



I-95 Multimodal Master Plan FACILITY OPERATIONS AND PRESERVATION ELEMENT REPORT

July 2020



Prepared for: Florida Department of Transportation – District Four (D4)

Prepared by: RS&H, Inc.

SR 9 / I-95 MULTIMODAL MASTER PLAN

FACILITY OPERATIONS AND PRESERVATION ELEMENT REPORT

Financial Project ID: 436577-1-22-01

Martin, St Lucie, and Indian River Counties



Prepared For:
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July 2020

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Reynolds, Smith and Hills, Inc., authorized under Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes, Certificate of Authorization (CA) No. 2294, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I prepared or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Financial Project ID: 436577-1-22-01
Project: SR 9 / I-95 Multimodal Master Plan
FACILITY OPERATIONS AND PRESERVATION ELEMENT REPORT
From Palm Beach/Martin County Line to Indian River/Brevard County Line
County: Martin, St Lucie, and Indian River Counties
FDOT Project Manager: Christine Fasiska

I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

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Traffic Element Report for I-95 Multimodal Master Plan, February 2020

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1.0 PROJECT OVERVIEW

1.1 Introduction

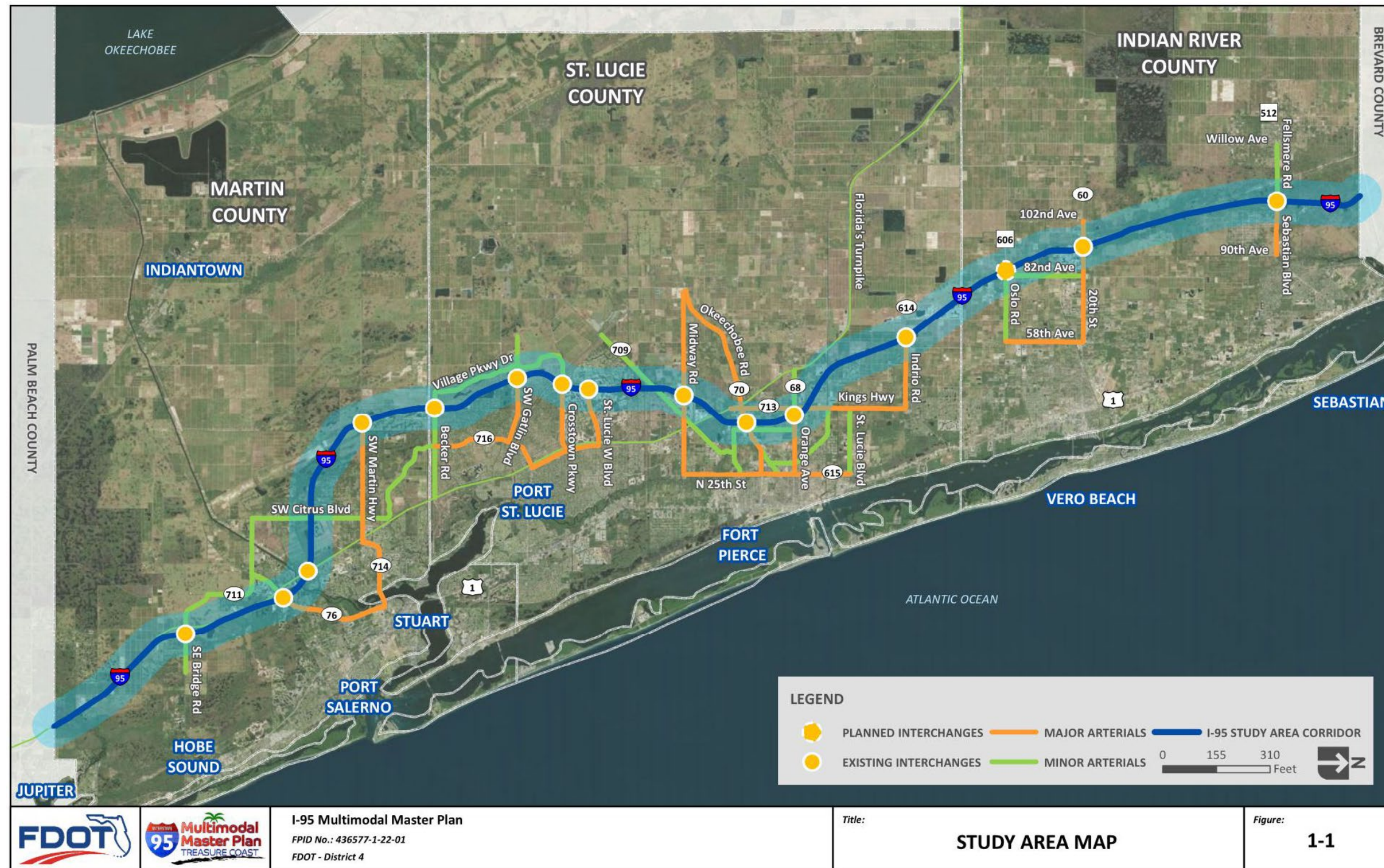
The Florida Department of Transportation (FDOT) is preparing a Multimodal Master Plan for SR 9 / I-95 between the Palm Beach/Martin County Line to the Indian River/Brevard County Line, a distance of approximately 71 miles. The study limits are shown in **Figure 1-1**. The plan includes the SR 9 / I-95 mainline, interchanges, and other road segments and intersections within the anticipated area of influence for the project. The Master Plan study conducted a prioritization assessment to determine improvement needs required for 2030 and 2045. The Facility Enhancement Report details the staging of improvements and focuses on the overall 2045 needs. On the other hand, the Facility Operations and Preservation Element documents the interim physical or operational improvements required to preserve the level of service on the selected intersections and roadways until major capacity improvements can be made. Additionally, it includes the short term needs required to be implemented by 2030 to proactively address capacity and operational deficiencies to continue providing the efficient movement of people and goods throughout the region and state.

