		B (16.9)			A (7.0)			D (51.0)					B (15.1)
	N w Jul Tellace	Volume to Capacity ratio	Movement		0.60		0.79	0.53		0.69		0.13				
		Queue Length 95th (ft)	Movement		377		#237	32		181		65				
		LOS (Delay)	Movement	E (58.5)	A (2.2)			B (10.3)	A (4.9)				D (51.2)		D (47.0)	B (10.6
	NW 5th Avenue	LOS (Delay)	Approach		A (4.4)			B (10.1)						D (49.5)		
	Nw 5th Avenue	Volume to Capacity ratio	Movement	0.78	0.53			0.50	0.06				0.61		0.22	
		Queue Length 95th (ft)	Movement	m#174	46			298	m6				140		82	
		LOS (Delay)	Movement		A (6.2)	A (2.0)		A (7.9)					C (20.2)		C (26.7)	
Sample Road	I-95 Southbound Off-	LOS (Delay)	Approach		A (4.6)			A (7.9)				•		C (23.6)		A (0.4
Sample Road	ramp	Volume to Capacity ratio	Movement		0.48	0.67		0.53					0.59		0.80	A (9.4
		Queue Length 95th (ft)	Movement		159	486		168					127		#189	1
	I-95 Northbound Ramps	LOS (Delay)	Movement		A (6.7)			A (7.1)	A (0.2)	C (22.6)		C (22.1)				A (9.3)
			Approach		A (6.7)			A (5.5)			C (22.4)				•	
		Volume to Capacity ratio	Movement		0.45			0.68	0.38	0.68		0.64				
		Queue Length 95th (ft)	Movement		97			m160	m0	143		126				
		LOS (Delay)	Movement	F (86.0)	C (21.2)		E (58.0)	E (60.4)		D (42.9)	D (36.1)	C (31.9)	C (29.6)	D (36.1)	F (101.3)	
	NE 2nd Assesso	LOS (Delay)	Approach		D (36.9)			E (60.3)			D (38.5)			E (76.5)		D (52
	NE 3rd Avenue	Volume to Capacity ratio	Movement	0.85	0.48		0.49	0.85		0.66	0.45	0.04	0.29	0.47	0.92	D (52.8
		Queue Length 95th (ft)	Movement	#281	307		91	#645		#224	225	0	98	219	#604	
/I Peak										·						
								PM M	ovement/Ap	proach LOS	(Delay)					Intersec
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location	Eastbound		Westbound			Northbound				Southbound		PM LOS	
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement		B (16.7)		F (161.1)	A (1.6)		E (57.4)		D (48.2)			8	B (18.3
	NW 5th Terrace		Approach		B (16.7)			B (16.8)			D (52.7)					
		Volume to Capacity ratio	Movement		0.63		1.15	0.66		0.65		0.08				
		Queue Length 95th (ft)	Movement		405		#413	33		152		56				
		LOS (Delay)	Movement	F (129.6)	A (1.8)			B (12.7)	B (15.3)				D (51.8)		D (48.4)	- B (14.2
			Approach		B (10.7)			B (13.0)	()			I		D (50.3)	()	
	NW 5th Avenue	Volume to Capacity ratio	Movement	1.11	0.53			0.68	0.20				0.56		0.11	
		Queue Length 95th (ft)	Movement	#326	38			393	m44				113		63	
			Movement		B (11.1)	A (0.9)		C (21.3)					C (31.6)		D (42.2)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (8.4)	(***)		C (21.3)			<u> </u>	ļ	- (0 0)	D (37.7)	- ()	-
					0.57	0.47		0.75					0.50		0.83	B (19.2)
Sample Road		Volume to Capacity ratio	Movement		0.57											
Sample Road	ramp	1 1											226		382	
Sample Road		Queue Length 95th (ft)	Movement		173	53		549	A (0.2)	D (36.1)		C (28.2)	226		382	
Sample Road	ramp		Movement Movement		173 B (17.0)			549 C (23.2)	A (0.2)	D (36.1)	C (33.2)	C (28.2)	226		382	-
Sample Road		Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach		173 B (17.0) B (17.0)			549 C (23.2) B (18.7)			C (33.2)		226		382	C (22.
Sample Road	ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement		173 B (17.0)			549 C (23.2) B (18.7) 0.76	0.29	D (36.1)	C (33.2)	C (28.2)	226		382	C (22.
Sample Road	ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement	F (92.8)	173 B (17.0) B (17.0) 0.75 339		F (127.1)	549 C (23.2) B (18.7) 0.76 m343		0.84 488		0.61 292		D (48.5)		C (22.
Sample Road	ramp I-95 Northbound Ramps	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement	F (92.8)	173 B (17.0) B (17.0) 0.75 339 C (22.1)		F (127.1)	549 C (23.2) B (18.7) 0.76 m343 D (40.3)	0.29	0.84	E (58.6)	0.61	226	D (48.5)	382 D (53.3)	C (22.
Sample Road	ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement	F (92.8)	173 B (17.0) B (17.0) 0.75 339		F (127.1)	549 C (23.2) B (18.7) 0.76 m343	0.29	0.84 488		0.61 292		D (48.5) D (49.8) 0.69		C (22.

Table 4.6: 2040 No-Build – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect



• Sample Road: All five signalized intersections are expected to operate at LOS D or better during both peak hours. The I-95 northbound and southbound off-ramp approaches are expected to operate at LOS D or better during both peak hours.

Table 4.7 summarizes the results of the off-ramp signals back of queue analyses for the AM and PM peak hours for 2040 No-Build conditions. HCM methodology does not provide queue lengths. The 95th percentile queues were obtained from Synchro reports. The Synchro reported queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. The results present the queue length in feet for each lane group movement. The available storage length was calculated from the stop bar at the ramp terminal intersection to the gore with I-95 mainline minus 615 feet for the required stopping distance for a design speed of 70 mph per FDOT's 2016 Greenbook (Table 3-22), and accounting for the changes in number of lanes. The analysis indicates that the queues on the northbound off-ramp at SW 10th Street are expected to exceed the available storage lengths during the PM peak hour.

Intersection	Annroach	Movement	Available	Queue (ft)			
intersection	Approach	wovement	Storage (ft)	АМ	PM		
2040 No-Build							
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	L (EB)	1,255	719	733		
Hillsbord Boulevard at 1-95 SB OII-Ramp	Southoothu	R (WB)	1,550	832	503		
Hillsboro Boulevard at I-95 NB Off-Ramp	Northbound	R (EB)	2,730	472	401		
CIAL 10th Street at LOE CD Off Dama	Couthhound	L (EB)	1,410	#468	258		
SW 10 th Street at I-95 SB Off-Ramp	Southbound	R (WB)	1,050	0	0		
CIN/ 40th Street at LOE ND Off Dama	Northbound	L (WB)	925	#928	#991		
SW 10 th Street at I-95 NB Off-Ramp	Northbound	R (EB)	925	#987	#1,045		
Cample Deed at LOS CD Off Dema	Southbound	L (EB)	1,010	246	438		
Sample Road at I-95 SB Off-Ramp	Southbound	R (WB)	1,010	#333	672		
Cample Deed at LOS ND Off Dema	Northbound	L (WB)	1,095	277	947		
Sample Road at I-95 NB Off-Ramp	INUITIDOUND	R (EB)	1,095	222	514		

Table 4.7: 2040 No-Build – Off-Ramp Signals Queuing Analysis Results

Queue Notes:

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. Queue lengths exceeding the available storage are shown in Red.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310+ (295*2)] = 1,552.5$ feet rounded to 1,550 feet.

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5 FUTURE BUILD CONDITIONS

5.1 Build Alternative – Transportation Network

The future Build Alternative network incorporates all the roadway improvements described under Section 4.3 and depicted in Figure 4.3 for the No-Build Alternative plus the proposed improvements to mitigate deficiencies identified in the No-Build Alternative, when feasible. The Build Alternative maintains the typical section from the No-Build Alternative along I-95 between interchanges (i.e., no through lanes along I-95 are added.)

5.2 Future Build Alternative Traffic Forecast

Traffic projections were obtained from the *Project Traffic Forecast Memorandum (PTFM)* dated January 2019 for the SW 10th Street Connector PD&E Study (FPID 439891-1) and from the Memorandum dated May 26, 2020 for the SW 10th Street Connector & I-95 Interchange Supplemental Traffic Forecast Scenarios.

5.3 Development and Screening of Build Alternatives

Based on the evaluation of the No-Build conditions, various Build alternatives were developed and analyzed for the I-95 and SW 10th Street SIMR (FPID 436964-1) and the SW 10th Street Connector PD&E Study (FPID 439891-1). Traffic evaluations were conducted for two different Build Alternatives (a Center Alignment and a Northern Alignment for the proposed managed lanes), with six different managed lane ingress and egress configurations resulting in a total of twelve (12) Build Alternatives.

The fifteen scenarios (existing 2016 conditions, 2040 No-Build conditions, 2040 Partial Build conditions, and twelve 2040 Build conditions) were first analyzed by conducting a Tier 1 volume to capacity ratio analysis of the SW 10th Street general use lanes and proposed managed lanes. In addition, the vehicle-miles traveled in the managed lanes during the peak hours for each of the twelve Build alternatives were calculated and compared. Subsequently, a Tier 2 intersection operations analysis was completed for the signalized intersections along SW 10th Street. A Tier 2 freeway analysis of the proposed managed lanes connecting the Sawgrass Expressway, Florida's Turnpike and I-95 was also completed. The peak hour traffic operations analysis results were reviewed to screen the twelve Build alternatives for any traffic operations fatal flaws, and a comparison of results was used to identify the most advantageous Build Alternatives to be considered further.

Overall, Tier 1 and Tier 2 analyses resulted in the selection of the North Build Alternative 3D-1.3 and the Center Build Alternative 3D-1.3 as the top ranked alternatives. VISSIM microsimulation was conducted to further evaluate these two shortlisted alternatives. The North



Build Alternative 3D-1.3 was projected to provide better operating conditions than the Center Build Alternative. Hence, the PTFM identified the North Build Alternative 3D-1.3 as the best Build Alternative based on projected traffic operations and was further refined to improve the overall operations. An *Alternatives Analysis Memorandum* documenting the development and screening of various alternatives for SW 10th Street and I-95 was submitted to FDOT District 4 on June 29, 2018 and is included in **Appendix I**. Subsequently, at the request of FDOT District 4, Florida's Turnpike Enterprise (FTE) staff was tasked with evaluating additional forecast scenarios addressing potential modifications to the SW 10th Street Connector ramps to and from I-95. The new forecast has been documented in a Memorandum dated May 26, 2020 and is also included in Appendix I. Based on the conclusions of the PTFM, Alternatives Analysis Memorandum, May 26, 2020 Memorandum, and directions received from the Department, the following three Build Alternatives were considered for this SIMR.

Build 1 Alternative: This Build alternative has been identified as an alternative without the direct-connect ramps to and from I-95 but includes all other freeway and arterial improvements proposed under Build 2 and Build 2A alternatives below. The traffic forecast for this alternative is similar to the No-Build forecast.

Build 2 Alternative: This Build alternative has been identified as the Partial Build alternative in the PTFM dated January 2019 and in the *Alternatives Analysis Memorandum* dated June 2018. The Partial-Build/Build 2 alternative provides for grade-separated managed lanes to and from I-95 extending just west of Military Trail. Also, there are no entry or exits ramps on the direct-connect ramps between Military Trail and I-95. The SW 10th Street connector connects to and from I-95 General Use Lanes (GULs) as well as the I-95 Express Lanes (Els).

Build 2A Alternative: This Build alternative is similar to Build 2 except that it provides for an EB exit ramp and a WB entrance ramp on the express lanes between Military Trail and I-95 and the express lanes extend to Sawgrass Expressway. This alternative has been identified as Build C2 in the May 26, 2020 Memorandum which was prepared by Florida's Turnpike Enterprise for evaluating additional forecast scenarios addressing potential modifications to the SW 10th Street Connector ramps to and from I-95. This memorandum included in Appendix I provides supplemental traffic forecast scenarios to the Project Traffic Forecast Memorandum (PTFM) dated January 2019.

It is important to note that except for the direct-connect ramps and connections to I-95 General Use Lanes and Express Lanes, the geometric configuration along the interchange cross-streets and the I-95 mainline lanes and ramps for Build 1, Build 2 and Build 2A alternatives are similar within the SIMR study limits and the area of influence. However, the traffic projections for Build 1 are the same as the No-Build but the Build 2 traffic projections are different than Build 2A. This is primarily due to the express lanes under Build 2 terminating immediately west



of Military Trail whereas under Build 2A, these lanes extend all the way to Sawgrass Expressway. The conceptual and signing plans for the Build 1, Build 2, and Build 2A alternatives are included in Appendix J.

Figure 5.1 shows the Roadway and Intersection Lane Configuration for Build 1 and **Figure 5.2** shows it for both Build 2 and Build 2A alternatives and includes the following improvements in addition to the No-Build improvements:

I-95 Improvements:

- I-95 NB and SB auxiliary lanes between Hillsboro Boulevard and Palmetto Park Road. (FPIDs 433108-6-52-01 and 433109-4-52-01)
- I-95 southbound auxiliary lane between SB entrance ramp from SW 10th Street and the SB exit ramp to Sample Road. This creates a 4-lane mainline segment on SB I-95. (FPID 433108-5-52-01)
- Eliminate the SB auxiliary lane between Hillsboro Boulevard and SW 10th Street. The proposed braided ramps in the southwest quadrant of interchange as discussed below eliminate the need for this auxiliary lane.

SW 10th Street Interchange Ramp Improvements:

- Provide a slip on-ramp for WB SW 10th Street to I-95 NB. Combine the EB to NB loop on-ramp from SW 10th Street with the new WB to NB slip on-ramp from SW 10th Street to create a single on-ramp merge on the mainline.
- Widen the EB to NB loop on-ramp to two lanes.
- Provide a braided NB off-ramp for Hillsboro Boulevard upstream of the NB on-ramp merge from SW 10th Street.
- Provide a two-lane NB off-ramp exit for SW 10th Street.
- Provide for 3 left-turn lanes and 3 right-turn lanes on the NB off-ramp approach.
- Provide for 2 left-turn lanes and 2 right-turn lanes on the SB off-ramp approach.
- Eliminate the existing WB to SB on-ramp signal on SW 10th Street by aligning it with the SB off-ramp signal. Widen the WB to SB on-ramp to two lanes.

Hillsboro Boulevard Interchange Ramp Improvements:

- Combine the WB to SB loop on-ramp from Hillsboro Boulevard with the EB to SB slip on-ramp from Hillsboro Boulevard to create a single on-ramp merge on the mainline.
- Provide a braided SB off-ramp for SW 10th Street upstream of the SB on-ramp merge from Hillsboro Boulevard.

SW 10th Street Intersection Improvements:

• At Newport Center Drive, eliminate the N-S left and through movements and provide for



triple NB and triple SB right turn lanes. Provide dual EB and WB left turn lanes and an exclusive EB right turn lane.

- Provide barrier separated two EB through lanes for EB to NB I-95 traffic from east of Newport Center Drive to west of NB off-ramp intersection. Widen the loop on-ramp in the southeast quadrant to two lanes.
- At the SB ramp intersection, provide dual WB left turn lanes extending 250 feet east of the NB ramp intersection.
- Widen the existing single free-flow southbound right turn lane to provide for signal controlled dual right-turn lanes to improve operations and safety in the westbound direction. The free-flow right turn movements are always a safety concern for the pedestrians in the cross-walk. Due to this safety concern, many municipalities and FDOT districts are not in favor of free-flow right turns. Also, due to the proximity of the signalized intersection at Newport Center Drive, the free-flow right turn induces weaving with the westbound traffic. This condition is likely to become worse with the introduction of the access to the westbound connector lanes immediately west of the Newport Center Drive.
- At Natura Boulevard, provide dual EB and WB left turn lanes and an exclusive EB right turn lane.

The 2020 and 2040 AADT traffic volumes for the Build 1, Build 2, and Build 2A Alternatives are shown in **Figures 5.3**, **5.4** and **5.5**, respectively. The 2020 and 2040 peak hour traffic volumes for Build 1 Alternative are shown in **Figures 5.6** and **5.7**, respectively. The 2020 and 2040 peak hour traffic volumes for Build 2 Alternative are shown in **Figures 5.8** and **5.9**, respectively. The 2020 and 2040 peak hour traffic volumes for Build 2 Alternative are shown in **Figures 5.8** and **5.9**, respectively. The 2020 and 2040 peak hour traffic volumes for Build 2 Alternative are shown in **Figures 5.10** and **5.11**, respectively.

These improvements address the traffic operation deficiencies by improving or eliminating failing merge, diverge and weaving segments; and may reduce crash rates by reducing congestion. Improvements at the ramp terminal intersections are projected to eliminate queue spillbacks on to the I-95 mainline. In addition, pedestrian and bicycle mobility is maintained or enhanced through improved design.

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Figure 5.1: Build 1 - Roadway and Intersection Lane Configurations

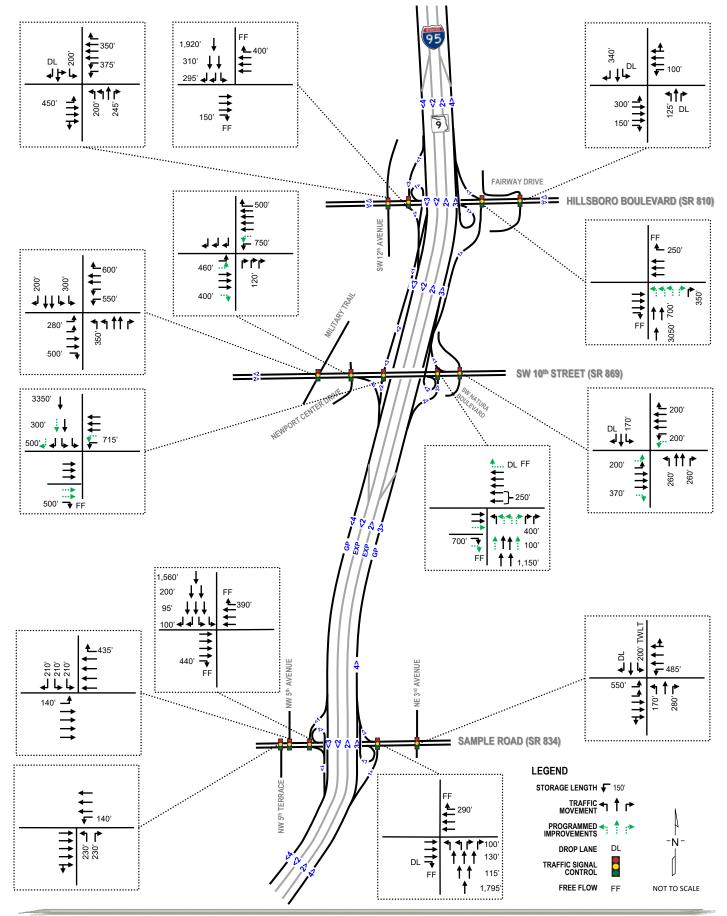


Figure 5.2: Build 2 & Build 2A - Roadway and Intersection Lane Configurations

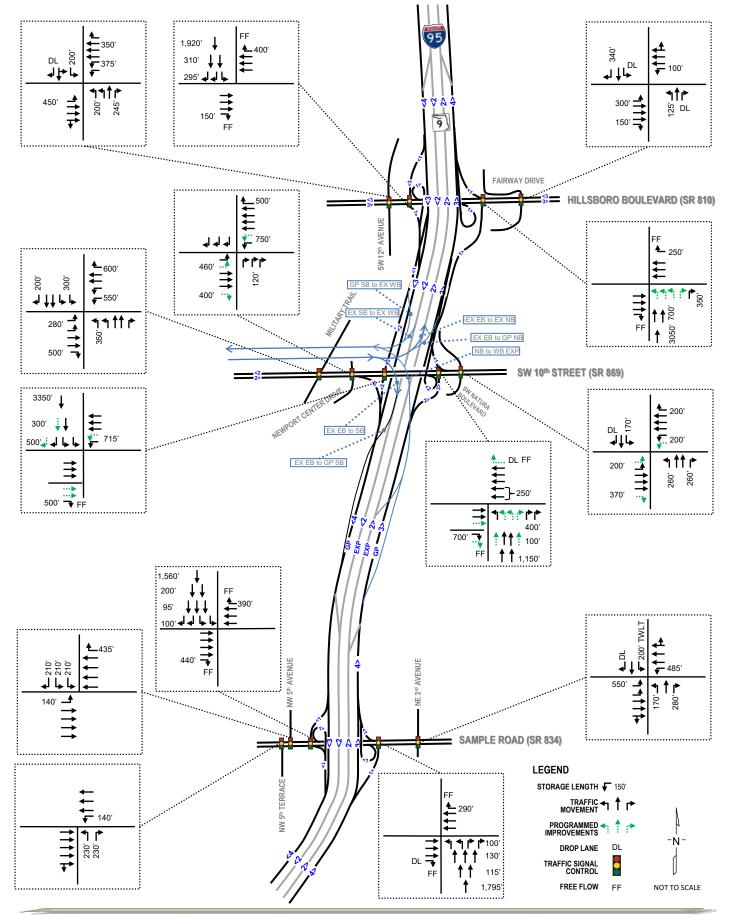


Figure 5.3: 2020 & 2040 Build 1 AADT Volumes

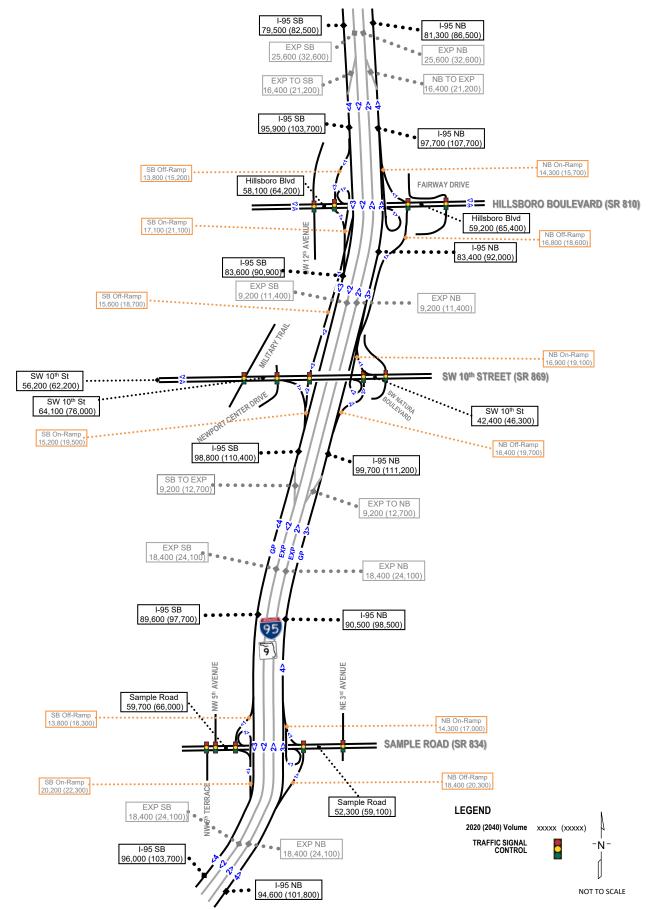


Figure 5.4: 2020 & 2040 Build 2 AADT Volumes

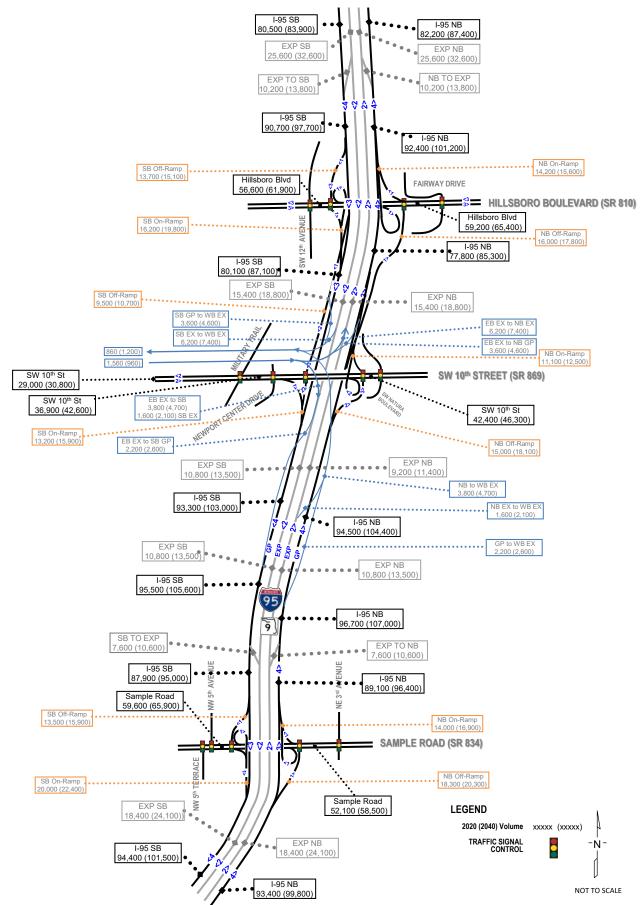


Figure 5.5: 2020 & 2040 Build 2A AADT Volumes

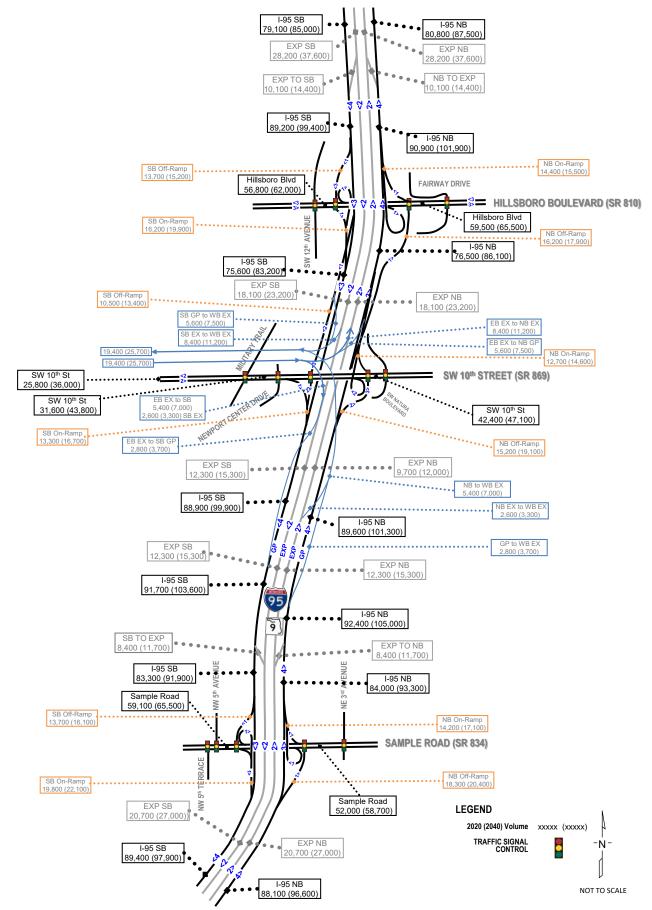


Figure 5.6: 2020 Build 1 Peak Hour Volumes

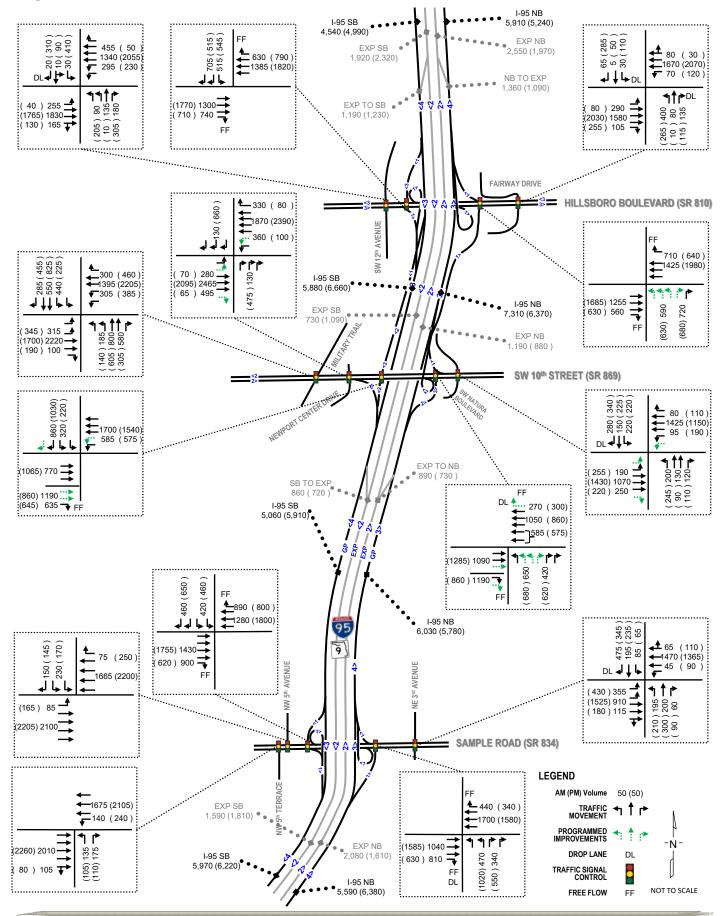


Figure 5.7: 2040 Build 1 Peak Hour Volumes

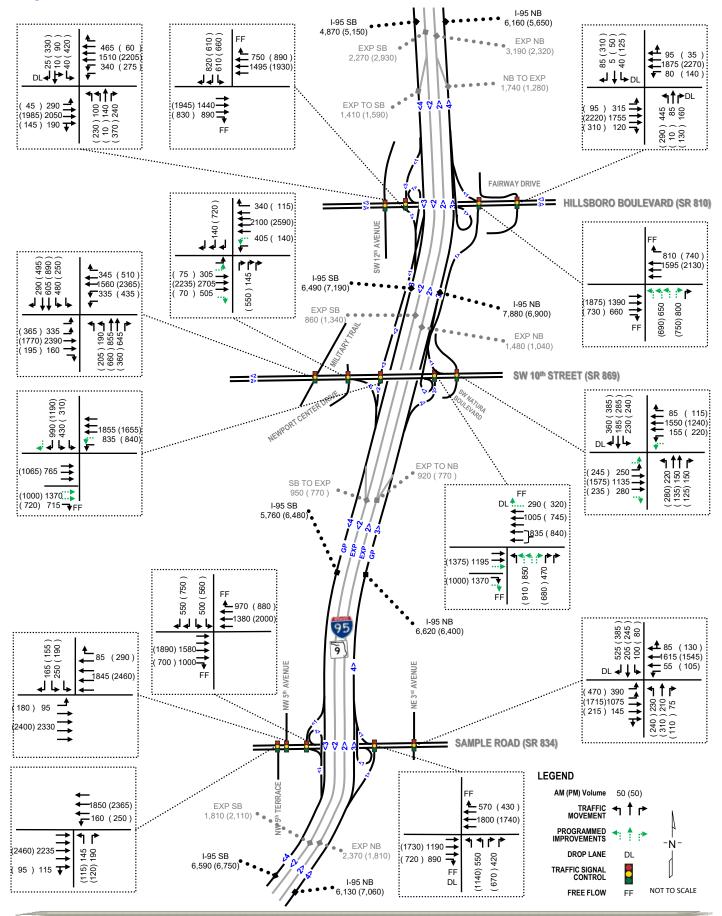


Figure 5.8: 2020 Build 2 Peak Hour Volumes

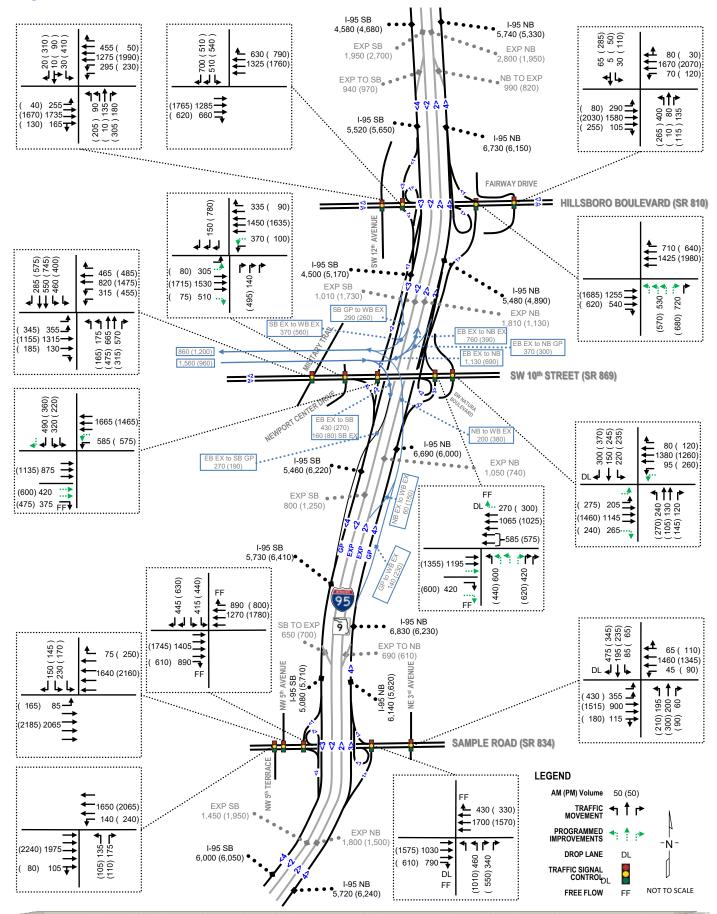
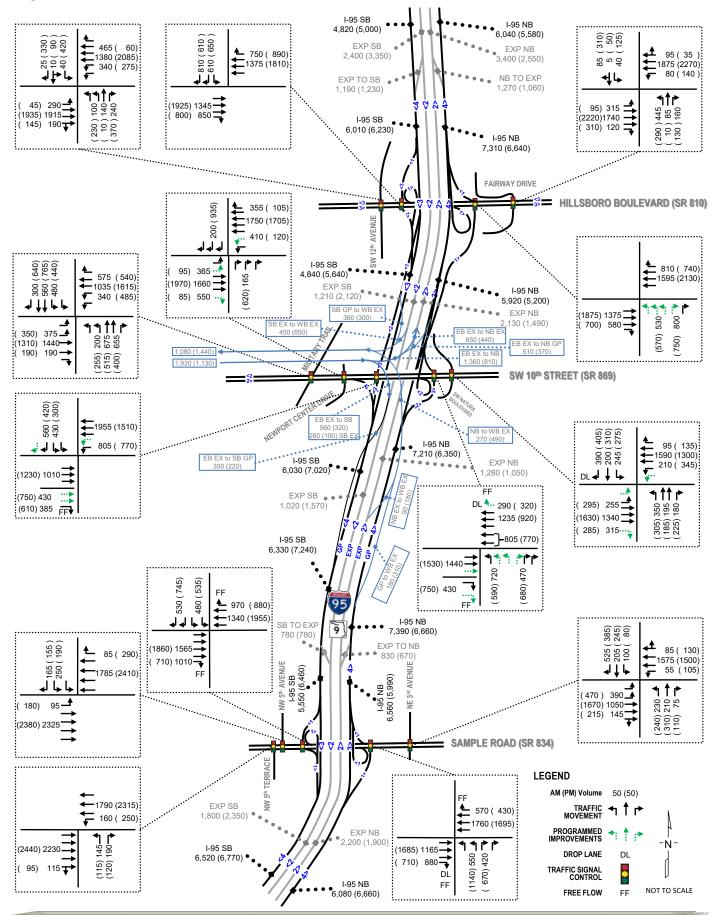