1.2 Purpose and Need

The purpose of this Facility Operations and Preservation Element is to document the need, type, extent and estimated cost of interim and short range (2030) SR 9 / I-95 mainline and interchange improvements. These improvements are intended to preserve and improve, where possible, the existing level of service until the ultimate design concept can be implemented. The needs assessment provides an analysis of physical improvement alternatives and includes analyses of alternative modes, Transportation System Management (TSM) techniques, and multi-modal improvements. Cost comparisons consider a variety of elements such as preliminary design, right-of-way acquisition, and construction costs. The development of improvement concepts is based on a multi-discipline, multi-agency approach that considers all aspects of the alternatives' analysis including benefits, costs, impacts, and state and local agency input.

The product of the Facility Operations and Preservation Element identifies recommendations for interim and short term improvements to the SR 9 / I-95 mainline and noted interchange influence areas. Priority for advance right-of-way acquisition and protection is also identified.

Figure 1.1 – Study Area Map



2.0 INTERIM AND SHORT TERM IMPROVEMENTS

2.1 General Description

The limits of the section of SR 9 / I-95 being studied is from the Palm Beach/Martin County Line to the Indian River/Brevard County Line, all of which is in the jurisdiction of FDOT District 4. There are 15 interchanges in the study area, including an interchange at Oslo Road that is currently under design by FDOT. The list of the interchanges is provided in Table 2-1.