Figure 5.9: 2040 Build 2 Peak Hour Volumes



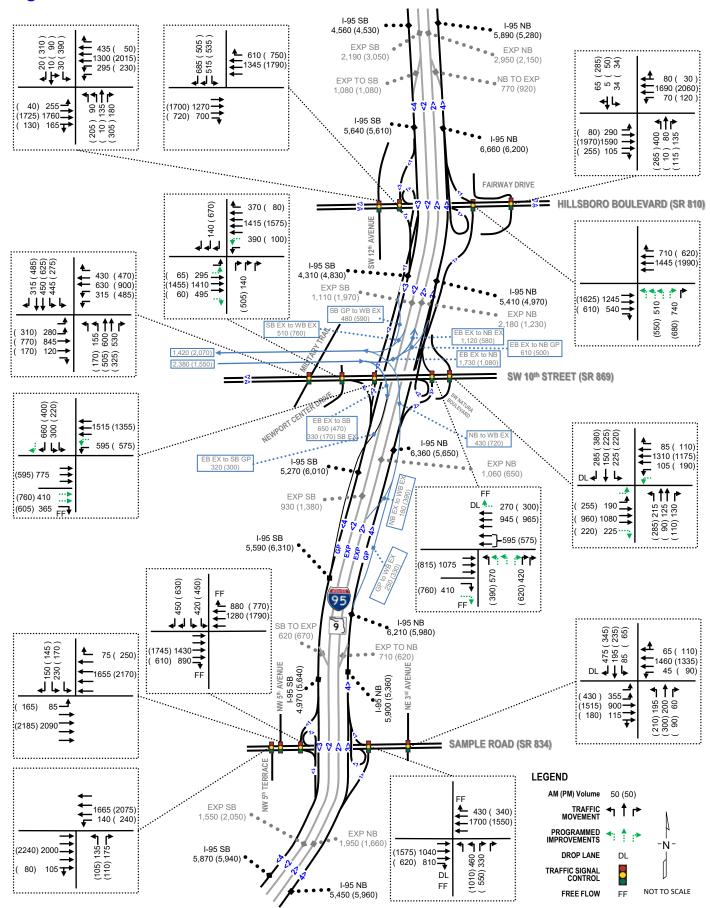


Figure 5.10: 2020 Build 2A Peak Hour Volumes

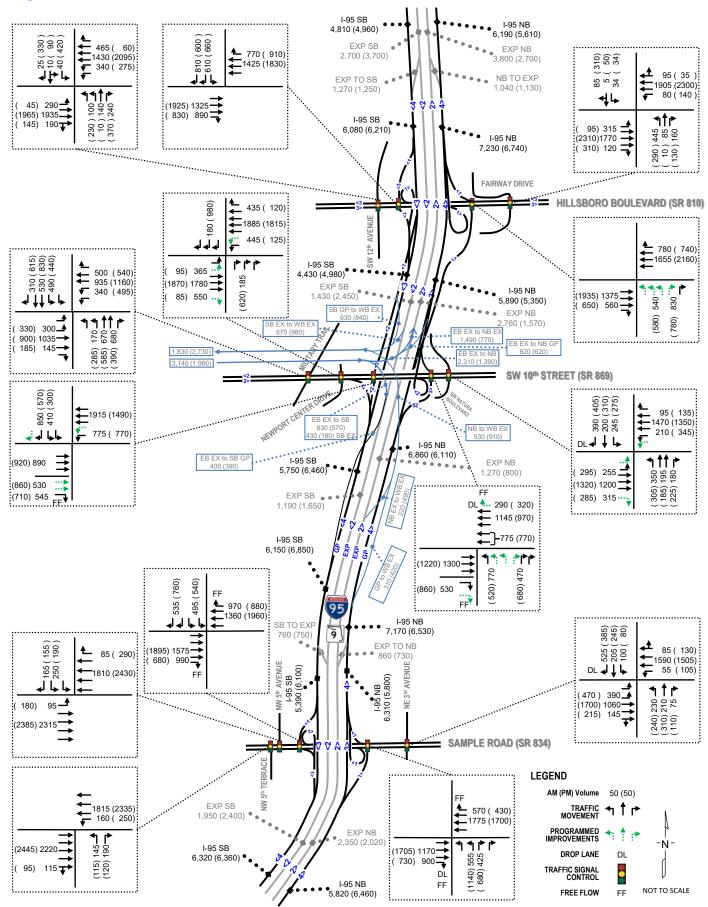


Figure 5.11: 2040 Build 2A Peak Hour Volumes



5.4 Build 1 Alternative – Traffic Operational Analysis

The proposed improvements are expected to provide better operating conditions than the No-Build conditions and prevent any spillbacks from the ramp terminals on to the mainline. These improvements are also likely to improve safety by reducing congestion and the number of conflict points.

5.4.1 2020 & 2040 – Freeway Analysis – I-95

The mainline/basic, weaving, and ramp merge/diverge analysis results for Opening Year 2020 are summarized and depicted on **Figures 5.12** and **5.13** for the NB and SB directions, respectively. The Design Year 2040 analysis results are summarized and depicted on **Figures 5.14** and **5.15** for the NB and SB directions, respectively. Documentation of the 2020 and 2040 Build 1 Alternative traffic freeway operational analysis is provided in **Appendix K**. The Design Year 2040 Build 1 Alternative analysis indicates that 7 of the 14 freeway segments in the NB direction, 3 of the 14 freeway segments are projected to operate at LOS E or F during one or both peak hours.

5.4.2 2020 & 2040 - Intersection Analysis

Tables 5.1 through **5.3** summarize the results of the 2020 Build 1 signalized intersection analyses for the AM and PM peak hours for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. **Tables 5.4** through **5.6** summarize the results of the 2040 Build 1 signalized intersection analyses for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. Signal timing was optimized for all intersections. The results include delays (in seconds per vehicle) and LOS by movement, approach, and the overall intersection. The volume to capacity (v/c) ratios and 95th percentile queue lengths have also been summarized by movement. **Appendix L** presents the intersection analysis worksheets. The intersection analysis results indicate the following for the 2040 Design Year:

- Hillsboro Boulevard: Two of the four signalized intersections are expected to operate at LOS E or worse during the AM or PM peak hours. The I-95 northbound and southbound off-ramp intersections are expected to operate at LOS C or better during both the AM and PM peak hours.
- SW 10th Street: Of the five signalized intersections, only the intersection at Military Trail is expected to operate at LOS F during both peak hours. The I-95 NB and SB off-ramp approaches are expected to operate at LOS E or worse during both peak hours.
- Sample Road: All five signalized intersections including the I-95 NB and SB off-ramp approaches are expected to operate at LOS D or better during both peak hours.

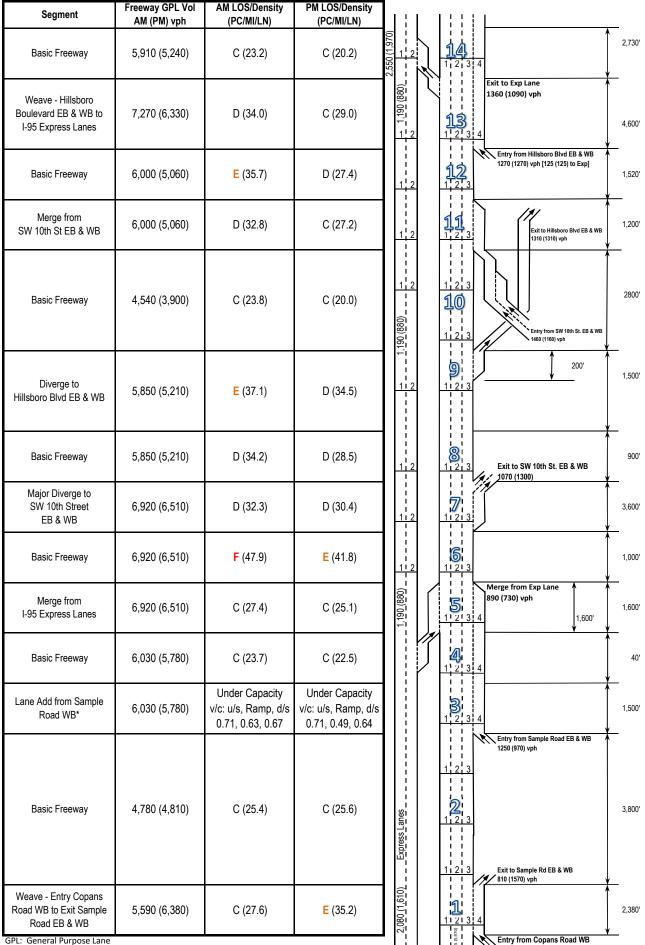


Figure 5.12: 2020 Build 1 Freeway Analysis Results - Northbound

* u/s= Up Stream, d/s= Down Stream

345 (410) vph

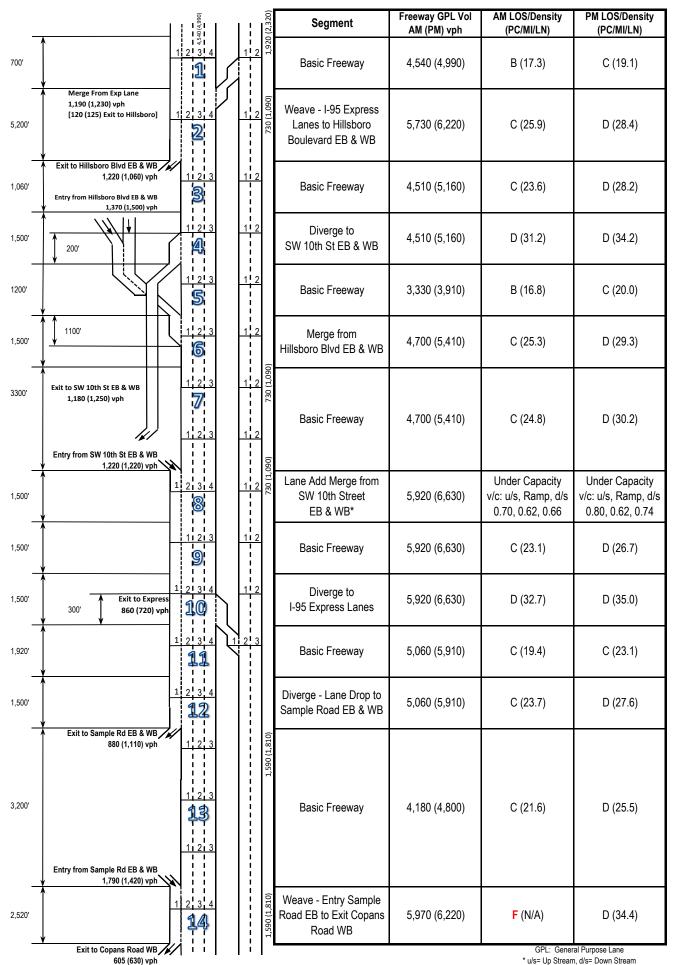


Figure 5.13: 2020 Build 1 Freeway Analysis Results - Southbound

Page 5-72

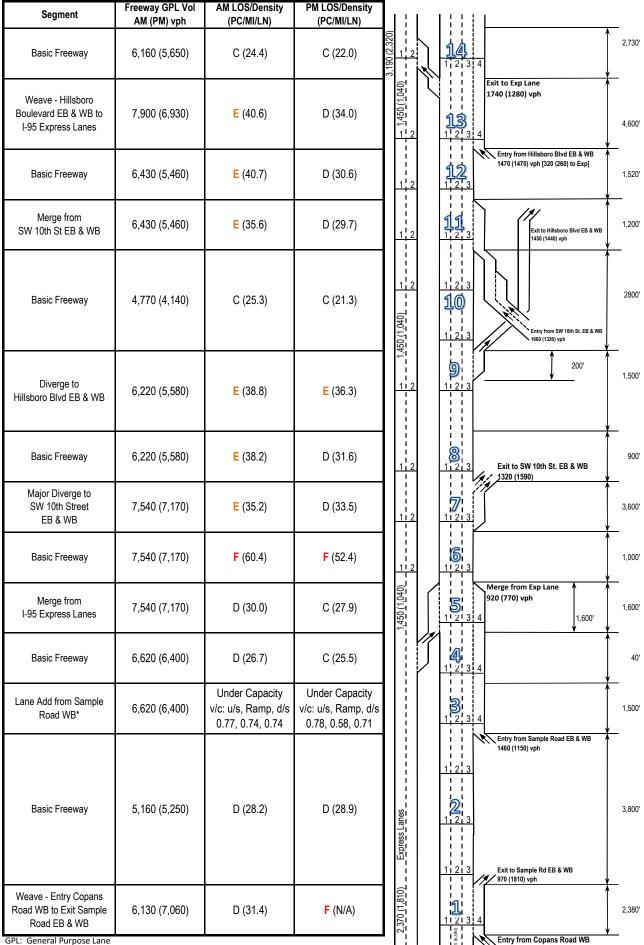


Figure 5.14: 2040 Build 1 Freeway Analysis Results - Northbound

* u/s= Up Stream, d/s= Down Stream

405 (480) vph

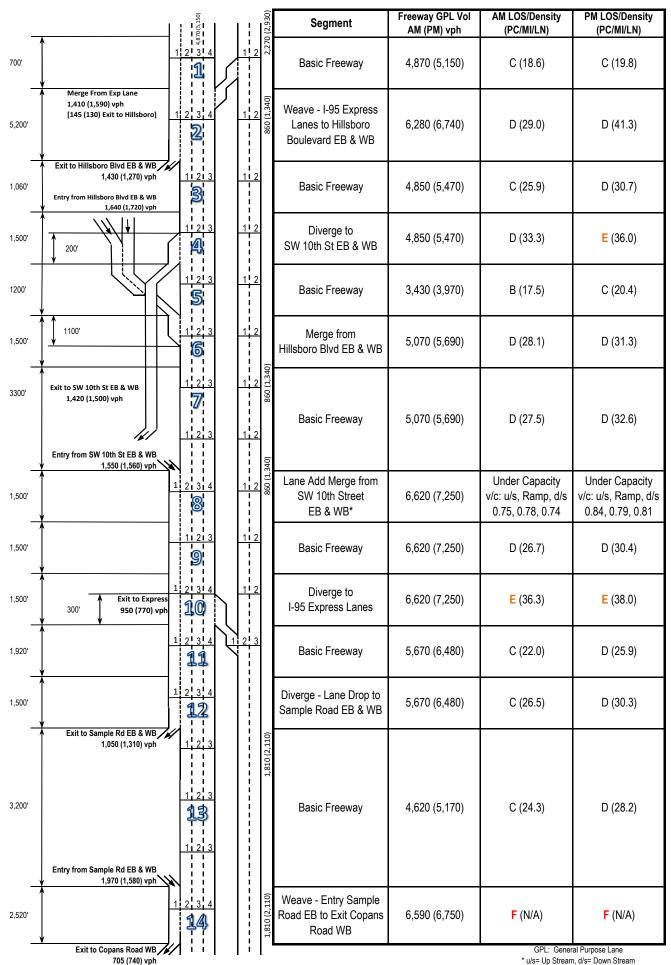


Figure 5.15: 2040 Build 1 Freeway Analysis Results - Southbound

Page 5-74

								AM Mo	ovement/Ap	proach LOS	(Delay)					Intersect
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	1		Southbound	1	AM LO
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
			Movement	F (98.6)	C (22.5)		F (101.2)	B (19.9)	A (8.3)	E (74.6)	F (93.6)	E (59.7)	F (84.5)	F (84.4)	E (56.8)	
	CW 10/1 A	LOS (Delay)	Approach		C (31.1)			C (28.9)			E (74.3)			E (75.2)		
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.90	0.68		0.90	0.51	0.40	0.28	0.77	0.12	0.31	0.30	0.01	C (34
		Queue Length 95th (ft)	Movement	#473	723		#295	496	133	85	247	67	63	63	0	
		LOS (Delay)	Movement		A (0.1)	A (0.8)		B (15.0)					E (59.7)		D (50.9)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.4)			B (15.0)						D (54.6)		B (18
	ramp	Volume to Capacity ratio	Movement		0.28	0.49		0.51					0.83		0.72	В (18
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	62		435					653		448	
HIISOOIO BIVU.		LOS (Delay)	Movement		A (8.6)			A (6.9)	A (0.5)	C (21.3)		C (27.5)				
	I-95 Northbound Off-	LOS (Delay)	Approach		A (8.6)			A (4.8)			C (24.7)					B (11
	ramp	Volume to Capacity ratio	Movement		0.47			0.54	0.49	0.36		0.72				D (11
		Queue Length 95th (ft)	Movement		243			m163	m0	110		242				
		LOS (Delay)	Movement	F (106.4)	B (14.5)	B (13.9)	F (86.8)	C (31.2)		F (414.1)	E (71.2)	E (68.5)	F (82.6)	F (83.3)	F (83.2)	
	SW Natura	LOS (Delay)	Approach		C (27.9)			C (33.3)			F (293.5)			F (83.0)		Е (67
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	0.96	0.51	0.07	0.61	0.69		1.73	0.35	0.09	0.40	0.07	0.05	Е (07
		Queue Length 95th (ft)	Movement	#587	368	19	150	360		#924	160	72	70	22	0	
A Peak																
								PM Mo	ovement/Ap	proach LOS	(Delay)					Intersec
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound		1	Northbound	1		Southbound	1	PM L
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Dela
			Movement	E (55.5)	C (32.4)		F (206.7)	C (23.9)	A (0.1)	D (54.6)	D (48.8)	F (155.2)	E (63.2)	E (63.9)	D (40.9)	
		LOS (Delay)	Approach		C (32.9)			D (41.4)			F (113.5)			D (54.9)		
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.42	0.86		1.25	0.93	0.03	0.64	0.06	1.14	0.84	0.84	0.52	D (47
		Queue Length 95th (ft)	Movement	72	#701		m#213	#785	m0	124	26	#324	306	313	146	
			Movement		A (0.1)	A (0.5)		B (18.3)					D (43.4)		C (28.7)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.2)			B (18.3)			•			D (36.2)		D (12
	ramp	Volume to Capacity ratio	Movement		0.38	0.47		0.72					0.85		0.51	B (13
		Queue Length 95th (ft)	Movement		0	m0		550					499		213	
TT.11 1 D1 1			M		B (10.1)			A (9.2)	A (0.5)	B (16.8)		C (23.3)				
Hillsboro Blvd.			Movement		- ()						~ (* * * * *			•		
Hillsboro Blvd.	I-95 Northbound Off-	LOS (Delay)	Approach		B (10.1)			A (7.1)			C (20.1)					D (11
Hillsboro Blvd.	I-95 Northbound Off- ramp				. ,			A (7.1) 0.73	0.44	0.44	C (20.1)	0.78				B (11
Hillsboro Blvd.			Approach		B (10.1)			. ,	0.44 m0	0.44 96	C (20.1)	0.78 #193				B (11
Hillsboro Blvd.		Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement	F (85.9)	B (10.1) 0.62	A (7.6)	F (136.9)	0.73			C (20.1)		D (42.5)	D (44.5)	E (62.2)	B (11
Hillsboro Blvd.		Volume to Capacity ratio	Approach Movement Movement	F (85.9)	B (10.1) 0.62 188	A (7.6)	F (136.9)	0.73 m259		96		#193	D (42.5)	D (44.5) E (55.3)	E (62.2)	B (11
Hillsboro Blvd.	ramp	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach	F (85.9)	B (10.1) 0.62 188 B (15.5)	A (7.6)	F (136.9)	0.73 m259 C (21.5)		96	D (44.2)	#193	D (42.5)		E (62.2)	B (11 C (31

Table 5.1: 2020 Build 1 – Hillsboro Boulevard Intersection Analysis Results

service (LOS) E reflecting at capacity operations Level :Level of service (LOS) F reflecting over capacity operations

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

AM Peak								AM M	ovement/Ap	proach LOS	(Delav)					Intersectio
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound		1	Northbound			Southbound	1	AM LOS
Arteriar	Intersections	(MOE)	Location	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	F (126.1)	F (100.8)	B (19.2)	E (70.1)	E (57.0)	B (12.1)	E (79.2)	F (173.7)	F (138.7)	F (187.5)	E (55.2)	A (0.3)	(2 0143)
		LOS (Delay)	Approach	1 (120.1)	F (100.7)	B (1).2)	L (70.1)	D (52.3)	D (12.1)	L (19.2)	F (149.6)	1 (130.7)	1 (107.5)	F (88.6)	M (0.5)	
	South Military Trail	Volume to Capacity ratio	Movement	1.03	1.11	0.07	0.83	0.96	0.29	0.76	1.23	1.15	1.22	0.71	0.20	F (95.9
		Queue Length 95th (ft)	Movement	#288	#1072	12	#239	#916	86	#159	#685	#708	#411	355	0.20	-
		Queue Lengui 95th (It)	Movement	C (33.7)	A (5.9)	A (2.7)	C (29.8)	A (3.0)	A (2.7)	#137	1005	C (27.2)	<i>m</i> -T1	555	C (29.7)	
	East Newport Center	LOS (Delay)	Approach	C (33.7)	A (7.8)	II(2.7)	0 (2).0)	A (6.7)	11 (2.7)		C (27.2)	C (27.2)		C (29.7)	0 (2).7)	-
	Drive	Volume to Capacity ratio	Movement	0.64	0.74	0.46	0.64	0.42	0.30		0 (27.2)	0.05		0 (2).1)	0.08	A (8.2)
		Queue Length 95th (ft)	Movement	m82	m106	m33	m113	m60	m27			21			22	
			Movement	11102	D (45.7)	A (0.6)	D (38.9)	A (7.6)	11127			21	D (38.8)		F (87.6)	
	I-95 Southbound Off-	LOS (Delay)	Approach		C (34.9)	Π (0.0)	D (30.7)	B (15.4)				<u> </u>	D (30.0)	E (74.4)	1 (07.0)	
SW 10th Street	ramp	Volume to Capacity ratio	Movement		0.97	0.42	0.64	0.61					0.31		1.02	D (35.
	Twittp	Queue Length 95th (ft)	Movement		#570	0.42	208	204					172		#679	_
		Queue Lengui 95til (It)	Movement		π370 A (7.6)	A (0.2)	208	A (4.1)	A (0.2)	E (57.7)		E (56.3)	1/2		#075	
	I-95 Northbound	LOS (Delay)	Approach		A (3.8)	A(0.2)		A (4.1) A (3.5)	A (0.2)	E (37.7)	E (57.1)	E (30.3)				
	Ramps	Volume to Capacity ratio	Movement		0.38	0.45		0.32	0.18	0.69	E (37.1)	0.61			1	B (14.
	Rumps	Queue Length 95th (ft)	Movement		m113	m375		86	0.18	270		225				
		Queue Lengui 95tii (It)	Movement	D (35.6)	B (18.7)	D (44.7)	C (33.9)	C (23.3)	B (14.5)	C (30.6)	C (31.4)	C (30.3)	C (27.8)	D (38.7)	C (29.6)	
	EAU Desearch Deule	LOS (Delay)		D (33.0)	C (25.2)	D (44.7)	C (33.9)	C (23.5) C (23.5)	Б (14.3)	C (30.0)	C (31.4) C (30.7)	C (30.3)	C (27.8)	C (31.1)	C (29.0)	
	FAU Research Park Boulevard	Valence to Conseito actio	Approach	0.57	0.54	0.17	0.43	0.78	0.05	0.67	0.37	0.08	0.67	0.70	0.19	C (26.
	Doulevalu	Volume to Capacity ratio	Movement	76	187	52	46	281	0.03	#138	58	0.08	147	#148	60	-
		Queue Length 95th (ft)	Movement	/0	187	52	40	281	0	#138	58	0	14/	#148	60	
A Peak																1
	Signal Controlled	Mesure of Effectiveness							ovement/Ap	<u> </u>	• • /					Intersect
Arterial	Intersections	(MOE)	Location		Eastbound			Westbound			Northbound			Southbound		PM LO
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	F (192.0)	C (34.8)	B (18.8)	E (63.1)	F (163.9)	B (12.7)	F (126.5)	F (105.9)	D (40.9)	F (189.1)	F (209.2)	A (0.5)	-
	South Military Trail		Approach		E (57.7)	1		F (128.4)			F (89.8)			F (143.1)		F (105
	2	1 5	Movement	1.22	0.76	0.16	0.86	1.28	0.44	0.95	1.03	0.47	1.18	1.31	0.31	· ``
		Queue Length 95th (ft)	Movement	#338	601	68	#284	#1672	111	#152	#491	203	#240	#726	0	
		LOS (Delay)	Movement	C (21.2)	A (3.7)	A (2.9)	C (22.1)	B (11.1)	B (10.4)			C (28.1)			C (33.7)	
	East Newport Center		Approach		A (4.3)	1		B (11.5)	1		C (28.1)			C (33.7)		В (12.
	Drive	Volume to Capacity ratio	Movement	0.07	0.67	0.04	0.14	0.69	0.06			0.57			0.84	
		Queue Length 95th (ft)	Movement	m24	m165	m6	m33	m343	m19			114			155	
		LOS (Delay)	Movement		F (88.8)	A (0.6)	D (50.9)	B (10.6)					C (33.7)		F (109.2)	
SW 10th Street	I-95 Southbound Off-		Approach		E (67.2)	1		C (21.3)			1			F (95.9)	1	E (56.
	ramp	1,1	Movement		1.09	0.43	0.63	0.59					0.19		1.10	2 (00)
		Queue Length 95th (ft)	Movement		#621	0	0	220					114		#831	
		LOS (Delay)	Movement		A (1.1)	A (0.1)		A (2.9)	A (0.2)	E (58.6)		E (73.6)				
	I-95 Northbound		Approach		A (0.7)			A (2.5)	1		E (65.8)					B (17.
	Ramps	Volume to Capacity ratio	Movement		0.43	0.32		0.28	0.20	0.72		0.90				
		Queue Length 95th (ft)	Movement		m4	m30		53	m0	283		#366				
		LOS (Delay)	Movement	D (38.7)	B (15.4)	B (10.4)	D (38.3)	C (25.0)	B (17.4)	D (52.4)	C (31.9)	C (31.1)	B (18.6)	D (39.1)	C (27.9)	
	FAU Research Park		Approach		B (18.0)			C (26.2)	1		D (43.0)			C (28.5)	I	C (24.
	Boulevard	Volume to Capacity ratio	Movement	0.70	0.85	0.15	0.69	0.74	0.08	0.88	0.30	0.08	0.53	0.77	0.39	
		Queue Length 95th (ft)	Movement	m78	267	m26	#93	232	2	#190	45	0	141	#225	#108	
nchro Version 9.2.9	14.6. HCM 2000 MOEs re	eported.														
OS notes:				Queue notes	<u>.:</u>											
b notes.																
	ts			HCM metho	dology does	not report qu	ueues, results	are from Syr	chro report o	outputs						
		E reflecting at capacity opera	ations				ueues, results theoretically	-	ichro report o	outputs						
elay is in sec/veh unit	Level of service (LOS)	E reflecting at capacity opera F reflecting over capacity op			exceeds capac	city, queue is	theoretically	-	ichro report o	outputs						