Table 2-1 | Study Area Interchange Locations

County	Interchange Location
Martin	CR 708 / SE Bridge Road
Martin	SR 76 / SW Kanner Highway
Martin	SW High Meadow Avenue
Martin	CR 714 / SR 714 / SW Martin Highway
St. Lucie	SW Becker Road
St. Lucie	Tradition Parkway / SW Gatlin Blvd.
St. Lucie	Crosstown Parkway
St. Lucie	Reserve Blvd. / St Lucie West Blvd.
St. Lucie	CR 712 / W. Midway Road
St. Lucie	SR 70 / Okeechobee Road
St. Lucie	SR 68 / Orange Avenue
St. Lucie	SR 614 / Indrio Road
Indian River	CR 606 / Oslo Road
Indian River	SR 60 / 20th Street
Indian River	CR 512 / Fellsmere Road

The Facility Enhancement Report includes detailed information regarding the ultimate improvements needed by no later than 2045 for the infrastructure to function effectively. (Some of the ultimate improvements were identified as having to be implemented by 2030, but are not considered short-term improvements for the purposes of this document.) The noted projects in this

report consist of interim improvements that correspond to minor intersection/interchange and/or roadway improvements that enable the preservation of the level of service until the ultimate project can be implemented.

Extensive coordination with Martin County, St. Lucie County, City of Port St. Lucie, City of Fort Pierce, Indian River County, and FDOT District 4 Planning/Design offices occurred throughout this project to avoid conflicts or overlaps between future developments between entities.

2.2 Design criteria

Design and operational standards for the interstate and cross roads are noted in detail in the Facility Enhancement Report. Design standards and criteria provided the framework for evaluating current geometric and operational deficiencies and future designs to meet mobility needs. Design elements presented in this report are consistent with the design parameters outlined in the Facility Enhancement Report.

The horizontal and vertical alignment, as well as the lighting, drainage, signing and pavement marking, pavement design, and maintenance of traffic, will be evaluated during the design phase.

2.3 Existing Conditions Analysis

SR 9 / I-95 is a limited access facility considered a key part of Florida's Strategic Intermodal System (SIS) and is anticipated to operate at acceptable levels of service through 2030. The typical section of SR 9 / I-95 varies within the study area as there are a total of six typical sections. The typical section for the roadway segment extending from the Palm Beach / Martin County Line to approximately 3,000 feet north differs from the rest of the corridor typicals as it is immediately adjacent to Florida's Turnpike and is separated by a concrete barrier wall. The other SR 9 / I-95 typical sections have a varying number of travel lanes and a grass varied median width. The right-of-way width varies throughout the corridor, particularly at rest areas, weigh stations and interchanges. The design speed for SR 9 / I-95 within the study limits is 70 miles per hour (mph), which matches the posted speed.

SR 9 / I-95 consists of various grade-separated crossings and some bridges will have to be replaced or widened due to the proposed improvements.

As part of the study, the SR 9 / I-95 corridor geometric and cross sectional characteristics were evaluated for compliance with current FDOT and Florida Intrastate Highway System/Strategic Intermodal Systems (FIHS/SIS) standards. Substandard elements were identified throughout the study limits. No safety and/or operation history was associated with corresponding substandard elements.

There are 15 interchanges within the study area and improvement limits along the cross roads were based on the anticipated area of influence for the project.

A detailed assessment of the existing conditions for SR 9 / I-95 and cross roads is provided in the *Facility Enhancement Report* for I-95 Multimodal Master Plan, dated June 2020.

2.4 Proposed Improvements

2.4.1 Mainline

The proposed ultimate improvements along SR 9 / I-95 entail the addition of one managed lane in each direction (northbound/southbound) from the Palm Beach / Martin County Line to SR 70 / Okeechobee Road, ramp reconstruction/reconfiguration with a braided ramp system between the Crosstown Parkway and St. Lucie West Boulevard interchanges, and extensions of some acceleration/deceleration lanes.

There are 15 bridges that are impacted by the widening of the I-95 corridor from CR 708 / SE Bridge Road to SR 70 / Okeechobee Road. These bridges themselves will either need widening or replacement.

There are no interim or short term improvement recommended along the SR 9 / I-95 mainline.

Additional details regarding the SR 9/I-95 Mainline widening and the impacted bridge improvements are included in the *Facility Enhancement Report* for I-95 Multimodal Master Plan, dated June 2020.