Table 5.2: 2020 Build 1 – SW 10th Street Intersection Analysis Results

m: Upstream metering is in effect

		M CECC (AM M	ovement/Aj	proach LOS	(Delay)					Intersection
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	1	AM LO
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement		B (16.2)		D (53.6)	A (1.2)		E (56.6)		D (46.9)				
	NW 5th Terrace	LOS (Delay)	Approach		B (16.2)			A (5.2)	•		D (51.1)			•		В (14.
	N w 5th Terrace	Volume to Capacity ratio	Movement		0.54		0.64	0.48		0.67		0.12				Б (14.
		Queue Length 95th (ft)	Movement		325		#155	27		170		64				
		LOS (Delay)	Movement	D (49.6)	A (2.0)			A (9.1)	A (4.8)				D (51.2)		D (47.0)	
	NW 5th Avenue	LOS (Delay)	Approach		A (3.8)			A (8.9)						D (49.6)		A (9.9
	Nw 5th Avenue	Volume to Capacity ratio	Movement	0.70	0.47			0.45	0.05				0.59		0.13	A (9.9
		Queue Length 95th (ft)	Movement	#153	43			251	m5				130		64	
		LOS (Delay)	Movement		A (5.2)	A (1.5)		A (6.9)					B (20.0)		C (23.7)	
Samula Dood	I-95 Southbound Off-	LOS (Delay)	Approach		A (3.8)			A (6.9)						C (21.9)		A (9.7
Sample Road	ramp	Volume to Capacity ratio	Movement		0.43	0.60		0.48					0.52		0.70	A (8.2
		Queue Length 95th (ft)	Movement		124	360		144					108		138	
		$LOC(D_{1})$	Movement		A (5.1)			A (4.6)	A (0.2)	C (22.1)		C (21.3)				
	I-95 Northbound	LOS (Delay)	Approach		A (5.1)			A (3.7)			C (21.8)					
	Ramps	Volume to Capacity ratio	Movement		0.38			0.62	0.29	0.63		0.56				A (7.7
		Queue Length 95th (ft)	Movement		56			m145	m0	124		104				
			Movement	E (66.7)	B (18.0)		E (56.4)	D (39.7)		D (40.0)	D (36.9)	C (32.7)	C (30.7)	D (36.8)	E (78.5)	
		LOS (Delay)	Approach		C (30.6)			D (40.1)		. ,	D (37.7)	. ,		E (62.4)		D (10)
	NE 3rd Avenue	Volume to Capacity ratio	Movement	0.91	0.49		0.49	0.87		0.65	0.44	0.04	0.29	0.43	0.97	D (40
		Queue Length 95th (ft)	Movement	m243	263		79	505		183	214	0	86	209	#517	
/I Peak	ł															
								PM M	ovement/Ar	proach LOS	(Delay)					Intersec
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound	-	-	Northbound	1		Southbound	1	PM LC
	Intersections	(MOE)	Locution	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
				2010												· ·
			Movement		0	Right			Tugitt				2011			
		LOS (Delay)	Movement Approach		B (16.1)	Right	F (122.2)	A (1.6)	light	E (56.5)	D (52.6)	D (48.8)				
	NW 5th Terrace		Approach		B (16.1) B (16.1)	Kigitt	F (122.2)	A (1.6) B (14.0)		E (56.5)	D (52.6)	D (48.8)				- B (16
	NW 5th Terrace	Volume to Capacity ratio	Approach Movement		B (16.1) B (16.1) 0.58	Kigit	F (122.2)	A (1.6) B (14.0) 0.58		E (56.5) 0.63	D (52.6)	D (48.8)				B (16
	NW 5th Terrace	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement	F (134.4)	B (16.1) B (16.1) 0.58 355		F (122.2)	A (1.6) B (14.0) 0.58 30		E (56.5)	D (52.6)	D (48.8)				В (16
	NW 5th Terrace	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement	F (134.4)	B (16.1) B (16.1) 0.58 355 A (1.6)		F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9)	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8)		D (48.9)	-
	NW 5th Terrace	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach		B (16.1) B (16.1) D.58 355 A (1.6) B (10.9)		F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3)	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8)	D (50.5)	D (48.9)	B (16.
		Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48		F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8)		D (48.9)	-
		Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement		B (16.1) B (16.1) D.58 355 A (1.6) B (10.9) 0.48 35		F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8) 0.53 104		D (48.9)	-
	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Movement	1.10	B (16.1) B (16.1) D.58 355 A (1.6) B (10.9) 0.48 35 A (6.4)	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7)	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8)	D (50.5)	D (48.9)	-
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 355 A (6.4) A (4.9)	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7)	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8) 0.53 104 B (19.5)		D (48.9) 0.10 61 D (41.2)	B (12
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Volume to Capacity ratio Volume to Capacity ratio	ApproachMovementMovementApproachMovementMovementMovementMovementMovementApproachMovement	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 0.69	A (3.7)	E (56.5) 0.63	D (52.6)	D (48.8)	D (51.8) 0.53 104 B (19.5) 0.54	D (50.5)	D (48.9) 0.10 61 D (41.2) 0.94	B (12
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 167	A (3.7) 0.17 m6	E (56.5) 0.63 142	D (52.6)	D (48.8)	D (51.8) 0.53 104 B (19.5)	D (50.5)	D (48.9) 0.10 61 D (41.2)	B (12
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Volume to Capacity ratio Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8)	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 0.69 167 B (11.1)	A (3.7)	E (56.5) 0.63		D (48.8)	D (51.8) 0.53 104 B (19.5) 0.54	D (50.5)	D (48.9) 0.10 61 D (41.2) 0.94	B (12
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8) B (15.8)	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) B (11.1) A (9.2)	A (3.7) 0.17 m6 A (0.2)	E (56.5) 0.63 142 	D (52.6)	D (48.8) 0.08 54 C (28.7)	D (51.8) 0.53 104 B (19.5) 0.54	D (50.5)	D (48.9) 0.10 61 D (41.2) 0.94	B (12 B (11
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	ApproachMovementMovementApproachMovement	1.10	B (16.1) B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8) B (15.8) 0.65	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) A (8.7) A (8.7) A (8.7) 0.69 167 B (11.1) A (9.2) 0.65	A (3.7) 0.17 m6 A (0.2) 0.23	E (56.5) 0.63 142 D (36.1) 0.80		D (48.8) 0.08 54 C (28.7) 0.53	D (51.8) 0.53 104 B (19.5) 0.54	D (50.5)	D (48.9) 0.10 61 D (41.2) 0.94	B (12 B (11
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Approach Movement Approach	1.10 #309	B (16.1) B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8) B (15.8) B (15.8) 358	A (0.7)	F (122.2) 1.04 #380	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 0.69 167 B (11.1) A (9.2) 0.65 m147	A (3.7) 0.17 m6 A (0.2)	E (56.5) 0.63 142 	C (33.5)	D (48.8) 0.08 54 C (28.7) 0.53 230	D (51.8) 0.53 104 B (19.5) 0.54 118	D (50.5)	0.10 0.10 61 D (41.2) 0.94 #243	B (12 B (11
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement Movement Movement	1.10	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8) B (15.8) 0.65 358 C (25.7)	A (0.7)	F (122.2)	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 0.69 167 B (11.1) A (9.2) 0.65 m147 C (34.7)	A (3.7) 0.17 m6 A (0.2) 0.23	E (56.5) 0.63 142 D (36.1) 0.80	C (33.5)	D (48.8) 0.08 54 C (28.7) 0.53	D (51.8) 0.53 104 B (19.5) 0.54	D (50.5)	D (48.9) 0.10 61 D (41.2) 0.94	-
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	ApproachMovementMovementApproachMovement	1.10 #309 E (68.6)	B (16.1) B (16.1) B (16.1) B (16.1) B (16.1) B (16.1) B (15.8) B (15.8) B (15.8) C (25.7) C (34.4)	A (0.7)	F (122.2) 1.04 #380 	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) A (8.7) A (8.7) A (8.7) 0.69 167 B (11.1) A (9.2) 0.65 m147 C (34.7) D (37.0)	A (3.7) 0.17 m6 A (0.2) 0.23	E (56.5) 0.63 142 0 0 0 0 0 0 0 0 0 0 0 0 0	C (33.5) D (51.1) E (61.6)	D (48.8) 0.08 54 C (28.7) 0.53 230 D (36.2)	D (51.8) 0.53 104 B (19.5) 0.54 118 D (37.5)	D (50.5) C (32.2) D (47.9) D (46.0)	D (48.9) 0.10 61 D (41.2) 0.94 #243 D (46.4)	B (12 B (11 B (11 B (18
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound Ramps	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement Movement Movement	1.10 #309	B (16.1) B (16.1) B (16.1) 0.58 355 A (1.6) B (10.9) 0.48 35 A (6.4) A (4.9) 0.54 187 B (15.8) B (15.8) 0.65 358 C (25.7)	A (0.7)	F (122.2) 1.04 #380	A (1.6) B (14.0) 0.58 30 A (9.9) A (9.3) 0.59 382 A (8.7) A (8.7) 0.69 167 B (11.1) A (9.2) 0.65 m147 C (34.7)	A (3.7) 0.17 m6 A (0.2) 0.23	E (56.5) 0.63 142 	C (33.5)	D (48.8) 0.08 54 C (28.7) 0.53 230	D (51.8) 0.53 104 B (19.5) 0.54 118	D (50.5)	0.10 0.10 61 D (41.2) 0.94 #243	B (12 B (11

Table 5.3: 2020 Build 1 – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

	Signal Controllad	Mesure of Effectiveness						AM Mo	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled Intersections	(MOE)	Location		Eastbound			Westbound			Northbound	1		Southbound	ļ	AM LO
	inter sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	F (113.9)	C (26.3)		F (125.2)	C (20.4)	B (12.1)	E (74.4)	F (93.9)	E (61.4)	F (84.5)	F (84.4)	E (55.3)	
	SW 12th Avenue	LOS (Delay)	Approach		D (36.3)			C (34.2)			E (73.6)			E (74.7)		D (39
	Sw 12th Avenue	Volume to Capacity ratio	Movement	0.97	0.77		1.02	0.59	0.42	0.30	0.77	0.30	0.36	0.35	0.02	D (39
		Queue Length 95th (ft)	Movement	#583	914		#353	354	118	93	255	140	72	72	1	
		LOS (Delay)	Movement		A (0.1)	A (1.1)		C (27.8)					D (52.9)		D (43.6)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.5)			C (27.8)						D (47.6)		C (20
	ramp	Volume to Capacity ratio	Movement		0.31	0.59		0.62					0.84		0.71	
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	239		429					719		473	
Hillsboro Biva.		$LOG(D_{1})$	Movement		B (13.9)			A (9.4)	A (0.4)	C (20.1)		C (27.5)				
	I-95 Northbound Off-	LOS (Delay)	Approach		B (13.9)			A (6.4)			C (24.1)					D (12
	ramp	Volume to Capacity ratio	Movement		0.55			0.63	0.56	0.37		0.76				B (13
		Queue Length 95th (ft)	Movement		255			m256	m0	121		282				1
			Movement	F (137.4)	B (14.6)	A (10.0)	F (88.4)	C (32.7)		F (532.4)	E (72.4)	E (69.5)	F (84.2)	F (83.3)	F (83.3)	
	SW Natura	LOS (Delay)	Approach		C (32.0)	, <i></i>		C (34.9)			F (368.6)	<u> </u>		F (83.6)		.
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	1.07	0.57	0.08	0.64	0.76		1.99	0.39	0.11	0.52	0.07	0.06	F (80
		Queue Length 95th (ft)	Movement	#667	428	m23	167	739		#1063	169	79	85	22	0	
M Peak																
								PM Ma	vement/An	proach LOS	(Delay)					Intersec
	Stand Controlled	2.5 0.7200						1 171 1710	wennen u Ap	proach LOS	(Delay)					Inter set
Artorial	Signal Controlled	Mesure of Effectiveness	Location		Fasthound			Westhound			Northbound	1		Southbound	1	
Arterial	Intersections	Mesure of Effectiveness (MOE)	Location	Left	Eastbound Through	Right		Westbound	I		Northbound			Southbound		-
Arterial	0			Left E (69.3)	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	-
Arterial	0		Movement	Left E (69.3)	Through D (39.8)	Right		Through B (19.1)	I		Through E (56.5)			Through F (85.6)		-
Arterial	0	(MOE) LOS (Delay)	Movement Approach	E (69.3)	Through D (39.8) D (40.4)	Right	Left F (228.9)	Through B (19.1) D (41.4)	Right A (0.3)	Left E (65.3)	Through E (56.5) F (175.0)	Right F (246.5)	Left F (84.7)	Through F (85.6) E (77.4)	Right E (65.3)	(Dela)
Arterial	Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92	Right	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91	Right A (0.3) 0.04	Left E (65.3) 0.70	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36	Left F (84.7) 0.91	Through F (85.6) E (77.4) 0.91	Right E (65.3) 0.81	(Dela)
Arterial	Intersections	(MOE) LOS (Delay)	Movement Approach Movement Movement	E (69.3)	Through D (39.8) D (40.4) 0.92 #897		Left F (228.9)	Through B (19.1) D (41.4) 0.91 #900	Right A (0.3)	Left E (65.3)	Through E (56.5) F (175.0)	Right F (246.5)	Left F (84.7) 0.91 #415	Through F (85.6) E (77.4)	Right E (65.3) 0.81 #333	(Dela)
Arterial	Intersections SW 12th Avenue	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1)	Right A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8)	Right A (0.3) 0.04	Left E (65.3) 0.70	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36	Left F (84.7) 0.91	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81	(Dela)
Arterial	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2)	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8)	Right A (0.3) 0.04	Left E (65.3) 0.70	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36	Left F (84.7) 0.91 #415 D (50.4)	Through F (85.6) E (77.4) 0.91	Right E (65.3) 0.81 #333 C (29.3)	(Dela) E (59
Arterial	Intersections SW 12th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83	Right A (0.3) 0.04	Left E (65.3) 0.70	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36	Left F (84.7) 0.91 #415 D (50.4) 0.90	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81 #333 C (29.3) 0.53	(Delay E (59
Arterial Hillsboro Blvd.	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661	Right A (0.3) 0.04 m0	Left E (65.3) 0.70 157	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36 #516	Left F (84.7) 0.91 #415 D (50.4)	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81 #333 C (29.3)	(Dela) E (59
	Intersections SW 12th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3)	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1)	Right A (0.3) 0.04	Left E (65.3) 0.70	Through E (56.5) F (175.0) 0.06 29	Right F (246.5) 1.36	Left F (84.7) 0.91 #415 D (50.4) 0.90	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81 #333 C (29.3) 0.53	(Delay E (59
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3)	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1)	Right A (0.3) 0.04 m0 A (0.6)	Left E (65.3) 0.70 157 	Through E (56.5) F (175.0) 0.06	Right F (246.5) 1.36 #516 C (26.3)	Left F (84.7) 0.91 #415 D (50.4) 0.90	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81 #333 C (29.3) 0.53	(Dela) E (59 B (17
	Intersections SW 12th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3)	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1) 0.80	Right A (0.3) 0.04 m0 A (0.6) 0.51	Left E (65.3) 0.70 157 B (18.4) 0.45	Through E (56.5) F (175.0) 0.06 29	Right F (246.5) 1.36 #516 C (26.3) 0.80	Left F (84.7) 0.91 #415 D (50.4) 0.90	Through F (85.6) E (77.4) 0.91 #425	Right E (65.3) 0.81 #333 C (29.3) 0.53	(Dela) E (59 B (17
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	E (69.3) 0.56 #98 	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3) 0.70 273	A (0.5) 0.55 m0	Left F (228.9) 1.29 m#253	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1) 0.80 m319	Right A (0.3) 0.04 m0 A (0.6)	Left E (65.3) 0.70 157 	Through E (56.5) F (175.0) 0.06 29 C (22.4)	Right F (246.5) 1.36 #516 C (26.3) 0.80 #240	Left F (84.7) 0.91 #415 D (50.4) 0.90 733	Through F (85.6) E (77.4) 0.91 #425 D (40.3)	Right E (65.3) 0.81 #333 C (29.3) 0.53 286	(Dela E (59 B (17
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (69.3) 0.56	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3) C (22.6)	A (0.5)	Left F (228.9) 1.29	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1) 0.80 m319 C (28.7)	Right A (0.3) 0.04 m0 A (0.6) 0.51	Left E (65.3) 0.70 157 B (18.4) 0.45	Through E (56.5) F (175.0) 0.06 29 C (22.4) D (48.5)	Right F (246.5) 1.36 #516 C (26.3) 0.80	Left F (84.7) 0.91 #415 D (50.4) 0.90	Through F (85.6) E (77.4) 0.91 #425 D (40.3) D (40.3) D (48.9)	Right E (65.3) 0.81 #333 C (29.3) 0.53	(Dela) E (59 B (17
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp SW Natura	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement	E (69.3) 0.56 #98 F (111.6)	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3) C (22.6) C (24.6)	A (0.5) 0.55 m0 B (12.0)	Left F (228.9) 1.29 m#253	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1) 0.80 m319 C (28.7) C (34.9)	Right A (0.3) 0.04 m0 A (0.6) 0.51	Left E (65.3) 0.70 157 	Through E (56.5) F (175.0) 0.06 29	Right F (246.5) 1.36 #516 C (26.3) 0.80 #240 D (49.1)	Left F (84.7) 0.91 #415 D (50.4) 0.90 733 0.90 733 D (46.9)	Through F (85.6) E (77.4) 0.91 #425 D (40.3) C (40.3) D (40.3) D (48.9) E (64.4)	Right E (65.3) 0.81 #333 C (29.3) 0.53 286 E (73.9)	(Delay E (59 B (17 B (13
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (69.3) 0.56 #98 	Through D (39.8) D (40.4) 0.92 #897 A (0.1) A (0.2) 0.42 m0 B (13.3) B (13.3) C (22.6)	A (0.5) 0.55 m0	Left F (228.9) 1.29 m#253	Through B (19.1) D (41.4) 0.91 #900 C (28.8) C (28.8) 0.83 661 B (12.1) A (9.1) 0.80 m319 C (28.7)	Right A (0.3) 0.04 m0 A (0.6) 0.51	Left E (65.3) 0.70 157 	Through E (56.5) F (175.0) 0.06 29 C (22.4) D (48.5)	Right F (246.5) 1.36 #516 C (26.3) 0.80 #240	Left F (84.7) 0.91 #415 D (50.4) 0.90 733	Through F (85.6) E (77.4) 0.91 #425 D (40.3) D (40.3) D (48.9)	Right E (65.3) 0.81 #333 C (29.3) 0.53 286	PM L0 (Delay E (59 B (17 B (13 D (37

Table 5.4: 2040 Build 1 – Hillsboro Boulevard Intersection Analysis Results

								AM M	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	l	AM LO
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOC (D-1)	Movement	F (178.3)	F (150.1)	C (21.7)	F (92.9)	E (76.5)	B (12.1)	F (84.2)	F (195.2)	F (155.8)	F (212.6)	E (59.1)	A (0.3)	
	South Military Trail	LOS (Delay)	Approach		F (146.3)			E (69.0)			F (167.7)			F (100.3)		F (12
	South Military Trail	Volume to Capacity ratio	Movement	1.17	1.22	0.13	0.87	1.07	0.33	0.77	1.27	1.19	1.28	0.75	0.20	г (12
		Queue Length 95th (ft)	Movement	#342	#1295	58	#286	#1168	149	#169	#780	#810	#474	413	0	
		LOS (Delay)	Movement	D (37.6)	A (6.3)	A (4.3)	C (33.3)	A (5.5)	A (4.7)			C (28.3)			C (31.0)	
	East Newport Center		Approach		A (8.7)	_		A (9.3)			C (28.3)			C (31.0)		A (9.
	Drive	Volume to Capacity ratio	Movement	0.65	0.82	0.47	0.67	0.48	0.31			0.09			0.13	А ().
		Queue Length 95th (ft)	Movement	m99	m209	m80	m138	m213	m92			27			27	
		LOS (Delay)	Movement		F (92.4)	A (0.6)	E (77.9)	B (10.2)					D (39.3)		F (104.0)	
SW 10th Street	I-95 Southbound Off-		Approach		E (69.9)			C (30.7)						F (84.4)		E (57
5 W Tom Sheet	ramp	Volume to Capacity ratio	Movement		1.08	0.48	0.98	0.70					0.38		1.08	L (5)
		Queue Length 95th (ft)	Movement		#718	0	m#424	m275					234		#838	
		LOS (Delay)	Movement		A (8.2)	A (0.2)		A (3.1)	A (0.2)	F (84.1)		E (65.5)				
	I-95 Northbound		Approach		A (4.0)			A (2.7)			E (77.5)				1	B (19
	Ramps	Volume to Capacity ratio	Movement		0.40	0.52		0.35	0.19	0.96		0.73				2 (1)
		Queue Length 95th (ft)	Movement		m112	m489		80	m0	#420		272				
		LOS (Delay)	Movement	D (43.9)	B (19.9)	D (49.9)	C (34.4)	C (24.6)	B (14.6)	D (48.3)	C (32.9)	C (31.6)	C (32.2)	D (44.3)	D (35.4)	
	FAU Research Park		Approach		C (28.5)			C (25.0)			D (39.1)			D (36.6)		C (29
	Boulevard	Volume to Capacity ratio	Movement	0.74	0.59	0.19	0.48	0.81	0.06	0.84	0.39	0.10	0.72	0.76	0.60	_ (_,
		Queue Length 95th (ft)	Movement	112	191	60	71	334	0	#161	69	0	#177	#188	#178	
Peak																
	Simul Controlled	М						PM M	ovement/Ap	proach LOS	(Delay)					Interse
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound			Northbound	[Southbound	1	PM L
		(Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Dela
		LOS (Delay)	Movement	F (219.8)	D (41.4)	C (20.4)	E (65.5)	F (209.7)	B (14.9)	F (183.9)	F (122.8)	D (45.2)	F (223.4)	F (256.5)	A (0.6)	
	South Military Trail		Approach		E (67.6)	1		F (160.7)	T		F (110.3)	r		F (174.0)	Т	F (13
		Volume to Capacity ratio	Movement	1.28	0.83	0.15	0.87	1.38	0.53	1.14	1.08	0.63	1.26	1.41	0.34	. (11
		Queue Length 95th (ft)	Movement	#381	705	52	#335	#2001	228	#232	#570	315	#282	#850	0	
		LOS (Delay)	Movement	C (21.4)	A (6.0)	A (3.7)	C (23.3)	B (14.1)	B (13.7)			C (30.2)			D (36.9)	
	East Newport Center		Approach		A (6.4)			B (14.5)			C (30.2)	1		D (36.9)		B (1
	Drive		Movement	0.07	0.73	0.05	0.18	0.77	0.08			0.64			0.86	_ (-
		Queue Length 95th (ft)	Movement	m23	m196	m39	m47	m411	m21			142			189	
		LOS (Delay)	Movement		F (114.9)	A (0.7)	E (77.2)	B (11.9)					C (34.8)		F (152.6)	
SW 10th Street	I-95 Southbound Off-		Approach		F (86.1)	1		C (33.4)				1		F (128.3)	1	E (7:
	ramp	Volume to Capacity ratio			1.14	0.48	0.98	0.65					0.26		1.21	- (
		Queue Length 95th (ft)	Movement		#730	0	m0	m232					161		#1055	
		LOS (Delay)	Movement		A (1.3)	A (0.0)		A (2.6)	A (0.2)	F (100.8)		F (116.3)				_
			Approach		A (0.8)			A (2.2)	1		F (107.5)				T	C (29
	I-95 Northbound				0.45	0.38		0.30	0.21	1.02		1.06				
	I-95 Northbound Ramps	Volume to Capacity ratio	Movement							#470		#470				
			Movement Movement		m5	m68		m57	m0							
	Ramps	Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Movement	D (39.9)	m5 C (26.1)	m68 B (17.7)	E (55.5)	C (28.6)	B (18.7)	E (60.1)	C (29.7)	C (28.8)	C (22.0)	E (63.9)	C (33.0)	
	Ramps FAU Research Park	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach		m5 C (26.1) C (26.8)	B (17.7)		C (28.6) C (31.6)	B (18.7)	E (60.1)	D (45.3)	C (28.8)		D (39.8)		- C (32
	Ramps	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Movement Approach Movement	0.71	m5 C (26.1) C (26.8) 0.95	B (17.7) 0.16	0.84	C (28.6) C (31.6) 0.80	B (18.7) 0.08	E (60.1) 0.94	D (45.3) 0.26	C (28.8)	0.57	D (39.8) 0.93	0.61	C (32
	Ramps FAU Research Park	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach		m5 C (26.1) C (26.8)	B (17.7)		C (28.6) C (31.6)	B (18.7)	E (60.1)	D (45.3)	C (28.8)		D (39.8)		C (3

Table 5.5: 2040 Build 1 – SW 10th Street Intersection Analysis Results

m: Upstream metering is in effect

								AM M	ovement/Ap	proach LOS	(Delay)					Intersectio
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	l	AM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement		B (16.9)		E (70.6)	A (1.5)		E (57.1)		D (46.4)				
	NW 5th Terrace	LOS (Delay)	Approach		B (16.9)			A (7.0)			D (51.0)					В (15.
	N W Jui Terrace	Volume to Capacity ratio	Movement		0.60		0.79	0.53		0.69		0.13				Б (15.
		Queue Length 95th (ft)	Movement		377		#237	32		181		65				
		LOS (Delay)	Movement	E (58.5)	A (2.2)			B (10.3)	A (4.9)				D (51.2)		D (47.0)	
	NW 5th Avenue	EOS (Delay)	Approach		A (4.4)			B (10.1)	-		-	-		D (49.5)		B (10.
	NW 5th Avenue	Volume to Capacity ratio	Movement	0.78	0.53			0.50	0.06				0.61		0.22	Б (10.
		Queue Length 95th (ft)	Movement	m#174	46			298	m6				140		82	
		LOS (Delay)	Movement		A (6.2)	A (2.0)		A (7.9)					C (20.2)		C (26.7)	
Sample Road	I-95 Southbound Off-	EOS (Delay)	Approach		A (4.6)			A (7.9)						C (23.6)		A (9.4
Sample Road	ramp	Volume to Capacity ratio	Movement		0.48	0.67		0.53					0.59		0.80	A (9.4
		Queue Length 95th (ft)	Movement		159	456		168					127		#189	
		LOS (Delay)	Movement		A (6.7)			A (7.1)	A (0.2)	C (22.6)		C (22.1)				
	I-95 Northbound	EOS (Delay)	Approach		A (6.7)			A (5.5)			C (22.4)	-				A (9.3
	Ramps	Volume to Capacity ratio	Movement		0.45			0.68	0.38	0.68		0.64				A ().5
		Queue Length 95th (ft)	Movement		97			m160	m0	143		126				
		LOS (Delay)	Movement	F (86.0)	C (21.2)		E (58.0)	E (60.4)		D (42.9)	D (36.1)	C (31.9)	C (29.6)	D (36.1)	F (101.3)	
	NE 3rd Avenue	EOS (Delay)	Approach		D (36.9)			E (60.3)			D (38.5)			E (76.5)		D (52.
	NE 514 Avenue	Volume to Capacity ratio	Movement	1.00	0.62		0.55	1.01		0.73	0.45	0.05	0.32	0.44	1.05	D (52
		Queue Length 95th (ft)	Movement	#281	307		91	#645		#224	225	0	98	219	#604	
I Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Intersec
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location		Eastbound		1		-	î			T	C 41-1		PM LC
1 11 001 1011	Intersections		Location		LastDoullu			Westbound			Northbound			Southbound	1	
	inter sections	(MOE)	Location	Left	Through	Right	Left	Westbound Through	Right	Left	Northbound Through	Right	Left	Through	Right	(Delay
			Movement	Left		Right	Left F (94.8)	r	Right		r		-	1		(Delay
		(MOE) LOS (Delay)		Left	Through	Right		Through	Right	Left	r	Right	-	1		-
	NW 5th Terrace	LOS (Delay)	Movement	Left	Through B (19.2)	Right		Through A (2.1)	Right	Left	Through	Right	-	1		-
		LOS (Delay)	Movement Approach	Left	Through B (19.2) B (19.2)	Right	F (94.8)	Through A (2.1) B (11.0)	Right	Left E (63.3)	Through	Right D (52.6)	-	1		-
		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement	Left	Through B (19.2) B (19.2) 0.65	Right	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65	Right	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	-	1		
	NW 5th Terrace	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Movement		Through B (19.2) B (19.2) 0.65 448	Right	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45		Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left	1	Right	B (16.
		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement		Through B (19.2) B (19.2) 0.65 448 A (1.8)	Right	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8)		Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left	Through	Right	B (16.
	NW 5th Terrace	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0)	Right	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1)	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left E (56.7)	Through	Right D (52.7)	B (16.
	NW 5th Terrace	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Approach Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52	Right	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left E (56.7) 0.57	Through	Right D 0.11	(Delay B (16. B (13.
	NW 5th Terrace	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38		F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left E (56.7) 0.57 122	Through	Right D (52.7) 0.11 65	B (16.
Sample Road	NW 5th Terrace NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9)		F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9)	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left E (56.7) 0.57 122	Through D (54.9)	Right D (52.7) 0.11 65	B (16.
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach	F (105.3)	Through B (19.2) B (19.2) B (19.2) O.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2)	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9)	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left E (56.7) 0.57 122 B (18.9)	Through D (54.9)	Right D D 0.11 65 C C	B (16.
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83	A (6.3)	Left E (63.3) 0.67	Through	Right D (52.6) 0.08	Left Left	Through D (54.9)	Right D D 0.11 65 C 0.33.8)	B (16
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83 291	A (6.3)	Left E (63.3) 0.67 164	Through	Right D (52.6) 0.08 58	Left Left	Through D (54.9)	Right D D 0.11 65 C 0.33.8)	B (16 B (13 B (14
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Approach	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304 B (17.9)	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83 291 B (14.6)	A (6.3)	Left E (63.3) 0.67 164	Through E (57.8)	Right D (52.6) 0.08 58	Left Left	Through D (54.9)	Right D D 0.11 65 C 0.33.8)	B (16) B (13) B (14)
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304 B (17.9) B (17.9)	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83 291 B (14.6) B (11.8)	A (6.3) 0.20 m11 A (0.2)	Left E (63.3) 0.67 164 	Through E (57.8)	Right D (52.6) 0.08 58	Left Left	Through D (54.9)	Right D D 0.11 65 C 0.33.8)	B (16) B (13) B (14)
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement	F (105.3)	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304 B (17.9) B (17.9) 0.74	A (0.9)	F (94.8) 0.95	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) B (13.9) B (14.6) B (11.8) 0.75	A (6.3) 0.20 m11 A (0.2) 0.29	Left E (63.3) 0.67 164 	Through E (57.8)	Right D (52.6) 0.08 58 0.0 C (30.4) 0.61	Left Left	Through D (54.9)	Right D D 0.11 65 C 0.33.8)	B (16) B (13) B (14)
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound Ramps	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement Approach Movement Movement	F (105.3) 1.03 #335	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304 B (17.9) B (17.9) A (7.4)	A (0.9)	F (94.8) 0.95 #397	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83 291 B (14.6) B (11.8) 0.75 m213	A (6.3) 0.20 m11 A (0.2) 0.29	Left E (63.3) 0.67 164 	Through E (57.8)	Right D (52.6) 0.08 58 0.0 C (30.4) 0.61 311	Left Left E (56.7) 0.57 122 B (18.9) 0.55 143	Through D (54.9) C (27.5)	Right D (52.7) 0.11 65 C (33.8) 0.90 #279	B (16) B (13) B (14) C (21)
	NW 5th Terrace NW 5th Avenue I-95 Southbound Off-ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement	F (105.3) 1.03 #335	Through B (19.2) B (19.2) 0.65 448 A (1.8) A (9.0) 0.52 38 B (10.9) A (8.2) 0.62 304 B (17.9) B (17.9) C (27.7)	A (0.9)	F (94.8) 0.95 #397	Through A (2.1) B (11.0) 0.65 45 B (12.8) B (12.1) 0.67 470 B (13.9) B (13.9) 0.83 291 B (14.6) B (11.8) 0.75 m213 D (40.8)	A (6.3) 0.20 m11 A (0.2) 0.29	Left E (63.3) 0.67 164 	Through E (57.8)	Right D (52.6) 0.08 58 0.0 C (30.4) 0.61 311	Left Left E (56.7) 0.57 122 B (18.9) 0.55 143	Through Through D (54.9) C (27.5) C (27.5) E (58.0)	Right D (52.7) 0.11 65 C (33.8) 0.90 #279	B (16.

Table 5.6: 2040 Build 1 – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect



Tables 5.7 summarizes the results of the off-ramp signals back of queue analyses for the AM and PM peak hours for 2040 Build 1 conditions. HCM methodology does not provide queue lengths. The 95th percentile queues were obtained from Synchro reports. The Synchro reported queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. The results present the queue length in feet for each lane group movement. The available storage length was calculated from the stop bar at the ramp terminal intersection to the gore with I-95 mainline minus 615 feet for the required stopping distance for a design speed of 70 mph per FDOT's 2016 Greenbook (Table 3-22), and accounting for the changes in number of lanes. The analysis indicates that the queues on the off-ramps are not expected to exceed the available storage lengths and are not likely to affect the I-95 mainline operations.

Intersection	Annraach	Movement	Available	Que	ue (ft)
Intersection	Approach	wovement	Storage (ft)	AM	PM
2040 Build 1					
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	L (EB)	1,255	719	733
	Southbound	R (WB)	1,550	833	503
Hillsboro Boulevard at I-95 NB Off-Ramp	Northbound	L (WB)	2,965	341	333
Hillsbord Boulevard at 1-95 NB Oli-Ramp	Inortinouna	R (EB)	2,615	496	#422
SW 10 th Street at I-95 SB Off-Ramp	Southbound	L (EB)	2,615	454	312
SW 10 th Street at 1-95 SB Oll-Rallip	Southbound	R (WB)	2,615	#1,475	#1,856
SW 10 th Street at I-95 NB Off-Ramp	Northbound	L (WB)	2,240	#1,184	#1,325
SW 10 ^{er} Street at 1-95 NB Oll-Rallip	nontinuouna	R (EB)	2,240	620	#1,072
Cample Deed at LOE CD Off Dama	Couthbourd	L (EB)	1,010	246	277
Sample Road at I-95 SB Off-Ramp	Southbound	R (WB)	1,010	#333	#491
Sample Read at LOE NR Off Roma	Northbound	L (WB)	1,095	277	1,013
Sample Road at I-95 NB Off-Ramp	מחשסמושוסאו	R (EB)	1,095	222	547

Table 5.7: 2040 Build 1 – Off-Ramp Signals Queuing Analysis Results

Queue Notes:

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. Queue lengths exceeding the available storage are shown in Red.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310+ (295*2)] = 1,552.5$ feet rounded to 1,550 feet.



5.5 Build 2 Alternative – Traffic Operational Analysis

The proposed improvements under Build 2 are similar to Build 1 and are expected to provide better operating conditions than the No-Build conditions. They are also likely to prevent any spillbacks from the ramp terminals on to the mainline and improve safety by reducing congestion and the number of conflict points.

5.5.1 2020 & 2040 – Freeway Analysis – I-95

The mainline/basic, weaving, and ramp merge/diverge analysis results for Opening Year 2020 are summarized on **Figures 5.16** and **5.17** for the NB and SB directions, respectively. **Figures 5.18** and **5.19** summarize the Design Year 2040 analysis results for NB and SB directions, respectively. Documentation of the Build 2 Alternative traffic freeway operational analysis is provided in **Appendix M**. The Design Year 2040 Build 2 Alternative analysis indicates that 3 of the 14 freeway segments in the NB direction are projected to operate at LOS E during the AM peak hour and only one segment is expected to operate at LOS F during the PM peak hour. In the SB direction, only 1 of the 14 freeway segments is projected to operate at LOS F during the AM peak hour and 3 segments are expected to operate at LOS E or F during the PM peak hour.

5.5.2 2020 & 2040 - Intersection Analysis

Tables 5.8 through **5.10** summarize the results of the 2020 Build 2 signalized intersection analyses for the AM and PM peak hours for Hillsboro Boulevard, SW 10^{th} Street, and Sample Road intersections, respectively. **Tables 5.11** through **5.13** summarize the results of the 2040 Build 2 signalized intersection analyses for Hillsboro Boulevard, SW 10^{th} Street, and Sample Road intersections, respectively. Signal timing was optimized for all intersections. The results include delays (in seconds per vehicle) and LOS by movement, approach, and the overall intersection. The volume to capacity (v/c) ratios and 95th percentile queue lengths have also been summarized by movement. **Appendix N** presents the intersection analysis worksheets. The intersection analysis results indicate the following for the 2040 Design Year:

- Hillsboro Boulevard: Two of the four signalized intersections are expected to operate at LOS E or worse during the AM or PM peak hours. The I-95 NB and SB off-ramp intersections are expected to operate at LOS D or better during both peak hours.
- SW 10th Street: All five signalized intersections are expected to operate at LOS D or better during the AM and PM peak hours. The I-95 NB and SB off-ramp approaches are expected to operate at LOS D or better during both peak hours.
- Sample Road: All five signalized intersections including the I-95 NB and SB off-ramp approaches are expected to operate at LOS D or better during both peak hours.

Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)	
Basic Freeway	5,740 (5,330)	C (22.3)	C (20.5)	
Weave - Hillsboro Boulevard EB & WB to I-95 Express Lanes	6,730 (6,150)	D (31.1)	D (28.1)	Exit to Exp Lane 990 (820) vph 1 2 1 2 1 2 1 2 3 4 650'
Basic Freeway	5,480 (4,890)	C (21.2)	C (18.7)	Entry from Hillsboro EB & WB 1,250 (1,260) vph [125 (130) to Exp]
Lane Add from SW 10th St EB & WB*	5,480 (4,890)	Under Capacity v/c: u/s, Ramp, d/s 0.66, 0.54, 0.61	Under Capacity v/c: u/s, Ramp, d/s 0.55, 0.61, 0.54	1 2 1 2 4 Exit to Hillsboro Bivd EB & WB 1,250 (1,250) vph
Basic Freeway	4,420 (3,690)	C (23.0)	C (18.8)	1 2 3 1 3 5 1
Diverge to Hillsboro Blvd EB & WB	5,670 (4,940)	E (36.2)	D (33.2)	
	SW 10th S			
Basic Freeway	5,670 (4,940)	orthbound Express - 760 (; D (32.4)	D (26.5)	$\begin{array}{c c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $
Major Diverge to SW 10th Street EB & WB	6,690 (6,000)	D (31.3)	D (28.0)	$ \begin{array}{c c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$
Basic Freeway	6,690 (6,000)	D (27.1)	C (23.5)	112 1213 140 (230) vph
Diverge from GP Lane to WB 10th St Ex Lane	6,830 (6,230)	D (30.6)	D (28.6)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Merge from I-95 Express Lanes	6,830 (6,230)	C (26.2)	C (23.5)	Merge from Exp Lane 690 (610) vph
Lane Add from Sample Road WB*	6,140 (5,620)	Under Capacity v/c: u/s, Ramp, d/s 0.73, 0.62, 0.68	Under Capacity v/c: u/s, Ramp, d/s 0.69, 0.48, 0.63	
Basic Freeway	4,920 (4,680)	D (26.4)	C (24.7)	Entry from Sample Road EB & WB 1 1 2 1 3 1 1 1 1 1 2 1 3 1 1 1 1 1 2 1 3 1 1 1 1 2 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	5,720 (6,240)	D (28.3)	D (34.3)	Control of the second s

Figure 5.16: 2020 Build 2 Freeway Analysis Results - Northbound

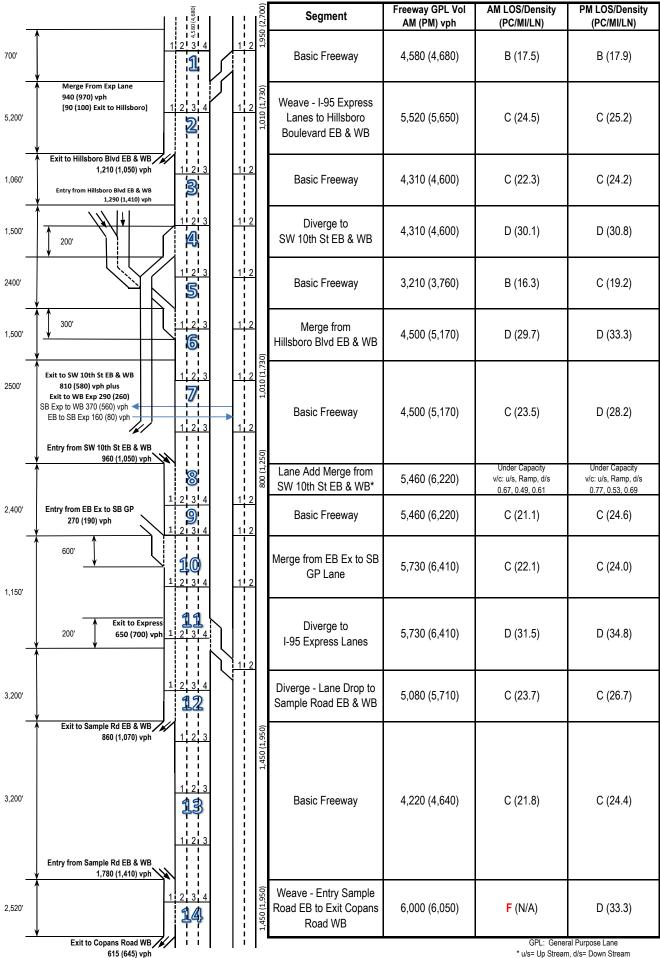


Figure 5.17: 2020 Build 2 Freeway Analysis Results - Southbound

* u/s= Up Stream, d/s= Down Stream

Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)	1		L
Basic Freeway	6,040 (5,580)	C (23.7)	C (21.6)	3,400 (2,550) 	<u>14</u>	4
Weave - Hillsboro Boulevard EB & WB to I-95 Express Lanes	7,310 (6,640)	E (36.7)	D (32.2)	2 <u>1</u> 30(1 <u>490</u>)	13 1 ¹ 2 ¹ 3	Exit to Exp Lane 1,270 (1,060) vph
Basic Freeway	5,920 (5,200)	C (23.1)	C (20.0)	1 2	<u>12</u>	Entry from Hillsboro EB & WB 1,390 (1,440) vph [300 (255) to Exp 4
Lane Add from SW 10th St EB & WB*	5,920 (5,200)	Under Capacity v/c: u/s, Ramp, d/s 0.70, 0.62, 0.66	Under Capacity v/c: u/s, Ramp, d/s 0.56, 0.73, 0.58	1 2	11 1 2 3	4 Exit to Hillsboro Blvd EB & WE 1,330 (1,320) vph
Basic Freeway	4,690 (3,760)	C (24.8)	C (19.2)	-2_130_(1_490)	<u>1, 2, 3</u> 10 <u>1, 2, 3</u>	Entry from SW 10th St. EB & WE (ncl Exp) 1,220 (1.440) vph
Diverge to Hillsboro Blvd EB & WB	6,020 (5,080)	E (37.8)	D (34.0)	∑ ¹ 112	9 <u>11 21 3</u>	200'
	SW 10th S	ress SW 10th Street - 90 (* Street orthbound Express - 850 (*				
Basic Freeway	6,020 (5,080)	E (35.9)	D (27.5)		8	Exit to SW 10th St. EB & WB
Major Diverge to SW 10th Street EB & WB	7,210 (6,350)	D (33.7)	D (29.7)	112	7 1	
Basic Freeway	7,210 (6,350)	D (30.1)	C (25.3)	<u>112</u>	<u>6</u>	Exit to WB 10th St Ex Lane 180 (310) vph
Diverge from GP Lane to WB 10th St Ex Lane	7,390 (6,660)	D (33.0)	D (30.8)	_1. <u>370(1.230)</u> _	5	4
Merge from I-95 Express Lanes	7,390 (6,660)	D (29.0)	C (25.4)			Merge from Exp Lane 830 (670) vph
Lane Add from Sample Road WB*	6,560 (5,990)	Under Capacity v/c: u/s, Ramp, d/s 0.76, 0.73, 0.73	Under Capacity v/c: u/s, Ramp, d/s 0.72, 0.58, 0.67			
Basic Freeway	5,110 (4,850)	D (27.8)	C (25.9)	Express Lanes		Entry from Sample Road EB & WB 1,450 (1,140) vph Exit to Sample Rd EB & WB 770 (1,810) vph
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	6,080 (6,660)	D (31.2)	F (N/A)	2.200(1.900)		

Figure 5.18: 2040 Build 2 Freeway Analysis Results - Northbound

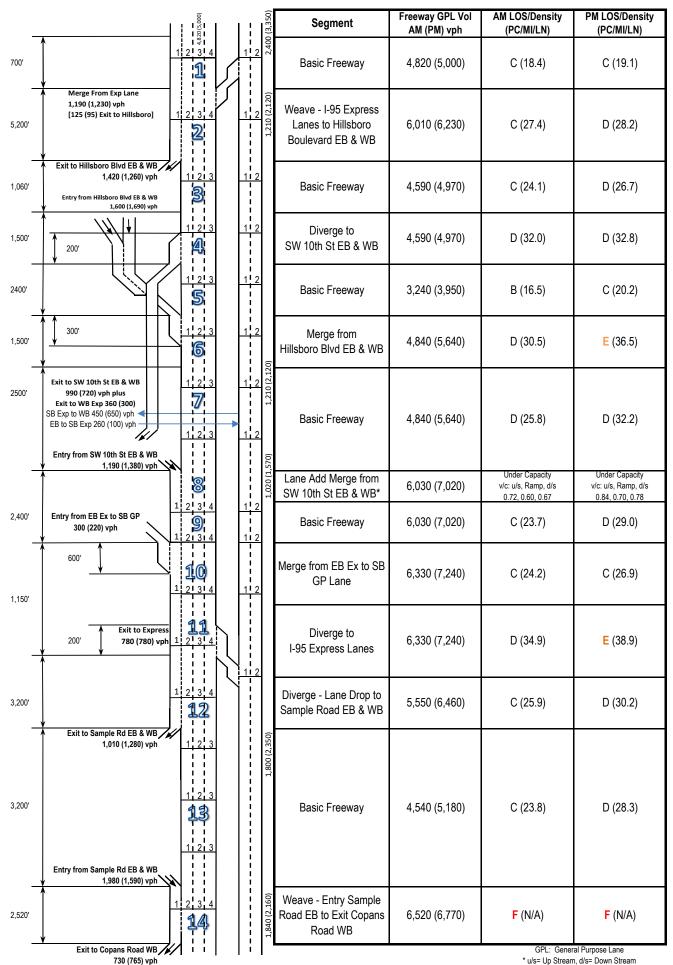


Figure 5.19: 2040 Build 2 Freeway Analysis Results - Southbound

Page 5-86

Arterial		M CERC (*						AM Mo	ovement/Ap	proach LOS	(Delay)					Intersection
	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound	[Northbound			Southbound	l	AM LOS
	Intel sections			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement	F (92.6)	C (21.5)		F (98.4)	B (20.0)	A (9.0)	E (70.3)	F (87.6)	E (56.4)	E (79.4)	E (79.3)	D (53.3)	
	SW 12th Avenue	LOS (Delay)	Approach		C (29.9)			C (29.0)			E (69.9)			E (70.7)	-	C (33.:
	Sw 12th Avenue	Volume to Capacity ratio	Movement	0.89	0.66		0.91	0.50	0.39	0.27	0.75	0.12	0.29	0.29	0.01	C (33.
		Queue Length 95th (ft)	Movement	#452	649		#282	474	130	81	236	66	60	60	0	
		LOS (Delay)	Movement		A (0.1)	A (0.7)		B (14.3)					E (56.5)		D (48.1)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.3)			B (14.3)			-			D (51.6)		B (18.
	ramp	Volume to Capacity ratio	Movement		0.27	0.44		0.49					0.82		0.71	D (10.
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	9		430					609		420	
Iniisooro Brva.		LOS (Delay)	Movement		A (7.8)			A (6.3)	A (0.5)	B (19.7)		C (26.1)				
	I-95 Northbound Off-		Approach		A (7.8)			A (4.4)	•		C (23.3)			•		B (10.3
	ramp	Volume to Capacity ratio	Movement		0.48			0.54	0.49	0.32		0.72				D (10
		Queue Length 95th (ft)	Movement		241			m143	m0	93		230				
		LOS (Delay)	Movement	F (110.7)	B (13.8)	B (15.1)	F (80.7)	C (28.4)		F (463.3)	E (66.9)	E (66.1)	E (77.3)	E (78.3)	E (78.2)	
	SW Natura	LOS (Delay)	Approach		C (28.1)			C (30.4)	-		F (324.7)			E (77.9)		Е (70.6
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	0.99	0.51	0.07	0.59	0.68		1.84	0.38	0.09	0.38	0.06	0.04	L (70.0
		Queue Length 95th (ft)	Movement	#579	357	16	143	582		#900	155	72	66	22	0	
M Peak																
								PM Mo	ovement/Ap	proach LOS	(Delay)					Intersect
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound	[Northbound			Southbound	l	PM LO
	inter sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement	E (55.5)	C (30.4)		F (206.4)	C (21.6)	A (0.2)	D (54.6)	D (48.8)	F (155.2)	E (63.2)	E (63.9)	D (40.9)	
	SW 12th Avenue	LOS (Delay)	Approach		C (30.9)			D (39.9)			F (113.5)			D (54.9)		D (46.1
	Sw 12th Avenue	Volume to Capacity ratio	Movement	0.42	0.82		1.25	0.90	0.03	0.64	0.06	1.14	0.84	0.84	0.52	D (40.1
		Queue Length 95th (ft)	Movement	72	#640		#215	#742	m0	124	26	#324	306	313	146	
		LOS (Delay)	Movement		A (0.1)	A (0.4)		B (19.1)					D (42.4)		C (28.5)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.2)			D(10.1)						D (35.6)		В (13.7
			rpprodein		11 (012)			B (19.1)								
	ramp	Volume to Capacity ratio	Movement		0.38	0.41		B (19.1) 0.69					0.84		0.50	Б (15.7
Hillshore Blvd	ramp				× 7	0.41 m0		× /					0.84 484		0.50 207	В (15.7
Hillsboro Blvd.	ramp	Queue Length 95th (ft)	Movement		0.38			0.69	A (0.5)	B (16.5)		C (23.3)				В (13.7
Hillsboro Blvd.	ramp I-95 Northbound Off-	Queue Length 95th (ft)	Movement Movement		0.38			0.69 563	A (0.5)	B (16.5)	C (20.1)	C (23.3)				
Hillsboro Blvd.		Queue Length 95th (ft) LOS (Delay)	Movement Movement Movement		0.38 0 A (9.8)			0.69 563 A (9.2)	A (0.5)	B (16.5)	C (20.1)	C (23.3)				
Hillsboro Blvd.	I-95 Northbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Movement Approach		0.38 0 A (9.8) A (9.8)			0.69 563 A (9.2) A (7.1)			C (20.1)					
Hillsboro Blvd.	I-95 Northbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Movement Approach Movement	F (85.7)	0.38 0 A (9.8) A (9.8) 0.62		F (136.9)	0.69 563 A (9.2) A (7.1) 0.73	0.44	0.40	C (20.1) D (44.2)	0.78		D (44.5)		
Hillsboro Blvd.	I-95 Northbound Off- ramp SW Natura	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Movement Approach Movement Movement	F (85.7)	0.38 0 A (9.8) A (9.8) 0.62 183	m0	F (136.9)	0.69 563 A (9.2) A (7.1) 0.73 m259	0.44	0.40 87		0.78 #193	484	D (44.5) E (55.3)	207	B (10.8
Hillsboro Blvd.	I-95 Northbound Off- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach	F (85.7)	0.38 0 A (9.8) A (9.8) 0.62 183 B (15.7)	m0	F (136.9)	0.69 563 A (9.2) A (7.1) 0.73 m259 C (21.5)	0.44	0.40 87	D (44.2)	0.78 #193	484	、 <i>、</i> ,	207	B (10.8 C (31.8

m: Upstream metering is in effect

<u>Table 5.8: 2020 Build 2 – Hillsboro Boulevard Intersection Analysis Results</u>

								AM M	ovement/Ap	proach LOS	(Delay)					Intersectio
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound		<u> </u>	Northbound	1		Southbound		AM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	F (88.3)	F (99.1)	C (22.6)	E (55.1)	D (49.0)	B (15.3)	E (69.4)	F (117.7)	F (80.7)	F (121.9)	D (54.7)	A (0.3)	× •,
		LOS (Delay)	Approach		F (93.4)	()		D (42.2)	()		F (96.7)	()		E (66.6)	()	
	South Military Trail	Volume to Capacity ratio	Movement	0.91	1.10	0.09	0.65	0.92	0.47	0.64	1.08	0.98	1.06	0.70	0.20	E (74.8
		Queue Length 95th (ft)	Movement	#297	#936	33	227	#682	136	137	#544	#509	#392	356	0	
			Movement	C (33.8)	A (3.9)	A (1.8)	C (26.4)	A (2.7)	A (2.4)			C (26.2)			C (28.3)	
	East Newport Center	LOS (Delay)	Approach	()	A (6.6)	()		A (6.1)			C (26.2)	()		C (28.3)	()	
	Drive	Volume to Capacity ratio	Movement	0.59	0.66	0.48	0.60	0.43	0.30			0.07			0.14	A (7.4)
		Queue Length 95th (ft)	Movement	m85	m131	m18	m132	72	m31			23			27	
			Movement		D (35.6)	A (0.7)	D (40.5)	A (8.8)					D (36.6)		D (52.3)	
	I-95 Southbound Off-	LOS (Delay)	Approach		C (25.6)	, , ,		B (16.3)			<u> </u>	ļ		D (47.6)	()	
SW 10th Street	ramp	Volume to Capacity ratio	Movement		0.86	0.44	0.64	0.67					0.29		0.84	C (25.8
		Queue Length 95th (ft)	Movement		392	0	208	219					167		501	
			Movement		A (6.5)	A (0.2)		A (3.8)	A (0.2)	E (61.0)		E (56.3)				
	I-95 Northbound	LOS (Delay)	Approach		A (4.1)	, , ,		A (3.3)			E (59.3)					
	Ramps	Volume to Capacity ratio	Movement		0.42	0.28		0.32	0.18	0.78		0.61				B (16.3
		Queue Length 95th (ft)	Movement		133	3		83	m0	309		225				
			Movement	C (33.5)	B (19.0)	D (41.6)	C (33.9)	C (25.3)	B (15.6)	C (30.8)	C (30.7)	C (29.7)	C (25.9)	D (38.7)	C (29.8)	
	FAU Research Park	LOS (Delay)	Approach	()	C (24.6)	()		C (25.4)			C (30.5)		()	C (30.5)		
	Boulevard	Volume to Capacity ratio	Movement	0.57	0.60	0.18	0.43	0.81	0.05	0.72	0.34	0.08	0.62	0.70	0.24	C (26.4
		Queue Length 95th (ft)	Movement	77	218	47	46	280	0	#173	58	0	142	#148	75	
M Peak								I								
iii cak								рм м	ovomont/An	proach LOS	(Dolov)					Intersecti
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound		T	Westbound	-	-	Northbound	1		Southbound		PM LO
Alterial	Intersections	(MOE)	Location	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	B (15.5)	D (35.3)	B (18.6)	E (56.3)	F (132.2)	B (17.7)	F (119.2)	F (134.3)	D (39.9)	F (159.3)	F (171.5)	A (0.7)	(Denuj)
		LOS (Delay)	Approach	D (15.5)	D (52.6)	D (10.0)	L (50.5)	F (101.4)	D (17.7)	1 (11).2)	F (100.6)	D (39.9)	1 (159.5)	F (111.6)	11 (0.7)	
	South Military Trail	Volume to Capacity ratio	Movement	1.14	0.80	0.13	0.86	1.22	0.48	0.97	1.12	0.59	1.17	1.23	0.39	F (90.1
		Queue Length 95th (ft)	Movement	#292	524	25	#285	#1291	136	#156	#378	#201	#331	#573	0.55	
			Movement	B (14.2)	A (3.1)	A (1.8)	B (19.5)	B (13.1)	B (13.2)	#150	11370	C (25.7)	11001	11010	C (27.8)	
	East Newport Center	LOS (Delay)	Approach	D (14.2)	A (3.4)	<i>I</i> (1.0)	D (17.5)	B (13.4)	D (13.2)		C (25.7)	C (25.7)		C (27.8)	C (27.0)	-
	Drive	Volume to Capacity ratio	Movement	0.07	0.70	0.05	0.15	0.71	0.06			0.61		0 (27.0)	0.85	B (12.4
	2	Queue Length 95th (ft)	Movement	m16	m121	m0	m32	317	m19			102			154	-
		Queue Lengui 95th (1t)	Movement	mito	D (40.2)	A (0.6)	D (40.6)	A (4.9)				102	D (40.0)		E (67.9)	
		LOS (Delay)			× /	A (0.0)	D (40.0)	B (13.6)			<u></u>	<u> </u>	D (40.0)	E (60.4)	E (07.5)	-
	I 05 Southbound Off	LOS (Delay)										1		L (00.4)	0.93	C (27.9
SW 10th Street	I-95 Southbound Off- ramp		Approach Movement		C (30.5)	0.44	0.55	. ,					0.28			
SW 10th Street	I-95 Southbound Off- ramp	Volume to Capacity ratio	Movement		0.94	0.44	0.55	0.57					0.28			
SW 10th Street			Movement Movement		0.94 #452	0	0.55	0.57 179	A (0,1)	D (46.6)		D (52 0)	0.28		#423	-
SW 10th Street	ramp	Volume to Capacity ratio	Movement Movement Movement		0.94 #452 A (0.5)			0.57 179 A (4.4)	A (0.1)	D (46.6)	D (49 1)	D (52.0)				-
SW 10th Street	ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Movement Approach		0.94 #452 A (0.5) A (0.4)	0 A (0.1)		0.57 179 A (4.4) A (3.8)			D (49.1)					B (13.3
SW 10th Street	ramp	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Movement Approach Movement		0.94 #452 A (0.5) A (0.4) 0.50	0 A (0.1) 0.32		0.57 179 A (4.4) A (3.8) 0.33	0.20	0.65	D (49.1)	0.78				B (13.3
SW 10th Street	ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement	D (42.9)	0.94 #452 A (0.5) A (0.4) 0.50 m4	0 A (0.1) 0.32 m8	0	0.57 179 A (4.4) A (3.8) 0.33 m84	0.20 m0	0.65		0.78	120	E (64.1)	#423	B (13.3
SW 10th Street	ramp I-95 Northbound Ramps	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Movement	D (43.8)	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0)	0 A (0.1) 0.32		0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8)	0.20	0.65	C (24.4)	0.78		E (64.1)		B (13.3
SW 10th Street	ramp I-95 Northbound Ramps FAU Research Park	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach		0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9)	0 A (0.1) 0.32 m8 B (14.2)	0 D (48.9)	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7)	0.20 m0 B (15.7)	0.65 249 E (56.1)	C (24.4) D (40.7)	0.78 288 C (23.9)	120 C (23.1)	D (35.8)	#423 C (25.1)	B (13.3
SW 10th Street	ramp I-95 Northbound Ramps	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Movement Approach Movement	0.85	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9) 0.95	0 A (0.1) 0.32 m8 B (14.2) 0.16	0 D (48.9) 0.87	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7) 0.84	0.20 m0 B (15.7) 0.08	0.65 249 E (56.1) 0.94	C (24.4) D (40.7) 0.22	0.78 288 C (23.9) 0.10	120 C (23.1) 0.65	D (35.8) 0.94	#423 C (25.1) 0.37	
	ramp I-95 Northbound Ramps FAU Research Park Boulevard	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach		0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9)	0 A (0.1) 0.32 m8 B (14.2)	0 D (48.9)	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7)	0.20 m0 B (15.7)	0.65 249 E (56.1)	C (24.4) D (40.7)	0.78 288 C (23.9)	120 C (23.1)	D (35.8)	#423 C (25.1)	
nchro Version 9.2.91	ramp I-95 Northbound Ramps FAU Research Park	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Movement Approach Movement	0.85 m#120	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9) 0.95 #296	0 A (0.1) 0.32 m8 B (14.2) 0.16	0 D (48.9) 0.87	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7) 0.84	0.20 m0 B (15.7) 0.08	0.65 249 E (56.1) 0.94	C (24.4) D (40.7) 0.22	0.78 288 C (23.9) 0.10	120 C (23.1) 0.65	D (35.8) 0.94	#423 C (25.1) 0.37	
nchro Version 9.2.91 <u>05 notes:</u>	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs re	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Movement Approach Movement	0.85 m#120 Queue notes	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9) 0.95 #296	0 A (0.1) 0.32 m8 B (14.2) 0.16 m20	0 D (48.9) 0.87 #120	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7) 0.84 #236	0.20 m0 B (15.7) 0.08 0	0.65 249 E (56.1) 0.94 #201	C (24.4) D (40.7) 0.22	0.78 288 C (23.9) 0.10	120 C (23.1) 0.65	D (35.8) 0.94	#423 C (25.1) 0.37	
nchro Version 9.2.91 <u>05 notes:</u>	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs res	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) ported.	Movement Movement Approach Movement Movement Approach Movement Movement	0.85 m#120 Queue notes HCM metho	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9) 0.95 #296	0 A (0.1) 0.32 m8 B (14.2) 0.16 m20 not report qu	0 D (48.9) 0.87 #120	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7) 0.84 #236	0.20 m0 B (15.7) 0.08 0	0.65 249 E (56.1) 0.94 #201	C (24.4) D (40.7) 0.22	0.78 288 C (23.9) 0.10	120 C (23.1) 0.65	D (35.8) 0.94	#423 C (25.1) 0.37	
	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs res	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement	0.85 m#120 Queue notes HCM metho	0.94 #452 A (0.5) A (0.4) 0.50 m4 C (23.0) C (24.9) 0.95 #296	0 A (0.1) 0.32 m8 B (14.2) 0.16 m20 not report qu	0 D (48.9) 0.87 #120	0.57 179 A (4.4) A (3.8) 0.33 m84 C (25.8) C (28.7) 0.84 #236	0.20 m0 B (15.7) 0.08 0	0.65 249 E (56.1) 0.94 #201	C (24.4) D (40.7) 0.22	0.78 288 C (23.9) 0.10	120 C (23.1) 0.65	D (35.8) 0.94	#423 C (25.1) 0.37	

Table 5.9: 2020 Build 2 – SW 10th Street Intersection Analysis Results

m: Upstream metering is in effect

								AM M	ovement/Ap	proach LOS	(Delay)					Intersectio
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	l	AM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Dalara)	Movement		B (16.1)		D (53.2)	A (1.1)		E (56.6)		D (46.9)				
	NW 5th Terrace	LOS (Delay)	Approach		B (16.1)			A (5.2)	•		D (51.1)					D (14)
	Nw 5th Terrace	Volume to Capacity ratio	Movement		0.53		0.64	0.47		0.67		0.12				B (14.0
		Queue Length 95th (ft)	Movement		318		#154	27		170		64				
		LOS (Delay)	Movement	D (49.7)	A (2.0)			A (9.1)	A (4.4)				D (51.2)		D (47.0)	
	NW 5th Avenue	LOS (Delay)	Approach		A (3.8)			A (8.9)						D (49.6)		A (10.
	NW 5th Avenue	Volume to Capacity ratio	Movement	0.70	0.47			0.44	0.05				0.59		0.13	A (10.
		Queue Length 95th (ft)	Movement	#152	42			238	m4				130		64	
		LOS (Delay)	Movement		A (5.2)	A (1.5)		A (6.7)					B (20.0)		C (23.2)	
Sample Road	I-95 Southbound Off-	EOS (Delay)	Approach		A (3.8)			A (6.7)						C (21.6)		A (8.1
Sample Road	ramp	Volume to Capacity ratio	Movement		0.42	0.59		0.47					0.52		0.69	A (0.1
		Queue Length 95th (ft)	Movement		126	363		145					107		134	
		LOS (Delay)	Movement		A (5.0)			A (4.5)	A (0.2)	C (22.0)		C (21.4)				
	I-95 Northbound	EOS (Delay)	Approach		A (5.0)			A (3.7)			C (21.8)	-				A (7.6
	Ramps	Volume to Capacity ratio	Movement		0.37			0.62	0.29	0.62		0.56				11 (7.0
		Queue Length 95th (ft)	Movement		56			m143	m0	121		104				
		LOS (Delay)	Movement	E (67.5)	B (18.9)		E (56.4)	D (40.6)		D (37.6)	D (36.3)	C (32.2)	C (30.9)	D (37.0)	F (81.2)	
	NE 3rd Avenue	EOS (Delay)	Approach		C (31.5)			D (41.1)			D (36.3)			E (64.1)		D (41.
		Volume to Capacity ratio	Movement	0.91	0.49		0.49	0.87		0.63	0.43	0.04	0.28	0.44	0.98	D (III
		Queue Length 95th (ft)	Movement	#243	259		79	501		183	214	0	86	212	#526	
1 Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Intersec
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound			Northbound	1		Southbound	l	PM LC
	inter sections															(Delay
		(MOL)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(· · · ·)
			Movement	Left	Through B (18.2)	Right	Left E (72.1)	Through A (1.4)	Right	Left E (62.8)	Through	Right D (53.2)	Left	Through	Right	
	NW 5th Torrace	LOS (Delay)	Movement Approach	Left		Right		9	Right		Through E (57.9)		Left	Through	Right	
	NW 5th Terrace	LOS (Delay)		Left	B (18.2)	Right		A (1.4)	Right				Left	Through	Right	
	NW 5th Terrace	LOS (Delay)	Approach	Left	B (18.2) B (18.2)	Right	E (72.1)	A (1.4) A (8.8)	Right	E (62.8)		D (53.2)	Left	Through	Right	
	NW 5th Terrace	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement	Left	B (18.2) B (18.2) 0.59	Right	E (72.1) 0.87	A (1.4) A (8.8) 0.56	Right	E (62.8) 0.65		D (53.2)	Left 	Through	Right D (53.4)	
		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement		B (18.2) B (18.2) 0.59 389	Right	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30		E (62.8) 0.65		D (53.2)		Through 		B (15.
	NW 5th Terrace NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Movement		B (18.2) B (18.2) 0.59 389 A (1.6)	Right	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5)		E (62.8) 0.65		D (53.2)				B (15.
		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4)	Right	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8)	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7)		D (53.4)	B (15.
		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47	Right	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7)		D (53.4)	B (15.
Sample Poad		LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Movement Approach Movement Movement	E (55.7)	B (18.2) B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35		E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7) E (56.7) 0.54 112		D (53.4) 0.10 64	B (15.
Sample Road	NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Movement	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0)		E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8)	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7) E (56.7) 0.54 112	E (55.2)	D (53.4) 0.10 64	B (15. B (11. B (12.
Sample Road	NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7)	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8)	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7) E (56.7) 0.54 112 B (18.5)	E (55.2)	D (53.4) 0.10 64 C (25.4)	B (15.
Sample Road	NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Approach Movement	E (55.7)	B (18.2) B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) 0.72	A (5.2)	E (62.8) 0.65		D (53.2)	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45	E (55.2)	D (53.4) 0.10 64 C (25.4) 0.79	B (15.
Sample Road	NW 5th Avenue	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) 0.72 m226	A (5.2)	E (62.8) 0.65 152 		D (53.2) 0.08 57	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45	E (55.2)	D (53.4) 0.10 64 C (25.4) 0.79	B (15. B (11. B (12.
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (55.7)	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290 A (7.5)	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) 0.72 m226 A (9.0)	A (5.2)	E (62.8) 0.65 152 	E (57.9)	D (53.2) 0.08 57	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45	E (55.2)	D (53.4) 0.10 64 C (25.4) 0.79	B (15.
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Approach	E (55.7)	B (18.2) B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290 A (7.5) A (7.5)	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) 0.72 m226 A (9.0) A (7.5)	A (5.2) 0.17 m23 A (0.2)	E (62.8) 0.65 152 	E (57.9)	D (53.2) 0.08 57 C (20.8)	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45	E (55.2) C (22.5)	D (53.4) 0.10 64 C (25.4) 0.79	B (15. B (11. B (12.
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement	E (55.7)	B (18.2) B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290 A (7.5) A (7.5)	A (0.7)	E (72.1) 0.87	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) B (13.8) 0.72 m226 A (9.0) A (7.5) 0.65	A (5.2) 0.17 m23 A (0.2) 0.22	E (62.8) 0.65 152	E (57.9)	D (53.2) 0.08 57 C (20.8) 0.66	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45	E (55.2)	D (53.4) 0.10 64 C (25.4) 0.79	B (15. B (11. B (12.
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound Ramps	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement Approach Movement Movement	E (55.7) 0.82 #277	B (18.2) B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290 A (7.5) A (7.5) 61	A (0.7)	E (72.1) 0.87 #359	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) B (13.8) 0.72 m226 A (9.0) A (7.5) 0.65 267	A (5.2) 0.17 m23 A (0.2) 0.22	E (62.8) 0.65 152 D (45.1) 0.98 #338	E (57.9)	D (53.2) 0.08 57 C (20.8) 0.66 167	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45 111	E (55.2) C (22.5)	D (53.4) 0.10 64 C (25.4) 0.79 #196	B (15. B (11. B (12. B (16.
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	ApproachMovementMovementMovementApproachMovement	E (55.7) 0.82 #277	B (18.2) B (18.2) 0.59 389 A (1.6) A (5.4) 0.47 35 A (10.0) A (7.7) 0.56 290 A (7.5) 0.65 61 C (24.2)	A (0.7)	E (72.1) 0.87 #359	A (1.4) A (8.8) 0.56 30 B (11.5) B (10.8) 0.59 382 B (13.8) 0.72 m226 A (9.0) A (7.5) 0.65 267 D (37.2)	A (5.2) 0.17 m23 A (0.2) 0.22	E (62.8) 0.65 152 D (45.1) 0.98 #338	E (57.9)	D (53.2) 0.08 57 C (20.8) 0.66 167	E (56.7) E (56.7) 0.54 112 B (18.5) 0.45 111	E (55.2) C (22.5) E (57.4)	D (53.4) 0.10 64 C (25.4) 0.79 #196	B (15. B (11. B (12.