2.4.2 Cross Roads

There are ultimate improvements proposed along the interchanges and cross roads within the anticipated influence area that vary in scope of work. They range from a signalization upgrade at Oslo Road to a full interchange reconfiguration at SR 76 / Kanner Highway. With the exception of the interim improvement at SR 70 / Okeechobee Road, all others correspond to intersection capacity and operation improvements that become part of the ultimate improvement configuration.

2.4.2.1 CR 708 / Bridge Road

2.4.2.1.1 CR 708 / Bridge Road and SR 9 / I-95 Ramp Terminals

The proposed improvements includes signalization of the SR 9 / I-95 northbound and southbound ramp terminals. These improvements consist of a new steel mast arm system, traffic signal heads, video/loop vehicle detection systems, push button/signal pedestrian signalized systems, traffic controllers, and ancillary features (conduit, conductor, electric service, etc.).

Additional details regarding cross road improvements are included in the *Facility Enhancement Element Report* for I-95 Multimodal Master Plan, dated June 2020.

2.4.2.1.2 Right-of-Way

Right-of-way acquisition will not be necessary for this roadway segment. The proposed design improvements will be accommodated within the existing right-of-way limits.

2.4.2.1.3 Cost Estimate

FDOT's Long Range Estimates (LRE) web-based computer system was used to develop construction cost estimates. The LRE is a parametric estimating tool used for conceptual estimating

prior to development of design quantities. The LRE cost estimate for the signalization improvements at both the I-95 northbound and southbound ramp terminal intersections along Bridge Road is approximately \$1.3 million. See **Appendix B** for short term improvement costs (LRE).

2.4.2.2 CR 714 / SR 714 / Martin Highway

2.4.2.2.1 CR 714 / SR 714 / Martin Highway and SR 9/ I-95 Ramp Terminals

The proposed short-term improvements include signalization of the CR 714 / SR 714 / Martin Highway Ramp Termini intersections at both ramp terminal intersections. These improvements consist of a new steel mast arm system, traffic signal heads, video/loop vehicle detection systems, push button/signal pedestrian signalized systems, traffic controllers, and ancillary features (conduit, conductor, electric service, etc.).

Additional details regarding cross road improvements are included in the *Facility Enhancement Element Report* for I-95 Multimodal Master Plan, dated June 2020.

2.4.2.2.2 CR 714 / SR 714 / Martin Highway and Stuart Boulevard

The proposed signal improvements include signalization of the CR 714 / SR 714 / Martin Highway and Stuart Boulevard intersection to improve the significantly higher delays in the AM and PM peak hours. These improvements consist of a new steel mast arm, traffic signal heads, video/loop vehicle detection systems, push button/signal pedestrian signalized systems, traffic controllers, and ancillary features (conduit, conductor, electric service, etc.).

2.4.2.2.3 Right-of-Way

Right-of-way acquisition will not be necessary for this roadway segment. The proposed design improvements will be accommodated within the existing right-of-way limits.

2.4.2.2.4 Cost Estimate

The LRE cost estimate for the signalization improvements at both the I-95 northbound and southbound ramp terminal intersections along Martin Highway as well as the intersection of Martin Highway with Stuart Boulevard is about \$1.6 million. See **Appendix B** for short term improvement costs (LRE).

2.4.2.3 Becker Road

2.4.2.3.1 Becker Road and Village Parkway

The proposed improvements includes the addition of one northbound and one southbound lane divided by a median of 19 to 29 feet wide on south approach of the Becker Road and Village Parkway intersection. On the Village Parkway north approach, a second southbound left turn lane was added. These improvements require widening of the existing roadway and new traffic signal heads.

See **Appendix A** for the Becker Road and Village Parkway conceptual improvements.

2.4.2.3.2 Right-of-Way

Right-of-way acquisition is necessary in order to build in the undeveloped land on the south side of Village of Parkway. An approximate total of 26,478 square feet of right-of-way needs to be obtained to accommodate the proposed improvements for the facility and for future developments described in the Facility Enhancement Report. Additional details regarding cross road improvement right-of-way impacts are included in the Facility Enhancement Element Report for I-95 Multimodal Master Plan, dated June 2020.