Table 5.10: 2020 Build 2 – Sample Road Intersection Analysis Results

el of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

	Signal Court II I	Maguna - CES- 4		AM Movement/Approach LOS (Delay)											Intersection	
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location	Eastbound			Westbound			Northbound			Southbound			AM LOS
	inter sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Dalay)	Movement	F (96.0)	C (25.2)		F (127.3)	C (27.6)	B (11.8)	E (74.4)	F (93.9)	E (60.6)	F (84.5)	F (84.4)	D (53.5)	
	SW 12th Avenue	LOS (Delay)	Approach		C (33.8)			D (39.8)			E (73.2)		E (74.1)			D (40.6)
	Sw 12th Avenue	Volume to Capacity ratio	Movement	0.91	0.73		0.98	0.55	0.43	0.30	0.77	0.29	0.36	0.35	0.02	D (40.6)
		Queue Length 95th (ft)	Movement	#525	827		#347	520	52	93	255	136	72	72	1	
		LOS (Delev)	Movement		A (0.1)	A (1.0)		C (22.3)					D (50.9)		D (42.0)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.5)			C (22.3)				•		D (45.8)		- D (10 (
	ramp	Volume to Capacity ratio	Movement		0.29	0.57		0.58					0.82		0.69	B (19
		Queue Length 95th (ft)	Movement		0	605		523					693		448	
Hillsboro Blvd.			Movement		B (10.5)			B (10.5)	A (0.4)	B (19.4)		C (27.5)				
	I-95 Northbound Off-	LOS (Delay)	Approach		B (10.5)			A (7.1)			C (24.2)			<u> </u>		
	ramp	Volume to Capacity ratio	Movement		0.54			0.63	0.56	0.30		0.76				B (12
		Queue Length 95th (ft)	Movement		345			m249	m0	98		282				1
			Movement	F (136.5)	B (14.3)	A (8.6)	F (88.4)	C (32.7)		F (532.4)	E (72.4)	E (69.5)	F (84.2)	F (83.3)	F (83.3)	
	SW Natura Blvd/Fairway Drive	LOS (Delay)	Approach		C (31.7)	(0.0)		C (34.9)			F (368.6)	(0)	- ((****)	F (83.6)	- (00.00)	F (80.4)
		Volume to Capacity ratio	Movement	1.07	0.56	0.08	0.64	0.76		1.99	0.39	0.11	0.52	0.07	0.06	
	5	Queue Length 95th (ft)	Movement	#666	382	m18	167	739		#1063	169	79	85	22	0	
M Peak		Quede Lengin 75 in (it)	ivio v enitent		562	mito	107	10)		11005	109	12	00	22	0	
								PM Ma	vement/An	nroach LOS	(Delay)					Intersec
A	Signal Controlled	Mesure of Effectiveness	Location		PM Movement/Approach LOS (Delay) Easthound Northbound						Southbound			mensee		
Arterial	0		Location		Easthound			Westhound			Northbound	1		Southbound	1	
Arterial	Intersections	(MOE)	Location	Left	Eastbound Through	Right		Westbound Through			Northbound Through			Southbound Through		
Arterial	0	(MOE)		Left F (69 3)	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
Arterial	0		Movement	Left E (69.3)	Through D (39.5)	Right		Through C (20.7)			Through E (56.5)			Through F (85.6)		
Arterial	0	(MOE) LOS (Delay)	Movement Approach	E (69.3)	Through D (39.5) D (40.2)	Right	Left F (172.4)	Through C (20.7) D (37.5)	Right A (1.1)	Left E (65.3)	Through E (56.5) F (159.0)	Right F (220.1)	Left F (84.7)	Through F (85.6) E (77.1)	Right E (64.7)	(Dela)
Arterial	Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91	Right	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86	Right A (1.1) 0.04	Left E (65.3) 0.70	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30	Left F (84.7) 0.91	Through F (85.6) E (77.1) 0.91	Right E (64.7) 0.81	(Dela)
Arterial	Intersections	(MOE) LOS (Delay)	Movement Approach Movement Movement	E (69.3)	Through D (39.5) D (40.2) 0.91 #873		Left F (172.4)	Through C (20.7) D (37.5) 0.86 538	Right A (1.1)	Left E (65.3)	Through E (56.5) F (159.0)	Right F (220.1)	Left F (84.7) 0.91 #415	Through F (85.6) E (77.1)	Right E (64.7) 0.81 #330	(Dela)
Arterial	Intersections SW 12th Avenue	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1)	Right A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6)	Right A (1.1) 0.04	Left E (65.3) 0.70	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30	Left F (84.7) 0.91	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81	(Dela)
Arterial	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2)	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6)	Right A (1.1) 0.04	Left E (65.3) 0.70	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30	Left F (84.7) 0.91 #415 D (47.9)	Through F (85.6) E (77.1) 0.91	Right E (64.7) 0.81 #330 C (29.1)	(Dela) E (56
Arterial	Intersections SW 12th Avenue	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Movement Approach Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78	Right A (1.1) 0.04	Left E (65.3) 0.70	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30	Left F (84.7) 0.91 #415 D (47.9) 0.88	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81 #330 C (29.1) 0.53	(Delay E (56
Arterial Hillsboro Blvd.	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704	Right A (1.1) 0.04 m1	Left E (65.3) 0.70 157	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30 #506	Left F (84.7) 0.91 #415 D (47.9)	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81 #330 C (29.1)	(Dela) E (56
	Intersections SW 12th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9)	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6)	Right A (1.1) 0.04	Left E (65.3) 0.70	Through E (56.5) F (159.0) 0.06 29	Right F (220.1) 1.30	Left F (84.7) 0.91 #415 D (47.9) 0.88	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81 #330 C (29.1) 0.53	(Dela) E (56
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Movement Approach	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9)	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6) A (8.8)	Right A (1.1) 0.04 m1 A (0.6)	Left E (65.3) 0.70 157 	Through E (56.5) F (159.0) 0.06	Right F (220.1) 1.30 #506 C (26.8)	Left F (84.7) 0.91 #415 D (47.9) 0.88	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81 #330 C (29.1) 0.53	(Dela) E (56 B (18
	Intersections SW 12th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9) 0.70	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6) A (8.8) 0.79	Right A (1.1) 0.04 m1 A (0.6) 0.51	Left E (65.3) 0.70 157 B (17.9) 0.37	Through E (56.5) F (159.0) 0.06 29	Right F (220.1) 1.30 #506 C (26.8) 0.81	Left F (84.7) 0.91 #415 D (47.9) 0.88	Through F (85.6) E (77.1) 0.91 #425	Right E (64.7) 0.81 #330 C (29.1) 0.53	(Dela) E (56 B (18
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	E (69.3) 0.56 #98 	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9) 0.70 263	A (0.5) 0.53 m0	Left F (172.4) 1.16 m#258	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) O.78 704 B (11.6) A (8.8) 0.79 m327	Right A (1.1) 0.04 m1 A (0.6)	Left E (65.3) 0.70 157 	Through E (56.5) F (159.0) 0.06 29 C (22.9)	Right F (220.1) 1.30 #506 C (26.8) 0.81 #240	Left F (84.7) 0.91 #415 D (47.9) 0.88 693	Through F (85.6) E (77.1) 0.91 #425 D (38.8)	Right E (64.7) 0.81 #330 C (29.1) 0.53 277	(Dela E (56 B (18
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement	E (69.3) 0.56	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9) 0.70 263 C (23.5)	A (0.5)	Left F (172.4) 1.16	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6) A (8.8) 0.79 m327 C (28.7)	Right A (1.1) 0.04 m1 A (0.6) 0.51	Left E (65.3) 0.70 157 B (17.9) 0.37	Through E (56.5) F (159.0) 0.06 29 C (22.9) C (22.9) D (48.5)	Right F (220.1) 1.30 #506 C (26.8) 0.81	Left F (84.7) 0.91 #415 D (47.9) 0.88	Through F (85.6) E (77.1) 0.91 #425 D (38.8) D (38.8) D (38.8)	Right E (64.7) 0.81 #330 C (29.1) 0.53	(Dela) E (56 B (18
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp SW Natura	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement	E (69.3) 0.56 #98 F (110.0)	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9) C (23.5) C (25.4)	A (0.5) 0.53 m0 B (12.6)	Left F (172.4) 1.16 m#258	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6) A (8.8) 0.79 m327 C (28.7) C (34.9)	Right A (1.1) 0.04 m1 A (0.6) 0.51	Left E (65.3) 0.70 157 	Through E (56.5) F (159.0) 0.06 29	Right F (220.1) 1.30 #506 C (26.8) 0.81 #240 D (49.1)	Left F (84.7) 0.91 #415 D (47.9) 0.88 693 0.88 693 D (46.9)	Through F (85.6) E (77.1) 0.91 #425 D (38.8) D (38.8) D (48.9) E (64.4)	Right E (64.7) 0.81 #330 C (29.1) 0.53 277 E (73.9)	(Delay E (56 B (18 B (12
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Movement Movement Movement Movement Movement Movement Movement Movement	E (69.3) 0.56 #98 	Through D (39.5) D (40.2) 0.91 #873 A (0.1) A (0.2) 0.41 m0 B (10.9) B (10.9) 0.70 263 C (23.5)	A (0.5) 0.53 m0	Left F (172.4) 1.16 m#258	Through C (20.7) D (37.5) 0.86 538 C (31.6) C (31.6) 0.78 704 B (11.6) A (8.8) 0.79 m327 C (28.7)	Right A (1.1) 0.04 m1 A (0.6) 0.51	Left E (65.3) 0.70 157 	Through E (56.5) F (159.0) 0.06 29 C (22.9) C (22.9) D (48.5)	Right F (220.1) 1.30 #506 C (26.8) 0.81 #240	Left F (84.7) 0.91 #415 D (47.9) 0.88 693	Through F (85.6) E (77.1) 0.91 #425 D (38.8) D (38.8) D (38.8)	Right E (64.7) 0.81 #330 C (29.1) 0.53 277	PM LC (Delay E (56 B (18 B (12 D (38

Table 5.11: 2040 Build 2 – Hillsboro Boulevard Intersection Analysis Results

		M CTICC (AM Movement/Approach LOS (Delay) Inter											Intersecti	
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location	Eastbound			Westbound			Northbound			Southbound			AM LOS
		(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
	South Military Trail		Movement	D (54.9)	D (52.2)	C (24.2)	D (43.4)	D (40.0)	B (15.9)	E (59.0)	E (75.5)	D (53.3)	E (79.7)	D (42.3)	A (0.3)	
		LOS (Delay)	Approach		D (50.7)			C (33.7)			E (64.4)			D (46.3)		D (48.5)
		Volume to Capacity ratio	Movement	0.70	0.91	0.09	0.62	0.81	0.51	0.61	0.97	0.89	0.94	0.62	0.20	
		Queue Length 95th (ft)	Movement	#238	#516	24	175	454	306	120	#447	#385	#324	298	0	
			Movement	B (13.4)	A (2.4)	A (2.0)	C (27.0)	A (5.3)	A (5.2)			C (22.1)			B (19.8)	
	East Newport Center	LOS (Delay)	Approach		A (3.8)		. ,	A (9.0)			C (22.1)			B (19.8)		-
	Drive	Volume to Capacity ratio		0.38	0.49	0.49	0.56	0.40	0.34			0.04			0.08	A (7.1
		Queue Length 95th (ft)	Movement	m78	m57	m32	138	64	42			17			21	
			Movement		C (30.4)	A (0.3)	D (43.9)	A (7.2)					D (38.1)		D (43.9)	
	I-95 Southbound Off-	LOS (Delay)	Approach		C (23.8)	()	- ()	B (16.5)			<u> </u>		- (0000)	D (41.6)	- ()	
SW 10th Street	ramp	Volume to Capacity ratio	Movement		0.69	0.25	0.55	0.57					0.36	_ (0.68	C (23.
	1	Queue Length 95th (ft)	Movement		241	0	275	212					162		290	
			Movement		A (1.7)	A (0.1)	270	A (3.3)	A (0.2)	D (44.1)		D (44.0)	102		250	
	I-95 Northbound	LOS (Delay)	Approach		A (1.3)	<i>I</i> I (0.1)		A (2.8)	n(0.2)	D (++.1)	D (44.0)	D (44.0)				
	Ramps	Volume to Capacity ratio	Movement		0.45	0.16		0.34	0.18	0.54	D (11.0)	0.52				B (11.3)
	rumps		Movement		11	0.10		54	m0	207		189				
		Queue Length 95th (It)	Movement	D (38.8)	A (8.4)	A (6.1)	C (28.7)	C (20.6)	B (12.8)	D (46.3)	C (27.6)	C (26.5)	C (29.9)	D (41.9)	C (26.3)	
	FAU Research Park Boulevard	LOS (Delay)		D (38.8)		A (0.1)	C (20.7)		B (12.8)	D (40.3)	D (36.5)	C (20.3)	C (29.9)	. ,	C (20.5)	C (20.8)
		Walana ta Canadita astia	Approach	0.71	B (11.9) 0.62	0.18	0.38	C (20.7) 0.77	0.05	0.87	0.39	0.08	0.74	C (31.0) 0.77	0.21	
			Movement	#86		9		237	0.03			0.08				
		Queue Length 95th (ft)	Movement	#80	114	9	41	237	0	#166	53	0	#132	#152	48	
l Peak	I															
	Signal Controlled	Mesure of Effectiveness	Location	PM Movement/Approach LOS (Delay)										Intersec		
Arterial	Intersections	(MOE)			Eastbound			Westbound			Northbound			Southbound	1	PM LC
	incer sections			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
	South Military Trail	LOS (Delay)	Movement	F (104.3)	D (45.7)	C (28.1)	D (44.1)	D (52.6)	B (18.0)	F (103.1)	F (85.3)	C (31.2)	F (89.2)	F (85.0)	A (0.1)	
			Approach		E (55.8)			D (44.1)			E (70.6)	-		E (57.8)		D (54.2)
	South Williary Trail	Volume to Capacity ratio	Movement	0.99	0.76	0.13	0.61	1.01	0.53	0.90	0.95	0.41	0.95	1.00	0.39	
		Queue Length 95th (ft)	Movement	#285	411	23	288	#917	194	#158	#361	147	#310	#533	0	
		LOS (Delay)	Movement	B (16.5)	A (2.6)	A (0.1)	B (13.1)	A (6.6)	A (5.6)			C (24.1)			C (25.9)	
	East Newport Center		Approach		A (3.1)			A (6.9)			C (24.1)			C (25.9)		P (10
	Drive	Volume to Capacity ratio	Movement	0.07	0.58	0.05	0.12	0.55	0.06			0.52			0.82	B (10.2
		Queue Length 95th (ft)	Movement	m13	m56	m0	m30	182	m15			112			149	
		LOS (Delay)	Movement		C (29.5)	A (0.4)	D (50.7)	A (5.8)					D (47.6)		D (53.6)	
	I-95 Southbound Off-		Approach		C (23.4)			B (18.1)			•	•		D (51.3)		- C (24.5
CWV 1041 Cturest	1-95 Southbound Off-	1	Approach		()			D (10.1)					0.33		0.67	
SW 10th Street	1-95 Southbound Off- ramp	Volume to Capacity ratio	Movement		0.74	0.32	0.52	0.45					0.55			
SW 10th Street						0.32	0.52 326	. ,					134		245	
SW 10th Street		Queue Length 95th (ft)	Movement		0.74			0.45 189	A (0.2)	D (43.1)		D (50.3)			245	
SW 10th Street	ramp		Movement Movement Movement		0.74 313 A (0.9)	0		0.45 189 A (4.4)	A (0.2)	D (43.1)	D (47.3)	D (50.3)			245	
SW 10th Street		Queue Length 95th (ft) LOS (Delay)	Movement Movement Movement Approach		0.74 313 A (0.9) A (0.6)	0 A (0.1)		0.45 189 A (4.4) A (3.8)	A (0.2)	D (43.1)	D (47.3)	D (50.3)			245	B (11
SW 10th Street	ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Movement Approach Movement		0.74 313 A (0.9) A (0.6) 0.51	0		0.45 189 A (4.4) A (3.8) 0.34	0.20	0.37	D (47.3)	0.71			245	B (11
SW 10th Street	ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement	D (47.3)	0.74 313 A (0.9) A (0.6) 0.51 5	0 A (0.1) 0.23 0	326	0.45 189 A (4.4) A (3.8) 0.34 73	0.20 m0	0.37 158		0.71 297	134	E (57.0)		B (11
SW 10th Street	ramp I-95 Northbound Ramps	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Movement	D (47.3)	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7)	0 A (0.1) 0.23		0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0)	0.20	0.37	C (26.6)	0.71		E (57.0)	245 C (27.2)	
SW 10th Street	ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach		0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7)	0 A (0.1) 0.23 0 B (13.2)	326 D (48.4)	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9)	0.20 m0 B (16.5)	0.37 158 D (51.9)	C (26.6) D (39.6)	0.71 297 C (26.1)	134 C (22.1)	C (34.4)	C (27.2)	B (11)
SW 10th Street	ramp I-95 Northbound Ramps	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement	0.86	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7) 0.93	0 A (0.1) 0.23 0 B (13.2) 0.16	326 D (48.4)	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9) 0.82	0.20 m0 B (16.5) 0.08	0.37 158 D (51.9) 0.91	C (26.6) D (39.6) 0.22	0.71 297 C (26.1) 0.10	134 C (22.1) 0.60	C (34.4) 0.90	C (27.2)	
	ramp I-95 Northbound Ramps FAU Research Park Boulevard	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach		0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7)	0 A (0.1) 0.23 0 B (13.2)	326 D (48.4)	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9)	0.20 m0 B (16.5)	0.37 158 D (51.9)	C (26.6) D (39.6)	0.71 297 C (26.1)	134 C (22.1)	C (34.4)	C (27.2)	
nchro Version 9.2.914	ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement	0.86 #139	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7) 0.93 #302	0 A (0.1) 0.23 0 B (13.2) 0.16	326 D (48.4)	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9) 0.82	0.20 m0 B (16.5) 0.08	0.37 158 D (51.9) 0.91	C (26.6) D (39.6) 0.22	0.71 297 C (26.1) 0.10	134 C (22.1) 0.60	C (34.4) 0.90	C (27.2)	
nchro Version 9.2.914 <u>S notes:</u>	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs re	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement	0.86 #139 Queue notes	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7) 0.93 #302	0 A (0.1) 0.23 0 B (13.2) 0.16 18	326 D (48.4) 0.85 #125	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9) 0.82 248	0.20 m0 B (16.5) 0.08 2	0.37 158 D (51.9) 0.91 #217	C (26.6) D (39.6) 0.22	0.71 297 C (26.1) 0.10	134 C (22.1) 0.60	C (34.4) 0.90	C (27.2)	
nchro Version 9.2.914 <u>S notes:</u>	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs re	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) ported.	Movement Movement Approach Movement Movement Approach Movement Movement	0.86 #139 Queue notes HCM metho	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7) 0.93 #302 : dology does	0 A (0.1) 0.23 0 B (13.2) 0.16 18 not report qu	326 D (48.4) 0.85 #125	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9) 0.82 248 are from Syn	0.20 m0 B (16.5) 0.08 2	0.37 158 D (51.9) 0.91 #217	C (26.6) D (39.6) 0.22	0.71 297 C (26.1) 0.10	134 C (22.1) 0.60	C (34.4) 0.90	C (27.2)	
nchro Version 9.2.914	ramp I-95 Northbound Ramps FAU Research Park Boulevard 4.6. HCM 2000 MOEs ress :Level of service (LOS)	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Movement Approach Movement Movement Approach Movement Movement	0.86 #139 Queue notes HCM metho	0.74 313 A (0.9) A (0.6) 0.51 5 C (23.7) C (25.7) 0.93 #302 : dology does xceeds capac	0 A (0.1) 0.23 0 B (13.2) 0.16 18 not report queity, queue is	326 D (48.4) 0.85 #125	0.45 189 A (4.4) A (3.8) 0.34 73 C (26.0) C (28.9) 0.82 248 are from Syn	0.20 m0 B (16.5) 0.08 2	0.37 158 D (51.9) 0.91 #217	C (26.6) D (39.6) 0.22	0.71 297 C (26.1) 0.10	134 C (22.1) 0.60	C (34.4) 0.90	C (27.2)	

Table 5.12: 2040 Build 2 – SW 10th Street Intersection Analysis Results

								AM M	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location	Eastbound				Westbound	•	1	Northbound	[Southbound			AM LOS
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement		B (16.9)	_	E (69.5)	A (1.4)		E (57.1)		D (46.4)				
	NIW 541 Tamara	LOS (Delay)	Approach		B (16.9)			A (7.0)			D (51.0)				1	B (15.2)
	NW 5th Terrace	Volume to Capacity ratio	Movement		0.60		0.79	0.51		0.69		0.13				
		Queue Length 95th (ft)	Movement		376		#237	32		181		65				
		LOS (Delay)	Movement	E (58.4)	A (2.2)			A (9.8)	A (4.2)				D (51.2)		D (47.0)	- B (10.4
	NW 5th Avenue	LOS (Delay)	Approach		A (4.4)			A (9.5)						D (49.5)		
	Nw 5th Avenue	Volume to Capacity ratio	Movement	0.78	0.53			0.49	0.06				0.61		0.22	
		Queue Length 95th (ft)	Movement	m#173	46			278	m5				140		81	
		LOS (Delay)	Movement		A (6.0)	A (2.0)		A (7.6)					C (20.4)		C (26.7)	
Sample Road	I-95 Southbound Off-	Eos (Beiny)	Approach		A (4.5)			A (7.6)						C (23.7)		A (9.
Sample Road	ramp	Volume to Capacity ratio	Movement		0.47	0.67		0.51					0.58		0.79	А ().
		Queue Length 95th (ft)	Movement		157	466		160					123		#182	
		LOS (Delay)	Movement		A (6.3)			A (7.0)	A (0.2)	C (22.6)		C (22.1)				A (9.2)
	I-95 Northbound		Approach		A (6.3)			A (5.4)			C (22.4)					
	Ramps	Volume to Capacity ratio	Movement		0.44			0.66	0.38	0.68		0.64				
		Queue Length 95th (ft)	Movement		75			m157	m0	143		126				
	NE 3rd Avenue	LOS (Delay)	Movement	F (86.8)	C (21.0)		E (58.0)	D (54.8)		D (41.3)	D (36.1)	C (31.9)	C (30.3)	D (36.9)	F (111.2)	D (52.0)
		LOS (Delay)	Approach		D (37.2)			D (54.9)			D (37.8)			F (83.1)		
	THE STU TEVENUE	Volume to Capacity ratio	Movement	1.00	0.61		0.55	0.98		0.72	0.45	0.05	0.32	0.45	1.08	
		Queue Length 95th (ft)	Movement	#280	299		91	#619		#220	225	0	98	222	#611	
Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Interse
Arterial	Signal Controlled	Mesure of Effectiveness (MOE)	Location	Eastbound				Westbound			Northbound	l	Southbound			PM LO
	Intersections			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement		$D_{(10,1)}$							D (52.6)				
		LOC (Dalary)	into i enneme		B (19.1)		F (94.3)	A (2.0)		E (63.3)		D (32.0)				
	NW 5th Torrage	LOS (Delay)	Approach		B (19.1) B (19.1)		F (94.3)	A (2.0) B (11.0)		E (63.3)	E (57.8)	D (32.6)				D (14
	NW 5th Terrace				. ,		F (94.3) 0.95	. ,		E (63.3) 0.67	E (57.8)	D (32.6)		<u> </u>		В (16
	NW 5th Terrace		Approach		B (19.1)			B (11.0)			E (57.8)					B (16
	NW 5th Terrace	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement	F (105.7)	B (19.1) 0.64		0.95	B (11.0) 0.64	A (5.7)	0.67	E (57.8)	0.08	E (56.7)		D (52.7)	B (16
		Volume to Capacity ratio	Approach Movement Movement	F (105.7)	B (19.1) 0.64 443		0.95	B (11.0) 0.64 42	A (5.7)	0.67	E (57.8)	0.08	E (56.7)	D (54.9)	D (52.7)	
	NW 5th Terrace NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement	F (105.7)	B (19.1) 0.64 443 A (1.8)		0.95	B (11.0) 0.64 42 B (12.3)	A (5.7)	0.67	E (57.8)	0.08	E (56.7) 0.57	D (54.9)	D (52.7)	
		Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach		B (19.1) 0.64 443 A (1.8) A (9.1)		0.95	B (11.0) 0.64 42 B (12.3) B (11.6)		0.67	E (57.8)	0.08		D (54.9)		
		Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52	A (0.9)	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65	0.20	0.67	E (57.8)	0.08	0.57	D (54.9)	0.11	
Gaurala Dava d		Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38	A (0.9)	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450	0.20	0.67	E (57.8)	0.08	0.57 122	D (54.9)	0.11 65	B (13
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7)	A (0.9)	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7)	0.20	0.67	E (57.8)	0.08	0.57 122		0.11 65	B (13
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0)		0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7)	0.20	0.67	E (57.8)	0.08	0.57 122 B (18.7)		0.11 65 C (33.1)	B (13
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Approach Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61	0.47	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81	0.20	0.67	E (57.8)	0.08	0.57 122 B (18.7) 0.52		0.11 65 C (33.1) 0.90	B (13
Sample Road	NW 5th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295	0.47	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276	0.20 m12	0.67 164	E (57.8)	0.08 58	0.57 122 B (18.7) 0.52		0.11 65 C (33.1) 0.90	B (12 B (14
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295 B (17.6)	0.47	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276 B (15.9)	0.20 m12	0.67 164		0.08 58	0.57 122 B (18.7) 0.52		0.11 65 C (33.1) 0.90	B (13 B (14
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295 B (17.6) B (17.6)	0.47	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276 B (15.9) B (12.8)	0.20 m12 A (0.2)	0.67 164		0.08 58 C (30.1)	0.57 122 B (18.7) 0.52		0.11 65 C (33.1) 0.90	B (13 B (14
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	ApproachMovementMovementMovementApproachMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovementMovement	1.03	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295 B (17.6) B (17.6)	0.47	0.95	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276 B (15.9) B (12.8) 0.73	0.20 m12 A (0.2) 0.29	0.67 164 D (38.0) 0.83		0.08 58 C (30.1)	0.57 122 B (18.7) 0.52		0.11 65 C (33.1) 0.90	B (13 B (14
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound Ramps	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Approach Movement Movement Movement Movement	1.03 #334	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295 B (17.6) B (17.6) 396	0.47	0.95 #396	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276 B (15.9) B (12.8) 0.73 m232	0.20 m12 A (0.2) 0.29	0.67 164 D (38.0) 0.83 513	C (35.0)	0.08 58 C (30.1)	0.57 122 B (18.7) 0.52 136	C (27.0)	0.11 65 C (33.1) 0.90 #276	B (16 B (13 B (14 C (21
Sample Road	NW 5th Avenue I-95 Southbound Off- ramp I-95 Northbound	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	ApproachMovementMovementMovementApproachMovement	1.03 #334	B (19.1) 0.64 443 A (1.8) A (9.1) 0.52 38 B (10.7) A (8.0) 0.61 295 B (17.6) B (17.6) C (26.7)	0.47	0.95 #396	B (11.0) 0.64 42 B (12.3) B (11.6) 0.65 450 B (13.7) B (13.7) 0.81 276 B (15.9) B (12.8) 0.73 m232 D (39.4)	0.20 m12 A (0.2) 0.29	0.67 164 D (38.0) 0.83 513	C (35.0) E (60.4)	0.08 58 C (30.1)	0.57 122 B (18.7) 0.52 136	C (27.0)	0.11 65 C (33.1) 0.90 #276	B (13 B (14

Table 5.13: 2040 Build 2 – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations

~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect



Tables 5.14 summarizes the results of the off-ramp signals back of queue analyses for the AM and PM peak hours for 2040 Build 2 conditions. HCM methodology does not provide queue lengths. The 95th percentile queues were obtained from Synchro reports. The Synchro reported queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. The results present the queue length in feet for each lane group movement. The available storage length was calculated from the stop bar at the ramp terminal intersection to the gore with I-95 mainline minus 615 feet for the required stopping distance for a design speed of 70 mph per FDOT's 2016 Greenbook (Table 3-22), and accounting for the changes in number of lanes. The analysis indicates that the queues on the off-ramps are not expected to exceed the available storage lengths and are not likely to affect the I-95 mainline operations.

Intersection	Approach	Movement	Available	Queue (ft)		
Intersection	Approach	wovement	Storage (ft)	AM	РМ	
2040 Build 2						
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	L (EB)	1,255	693	693	
	Southbound	R (WB)	1,550	789	488	
Hillsboro Boulevard at I-95 NB Off-Ramp	Northbound	L (WB)	2,965	276	274	
	UNDURIDUUIU	R (EB)	2,615	496	#422	
SW 10 th Street at I-95 SB Off-Ramp	Southbound	L (EB)	2,615	400	299	
SW 10 ^{er} Sueel at 1-95 SB Oll-Rallip	Southbound	R (WB)	2,615	561	#486	
SW 10 th Street at I-95 NB Off-Ramp	Northbound	L (WB)	2,240	643	522	
SW 10 th Street at 1-95 NB Oll-Ramp	Northbourid	R (EB)	2,240	440	659	
Sample Deed at LOE SD Off Dema	Couthbound	L (EB)	1,010	239	264	
Sample Road at I-95 SB Off-Ramp	Southbound	R (WB)	1,010	#320	#486	
Sample Read at LOE NR Off Roma	Northbound	L (WB)	1,095	277	995	
Sample Road at I-95 NB Off-Ramp	מחשטמושוטאו	R (EB)	1,095	222	540	

Table 5.14: 2040 Build 2 – Off-Ramp Signals Queuing Analysis Results

Queue Notes:

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. Queue lengths exceeding the available storage are shown in Red.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310+ (295*2)] = 1,552.5$ feet rounded to 1,550 feet.

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5.6 Build 2A Alternative – Traffic Operational Analysis

The proposed improvements under Build 2A are similar to Build 1 and Build 2 and are expected to provide better operating conditions than the No-Build conditions. They are also likely to prevent any spillbacks from the ramp terminals on to the mainline and improve safety by reducing congestion and the number of conflict points.

5.6.1 2020 & 2040 – Freeway Analysis – I-95

The mainline/basic, weaving, and ramp merge/diverge analysis results for Opening Year 2020 are summarized on **Figures 5.20** and **5.21** for the NB and SB directions, respectively. **Figures 5.22** and **5.23** summarize the Design Year 2040 analysis results for NB and SB directions, respectively. Documentation of the Build 2A Alternative traffic freeway operational analysis is provided in **Appendix O**. The Design Year 2040 Build 2A Alternative analysis indicates that 3 of the 14 freeway segments in the NB direction are projected to operate at LOS E or F during one or both peak hours. In the SB direction, 2 of the 14 freeway segments are projected to operate at LOS E or F during one or both peak hours.

5.6.2 2020 & 2040 - Intersection Analysis

Tables 5.15 through **5.17** summarize the results of the 2020 Build 2A signalized intersection analyses for the AM and PM peak hours for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. **Tables 5.18** through **5.20** summarize the results of the 2040 Build 2A signalized intersection analyses for Hillsboro Boulevard, SW 10th Street, and Sample Road intersections, respectively. Signal timing was optimized for all intersections. The results include delays (in seconds per vehicle) and LOS by movement, approach, and the overall intersection. The volume to capacity (v/c) ratios and 95th percentile queue lengths have also been summarized by movement. **Appendix P** presents the intersection analysis worksheets. The intersection analysis results indicate the following for the 2040 Design Year:

- Hillsboro Boulevard: Two of the four signalized intersections are expected to operate at LOS E or worse during the AM or PM peak hours. The I-95 NB and SB off-ramp intersections are expected to operate at LOS D or better during both the AM and PM peak hours.
- SW 10th Street: One of the five signalized intersections is expected to operate at LOS E during the AM peak hour. The I-95 NB and SB off-ramp approaches are expected to operate at LOS E or better during both peak hours.
- Sample Road: All five signalized intersections including the I-95 NB and SB off-ramp approaches are expected to operate at LOS D or better during both peak hours.

Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)	
Basic Freeway	5,890 (5,280)	C (23.0)	C (20.3)	
Weave - Hillsboro Boulevard EB & WB to I-95 Express Lanes	6,660 (6,200)	D (30.7)	D (28.3)	Exit to Exp Lane 770 (920) vph 13 12 12 12 12 12 12 12 12 12 12
Basic Freeway	5,410 (4,970)	C (20.9)	C (19.0)	Entry from Hillsboro EB & WB 1,250 (1,230) vph [125 (125) to Exp]
Lane Add from SW 10th St EB & WB*	5,410 (4,970)	Under Capacity v/c: u/s, Ramp, d/s 0.61, 0.65, 0.60	Under Capacity v/c: u/s, Ramp, d/s 0.51, 0.79, 0.55	1 2 1 2 4 Exit to Hillsboro Bivd EB & WB 1.250 (1.230) vph
Basic Freeway	4,120 (3,410)	C (21.2)	B (17.3)	1 2 3 1
Diverge to Hillsboro Blvd EB & WB	5,370 (4,640)	E (35.0)	D (31.9)	
	SW 10th S	ess SW 10th Street - 180 (Street		
Eastbound SW Basic Freeway	5,370 (4,640)	rthbound Express - 1,120 D (29.8)	C (24.4)	
Major Diverge to SW 10th Street EB & WB	6,360 (5,650)	D (29.7)	C (26.4)	
Basic Freeway	6,360 (5,650)	C (25.3)	C (21.9)	112 1123 250 (330) vph
Diverge from GP Lane to WB 10th St Ex Lane	6,610 (5,980)	D (30.3)	D (28.2)	1 1 2 1 3 4 1 2 1 2 1 3 4 1 2 1 3 1 1 3 1 3 1 1 3 1 3 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Merge from I-95 Express Lanes	6,610 (5,980)	C (25.4)	C (22.5)	Merge from Exp Lane 710 (620) vph
Lane Add from Sample Road WB*	5,900 (5,360)	Under Capacity v/c: u/s, Ramp, d/s 0.69, 0.63, 0.66	Under Capacity v/c: u/s, Ramp, d/s 0.65, 0.49, 0.60	
Basic Freeway	4,660 (4,400)	C (24.6)	C (22.9)	Exit to Sample Rd EB & WB
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	5,450 (5,960)	C (26.8)	D (32.5)	1 1

Figure 5.20: 2020 Build 2A Freeway Analysis Results - Northbound

Freeway GPL Vol PM LOS/Density AM LOS/Density Segment AM (PM) vph (PC/MI/LN) (PC/MI/LN) 13 700' **Basic Freeway** 4,560 (4,530) B (17.4) B (17.3) 1 Merge From Exp Lane 1,080 (1,080) vph Weave - I-95 Express [110 (110) Exit to Hillsboro] Lanes to Hillsboro 5,640 (5,610) C (25.3) C (25.2) 5,200' 2 ł Boulevard EB & WB -Exit to Hillsboro Blvd EB & WB 1,200 (1,040) vph 11213 11; 1,060' **Basic Freeway** 4,440 (4,570) C (23.1) C (24.0) 3 | | | | Entry from Hillsboro Blvd EB & WB 1,310 (1,470) vph 12 112 Diverge to 4,440 (4,570) D (31.5) D (31.5) 1,500' A SW 10th St EB & WB 200' 112 12 2400' 3,000 (3,360) B (17.1) i **Basic Freeway** B (15.3) 5 ł 1 1 300' 2 1 2 Merge from 1,500' 4,310 (4,830) D (28.8) D (31.8) 6 Hillsboro Blvd EB & WB i. 1 2 Exit to SW 10th St EB & WB 2500' 960 (620) vph plus 7 Exit to WB Exp 480 (590) SB Exp to WB 510 (760) vph **Basic Freeway** 4,310 (4,830) C (22.3) C (25.7) EB to SB Exp 330 (170) vph 1 2 3 н Entry from SW 10th St EB & WB 960 (1,180) vph н I ł L. Under Capacit Under Capacity Lane Add Merge from 8 5,270 (6,010) v/c: u/s, Ramp, d/s v/c: u/s, Ramp, d/s SW 10th St EB & WB* 0.64, 0.49, 0.59 0.72, 0.60, 0.67 2! 3! 1 I 2,400' Entry from EB Ex to SB GP 9 **Basic Freeway** 5,270 (6,010) C (20.3) C (23.6) 320 (300) vph 3 1 1 600 Merge from EB Ex to SB 10 5,590 (6,310) C (21.9) C (24.2) GP Lane 213 11 1,150' I ł 1 **11** 2' 3' 4 Exit to Express Diverge to 200' 620 (670) vph 1 5,590 (6,310) D (30.7) D (34.2) I-95 Express Lanes н <u>1i 2</u> T 2 3 Diverge - Lane Drop to 4,970 (5,640) C (26.4) 3,200' C (23.2) 12 Sample Road EB & WB Т I. Exit to Sample Rd EB & WB 870 (1,080) vph 1 3,200' 4,100 (4,560) C (21.1) C (23.9) **Basic Freeway** 13 L I Entry from Sample Rd EB & WB 1,770 (1,380) vph Weave - Entry Sample 2,520' Road EB to Exit Copans 5,870 (5,940) F (N/A) D (32.5) 1 Road WB Exit to Copans Road WB GPL: General Purpose Lane

Figure 5.21: 2020 Build 2A Freeway Analysis Results - Southbound

* u/s= Up Stream, d/s= Down Stream

615 (645) vph

Segment	Freeway GPL Vol AM (PM) vph	AM LOS/Density (PC/MI/LN)	PM LOS/Density (PC/MI/LN)] ;		
Basic Freeway	6,190 (5,610)	C (24.4)	C (21.7)	3,800 (2,700)		4
Weave - Hillsboro Boulevard EB & WB to I-95 Express Lanes	7,230 (6,740)	E (36.0)	D (32.7)		1 3 1,2,3	Exit to Exp Lane 1,040 (1,130) vph
Basic Freeway	5,890 (5,350)	C (23.0)	C (20.6)	1 1 1	<u>12</u>	Entry from Hillsboro EB & WB 1,340 (1,390) vph [290 (245) to Exp 4
Lane Add from SW 10th St EB & WB*	5,890 (5,350)	Under Capacity v/c: u/s, Ramp, d/s 0.63, 0.83, 0.66	Under Capacity v/c: u/s, Ramp, d/s 0.53, 0.91, 0.60	1,2	11 1 2 3	4 Exit to Hillsboro Blvd EB & WB 1,370 (1,360) vph
Basic Freeway	4,250 (3,550)	C (22.0)	C (18.1)	2 - <u>-</u>	<u>1, 2, 3</u> <u>1, 0</u> <u>1, 2, 3</u> <u>1, 2, 3</u>	Entry from SW 10th SL EB & WB (Incl Exp) 1,640 (1,800) vph
Diverge to Hillsboro Blvd EB & WB	5,620 (4,910)	E (36.3)	D (33.4)	11 2	9 11 21 3	200'
	SW 10th S	ess SW 10th Street - 220 (Street rthbound Express - 1,490				
Basic Freeway	5,620 (4,910)	D (32.0)	D (26.3)			Exit to SW 10th St. EB & WB
Major Diverge to SW 10th Street EB & WB	6,860 (6,110)	D (32.1)	D (28.6)	112	7 1 2 3	
Basic Freeway	6,860 (6,110)	D (28.0)	C (24.1)	112	6 <u>1 2 3</u>	Exit to WB 10th St Ex Lane 310 (420) vph
Diverge from GP Lane to WB 10th St Ex Lane	7,170 (6,530)	D (32.8)	D (30.8)	_1,490 (1,290)_	5 11 21 3	4
Merge from I-95 Express Lanes	7,170 (6,530)	D (28.2)	C (25.1)			Merge from Exp Lane 860 (730) vph
Lane Add from Sample Road WB*	6,310 (5,800)	Under Capacity v/c: u/s, Ramp, d/s 0.72, 0.74, 0.70	Under Capacity v/c: u/s, Ramp, d/s 0.69, 0.59, 0.65			
Basic Freeway	4,840 (4,640)	C (25.8)	C (24.4)	Express Lanes	1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3	Entry from Sample Road EB & WB 1,470 (1,160) vph Exit to Sample Rd EB & WB 980 (1,820) vph
Weave - Entry Copans Road WB to Exit Sample Road EB & WB	5,820 (6,460)	D (29.7)	F (N/A)	2,350 (2,020)	11 21 31 11 21 31 11 21 31 11 21 31 11 21 31	

Figure 5.22: 2040 Build 2A Freeway Analysis Results - Northbound

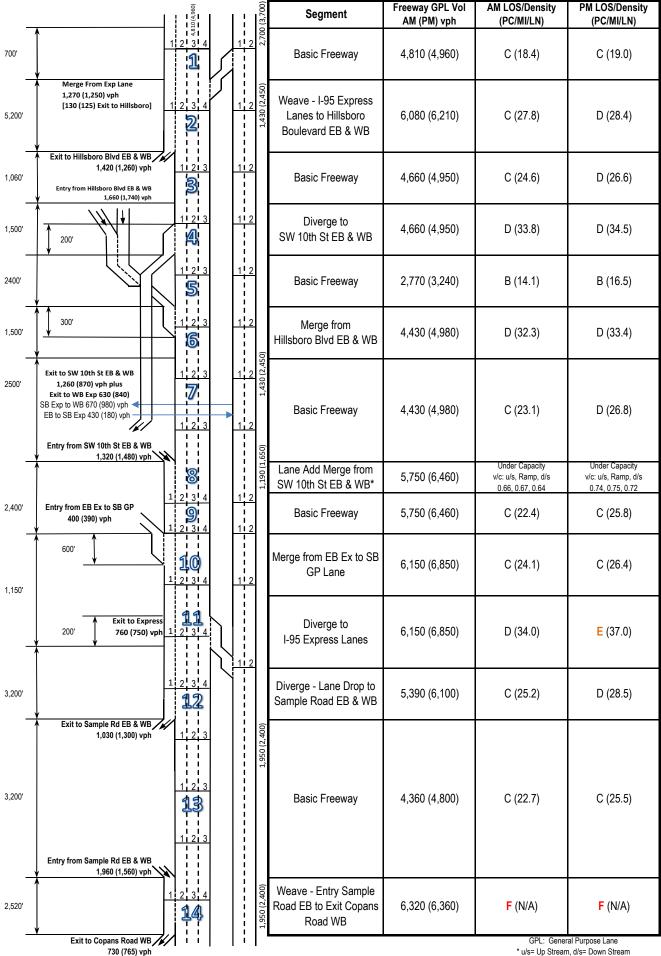


Figure 5.23: 2040 Build 2A Freeway Analysis Results - Southbound

* u/s= Up Stream, d/s= Down Stream

Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)							ovement/Ap	proach LOS	(Delay)					Intersecti
			Location		Eastbound			Westbound	l		Northbound	ł		Southbound	l	AM LO
		(Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delev)	Movement	F (87.5)	C (21.2)		F (102.4)	B (18.8)	B (15.0)	E (65.9)	F (82.0)	D (53.6)	E (74.4)	E (74.3)	D (49.8)	
		LOS (Delay)	Approach		C (29.0)			C (30.1)			E (65.8)			E (66.2)		C (22
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.88	0.67		0.96	0.52	0.37	0.27	0.75	0.12	0.28	0.28	0.01	C (33
		Queue Length 95th (ft)	Movement	#430	639		#278	272	83	77	224	64	57	57	0	
		LOS (Delay)	Movement		A (0.1)	A (0.8)		B (15.5)					D (53.3)		D (44.3)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.3)			B (15.5)						D (48.1)		B (17
	ramp	Volume to Capacity ratio	Movement		0.27	0.47		0.50					0.82		0.69	Б (17
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	0		300					583		384	
nilisooro biva.		LOS (Delay)	Movement		B (10.7)			A (6.5)	A (0.5)	B (17.9)		C (24.2)				
	I-95 Northbound Off-	LOS (Delay)	Approach		B (10.7)			A (4.5)			C (21.6)					B (10
	ramp	Volume to Capacity ratio	Movement		0.49			0.56	0.49	0.30		0.72				В (10
		Queue Length 95th (ft)	Movement		211			m153	m0	84		224				
		$LOG(D_{1})$	Movement	F (113.2)	B (13.4)	B (13.7)	E (76.8)	C (27.2)		F (484.8)	E (65.6)	E (62.9)	E (72.4)	E (73.3)	E (73.2)	
	SW Natura	LOS (Delay)	Approach		C (28.0)			C (29.1)			F (337.6)			E (73.0)		E (71
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	1.01	0.52	0.07	0.59	0.69		1.90	0.39	0.09	0.39	0.06	0.04	E (71
		Queue Length 95th (ft)	Movement	#552	364	11	137	558		#859	148	65	70	21	0	
M Peak	•	•	•													
								PM Mo	ovement/An	proach LOS	(Delav)					Intersec
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound	-		Northbound	1		Southbound	d	PM LO
	Intersections	(MOE)			1			r							1	
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
			Movement	Left E (55.5)	Through C (30.6)	Right	Left F (210.2)	Through C (22.2)	Right A (0.0)	Left D (54.6)	Through D (48.8)	Right F (155.2)	Left E (63.8)	Through E (62.6)	Right D (41.6)	(Dela)
		LOS (Delay)	Movement Approach	Left E (55.5)	C (30.6)	Right	Left F (210.2)	C (22.2)	Right A (0.0)	Left D (54.6)	D (48.8)	Right F (155.2)	Left E (63.8)	E (62.6)	Right D (41.6)	
	SW 12th Avenue		Approach		C (30.6) C (31.1)	Right	F (210.2)	e	A (0.0)		ę	U		0	D (41.6)	
	SW 12th Avenue	Volume to Capacity ratio	Approach Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83	Right	F (210.2) 1.25	C (22.2) D (40.5)	A (0.0)	D (54.6)	D (48.8) F (113.5) 0.06	F (155.2)	E (63.8) 0.84	E (62.6) D (54.7) 0.83	D (41.6)	
	SW 12th Avenue	Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement	E (55.5)	C (30.6) C (31.1) 0.83 #676		F (210.2)	C (22.2) D (40.5) 0.90 #757	A (0.0)	D (54.6) 0.64	D (48.8) F (113.5)	F (155.2)	E (63.8) 0.84 295	E (62.6) D (54.7)	D (41.6) 0.54 146	
		Volume to Capacity ratio	Approach Movement Movement Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1)	Right A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4)	A (0.0)	D (54.6) 0.64	D (48.8) F (113.5) 0.06	F (155.2)	E (63.8) 0.84	E (62.6) D (54.7) 0.83 297	D (41.6)	D (46
	SW 12th Avenue	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2)	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4)	A (0.0)	D (54.6) 0.64	D (48.8) F (113.5) 0.06	F (155.2)	E (63.8) 0.84 295	E (62.6) D (54.7) 0.83	D (41.6) 0.54 146 C (28.9)	D (46
	I-95 Southbound Off-	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70	A (0.0)	D (54.6) 0.64	D (48.8) F (113.5) 0.06	F (155.2)	E (63.8) 0.84 295 D (43.3) 0.84	E (62.6) D (54.7) 0.83 297	D (41.6) 0.54 146 C (28.9) 0.50	D (46
Hillsboro Blvd.	I-95 Southbound Off-	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Approach Movement Movement Approach Movement Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507	A (0.0) 0.03 m0	D (54.6) 0.64 124	D (48.8) F (113.5) 0.06	F (155.2)	E (63.8) 0.84 295 D (43.3)	E (62.6) D (54.7) 0.83 297	D (41.6) 0.54 146 C (28.9)	D (46
Hillsboro Blvd.	I-95 Southbound Off- ramp	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8)	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3)	A (0.0)	D (54.6) 0.64	D (48.8) F (113.5) 0.06 26	F (155.2)	E (63.8) 0.84 295 D (43.3) 0.84	E (62.6) D (54.7) 0.83 297	D (41.6) 0.54 146 C (28.9) 0.50	D (46 B (12
Hillsboro Blvd.	I-95 Southbound Off- ramp I-95 Northbound Off-	Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Approach Movement Movement Approach Movement Movement Approach	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8) B (10.8)	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3) A (7.2)	A (0.0) 0.03 m0 A (0.5)	D (54.6) 0.64 124 B (16.4)	D (48.8) F (113.5) 0.06	F (155.2) 1.14 #324 C (23.3)	E (63.8) 0.84 295 D (43.3) 0.84	E (62.6) D (54.7) 0.83 297	D (41.6) 0.54 146 C (28.9) 0.50	(Delay D (46 B (12 B (11
Hillsboro Blvd.	I-95 Southbound Off- ramp	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8) B (10.8) 0.60	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3) A (7.2) 0.73	A (0.0) 0.03 m0 A (0.5) 0.43	D (54.6) 0.64 124 B (16.4) 0.39	D (48.8) F (113.5) 0.06 26	F (155.2) 1.14 #324 C (23.3) 0.78	E (63.8) 0.84 295 D (43.3) 0.84	E (62.6) D (54.7) 0.83 297	D (41.6) 0.54 146 C (28.9) 0.50	D (46
Hillsboro Blvd.	I-95 Southbound Off- ramp I-95 Northbound Off-	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Approach Movement Movement	E (55.5) 0.42 72 	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8) B (10.8) B (10.8) 0.60 189	A (0.6) 0.48 m0	F (210.2) 1.25 #214	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3) A (7.2) 0.73 m262	A (0.0) 0.03 m0 A (0.5)	D (54.6) 0.64 124 B (16.4) 0.39 84	D (48.8) F (113.5) 0.06 26 C (20.2)	F (155.2) 1.14 #324 C (23.3) 0.78 #193	E (63.8) 0.84 295 D (43.3) 0.84 486	E (62.6) D (54.7) 0.83 297 D (36.3)	D (41.6) 0.54 146 C (28.9) 0.50 209	D (46
Hillsboro Blvd.	I-95 Southbound Off- ramp I-95 Northbound Off- ramp	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	E (55.5) 0.42	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8) B (10.8) B (10.8) 0.60 189 B (16.3)	A (0.6)	F (210.2) 1.25	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3) A (7.2) 0.73 m262 C (23.7)	A (0.0) 0.03 m0 A (0.5) 0.43	D (54.6) 0.64 124 B (16.4) 0.39	D (48.8) F (113.5) 0.06 26 C (20.2) C (20.2) D (40.0)	F (155.2) 1.14 #324 C (23.3) 0.78	E (63.8) 0.84 295 D (43.3) 0.84	E (62.6) D (54.7) 0.83 297 D (36.3) D (36.3) D (42.4)	D (41.6) 0.54 146 C (28.9) 0.50	D (46 B (12 B (11
Hillsboro Blvd.	I-95 Southbound Off- ramp I-95 Northbound Off-	Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Approach Movement Movement Approach Movement Movement Approach Movement Movement	E (55.5) 0.42 72 	C (30.6) C (31.1) 0.83 #676 A (0.1) A (0.2) 0.36 0 B (10.8) B (10.8) B (10.8) 0.60 189	A (0.6) 0.48 m0	F (210.2) 1.25 #214	C (22.2) D (40.5) 0.90 #757 B (16.4) B (16.4) 0.70 507 A (9.3) A (7.2) 0.73 m262	A (0.0) 0.03 m0 A (0.5) 0.43	D (54.6) 0.64 124 B (16.4) 0.39 84	D (48.8) F (113.5) 0.06 26 C (20.2)	F (155.2) 1.14 #324 C (23.3) 0.78 #193	E (63.8) 0.84 295 D (43.3) 0.84 486	E (62.6) D (54.7) 0.83 297 D (36.3)	D (41.6) 0.54 146 C (28.9) 0.50 209	D (46 B (12

Table 5.15: 2020 Build 2A – Hillsboro Boulevard Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

AM Peak																
	Signal Controlled	Mesure of Effectiveness						AM M	ovement/Ap	proach LOS	(Delay)		1			Intersectio
Arterial	Intersections	(MOE)	Location		Eastbound			Westbound			Northbound			Southbound		AM LOS
	intersections			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement	D (52.7)	D (45.0)	C (22.2)	D (45.4)	C (30.7)	B (16.0)	D (54.0)	E (63.7)	D (40.3)	E (64.9)	D (37.3)	A (5.3)	
	South Military Trail	EOS (Delay)	Approach		D (44.5)			C (29.5)			D (52.9)			D (39.1)		D (41.3
	South Winnary Train	Volume to Capacity ratio	Movement	0.67	0.82	0.08	0.68	0.59	0.53	0.56	0.92	0.76	0.89	0.51	0.26	D (41.5
		Queue Length 95th (ft)	Movement	163	432	7	188	297	309	102	#372	225	#282	223	55	
		LOS (Delay)	Movement	C (26.3)	A (4.2)	A (4.4)	B (19.8)	A (3.0)	A (3.5)			C (20.1)			C (22.1)	
	East Newport Center	LOS (Delay)	Approach		A (7.2)			A (6.1)			C (20.1)			C (22.1)		A (7.6)
	Drive	Volume to Capacity ratio	Movement	0.53	0.47	0.49	0.57	0.35	0.35			0.04			0.06	A (7.0)
		Queue Length 95th (ft)	Movement	m86	113	m107	m121	63	m48			14			16	
		$LOS(D_{1})$	Movement		D (47.9)	A (0.3)	B (19.9)	A (7.0)					C (32.0)		D (44.4)	
	I-95 Southbound Off-	LOS (Delay)	Approach		D (37.0)	•		B (10.6)						D (40.5)	•	G (25)
SW 10th Street	ramp	Volume to Capacity ratio	Movement		0.83	0.24	0.52	0.55					0.30		0.82	C (25.
		Queue Length 95th (ft)	Movement		283	0	128	186					135		367	-
			Movement		B (15.3)	A (0.1)		A (2.9)	A (0.2)	D (38.7)		D (39.0)				
	I-95 Northbound	LOS (Delay)	Approach		B (11.2)			A (2.5)			D (38.8)					
	Ramps	Volume to Capacity ratio	Movement		0.45	0.16		0.33	0.18	0.48		0.49				B (13.
	1	Queue Length 95th (ft)	Movement		165	m0		58	m0	179		172				
			Movement	C (30.1)	B (17.5)	D (49.8)	C (26.2)	C (26.9)	B (14.5)	D (42.0)	C (26.6)	C (25.5)	C (21.4)	C (28.6)	C (23.6)	
	FAU Research Park	LOS (Delay)	Approach	0 (30.1)	C (24.0)	D (19.0)	0 (20.2)	C (26.2)	B (11.5)	D (12.0)	C (33.4)	0 (20.0)	0 (21.1)	C (24.0)	0 (25.0)	
	Boulevard	Volume to Capacity ratio	Movement	0.50	0.66	0.15	0.38	0.88	0.06	0.84	0.46	0.09	0.66	0.64	0.31	C (25.
		Queue Length 95th (ft)	Movement	84	152	47	41	216	0	#156	48	0	#150	#140	#101	
M Peak		Queue Deligiti 95th (It)	Wovement	01	152	17	11	210	v	11100	10	Ū	1150	//110	1101	
ИРеак								517.17			(D I)					.
	Signal Controlled	Mesure of Effectiveness					1			proach LOS				~		Intersect
Arterial	Intersections	(MOE)	Location		Eastbound			Westbound			Northbound			Southbound		PM LO
				Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement	E (56.1)	D (42.6)	C (23.9)	E (55.9)	D (35.6)	B (12.8)	E (61.4)	D (54.6)	C (29.4)	E (58.9)	D (51.8)	A (6.1)	_
	South Military Trail		Approach		D (43.4)	T		D (35.1)			D (47.6)			D (37.2)		D (39.
	5	Volume to Capacity ratio	Movement	0.69	0.73	0.13	0.82	0.75	0.54	0.64	0.78	0.42	0.70	0.80	0.43	Ì
		Queue Length 95th (ft)	Movement	195	414	29	262	488	77	120	299	193	175	355	115	
		LOS (Delay)	Movement	B (13.2)	A (7.8)	A (6.7)	A (9.7)	A (5.0)	A (3.8)			B (18.9)			C (25.5)	
	East Newport Center		Approach		A (8.0)			A (5.2)	1		B (18.9)			C (25.5)		B (10.
	Drive	Volume to Capacity ratio	Movement	0.06	0.56	0.04	0.10	0.49	0.06			0.42			0.79	_ (
		Queue Length 95th (ft)	Movement	m19	143	m7	m23	110	m11			98			120	
		LOS (Delay)	Movement		C (33.1)	A (0.7)	C (32.9)	A (6.3)					D (41.7)		D (47.7)	4
SW 10th Street	I-95 Southbound Off-	Eos (Bondy)	Approach		C (23.3)			B (14.0)						D (45.6)		C (22.
5 W Toth Sheet	ramp	Volume to Capacity ratio	Movement		0.67	0.40	0.50	0.43					0.30		0.66	0 (22.
		Queue Length 95th (ft)	Movement		288	0	160	186					122		248	
		LOS (Delay)	Movement		A (5.9)	A (0.2)		A (4.3)	A (0.2)	D (39.1)		D (46.0)				
	I-95 Northbound	LOS (Delay)	Approach		A (3.2)			A (3.7)			D (43.4)					B (12.4
	Ramps	Volume to Capacity ratio	Movement		0.34	0.29		0.33	0.20	0.32		0.70				D (12.)
		Queue Length 95th (ft)	Movement		54	72		63	m0	131		277				
		LOC (Dalar)	Movement	D (37.1)	B (19.1)	D (36.7)	C (29.4)	C (29.5)	B (17.2)	D (45.4)	C (26.7)	C (26.1)	B (15.7)	C (34.9)	C (24.3)	
	FAU Research Park	LOS (Delay)	Approach		C (25.0)			C (28.6)			D (37.5)			C (24.9)		0.07
	Boulevard	Volume to Capacity ratio	Movement	0.80	0.72	0.15	0.59	0.87	0.08	0.89	0.25	0.08	0.50	0.76	0.40	C (27.
		Queue Length 95th (ft)	Movement	#130	186	68	#79	#224	0	#176	38	0	119	#208	#129	1
	4.6. HCM 2000 MOEs re															
nchro version 9.2.91		-		_												
				Queue notes	3:											
OS notes:	S					not report a	ieues, results	are from Svr	chro report o	outputs						
OS notes:		E reflecting at capacity operation	ations	HCM metho	dology does		ieues, results theoretically	-	chro report o	outputs						
DS notes: DS notes: elay is in sec/veh unit	:Level of service (LOS)	E reflecting at capacity opera F reflecting over capacity op		HCM metho ~: Volume e	odology does exceeds capa		theoretically	-	ichro report o	outputs						

Table 5.16: 2020 Build 2A – SW 10th Street Intersection Analysis Results

m: Upstream metering is in effect

								AM M	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound		1	Northbound	1		Southbound	1	AM LOS
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement		B (16.2)		D (53.6)	A (1.2)	8	E (56.6)		D (46.9)				
		LOS (Delay)	Approach		B (16.2)		. ,	A (5.2)			D (51.1)				-	
	NW 5th Terrace	Volume to Capacity ratio	Movement		0.54		0.64	0.47		0.67		0.12				B (14.
		Queue Length 95th (ft)	Movement		323		#154	27		170		64				
			Movement	D (49.5)	A (2.0)			A (9.1)	A (4.3)				D (51.2)		D (47.0)	
		LOS (Delay)	Approach		A (3.8)			A (8.9)						D (49.6)		
	NW 5th Avenue	Volume to Capacity ratio	Movement	0.70	0.47			0.45	0.05				0.59		0.13	A (9.9
		Queue Length 95th (ft)	Movement	#152	43			242	m4				130		64	
			Movement		A (5.3)	A (1.5)		A (6.7)					C (20.1)		C (23.5)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (3.8)	Ļ		A (6.7)			Į	ļ		C (21.8)		
Sample Road	ramp	Volume to Capacity ratio	Movement		0.42	0.59		0.48					0.53		0.70	A (8.1
		Queue Length 95th (ft)	Movement		131	356		146					108		135	
			Movement		A (5.0)			A (4.5)	A (0.2)	C (22.0)		C (21.2)				
	I-95 Northbound	LOS (Delay)	Approach		A (5.0)			A (3.7)	. ,	. ,	C (21.7)				-	1
	Ramps	Volume to Capacity ratio			0.38			0.62	0.29	0.62		0.55				- A (7.5
		Queue Length 95th (ft)	Movement		56			m143	m0	121		101				
			Movement	E (67.5)	B (18.9)		E (56.4)	D (40.6)		D (37.6)	D (36.3)	C (32.2)	C (30.9)	D (37.0)	F (81.2)	
		LOS (Delay)	Approach		C (31.5)			D (41.1)		()	D (36.3)	(-)	()	E (64.1)		-
	NE 3rd Avenue	Volume to Capacity ratio	Movement	0.91	0.49		0.49	0.87		0.63	0.43	0.04	0.28	0.44	0.98	D (41
		Queue Length 95th (ft)	Movement	#243	260		79	501		183	214	0	86	212	#526	_
M Peak		Queue Dengar / em (h)										Ť				
								DM M	arram ant/A m	nucesh I OS	(Dolaw)					Interror
A	Signal Controlled	Mesure of Effectiveness	Levelow		E 41				-	proach LOS				C 41-1		Intersec
Arterial	Intersections	(MOE)	Location	Left	Eastbound	D:-14	Left	Westbound	1		Northbound		-	Southbound	1	PM LC (Delay
			Maaaant	Leit	Through	Right		Through	Right	Left	Through	Right	Left	Through	Right	(Delay
		LOS (Delay)	Movement		B (18.2)		E (72.7)	A (1.5)		E (62.8)	E (57.9)	D (53.2)			<u> </u>	-
	NW 5th Terrace	VI C i i	Approach		B (18.2)		0.87	A (8.9)		0.65	E (37.9)	0.09				B (15.
										0.65		0.08				-
			Movement		0.59			0.56				67				
		Queue Length 95th (ft)	Movement		389		#359	31	A (4.1)	152		57			D (52.4)	
			Movement Movement	E (55.7)	389 A (1.6)			31 B (12.1)	A (4.1)			57	E (56.7)	F (55.2)	D (53.4)	
	NW 5th Avenue	Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach		389 A (1.6) A (5.4)			31 B (12.1) B (11.2)				57		E (55.2)		B (11
	NW 5th Avenue	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement	0.82	389 A (1.6) A (5.4) 0.47			31 B (12.1) B (11.2) 0.60	0.17			57	0.54	E (55.2)	0.10	B (11.
	NW 5th Avenue	Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement		389 A (1.6) A (5.4) 0.47 35			31 B (12.1) B (11.2) 0.60 406				57	0.54 112	E (55.2)	0.10 64	B (11
		Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2)	A (0.7)		31 B (12.1) B (11.2) 0.60 406 B (13.6)	0.17			57	0.54		0.10	B (11.
Sample Road	I-95 Southbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1)	· · · ·		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6)	0.17			57	0.54 112 B (18.5)	E (55.2) C (22.5)	0.10 64 C (25.4)	-
Sample Road		Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56	0.41		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) 0.73	0.17			57	0.54 112 B (18.5) 0.46		0.10 64 C (25.4) 0.79	B (11.
Sample Road	I-95 Southbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263	· · · ·		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) m238	0.17 m15	152			0.54 112 B (18.5)		0.10 64 C (25.4)	-
Sample Road	I-95 Southbound Off- ramp	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Movement	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8)	0.41		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) M (13.6) 0.73 m238 A (9.4)	0.17			57	0.54 112 B (18.5) 0.46		0.10 64 C (25.4) 0.79	-
Sample Road	I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Approach	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) A (6.8)	0.41		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) 0.73 m238 A (9.4) A (7.8)	0.17 m15	152	D (36.5)	C (20.8)	0.54 112 B (18.5) 0.46		0.10 64 C (25.4) 0.79	B (12
Sample Road	I-95 Southbound Off- ramp	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Approach	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) A (6.8) 0.65	0.41		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) A (9.4) A (7.8) 0.64	0.17 m15 A (0.2)	152	D (36.5)	C (20.8)	0.54 112 B (18.5) 0.46		0.10 64 C (25.4) 0.79	B (12
Sample Road	I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Approach	0.82 #277	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) A (6.8) 0.65 62	0.41	#359	31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) M (13.6) 0.73 m238 A (9.4) A (7.8) 0.64 m283	0.17 m15	152 D (45.1) 0.98 #338		C (20.8)	0.54 112 B (18.5) 0.46 114	C (22.5)	0.10 64 C (25.4) 0.79 #196	B (12
Sample Road	I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement	0.82	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) A (6.5 62 C (21.1)	0.41		31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) 0.73 m238 A (9.4) A (7.8) 0.64 m283 D (35.3)	0.17 m15 A (0.2)	152	D (53.4)	C (20.8)	0.54 112 B (18.5) 0.46	C (22.5)	0.10 64 C (25.4) 0.79	B (12
Sample Road	I-95 Southbound Off- ramp I-95 Northbound Ramps	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Volume to Capacity ratio	Movement Movement Approach Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement	0.82 #277	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) 0.65 62 C (21.1) C (29.2)	0.41	#359 #359 E (76.7)	31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) B (13.6) A (7.8) 0.64 m283 D (35.3) D (37.8)	0.17 m15 A (0.2)	152 D (45.1) 0.98 #338 F (81.4)	D (53.4) E (61.0)	C (20.8) 0.66 167 D (39.0)	0.54 112 B (18.5) 0.46 114 D (43.3)	C (22.5) E (57.5) D (53.2)	0.10 64 C (25.4) 0.79 #196 D (52.2)	B (12 B (16
Sample Road	I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Movement Approach Movement Movement Approach Movement Approach Movement Movement Movement Movement Movement Movement	0.82 #277	389 A (1.6) A (5.4) 0.47 35 A (9.2) A (7.1) 0.56 263 A (6.8) A (6.5 62 C (21.1)	0.41	#359	31 B (12.1) B (11.2) 0.60 406 B (13.6) B (13.6) B (13.6) 0.73 m238 A (9.4) A (7.8) 0.64 m283 D (35.3)	0.17 m15 A (0.2)	152 D (45.1) 0.98 #338	D (53.4)	C (20.8)	0.54 112 B (18.5) 0.46 114	C (22.5)	0.10 64 C (25.4) 0.79 #196	-