2.4.2.3.3 Cost Estimate

The LRE cost estimate for the Becker Road and Village Parkway intersection improvements includes the addition of the south approach leg and additional turn lane on the north approach as

well as signalization improvements is \$60,187.61. See **Appendix B** for short term improvement costs (LRE).

2.4.2.4 Tradition Parkway / Gatlin Boulevard

2.4.2.4.1 Tradition Parkway / Gatlin Boulevard and Village Parkway

The proposed improvements include the replacement of the existing westbound Tradition Parkway Drive / Gatlin Boulevard right turn to a free flow lane. This improvement would require a new steel mast arm and new traffic signal heads. Existing bridge along Village Parkway needs to be widened by one lane to accommodate the new receiving lane. Also existing northbound Village Parkway right-turn lane is to be upgraded to a free flow lane.

See **Appendix A** for the Gatlin Boulevard and Village Parkway conceptual improvements.

2.4.2.4.2 Right-of-Way

Right-of-way acquisition is necessary for these proposed improvements. Additional details regarding cross road improvement right-of-way impacts are included in the Facility Enhancement Element Report for I-95 Multimodal Master Plan, dated June 2020.

2.4.2.4.3 Cost Estimate

The LRE cost estimate for the Tradition Parkway and Village Parkway intersection improvements that includes the addition of the westbound right free flow lane and signalization improvements is nearly \$1.4 million. The extension of the right free flow lane along northbound Village Parkway requires the widening of the existing bridge for which the cost is also included. See **Appendix B** for short term improvement costs (LRE).

2.4.2.5 St. Lucie West Boulevard

2.4.2.5.1 St. Lucie West Boulevard and Peacock Boulevard

The proposed improvements include adding a third left turn lane and a third through lane along eastbound of St Lucie West Boulevard. Also, along westbound of St. Lucie West Boulevard a second left turn lane, a third through lane and a second right turn lane with a protected right turn overlap phase is to be added. Moreover, northbound Peacock Boulevard requires the addition of a second through lane with a protected overlap phase. Likewise, along southbound Peacock Boulevard a second through lane and a second right-turn lane with a protected right-turn overlap phase is to be added. These improvements would require a new steel mast arm and new traffic signal heads.

See **Appendix A** for the St. Lucie West Boulevard and Peacock Boulevard conceptual improvements.

2.4.2.5.2 Right-of-Way

Right-of-way acquisition is necessary for these proposed improvements. Additional details regarding cross road improvement right-of-way impacts are included in the Facility Enhancement Element Report for I-95 Multimodal Master Plan, dated June 2020.

2.4.2.5.3 Cost Estimate

The LRE cost estimate for the St. Lucie West Boulevard and Peacock Boulevard intersection improvements that includes the addition of a third left turn lane and through lane along eastbound, left/right turn lane and through lane along the westbound, one through lane along the northbound, and one left turn lane and through lane along the southbound as well as signalization improvements is about \$4 million. See **Appendix B** for short term improvement costs (LRE).

*2.4.2.6 SR 70 / Okeechobee Road***2.4.2.6.1 SR 70 / Okeechobee Road**

This is a high prioritized improvement project that in addition to being on a Strategic Intermodal System (SIS) facility, the improvements affect multiple modes of transportation; are intended to address immediate safety concerns in the westbound direction of travel; and can be built within the existing right-of-way. The proposed improvements include lane reconfiguration to improve lane utilization along west bound of SR 70 / Okeechobee Road accommodating a shared through right turn lane movement with northbound on ramp of SR 9 / I-95.

The westbound SR 70 / Okeechobee Road typical section consists of four through lanes and a bicycle lane between the driveway connection for a retail development (The Home Depot, Waffle House, RaceTrac, and Sonic restaurant) to Jenkins Road. The outside lane becomes a drop-lane at the I-95 northbound/southbound on-ramps with three through lanes and the bike lane continuing across the interchange.