Table 5.17: 2020 Build 2A – Sample Road Intersection Analysis Results

:Level of service (LOS) E reflecting at capacity operations :Level of service (LOS) F reflecting over capacity operations ~: Volume exceeds capacity, queue is theoretically infinite

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect

Arterial								AM M	ovement/Ap	proach LOS	(Delay)					Intersection
1 II tol lai	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	1	AM LO
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
			Movement	F (96.0)	C (25.5)		F (126.1)	C (27.6)	B (11.5)	E (74.4)	F (93.9)	E (60.6)	F (84.5)	F (84.4)	D (53.5)	
		LOS (Delay)	Approach		C (33.9)			D (39.3)	<u> </u>		E (73.2)	i		E (74.1)		D (40)
	SW 12th Avenue	Volume to Capacity ratio	Movement	0.91	0.74		0.98	0.57	0.43	0.30	0.77	0.29	0.36	0.35	0.02	D (40.4
		Queue Length 95th (ft)	Movement	#526	839		#347	532	57	93	255	136	72	72	1	
			Movement		A (0.1)	A (1.2)		C (23.2)					D (51.6)		D (42.5)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (0.5)	•		C (23.2)						D (46.4)	•	D (10.7
	ramp	Volume to Capacity ratio	Movement		0.28	0.59		0.60					0.83		0.70	B (19.7
Hillsboro Blvd.		Queue Length 95th (ft)	Movement		0	715		540					702		454	
Hillsboro Biva.		LOS (Delay)	Movement		B (11.1)			B (10.7)	A (0.4)	B (18.8)		C (27.2)				
	I-95 Northbound Off-	LOS (Delay)	Approach		B (11.1)			A (7.4)			C (23.8)					B (13.1
	ramp	Volume to Capacity ratio	Movement		0.55			0.66	0.54	0.30		0.77				Б (15.1
		Queue Length 95th (ft)	Movement		345			m295	m0	98		292				
		LOS (Delay)	Movement	F (136.1)	B (15.2)	A (9.6)	F (88.4)	C (33.2)		F (532.4)	E (72.4)	E (69.5)	F (83.0)	F (83.3)	F (83.3)	
	SW Natura	LOS (Delay)	Approach		C (32.4)			D (35.3)			F (368.6)			F (83.2)		F (80.2
	Blvd/Fairway Drive	Volume to Capacity ratio	Movement	1.07	0.57	0.08	0.64	0.77		1.99	0.39	0.11	0.45	0.07	0.06	Г (00.2
		Queue Length 95th (ft)	Movement	#666	400	m21	167	759		#1063	169	79	77	22	0	
M Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Intersection
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	1	PM LOS
Arterial	Intersections	(MOE)	Location	Left	Eastbound Through	Right	Left		Right		Northbound Through	Right	Left	Southbound Through	l Right	PM LOS (Delay)
Arterial	0	(MOE)	Location Movement	Left E (61.8)			Left F (239.8)	Westbound								-
Arterial	Intersections				Through			Westbound Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
Arterial	0	(MOE) LOS (Delay)	Movement		Through D (42.4)			Westbound Through C (23.2)	Right	Left	Through D (52.2)	Right	Left	Through E (73.1)	Right	(Delay)
Arterial	Intersections	(MOE) LOS (Delay) Volume to Capacity ratio	Movement Approach	E (61.8)	Through D (42.4) D (42.8)		F (239.8)	Westbound Through C (23.2) D (47.2)	Right A (0.4)	Left E (60.0)	Through D (52.2) F (166.7)	Right F (236.1)	Left E (72.3)	Through E (73.1) E (64.7)	Right D (52.5)	(Delay)
Arterial	Intersections	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement	E (61.8)	Through D (42.4) D (42.8) 0.95		F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91	Right A (0.4) 0.04	Left E (60.0) 0.68	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35	Left E (72.3) 0.87	Through E (73.1) E (64.7) 0.88	Right D (52.5) 0.72	(Delay)
Arterial	Intersections	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement	E (61.8)	Through D (42.4) D (42.8) 0.95 #873	Right	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823	Right A (0.4) 0.04	Left E (60.0) 0.68	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35	Left E (72.3) 0.87 #369	Through E (73.1) E (64.7) 0.88	Right D (52.5) 0.72 249	(Delay) E (60.1)
Arterial	Intersections SW 12th Avenue	(MOE) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement Movement Approach	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1)	Right	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7)	Right A (0.4) 0.04	Left E (60.0) 0.68	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35	Left E (72.3) 0.87 #369	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249	(Delay) E (60.1)
	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2)	Right A (0.5)	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7)	Right A (0.4) 0.04	Left E (60.0) 0.68	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35	Left E (72.3) 0.87 #369 D (45.2)	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4)	(Delay) E (60.1)
Arterial Hillsboro Blvd.	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Movement Approach Movement	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41	Right A (0.5) 0.55	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) 0.80	Right A (0.4) 0.04	Left E (60.0) 0.68	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35	Left E (72.3) 0.87 #369 D (45.2) 0.89	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4) 0.51	-
	Intersections SW 12th Avenue I-95 Southbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0	Right A (0.5) 0.55	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) 0.80 645	Right A (0.4) 0.04 m0	Left E (60.0) 0.68 146	Through D (52.2) F (166.7) 0.06	Right F (236.1) 1.35 #475	Left E (72.3) 0.87 #369 D (45.2) 0.89	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4) 0.51	(Delay) E (60.1 B (15.6
	Intersections SW 12th Avenue I-95 Southbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0 B (13.2)	Right A (0.5) 0.55	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) 0.80 645 B (11.8)	Right A (0.4) 0.04 m0	Left E (60.0) 0.68 146	Through D (52.2) F (166.7) 0.06 27	Right F (236.1) 1.35 #475	Left E (72.3) 0.87 #369 D (45.2) 0.89	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4) 0.51	(Delay) E (60.1)
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0 B (13.2) B (13.2)	Right A (0.5) 0.55	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) 0.80 645 B (11.8) A (9.0)	Right A (0.4) 0.04 m0 A (0.6)	Left E (60.0) 0.68 146 B (16.7)	Through D (52.2) F (166.7) 0.06 27	Right F (236.1) 1.35 #475 C (27.2)	Left E (72.3) 0.87 #369 D (45.2) 0.89	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4) 0.51	(Delay) E (60.1) B (15.6)
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Movement Movement Movement Movement Approach Movement Movement	E (61.8)	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0 B (13.2) B (13.2) 0.73	Right A (0.5) 0.55	F (239.8) 1.33	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) O.80 645 B (11.8) A (9.0) 0.81	Right A (0.4) 0.04 m0 A (0.6) 0.51	Left E (60.0) 0.68 146 B (16.7) B (16.7)	Through D (52.2) F (166.7) 0.06 27	Right F (236.1) 1.35 #475 C (27.2) 0.84	Left E (72.3) 0.87 #369 D (45.2) 0.89	Through E (73.1) E (64.7) 0.88 #377	Right D (52.5) 0.72 249 C (26.4) 0.51	(Delay) E (60.1) B (15.6)
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	E (61.8) 0.52 #90 	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0 B (13.2) B (13.2) 0.73 236	Right A 0.55 m0	F (239.8) 1.33 m#248	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) O.80 645 B (11.8) A (9.0) 0.81 m315	Right A (0.4) 0.04 m0 A (0.6) 0.51	Left E (60.0) 0.68 146 B (16.7) B (16.7) 0.38 92	Through D (52.2) F (166.7) 0.06 27	Right F (236.1) 1.35 #475 C (27.2) 0.84 #263	Left E (72.3) 0.87 #369 D (45.2) 0.89 669	Through E (73.1) E (64.7) 0.88 #377 D (36.3)	Right D (52.5) 0.72 249 C (26.4) 0.51 256	(Delay) E (60.1 B (15.6 B (13.3
	Intersections SW 12th Avenue I-95 Southbound Off-ramp I-95 Northbound Off-ramp	(MOE)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Approach	E (61.8) 0.52 #90 	Through D (42.4) D (42.8) 0.95 #873 A (0.1) A (0.2) 0.41 m0 B (13.2) 0.73 236 C (22.2)	Right A 0.55 m0	F (239.8) 1.33 m#248	Westbound Through C (23.2) D (47.2) 0.91 #823 C (24.7) C (24.7) C (24.7) B (11.8) A (9.0) 0.81 m315 C (28.9)	Right A (0.4) 0.04 m0 A (0.6) 0.51	Left E (60.0) 0.68 146 B (16.7) B (16.7) 0.38 92	Through D (52.2) F (166.7) 0.06 27	Right F (236.1) 1.35 #475 C (27.2) 0.84 #263	Left E (72.3) 0.87 #369 D (45.2) 0.89 669	Through E (73.1) E (64.7) 0.88 #377 D (36.3) D (36.3)	Right D (52.5) 0.72 249 C (26.4) 0.51 256	(Delay) E (60.1 B (15.6

m: Upstream metering is in effect

Table 5.18: 2040 Build 2A – Hillsboro Boulevard Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

								AM M	ovement/Ap	proach LOS	(Delay)					Intersecti
Arterial	Signal Controlled Intersections	Mesure of Effectiveness	Location		Eastbound			Westbound			Northbound	l		Southbound	1	AM LO
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Dalar)	Movement	E (61.2)	E (73.9)	C (29.1)	D (49.4)	D (41.1)	B (17.1)	E (74.1)	F (115.7)	F (90.9)	F (115.7)	D (53.7)	A (4.8)	
	Courth Militare Terril	LOS (Delay)	Approach		E (66.9)	•		D (36.0)			F (99.9)			E (65.1)	*	E (65
	South Military Trail	Volume to Capacity ratio	Movement	0.55	0.97	0.12	0.55	0.82	0.63	0.64	1.06	1.02	1.03	0.63	0.25	E (65
		Queue Length 95th (ft)	Movement	228	#781	57	178	565	89	141	#571	#889	#428	353	66	
		LOS (Delay)	Movement	C (29.4)	A (8.2)	A (8.2)	C (26.4)	A (3.8)	A (4.0)			C (26.3)			C (29.2)	
	East Newport Center	LOS (Delay)	Approach		B (11.1)			A (7.4)			C (26.3)			C (29.2)		B (10
	Drive	Volume to Capacity ratio	Movement	0.63	0.56	0.54	0.62	0.45	0.41			0.14			0.22	Б(10
		Queue Length 95th (ft)	Movement	m95	m351	m272	m196	186	m146			35			36	
		LOS (Delay)	Movement		D (46.9)	A (0.6)	E (63.7)	B (16.3)					D (36.8)		E (55.7)	
SW 10th Street	I-95 Southbound Off-	EOS (Delay)	Approach		C (34.4)			C (29.7)						D (49.6)		D (35
Sw Tom Sheet	ramp	Volume to Capacity ratio	Movement		0.81	0.36	0.86	0.74					0.34		0.88	D (55
		Queue Length 95th (ft)	Movement		427	0	457	427					216		601	
		LOS (Delay)	Movement		A (1.6)	A (0.1)		A (2.9)	A (0.1)	E (70.0)		E (64.3)				
	I-95 Northbound	EOS (Delay)	Approach		A (1.2)			A (2.6)			E (67.9)					В (17
	Ramps	Volume to Capacity ratio	Movement		0.43	0.20		0.37	0.19	0.85		0.72				Б (17
		Queue Length 95th (ft)	Movement		10	0		m62	m0	347		271				
		LOS (Delay)	Movement	D (52.2)	B (14.7)	C (24.1)	D (38.0)	C (30.5)	B (17.1)	E (66.6)	C (29.2)	C (28.0)	C (31.4)	E (56.8)	D (47.7)	
	FAU Research Park	LOS (Delay)	Approach		C (21.8)			C (30.7)			D (46.9)			D (45.1)		C (32
	Boulevard	Volume to Capacity ratio	Movement	0.85	0.73	0.22	0.66	0.88	0.07	0.99	0.35	0.12	0.72	0.86	0.77	C (52
		Queue Length 95th (ft)	Movement	#127	195	46	#104	#347	0	#304	81	7	#169	#222	#226	
Peak																
								PM M	ovement/Ap	proach LOS	(Delay)					Interse
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound			Northbound			Southbound	1	PM L
	The sections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Dela
		LOS (Delay)	Movement	F (92.6)	D (53.7)	C (23.0)	E (55.3)	D (44.6)	B (17.5)	F (92.7)	E (58.9)	C (30.4)	E (73.4)	E (69.8)	A (8.2)	
	South Military Trail	EOS (Delay)	Approach		E (58.7)			D (40.4)			E (57.7)			D (50.5)		D (50
	South Winnary Tran	Volume to Capacity ratio	Movement	0.97	0.91	0.13	0.94	0.99	0.61	0.96	0.88	0.54	0.93	0.98	0.57	D (5)
		eraine to capacity ratio							205	#216	#353	152	#291	#506	183	
		Queue Length 95th (ft)	Movement	#242	#505	52	m#300	#661	m205	#210	11555		11271			
		Queue Length 95th (ft)	Movement Movement	#242 B (10.3)	A (5.6)	52 A (1.6)	m#300 B (16.5)	#661 B (14.9)	m205 B (14.5)	#210	11333	C (25.4)	1291		C (28.2)	
	East Newport Center									#210	C (25.4)			C (28.2)	C (28.2)	B (14
	East Newport Center Drive	Queue Length 95th (ft)	Movement		A (5.6)			B (14.9)		#210					C (28.2)	B (15
	-	Queue Length 95th (ft) LOS (Delay)	Movement Approach	B (10.3)	A (5.6) A (5.7)	A (1.6)	B (16.5)	B (14.9) B (15.0)	B (14.5)	#210		C (25.4)				B (15
	-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft)	Movement Approach Movement	B (10.3)	A (5.6) A (5.7) 0.64	A (1.6) 0.06	B (16.5) 0.16	B (14.9) B (15.0) 0.76	B (14.5) 0.09	#210		C (25.4) 0.72	D (39.3)		0.92	B (15
SW 10th Street	-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio	Movement Approach Movement Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186	A (1.6) 0.06 m272	B (16.5) 0.16 m42	B (14.9) B (15.0) 0.76 m193	B (14.5) 0.09	#210		C (25.4) 0.72	D (39.3)		0.92 #243	-
SW 10th Street	Drive	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4)	A (1.6) 0.06 m272	B (16.5) 0.16 m42	B (14.9) B (15.0) 0.76 m193 A (5.4)	B (14.5) 0.09	#210		C (25.4) 0.72		C (28.2)	0.92 #243	-
SW 10th Street	Drive I-95 Southbound Off-	Queue Length 95th (ft) LOS (Delay) Volume to Capacity ratio Queue Length 95th (ft) LOS (Delay)	Movement Approach Movement Movement Approach	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9)	A (1.6) 0.06 m272 A (0.8)	B (16.5) 0.16 m42 C (31.6)	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2)	B (14.5) 0.09	#210		C (25.4) 0.72	D (39.3)	C (28.2)	0.92 #243 E (66.2)	B (15
SW 10th Street	Drive I-95 Southbound Off-	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92	A (1.6) 0.06 m272 A (0.8) 0.47	B (16.5) 0.16 m42 C (31.6) 0.68	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46	B (14.5) 0.09	#210		C (25.4) 0.72	D (39.3)	C (28.2)	0.92 #243 E (66.2) 0.94	-
SW 10th Street	Drive I-95 Southbound Off-	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411	A (1.6) 0.06 m272 A (0.8) 0.47 0	B (16.5) 0.16 m42 C (31.6) 0.68	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143	B (14.5) 0.09 m10			C (25.4) 0.72 116	D (39.3)	C (28.2)	0.92 #243 E (66.2) 0.94	C (29
SW 10th Street	Drive I-95 Southbound Off- ramp	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0)	A (1.6) 0.06 m272 A (0.8) 0.47 0	B (16.5) 0.16 m42 C (31.6) 0.68	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7)	B (14.5) 0.09 m10		C (25.4)	C (25.4) 0.72 116	D (39.3)	C (28.2)	0.92 #243 E (66.2) 0.94	C (29
SW 10th Street	Drive I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8)	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2)	B (16.5) 0.16 m42 C (31.6) 0.68	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0)	B (14.5) 0.09 m10 A (0.2)	D (38.2)	C (25.4)	C (25.4) 0.72 116 D (47.1)	D (39.3)	C (28.2)	0.92 #243 E (66.2) 0.94	C (29
SW 10th Street	Drive I-95 Southbound Off- ramp I-95 Northbound	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement	B (10.3)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32	B (16.5) 0.16 m42 C (31.6) 0.68	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39	B (14.5) 0.09 m10 A (0.2) 0.21	D (38.2)	C (25.4)	C (25.4) 0.72 116 D (47.1)	D (39.3)	C (28.2)	0.92 #243 E (66.2) 0.94	-
SW 10th Street	Drive I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)Volume to Capacity ratioVolume to Capacity ratioVolume to Capacity ratio	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement	B (10.3) 0.07 m15	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51 m1382	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32 m33	B (16.5) 0.16 m42 C (31.6) 0.68 184	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39 m73	B (14.5) 0.09 m10 A (0.2) 0.21 m0	D (38.2) 0.44 163	C (25.4)	C (25.4) 0.72 116 D (47.1) 0.79 289	D (39.3) 0.40 151 C (33.3)	C (28.2) E (56.9)	0.92 #243 E (66.2) 0.94 #383	C (29
SW 10th Street	Drive I-95 Southbound Off- ramp I-95 Northbound Ramps	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement	B (10.3) 0.07 m15	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51 m1382 C (27.7)	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32 m33	B (16.5) 0.16 m42 C (31.6) 0.68 184	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39 m73 D (38.6)	B (14.5) 0.09 m10 A (0.2) 0.21 m0	D (38.2) 0.44 163	C (25.4)	C (25.4) 0.72 116 D (47.1) 0.79 289	D (39.3) 0.40 151	C (28.2) E (56.9) E (71.2)	0.92 #243 E (66.2) 0.94 #383	C (29
SW 10th Street	Drive I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)LOS (Delay)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Approach	B (10.3) 0.07 m15 D (52.2)	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51 m1382 C (27.7) C (35.0)	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32 m33 D (50.6)	B (16.5) 0.16 m42 C (31.6) 0.68 184 E (65.4)	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39 m73 D (38.6) D (42.7)	B (14.5) 0.09 m10 A (0.2) 0.21 m0 C (26.1)	D (38.2) 0.44 163 E (66.7)	C (25.4)	C (25.4) 0.72 116 D (47.1) 0.79 289 D (37.8)	D (39.3) 0.40 151 C (33.3)	C (28.2) E (56.9) E (71.2) E (55.2)	0.92 #243 E (66.2) 0.94 #383 E (57.9)	C (2
	Drive I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement	B (10.3) 0.07 m15 D (52.2) 0.83	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51 m1382 C (27.7) C (35.0) 0.82	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32 m33 D (50.6) 0.20	B (16.5) 0.16 m42 C (31.6) 0.68 184 E (65.4) 0.85	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39 m73 D (38.6) D (42.7) 0.81	B (14.5) 0.09 m10 A (0.2) 0.21 m0 C (26.1) 0.11	D (38.2) 0.44 163 E (66.7) 0.95	C (25.4) C (25.4) D (43.2) D (43.2) D (38.7) D (50.4) 0.26	C (25.4) 0.72 116 D (47.1) 0.79 289 D (37.8) 0.16	D (39.3) 0.40 151 C (33.3) 0.62	C (28.2) E (56.9) E (56.9) E (71.2) E (55.2) 0.91	0.92 #243 E (66.2) 0.94 #383 E (57.9) E (57.9)	C (2'
	Drive I-95 Southbound Off- ramp I-95 Northbound Ramps FAU Research Park Boulevard	Queue Length 95th (ft)LOS (Delay)Volume to Capacity ratioQueue Length 95th (ft)	Movement Approach Movement Movement Approach Movement Movement Approach Movement Movement Movement Movement Movement Movement	B (10.3) 0.07 m15 D (52.2) 0.83	A (5.6) A (5.7) 0.64 m186 D (45.4) C (32.9) 0.92 411 B (18.0) B (10.8) 0.51 m1382 C (27.7) C (35.0) 0.82 382	A (1.6) 0.06 m272 A (0.8) 0.47 0 A (0.2) 0.32 m33 D (50.6) 0.20	B (16.5) 0.16 m42 C (31.6) 0.68 184 E (65.4) 0.85	B (14.9) B (15.0) 0.76 m193 A (5.4) B (14.2) 0.46 143 A (4.7) A (4.0) 0.39 m73 D (38.6) D (42.7) 0.81	B (14.5) 0.09 m10 A (0.2) 0.21 m0 C (26.1) 0.11	D (38.2) 0.44 163 E (66.7) 0.95	C (25.4) C (25.4) D (43.2) D (43.2) D (38.7) D (50.4) 0.26	C (25.4) 0.72 116 D (47.1) 0.79 289 D (37.8) 0.16	D (39.3) 0.40 151 C (33.3) 0.62	C (28.2) E (56.9) E (56.9) E (71.2) E (55.2) 0.91	0.92 #243 E (66.2) 0.94 #383 E (57.9) E (57.9)	C (2

Table 5.19: 2040 Build 2A – SW 10th Street Intersection Analysis Results

:Level of service (LOS) F reflecting over capacity operations

- #: 95th percentile volume exceeds capacity
- m: Upstream metering is in effect

	Signal Controlled	Maguna of Effectiveness						AM M	ovement/Ap	oproach LOS	(Delay)					Intersecti
Arterial	Signal Controlled Intersections	Mesure of Effectiveness (MOE)	Location		Eastbound			Westbound	l		Northbound	1		Southbound	1	AM LOS
	Intersections	(NOL)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Delay)
		LOS (Delay)	Movement		B (16.8)		E (69.9)	A (1.4)		E (57.1)		D (46.4)				
	NW 5th Terrace	LOS (Delay)	Approach		B (16.8)			A (7.0)	•		D (51.0)					B (15.
	Nw 5th Terrace	Volume to Capacity ratio	Movement		0.59		0.79	0.52		0.69		0.13				в (13.
		Queue Length 95th (ft)	Movement		374		#237	32		181		65				
		LOS (Delay)	Movement	E (58.5)	A (2.2)			A (9.9)	A (3.9)				D (51.2)		D (47.0)	
	NW 5th Avenue	LOS (Delay)	Approach		A (4.4)			A (9.7)						D (49.5)		B (10
	NW 5th Avenue	Volume to Capacity ratio	Movement	0.78	0.53			0.49	0.06				0.61		0.22	D (10
		Queue Length 95th (ft)	Movement	m#175	46			278	m5				140		81	
		LOS (Delay)	Movement		A (6.0)	A (1.9)		A (7.5)					C (20.7)		C (27.0)	
Sample Road	I-95 Southbound Off-	LOS (Delay)	Approach		A (4.5)			A (7.5)						C (24.0)		A (9.3
Sample Road	ramp	Volume to Capacity ratio	Movement		0.47	0.66		0.52					0.60		0.80	A (9
		Queue Length 95th (ft)	Movement		164	453		164					128		#185	
		LOS (Delay)	Movement		A (6.6)			A (7.1)	A (0.2)	C (22.5)		C (22.0)				
	I-95 Northbound	LOS (Delay)	Approach		A (6.6)			A (5.4)			C (22.3)					A (9.
	Ramps	Volume to Capacity ratio	Movement		0.44			0.67	0.38	0.69		0.65				A (9
		Queue Length 95th (ft)	Movement		102			m158	m0	144		127				
		LOS (Dalari)	Movement	F (86.7)	C (21.5)		E (58.0)	E (56.7)		D (41.3)	D (36.1)	C (31.9)	C (30.3)	D (36.9)	F (111.8)	
		LOS (Delay)	Approach		D (37.4)			E (56.8)			D (37.8)			F (83.4)		D (52
	NE 3rd Avenue	Volume to Capacity ratio	Movement	1.00	0.61		0.55	0.99		0.72	0.45	0.05	0.32	0.45	1.08	D (52
		Queue Length 95th (ft)	Movement	#281	301		91	#628		#220	225	0	98	222	#613	
Peak																
								PM M	ovement/Ar	proach LOS	(Delav)					Interse
Arterial	Signal Controlled	Mesure of Effectiveness	Location		Eastbound			Westbound	-	-	Northbound	1		Southbound	1	PM L
	Intersections	(MOE)		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	(Dela
			Movement		B (19.1)	0	F (93.5)	A (1.8)		E (63.3)		D (52.6)		0		
		LOS (Delay)	Approach		B (19.1)			B (10.7)			E (57.8)	/		!	1	
	NW 5th Terrace	Volume to Capacity ratio	Movement		0.64		0.95	0.64		0.67		0.08				B (16
		Queue Length 95th (ft)	Movement		444		#394	41		164		58			1	
			Movement	F (105.6)	A (1.8)			B (12.0)	A (6.1)				E (56.7)		D (52.7)	
		LOS (Delay)	Approach		A (9.1)			B (11.4)	(-)		Į	Į		D (54.9)	(* *)	-
	NW 5th Avenue	Volume to Capacity ratio	Movement	1.03	0.52			0.66	0.20				0.57	()	0.11	B (13
		Queue Length 95th (ft)	Movement	#335	38			429	m21				122		65	
			Movement		B (12.4)	A (0.8)		B (15.4)					B (18.6)		C (34.8)	
	I-95 Southbound Off-	LOS (Delay)	Approach		A (9.4)	(***)		B (15.4)					- ()	C (28.1)	- ()	_
Sample Road	ramp	Volume to Capacity ratio	Movement		0.62	0.45		0.81					0.52	0 (2011)	0.91	B (15
	1	Queue Length 95th (ft)	Movement		346	47		294					137		#285	
			Movement		B (15.9)	.,		B (17.8)	A (0.2)	D (38.6)		C (30.7)	157		11200	
	I-95 Northbound	LOS (Delay)	Approach		B (15.9)			B (14.3)	11 (0.2)	D (50.0)	D (35.7)	0 (30.7)				
	Ramps	Volume to Capacity ratio	Movement		0.73			0.73	0.29	0.84	D (33.17)	0.62			T	C (21
	1	Queue Length 95th (ft)	Movement		315			m272	m0	522		318				-
			Movement	F (87.5)	C (27.6)		F (120.6)	D (39.6)	mo	F (126.7)	E (60.4)	D (40.3)	D (41.9)	E (58.0)	E (67.9)	
		LOS (Delay)	Approach	1 (07.3)	D (39.4)		1 (120.0)	D (39.0) D (44.5)		1 (120.7)	F (81.1)	D (+0.3)	D (41.9)	E (58.0) E (61.5)	L (07.5)	-
	NE 3rd Avenue	Volume to Capacity ratio	Movement	0.97	0.84		0.93	0.86		1.09	0.82	0.08	0.51	0.76	0.83	D (48
		, orune to Capacity fatto			#611		#217	#662		#280	358	0.08	87	291	303	-
		Queue Length 05th (ft)	Movement	# 44 4	#011											1
hro Varoice 0.2.0	14.6 HCM 2000 MOEs	Queue Length 95th (ft)	Movement	#343	#011		#217	#002		11200	550	0	07	271	505	
hro Version 9.2.9 notes:	14.6. HCM 2000 MOEs re	· · · ·	Movement	#343 Queue notes	L		#217	#002		11200	550	Ū	07	271	505	

Table 5.20: 2040 Build 2A – Sample Road Intersection Analysis Results

e (LOS) E refle cting at capacity oper :Level of service (LOS) F reflecting over capacity operations

#: 95th percentile volume exceeds capacity

m: Upstream metering is in effect



Tables 5.21 summarizes the results of the off-ramp signals back of queue analyses for the AM and PM peak hours for 2040 Build 2A conditions. HCM methodology does not provide queue lengths. The 95th percentile queues were obtained from Synchro reports. The Synchro reported queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. The results present the queue length in feet for each lane group movement. The available storage length was calculated from the stop bar at the ramp terminal intersection to the gore with I-95 mainline minus 615 feet for the required stopping distance for a design speed of 70 mph per FDOT's 2016 Greenbook (Table 3-22), and accounting for the changes in number of lanes. The analysis indicates that the queues on the off-ramps are not expected to exceed the available storage lengths and are not likely to affect the I-95 mainline operations.

Intersection	Annroach	Movement	Available	Que	ue (ft)
Intersection	Approach	wovement	Storage (ft)	AM	РМ
2040 Build 2A					
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	L (EB)	1,255	702	669
Thisbord Bodievard at 1-35 SB Oli-Ramp	Southbound	R (WB)	1,550	454	256
Hillsboro Boulevard at I-95 NB Off-Ramp	Northbound	L (WB)	2,965	98	92
Hillsbord Boulevard at 1-95 NB Oll-Ramp	Nortribouria	R (EB)	2,615	292	#263
SW 10 th Street at I-95 SB Off-Ramp	Southbound	L (EB)	2,615	419	293
	Southound	R (WB)	2,615	1,058	#674
SW 10 th Street at I-95 NB Off-Ramp	Northbound	L (WB)	2,240	979	460
SW 10 ^{er} Street at 1-95 NB OII-Ramp	Nortribouria	R (EB)	2,240	618	659
Convolo Dood at LOE CD Off Down	Couldebaured	L (EB)	1,010	128	137
Sample Road at I-95 SB Off-Ramp	Southbound	R (WB)	1,010	#185	#285
Sample Road at LOE NR Off Romp	Northbound	L (WB)	1,095	144	522
Sample Road at I-95 NB Off-Ramp		R (EB)	1,095	127	318

Table 5.21: 2040 Build 2A – Off-Ramp Signals Queuing Analysis Results

Queue Notes:

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length. Queue lengths exceeding the available storage are shown in Red.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310+ (295*2)] = 1,552.5$ feet rounded to 1,550 feet.

5.6.3 VISSIM Analysis of 2040 No-Build and Build 2A Alternatives

Some of the Synchro analysis results did not appear to be reasonable probably because of its limitations pertaining to over-saturated traffic conditions, closely spaced intersections, unconventional intersection treatment, and free-flow right turn lane treatment. Synchro analysis failed to fully capture the operational benefits of the proposed improvements. For example, the analysis results for the southbound right turn movement from the I-95 southbound off-ramp to SW 10th Street, did not appear reasonable under the No-Build and Build conditions. Tables 4.5 and 5.19, presented earlier, provide a summary of the Synchro intersection analysis results for SW 10th Street for the 2040 No-Build and 2040 Build 2A alternatives, respectively. Table 4.5



shows that the free-flow southbound right turn movement from the I-95 southbound off-ramp will have a delay of less than 5 seconds per vehicle and practically zero queue length. With the heavy westbound traffic, weaving movements, and the proximity of the Newport Center Drive intersection, it is very unlikely that this movement will not experience any operational issues as indicated by the Synchro results. Similarly, Table 5.19 shows that the proposed signal controlled dual southbound right turn lanes will operate at LOS E despite the elimination of the signal for the westbound to I-95 southbound movement and the reconfiguration of the ramp terminal to physically separate the eastbound to I-95 northbound traffic from the eastbound through traffic. Therefore, in order to reasonably compare the No-Build and Build alternatives, additional traffic simulation analysis results for the SW 10th Street interchange were obtained from the ongoing SW 10th Street Connector PD&E Study. The traffic forecast and the Build alternative included in the SW 10th Street Connector PD&E Study are identical to the forecast and Build 2A alternative of the SIMR project.