There is a lane utilization concern within this roadway segment. Drivers travelling along westbound SR 70 / Okeechobee Road as they approach Jenkins Road currently must position their vehicle in a single outside lane if their destination is I-95 northbound/southbound; access to the retail development immediately downstream; or turn right onto Jenkins Road. This results in excessive queues and vehicular delays in the outside lane of westbound SR 70 / Okeechobee Road.

It is recommended for the outside lane area on westbound SR 70 / Okeechobee Road to be widened and restriped such that it maintains the outside drop-lane while also providing a second lane that allows a shared through/right movement from the SR 70 / Okeechobee Road third lane. The I-95 northbound on-ramp is to be realigned to relocate the ramp gore limits further west to provide an extended weaving segment. The bicycle lane is being maintained along westbound SR 70 / Okeechobee Road with an alternative route. This would permit bicyclists to continue along the SR

70 / Okeechobee Road outside paved shoulder onto the marked crosswalk location eventually linking to the existing sidewalk near the ramp terminal intersection.

See **Appendix A** for the SR 70 / Okeechobee Road ramp conceptual improvements.

2.4.2.6.2 SR 70 / Okeechobee Road and Jenkins Road

The proposed signal improvement includes retiming existing phasing to maximize the efficiency of the current transportation system for SR 70 / Okeechobee Road and Jenkins Road.

2.4.2.6.3 Right-of-Way

Right-of-way acquisition will not be necessary for this roadway segment. The proposed design improvements will be accommodated within the existing right-of-way limits.

2.4.2.6.4 Cost Estimate

The LRE cost estimate for the I-95 northbound/southbound onramp improvements along Okeechobee Road westbound to improve lane utilization as well as signalization improvements at the Okeechobee Road and Jenkins Road intersection is nearly \$1 million. See **Appendix B** for improvement costs (LRE).

*2.4.2.7 CR 512 / Fellsmere Road***2.4.2.7.1 CR 512 / Fellsmere Road**

The proposed improvement provides a westbound drop right turn lane to eliminate westbound merge prior to Fellsmere Trailhead Preserve driveway immediately west of southbound off ramp SR 9/ I-95 termini intersection.

See **Appendix A** for the CR 512/Fellsmere Road conceptual improvements.

2.4.2.7.2 Right-of-Way

Right-of-way acquisition will not be necessary for this roadway segment. The proposed design improvements will be accommodated within the existing right-of-way limits.

2.4.2.7.3 Cost Estimate

The LRE cost estimate for the provision of the drop right-turn lane on to Fellsmere Trailhead Preserve along Fellsmere Road westbound is \$511,169.21. See **Appendix B** for short term improvement costs (LRE).

3.0 STAGING OF IMPROVEMENTS

The Multimodal Master Plan for SR 9 / I-95 between the Palm Beach/Martin County Line to the Indian River/Brevard County Line evaluated the short and long term conceptual improvements that are intended to meet the SIS criteria and standards and reflect improvements needed for the transportation infrastructure to function effectively through 2045.

The needs assessment conducted for this study included an analysis of physical improvement alternatives that includes analyses of alternative modes, Transportation System Management (TSM) techniques, and multi-modal improvements. Cost comparisons considering a variety of items such as preliminary design, right-of-way acquisition, and construction costs were conducted. The development of the improvement concepts were based on a multi-discipline, multi-agency approach that considered all aspects of the analysis of Alternatives including benefits, costs, impacts, and state and local agency input.

The noted improvements along the I-95 mainline and the interchange influence areas were prioritized through collaborative discussions with a multi-discipline group of FDOT-4 staff. Projects were differentiated based on the type and number of modes affected by the improvement; if the improvement specifically addresses safety concerns; if right-of-way is needed to construct the improvement; and the improvement's construction cost. Separate prioritization lists were compiled for improvements needed by 2030 and by 2045. (It is noted that these prioritization lists do not necessarily imply that an individual improvement is staged to be constructed within the timeframes listed.)