Table 5.22 below shows a comparison of the Synchro and VISSIM analysis results for the SW 10th Street interchange ramp approaches and movements. It can be observed that Synchro analysis shows zero queue and LOS A for the free-flow southbound right turn movement under the 2040 No-Build conditions whereas VISSIM shows 28 and 106 seconds of delay during the AM and PM peak hours, respectively, and much longer queues for the same movement. Similarly, under the 2040 Build 2A conditions, Synchro analysis shows LOS E for the signal controlled dual southbound right turn movement whereas VISSIM shows this movement to operate at LOS C. The reliability of the results from VISSIM analysis is much higher than the results from Synchro analysis. Therefore, it can be concluded that the I-95 ramps at SW 10th Street are expected to operate much better under the Build 2A conditions than under the No-Build conditions in 2040.

	Annroach			SYNCHR	O MOEs			VISSIM N	AOEs ⁽¹⁾	
Intersection	Approach	Movt.	Available Storage	AM (PM) Queue	AM (PM) Delay	AM (PM) LOS	Available Storage	AM(PM) Queues	AM (PM) Delay	AM (PM) LOS
No-Build Alternative										
SW 10th Street at I-95 SB Off	Southbound	L (EB)	1,410	#468 (258)	68 (48)	E (D)	1,410	284 (158)	102 (127)	E (F)
Ramp	Soumbound	R (WB)	1,050	0 (0)	2 (5)	A (A)	1,050	284 (158)	28 (106)	C (F)
SW 10th Street at I-95 NB	Northbound	L (WB)	925	#928 (#991)	94 (109)	F (F)	925	288 (9,565)	48 (200+)	D (F)
Off-Ramp	normound	R (EB)	925	#987 (#1,045)	133 (149)	F (F)	925	207 (1,191)	44 (200+)	D (F)
Build 2A Alternative										
SW 10th Street at I-95 SB Off-	Southbound	L (EB)	2,665	419 (293)	37 (39)	D (D)	2,665	333 (233)	72 (111)	E (F)
Ramp	Soundound	R (WB)	2,665	1,058 (#674)	56 (66)	E (E)	2,665	333 (233)	33 (26)	C (C)
SW 10th Street at I-95 NB	Northbound	L (WB)	2,240	979 (460)	70 (38)	E (D)	2,240	364 (232)	58 (48)	E (D)
Off-Ramp	normound	R (EB)	2,240	618 (659)	64 (47)	E (D)	2,240	228 (294)	52 (52)	D (D)

Table 5.22: 2040 Comparison of SYNCHRO and VISSIM ResultsSW 10th Street Interchange Ramp Approaches

(1) VISSIM MOEs obtained from the Project Traffic Analysis Report (PTAR) dated June 2020 for SR 869/SW 10th Street Connector PD&E Study.

Synchro Queue Notes:

All lengths are in feet. Queue lengths exceeding the available storage are shown in Red.

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length.

#: 95th percentile volume exceeds capacity



Table 5.23 provides a comparison of the network-wide MOEs for the 2040 No-Build and Build 2A alternatives. These MOEs were obtained from VISSIM analysis documented in the PTAR dated June 2020 for the SW 10th Street Connector PD&E Study. The comparison clearly shows the Build 2A alternative to be better than the No-Build for all MOEs.

AM PEAK	No-Build Alternative	Build 2A Alt	ternative		
	Value	Value	Difference		
Total Delay (hr)	4,803	1,283	-73%		
Total Travel Time (hr)	10,807	8,073	-25%		
Total Stops	484,927	84,137	-83%		
Latent Demand	3,383	1	-100%		
Average Delay (mm:ss)	3:09	0:47	-75%		
Average Speed (mph)	28	42	50%		
PM PEAK	No-Build Alternative	Build 2A Alternative			
	Value	Value	Difference		
Total Delay (hr)	21,577	1,685	-92%		
Total Travel Time (hr)	26,000	9,124	-65%		
Total Stops	2,755,216	134,793	-95%		
Latent Demand	35,161	2	-100%		
Average Delay (mm:ss)	17:31	0:57	-95%		
Average Speed (mph)	8	41	413%		
2040 Horizon	Daily TT Savings (hr)	Ann. TT Savings (hr)	Ann. Benefits (\$)		
Build Alt*	19,610	5,098,600	\$ 97,893,120		

Table 5.23: 2040 Network-Wide Output (VISSIM)

Benefits over 2040 No-Build Alternative using AM & PM Peak Period at 260 days.

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5.7 Safety Analysis of the 2040 No-Build and Build Alternatives

5.7.1 HSM Analysis

As discussed earlier under Section 3.4, the crash data was obtained from FDOT Crash Analysis Reporting System (CARS) and summarized in Table 3.5. It was found that the percentages of the major crash types and the contributing factors were found to be very similar across the three interchanges. In order to assess the benefits of the proposed interchange and roadway design improvements as part of the three Build Alternatives, the theories and methods contained in Part C of the American Association of State and Highway Transportation Officials (AASHTO) Highway Safety Manual (HSM) were used. Part C of the HSM outlines procedures to estimate the frequency of crashes expected on a roadway based on geometric and traffic characteristics. The crash frequency is estimated based on predictive methods using Safety Performance Functions (SPFs) to determine base condition performance. Then Crash Modification Factors (CMFs) are applied to account for the unique characteristics of the site being analyzed. The Empirical Bayes (EB) Method is applied to determine the expected crash frequency for the "No-Build" condition. The EB Method combines the predicted average crash frequency, determined as part of the predictive method, and the observed crash frequency to determine the expected crash frequency. The addition of the observed crash frequency provides a more statistically reliable estimate of the expected average crash frequency. The HSM Arterial Spreadsheets and Excel file provided by FDOT for use on Freeways and Ramps were utilized to conduct this analysis. The limits of this analysis included:

- I-95 from south of Sample Road to north of Hillsboro Boulevard Including: Three freeway segments (including associated weaving sections), seven ramp terminals, nine merging segments, and seven diverging segments
- Sample Road from NW 5th Terrace to NE 3rd Avenue Including: Three arterial segments and three arterial intersections
- SW 10th Street from South Military Trail to Natura Boulevard Including: Five arterial segments and three arterial intersections
- Hillsboro Boulevard from SW 12th Avenue to Natura Boulevard Including: Three arterial segments and two arterial intersections

The primary modifications along the freeway segments include the addition of collectordistributor (C-D) roads at the SW 10th Street and Hillsboro Blvd Interchanges and the resultant reorganization of freeway entry and exit points, which contributed to changes in the predicted crash frequencies. Additionally, the ramp terminals at SW 10th street were re-designed.

While the HSM predictive method is a very useful tool in assessing the safety impacts of new and modified roadways, there are still some limitations. These methods are relatively new and



research is still being conducted to determine the safety impacts and predictive methods for some of the new and developing traffic management strategies and innovative roadway designs being produced at this time. One of the major factors that impacted the analysis, primarily in the vicinity of SW 10th Street, is the SPFs dependency on length and AADT. A good example of this is seen when comparing the freeway segments for the SW 10th Street No-Build and Build 1 conditions, where the AADT is the same and only the geometry changes. In the No-Build condition, SW 10th Street is a traditional interchange with merge and diverge points in both directions, resulting in an effective freeway length (total length minus merge and diverge areas) of 1.45 miles. However, in the Build conditions, these merge and diverge areas are relocated or eliminated through the use of C-D roads (braided ramps) and auxiliary lanes resulting in two freeway segments that have a total effective length of 1.88 miles. Due to the SPFs reliance on length and AADT, this increase in length results in 26 more crashes predicted in Build 1 vs. No-Build. Therefore, even though from an operational standpoint, the re-organization of the merge and diverge points will most likely yield good results with increased safety, better average speeds and travel time reliability through the interchange, these benefits cannot be reflected in the HSM analysis.

The CMFs that have the biggest impact are the presence of turn lanes, protected only left-turn signal phasing and channelized right turns. When turn lanes or protected only left-turn phasing are present a CMF of lower than 1 is applied, which reduces the predicted crash rate. When a channelized right-turn is present a CMF higher than 1 is applied, which increases the predicted crash rate. In the No-Build condition, at SW 10th Street, left-turn lanes with protected only signal phasing are present for the westbound approach (entering the loop ramp to northbound I-95) and a channelized right-turn is present on the eastbound approach (entering the loop ramp to northbound I-95). However, in the Build condition this westbound left-turn movement is eliminated and replaced by an exclusive westbound to northbound ramp with a channelized right-turn entry. Based on the geometric and signal related features for the No-build condition the final CMFs are 0.55 for fatal crashes and 0.68 for Property Damage Only crashes, whereas the final CMFs for the Build Condition are 1.21 for fatal and property damage only crashes. As with the freeway segment, the potential operational benefits of eliminating the westbound leftturn movement in the Build condition are not able to be reflected by the HSM analysis and are actually being negatively represented by an increase in predicted crashes. Some of the other limitations that may have impacted this analysis include innovative arterial intersection designs, no analysis for six-lane arterial segments, and Express Lanes.

The arterial intersections' SPFs are based on classic three and four leg intersection designs and as such the innovative designs being proposed at SW 10th Street and Newport Center Drive cannot be accurately reflected. The proposed design eliminates the northbound and southbound left-turn and through movements and redirects them to a loop road that connects the north and south sides of Newport Center Drive. While we know that both safety and operational impacts



should be seen by eliminating these movements there is currently no way to reflect the elimination of a major movement in the HSM analysis. Additional research was conducted to see if any CMFs exist to account for this change, however, nothing could be found. When individual sites along SW 10th Street are looked at, most sites show either the same or a lower crash frequency for the Build condition vs. the No-Build condition.

All three of the arterials being analyzed are six-lane divided arterials. However, the HSM only includes SPFs for four-lane divided arterials. When conducting this analysis all arterials were shown as four-lane divided arterials and then an additional Crash Modification Factor (CMF) was applied to account for the six-lane condition. The CMF used was determined via the CMF Clearing House website, details of this CMF can be found in **Appendix Q**.

5.7.2 Crash Reduction Analysis

As discussed above, the limitations in the HSM methodology could not quantify the safety benefits of the proposed improvements under the Build conditions. Therefore, in consultation with FDOT and District 4 Safety staff, it was determined that a traditional crash reduction analysis will need to be conducted to determine the safety benefits of the proposed improvements.

In order to estimate the potential safety benefits associated with proposed freeway, interchange, and arterial improvements, the crash reduction analysis utilized the following steps:

- 1. Identifying applicable crash reduction factors (CRF)
- 2. Identifying potentially correctable crashes for each improvement with an applicable CRF
- 3. Applying the CRFs to potentially correctable crashes to estimate the crash reduction per year.

This analysis was conducted based on historic crash data for the years 2012 to 2016. Life cycle analysis, which takes into account the project life in years and capital recovery factor, was not included in this analysis.

The following available resources in the order listed, were used to determine the applicable CRFs:

- FHWA Desktop Reference for Crash Reduction Factors
- FDOT approved Technical Report "Update of Florida Crash Reduction Factors and Countermeasures to improve the Development of District Safety Improvement Projects"
- CMFClearinghouse.org website
- Literature Review for any recent studies that may provide applicable CRFs



Based on the available CRF data, applicable CRFs were identified for the following nine of the proposed improvements under the Build alternatives:

- 1. I-95 NB auxiliary lanes between Hillsboro Boulevard and Palmetto Park Road.
- 2. I-95 SB auxiliary lanes between Hillsboro Boulevard and Palmetto Park Road.
- 3. I-95 SB auxiliary lane between SW 10th Street and Sample Road.
- 4. Widen NB off-ramp to SW 10th Street from one lane to two lanes.
- 5. Provide two right-turn lanes on the SB off-ramp to SW 10th Street.
- 6. Convert SW 10th Street/Newport Center Drive intersection from conventional intersection to RCUT Style intersection.
- 7. Provide an additional WB left-turn lane at the SW 10th Street and SB entry/exit ramp intersection.
- Provide dual EB and WB left turn lanes and an exclusive EB right turn lane at the SW 10th Street/Natura Blvd Intersection

It is important to note that appropriate CRFs are not available for many of the proposed improvements under the Build alternatives. These improvements are very likely to improve the operations and consequently the safety, the benefits of which cannot be quantified due to the lack of available data. Some of the improvements for which no appropriate CRFs could be obtained are:

- 1. Removal of the traffic signal for the WB to SB movement at the SW 10th Street interchange. This signal is being combined with the SB off-ramp signal.
- 2. Elimination of the weaving between the EB Hillsboro Boulevard to I-95 NB loop ramp and the NB I-95 to WB Hillsboro Boulevard loop ramp.
- Elimination (through braided ramps) of the conflict between the NB On-ramp from SW 10th Street and NB Off-Ramp to Hillsboro Boulevard.
- 4. Elimination (through braided ramps) of the conflict between the SB On-ramp from Hillsboro Boulevard and the SB Off-Ramp to SW 10th Street.
- 5. Elimination of the WB to SB I-95 loop ramp merge with I-95 mainline lanes at Hillsboro Boulevard
- 6. Increasing the storage length of the NB Off-Ramp to Hillsboro Boulevard from 2450' to 4100' to prevent queue spillback onto I-95 mainline.
- Increasing the storage length of the SB Off-Ramp to SW 10th Street from 1360' to 4150' to prevent queue spillback onto I-95 mainline.

The 2012 to 2016 crash data related to the eight improvements for which CRFs were available was obtained and a high-level review was conducted to determine those crashes that may be correctable as a result of each of the nine improvements. Crash data for all but one of the improvements was obtained from the FDOT Crash Analysis Reporting System (CARS). SW 10th Street is not a State Road east of the NB I-95 on/off ramp intersection. As such, the



crash data for the SW 10^{th} Street/Natura Boulevard intersection had to be obtained from Signal Four Analytics. The crash data was filtered to include only those crashes that would be applicable to the associated improvements. For example, only the crashes that occurred in the southbound direction were used in the analysis for the SB auxiliary lane improvements. All pertinent data is included in **Appendix Q**. The results of this analysis are summarized in **Table 5.24**. The analysis results show that approximately 42 crashes per year may be reduced by the proposed improvements resulting in an annual safety benefit of \$6,159,918. The safety benefit per year was calculated based on the average cost per crash provided in the FDOT Design Manual which is based on the 2012 to 2016 crash data.

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Improvement	BMP	EMP	CRF^1	Source	Potentially Correctable Crashes ² (2012-2016)	Estimated Crash Reduction (per year)	Cost per crash ³	Estimated Safety Benefit (per year)
I-95 NB auxiliary lanes between Hillsboro Boulevard and Palmetto Park Road.	25.013/0.000	25.334/1.354	21%	CMF Clearing House	227	9.534	\$153,130	\$1,459,941.42
I-95 SB auxiliary lanes between Hillsboro Boulevard and Palmetto Park Road.	25.334/1.337	24.980/0.000	21%	CMF Clearing House	278	11.676	\$153,130	\$1,787,945.88
I-95 SB auxiliary lane between SW 10th Street and Sample Road.	23.526	21.983	21%	CMF Clearing House	201	8.442	\$153,130	\$1,292,723.46
Widen NB off-ramp to SW 10th Street from one lane to two lanes	-	-	25%	FDOT Report	57	2.85	\$153,130	\$436,420.50
Provide two right-turn lanes on the SB off-ramp to SW 10th Street	-	-	17%	FDOT Report	52	1.768	\$153,130	\$270,733.84
Convert SW 10th Street/Newport Center Drive intersection from conventional intersection to RCUT Style intersection	1.774	1.874	15%	FHWA-HRT-17-082	86	2.58	\$123,598	\$318,882.84
Provide an additional WB left-turn lane at the SW 10th Street and SB entry/exit ramp intersection	1.955	2.135	17%	FDOT Report	44	1.496	\$123,598	\$184,902.61
Provide dual EB and WB left turn lanes and an exclusive EB right turn lane at the SW 10th Street/Natura Blvd Intersection ⁴	n/a	n/a	28%	FDOT Report	59	3.304	\$123,598	\$408,367.79
					Total	41.65		\$6,159,918.34

Table 5.24: Crash Reduction Analysis Summary

1. See appendix Q for CRF Reference Information

2. See Appendix Q for Crash Data

3. Cost per crash based on FDOT Design Manual Section 122.6.1 Table 122.6.1

4. This portion of SW 10th Street is not part of the SHS, crash data was obtained from Signal Four Analytics



6 OTHER CONSIDERATIONS

6.1 **Potential Design Exceptions and Variations**

Improvements along the I-95 mainline and ramps will require a border width variation, as there are several locations where the 94' minimum width cannot be achieved without further right-of-way acquisition, and a horizontal alignment variation due to several curves that do not meet the minimum curve length of 400'. Improvements along SW 10th Street may require a border width variation from the I-95 interchange to Military Trail where the minimum 15.5' width is not provided, and a shoulder width variation for each direct connect bridge over I-95 and SW 10th Street connecting managed lanes and express lanes. All other improvements along the mainline, ramps, SW 10th Street and Hillsboro Boulevard should be designed using minimum standards established in the latest editions of AASHTO's A Policy on Geometric Design of Highways and Streets and the FDOT Design Manual.

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7 PROJECT JUSTIFICATION

7.1 FHWA's Policy on Access to the Interstate System

The Federal Highway Administration's (FHWA's) newly adopted policy on *Access to the Interstate System* became effective on May 22, 2017 and replaces the policy of August 27, 2009 on *Access to the Interstate System*, published at 74 Federal Register 43743. The changes in this policy are made to ensure this policy focuses on safety, operational, and engineering issues. The consideration of social, economic, and environmental impacts discussed in the 2009 policy are removed from this policy. However, the removal from this policy does not eliminate the need to consider those matters. Those issues will be addressed under the National Environmental Policy Act and other statutes and regulations applicable to the approval process.

This policy is effective as of May 22, 2017.

It is in the national interest to preserve and enhance the Interstate System to meet the needs of the 21st Century by assuring that it provides the highest level of service in terms of safety and mobility. Full control of access along the Interstate mainline and ramps, along with control of access on the crossroad at interchanges, is critical to providing such service. Therefore, the Federal Highway Administration's (FHWA) decision to approve new or revised access points to the Interstate System under Title 23, United States Code (U.S.C.), Section 111, must be supported by substantiated information justifying and documenting that decision. The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the following requirements:

Considerations and Requirements

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)).

The operational analysis conducted for the SIMR confirmed that the proposed interchange modifications are not expected to have any significant adverse impacts on safety and operations on the interstate facility (I-95). The proposed elimination of the loop ramp in the northeast quadrant of the Hillsboro Boulevard interchange will remove the weaving movement between the ramp terminals and thereby improve the safety and flow of traffic along Hillsboro Boulevard. The proposed improvements along SW 10th Street under the Build alternatives are expected to significantly improve the operations at the NB off-ramp terminal intersection from LOS E and F to LOS B. The 2040 No-Build queuing results for the NB off-ramp at SW 10th Street show the queues to be exceeding the available storage lengths which could adversely impact the flow of traffic along I-95. The proposed improvements under the 2040 Build conditions are projected to significantly increase the available storage length for this ramp and should prevent the queue from adversely affecting the operations along I-95. The comparison between No-Build and Build Alternative 2A shows that the annual travel time saving is approximately \$98 million. Compared to the No-Build Alternative, the Build Alternative 2A is expected to reduce the total delay by 75% and 92% and increase the average speed by 50% and 413% during the AM and PM peak hours, respectively. The Build Alternative 2A is projected to significantly improve the LOS at the intersections along SW 10th Street from LOS E and F to LOS D or better. The projected failing conditions under the No-Build Alternative are expected to increase future crash risk within the project corridor. This potential for increased crash risk is alleviated by the capacity improvements proposed in the Build Alternatives.

Many of the improvements proposed for this project are unconventional and unique. The limitations in the Highway Safety Manual (HSM) analysis methodology fail to capture the benefits of the proposed operational and capacity improvements proposed under the Build alternatives and consequently fail to quantify the crash reduction in a meaningful way for this project. Therefore, a traditional crash reduction analysis was conducted to estimate the potential safety benefits of the proposed freeway, interchange, and arterial improvements. The analysis shows that the proposed improvements are expected to reduce approximately 42 crashes per year resulting in an annual safety benefit of more than six (6) million dollars.

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.

This SIMR does not propose any new interchanges along I-95. These existing interchanges provide access to public roads only. The improvements proposed at the interchanges will maintain full access to the existing cross streets and accommodate all movements.

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8 CONCEPTUAL FUNDING

A funding plan for the proposed project has been developed and the right of way phase has been programmed. The interchange improvements will be constructed as part of a Design/Build project under FM number 436964-2 as follows:

- Construction Programmed in FY 2023
- Letting Date July 3, 2024
- Open to Traffic July 2027

Funding has been identified in the Work Program for the preliminary design, right of way, utility and design build phases in FY 2019 through FY 2024. The total estimated construction cost is \$309 million. Cost estimates have been developed based on an engineer's opinion of probable cost using current FDOT Long Range Estimates (LRE) base costs.

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9 CONCLUSION AND RECOMMENDATION

The primary purpose of the I-95 Systems Interchange Modification Report (SIMR) project is to identify the long-term needs through 2040 and to develop design concepts to address traffic spillbacks onto I-95, improve interchange operations, reduce congestion, and enhance safety at the I-95 interchange at SW 10th Street (SR 869) and adjacent interchanges at Hillsboro Boulevard (SR 810) and Sample Road (SR 834). This SIMR evaluates the traffic operations of the No-Build, Build 1, Build 2, and Build 2A alternatives.

The information and analysis indicate that several of the merge, diverge and weaving areas have been designated as High Crash Locations at some point within the last three years of analysis (2013-2015). Similarly, the No-Build Alternative is projected to experience operational failures at multiple merge, diverge and weave locations along I-95 within the study interchanges. Proposed modifications to the interchange are recommended to address projected deficiencies in the future. Listed below are specific modifications and projected benefits:

- The proposed Build alternatives with a 7,900 foot SB auxiliary lane on I-95 between the SB entrance ramp from SW 10th Street and the SB exit ramp to Sample Road creates a 4-lane mainline segment on SB I-95 and is projected to significantly improve the operations in the SB direction.
- The proposed NB braided ramps at the SW 10th Street interchange and the SB braided ramps at Hillsboro Boulevard not only reduce the number of merge and diverge points along I-95 but also provides for longer off-ramp storage lengths. Freeway analysis projects significant improvements over the No-Build conditions in the merge, diverge and mainline operations in both directions.
- The interchange ramp terminal improvements proposed under the Build alternatives are projected to significantly improve the operations at the ramp terminals and potentially eliminate the possibility of off-ramp queues spilling on to the mainline.
- The proposed elimination of the SB on-ramp signal at SW 10th Street and the proposed improvements along SW 10th Street are expected to significantly improve the flow of traffic along the arterial, particularly at the interchange. The improved operations are projected to improve the safety along the corridor.
- The intersection of SW 10th Street and Newport Center Drive is located less than 900 feet west of the SB off-ramp terminal and the westbound queues affect the ramp operations. In order to provide more green time for the east-west movements at this intersection, the northbound and southbound approaches have been modified to allow only right turn movements. Triple right turn lanes have been provided on the northbound and southbound approaches. The northbound and southbound through and left turn

movements have been reassigned based on their destination to SW 12th Avenue/Newport Center Drive local road.

These improvements address the traffic operation deficiencies by eliminating or improving the failing conditions within the interchange influence area and improving safety by reducing congestion and improving operating conditions along SW 10th Street and Hillsboro Boulevard. A traditional crash reduction analysis shows that the proposed improvements are likely to reduce approximately 42 crashes per year resulting in an annual safety benefit of more than six (6) million dollars.

Table 9.1 provides a comparison of the Design Year 2040 intersection analysis results. It is evident from this summary table that the Build alternatives are projected to provide better operating conditions than the No-Build in Design Year 2040. Among the Build alternatives, both Build 2 and Build 2A provide better MOEs than Build 1. Build 2 and Build 2A appear to provide similar MOEs despite higher volumes under Build 2A due to the system-to-system connection between Sawgrass Expressway in the west and I-95 in the east.

Table 9.2 provides a comparison of the off-ramp queuing analysis results for Design Year 2040. The analysis indicates that under the Build alternatives, it is highly unlikely for the off-ramp queues to exceed the available storage lengths. It is also important to note that the Build queues are shorter than the No-Build queues in most instances.

Considering the overall operations along I-95, ramp terminals, and along Hillsboro Boulevard and SW 10th Street, all three Build alternatives are projected to provide better operating conditions than the No-Build. However, the operational improvements under the Build 2 and Build 2A alternatives are better than Build 1. The MOEs for Build 2 and Build 2A are very similar despite the highest traffic demand under Build 2A. In terms of Strategic Intermodal System (SIS) connectivity, Build 2A provides better connectivity. Build 2A provides a direct and logical system-to-system connection between Sawgrass Expressway and I-95 and Florida's Turnpike. VISSIM analysis conducted under the SW 10th Street Connector PD&E Study confirms that the Build 2A alternative is expected to provide better operations than the No-Build alternative in 2040.

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gnal Controlled Intersections / 12th Avenue 5 Southbound Off-ramp 5 Northbound Off-ramp / Natura Blvd/Fairway Dr	Existing 2016 LOS (Delay) C (32.8) C (22.2)		20 Build 1 LOS (Delay)	40 Build 2 LOS (Delay)	Build 2A LOS
/ 12th Avenue 5 Southbound Off-ramp 5 Northbound Off-ramp	LOS (Delay) C (32.8)	LOS (Delay)			LOS
/ 12th Avenue 5 Southbound Off-ramp 5 Northbound Off-ramp	(Delay) C (32.8)		LOS (Delay)	LOS (Delay)	
5 Southbound Off-ramp 5 Northbound Off-ramp	. ,				(Delay)
5 Southbound Off-ramp 5 Northbound Off-ramp	. ,				
5 Northbound Off-ramp	C (22.2)	D (40.0)	D (39.3)	D (40.6)	D (40.4)
-		C (20.4)	C (20.9)	B (19.2)	B (19.7)
/ Natura Blvd/Fairway Dr		B (10.5)	B (13.2)	B (12.4)	B (13.1)
Thatara Brear an oray Br	E (77.4)	F (80.0)	F (80.4)	F (80.4)	F (80.2)
/ 12th Avenue	D (42.0)	E (60.2)	E (59.2)	E (56.3)	E (60.1)
5 Southbound Off-ramp	B (17.8)	B (16.7)	B (17.9)	B (18.3)	B (15.6)
5 Northbound Off-ramp		A (9.8)	B (13.4)	B (12.5)	B (13.3)
/ Natura Blvd/Fairway Dr	C (32.4)	D (38.0)	D (37.8)	D (38.1)	D (37.4)
uth Military Trail	F (84.8)	F (140.5)	F (121.8)	D (48.5)	E (65.8)
· · · · · · · · · · · · · · · · · · ·	C (32.2)	C (34.5)	A (9.9)	· · ·	B (10.4)
5 Southbound On-ramp		· · · · ·		, í	
5 Southbound Off-ramp	D (35.7)		E (57.6)	C (23.3)	D (35.4)
5 Northbound Ramps	D (48.6)	E (58.5)	B (19.4)	B (11.3)	B (17.1)
U Research Park Blvd	D (38.4)	C (30.1)	C (29.7)	C (20.8)	C (32.3)
uth Military Trail	F (95.4)	F (141.4)	F (130.5)	D (54.2)	D (50.3)
,	~ /		× /	, ,	B (15.0)
1	D (46.2)		E (75.8)	C (24.5)	C (29.0)
5 Northbound Ramps	F (97.2)	F (81.3)	C (29.7)	B (11.7)	B (15.3)
U Research Park Blvd	D (49.2)	D (38.8)	C (32.6)	C (29.7)	D (43.3)
			· · ·		```````
V 5th Terrace	B (16.1)	B (15.1)	B (15.1)	B (15.2)	B (15.1)
	. ,	· · · ·			B (10.5)
		· · · ·		、 <i>、</i> /	A (9.3)
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3rd Avenue					D (52.8)
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V 5th Terrace	B (15 9)	B (183)	B (16 9)	B (16.9)	B (16.7)
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1				, , ,	D (48.9)
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Table 9.1: 2040 Comparison of No-Build and Build Alternatives -Intersection Analysis Results

SR 9 (I-95) Systems Interchange Modification Report: Sample Road to Hillsboro Boulevard

Intersection	Approach	Movt.	No-Build Queue Lengths		Build Queue Lengths			
			Available	AM (PM)	Available	Build 1	Build 2	Build 2A
			Storage	Queue	Storage	AM(PM)	AM(PM)	AM(PM)
Hillsboro Boulevard at I-95 SB Off-Ramp	Southbound	L (EB)	1,255	719 (733)	1,255	719 (733)	693 (693)	702 (669)
		R (WB)	1,550	832 (503)	1,550	833 (503)	789 (488)	454 (256)
Hillsboro Boulevard at I-95 NB Off-Ramp	Northbound	L(WB)	N/A	N/A	2,965	341 (333)	276 (274)	98 (92)
		R (EB)	2,730	472 (401)	2,615	496 (#422)	496 (#422)	292 (#263)
SW 10th Street at I-95 SB Off-Ramp	Southbound	L (EB)	1,410	#468 (258)	2,615	454 (312)	400 (299)	419 (293)
		R (WB)	1,050	0 (0)	2,615	#1,475 (#1,856)	561 (#486)	1,058 (#674)
SW 10th Street at I-95 NB Off-Ramp	Northbound	L (WB)	925	#928 (#991)	2,240	#1,184 (#1,325)	643 (522)	979 (460)
		R (EB)	925	#987 (#1,045)	2,240	620 (#1,072)	440 (659)	618 (659)
Sample Road at I-95 SB Off-Ramp	Southbound	L (EB)	1,010	246 (438)	1,010	246 (277)	239 (264)	128 (137)
		R (WB)	1,010	#333 (672)	1,010	#333 (#491)	#320 (#486)	#185 (#285)
Sample Road at I-95 NB Off-Ramp	Northbound	L (WB)	1,095	277 (947)	1,095	277 (1,013)	277 (995)	144 (522)
		R (EB)	1,095	222 (514)	1,095	222 (547)	222 (540)	127 (318)

Table 9.2: 2040 No-Build & Build - Off-Ramp Signals Queing Analysis Results

Queue Notes:

All lengths are in feet. Queue lengths exceeding the available storage are shown in Red.

Synchro queue was multiplied by the number of turn lanes and the lane utilization factor to calculate the total queue length.

#: 95th percentile volume exceeds capacity

Example of Storage Length Calculation for SBRT at Hillsboro Blvd. = $[{(1920-615)/2} + 310 + (295*2)] = 1,552.5$ feet rounded to 1,550 feet.



APPENDIX A

Amended Methodology Letter of Understanding (MLOU)



APPENDIX B

Raw Traffic Data & Signal Timing Data



APPENDIX C

2016 Existing Freeway HCS Operational Analysis



APPENDIX D

2016 Existing Synchro Intersection Analysis



APPENDIX E

2013 – 2015 Historical Crash Maps and Statistical Summaries



APPENDIX F

Travel Demand Forecast - SW 10th Street PD&E PTFM, January 2019



APPENDIX G

2020 & 2040 No-Build Freeway HCS Analysis



APPENDIX H

2020 & 2040 No-Build Synchro Intersection Analysis



APPENDIX I

SW 10th Street Connector & I-95 Interchange Supplemental Traffic Forecast Scenarios SW 10th Street at I-95 – Alternatives Analysis Memorandum



APPENDIX J

Build 1, Build 2, and Build 2A Conceptual and Signing Plans



APPENDIX K

2020 & 2040 Build 1 Freeway HCS Operational Analysis



APPENDIX L

2020 & 2040 Build 1 Synchro Intersection Analysis



APPENDIX M

2020 & 2040 Build 2 Freeway HCS Operational Analysis



APPENDIX N

2020 & 2040 Build 2 Synchro Intersection Analysis



APPENDIX O

2020 & 2040 Build 2A Freeway HCS Operational Analysis



APPENDIX P

2020 & 2040 Build 2A Synchro Intersection Analysis



APPENDIX Q

2040 No-Build and Build Safety Analysis