Additional details regarding priority lists for 2030 and 2045 are included in the Facility Enhancement Element Report for I-95 Multimodal Master Plan, dated June 2020.

There are 7 interim / short term improvements needed by 2030 that were prioritized. They include:

1. SR 70 / Okeechobee Road westbound lane utilization and northbound on-ramp concept and signal timing improvements at the Jenkins Road intersection.
2. St. Lucie West Boulevard intersection improvements at Peacock Boulevard, (EB) add third left-turn and third through lane; (WB) add a second left-turn lane, third through lane, and second right-turn lane with a protected right-turn overlap phase; (NB) add a second through lane and provide a protected right-turn overlap phase; (SB) add a second through lane and second right turn lane with a protected right-turn overlap phase.
3. Tradition Parkway / Gatlin Boulevard, add free flow northbound right turn and free flow westbound right turn.
4. Becker Road, add southbound left-turn lane at Village Parkway intersection.
5. CR 714 / SR 714 / Martin Highway signalize I-95 ramp termini intersections and Stuart Boulevard intersection.
6. CR 708 / Bridge Road, signalize I-95 ramp termini intersections.
7. CR 512 / Fellsmere Road, reconstruct and widen westbound Fellsmere Road west of I-95.

See **Appendix C** for a list of work program needs and a priority list of the 2030 needed improvements.

4.0 LOCAL GOVERNMENT POLICIES

Land development regulations, land use strategies, and comprehensive plan goals, objectives, and policies of Martin, St Lucie, and Indian River counties were reviewed with a focus upon elements that affect the I-95 corridor and interchange influence areas. Coordination efforts with the counties, as well as with the City of Port St Lucie, were also conducted in early 2020 to discuss strategies and policies that are in place or under development that benefit SIS facilities. Each of the local government's Code of Ordinances and corresponding zoning and Land Development Regulations (LDR) were reviewed. (See **Appendix D** for Zoning and Land Use maps.) Areas of specific interest to the I-95 corridor and its interchange influence areas include Access Management and Transportation Demand Management.

4.1 Access Management

Local access management policies along non-state roadways that have interchanges with I-95 have the potential to significantly affect the safety and mobility at those interchanges and I-95. Well managed access connections and median openings result in increased capacity and traffic flow coupled with a safer driving environment. Conversely, the presence of numerous and closely spaced driveway connections results in reduced capacity and mobility, and a less safe environment for all transportation users. Consistent with FDOT's Interchange Access Request User's Guide (IARUG),

“Access management standards require more stringent regulation of driveway connections and median openings in interchange areas. Interchange areas are defined as either ¼ mile from the interchange if the crossroad is a controlled-access facility, or up to the first intersection with an arterial road, whichever is less. The distance is measured from the end of the ramp that is farthest from the interchange. These distances may be increased at the discretion of FDOT to improve the operations and safety of the facility.”

While each of the three counties and the City of Port St Lucie have varying policies and standards regarding access management, all generally adhere to or exceed FDOT Access Management driveway and median opening spacing criteria. An overview of some specific policies is provided herein.

4.1.1.1 Martin County

Within the Transportation Element of Martin County's Comprehensive Plan, several policies exist regarding access management. In particular, Policy 5.3A.10 notes that driveways and median must be designed to meet Martin County and FDOT standards. Further, it is stated that the number of driveways should be minimized while their spacing maximized to ensure sufficient capacity and transportation safety along the roadway network. This policy supports FDOT's IARUG access management guidelines near interchange influence areas, which is intended to protect facilities such as I-95.

Martin County's Comprehensive Plan also includes several policies in the Transportation Element that promotes interconnectivity between various types of development. Policies 5.2A.13, 5.2A.14, and 5.2A.15 require connectivity between developments, where possible, as a means to promote overall mobility and reduce transportation impacts upon the adjacent arterial and collector networks. These three policies also support County objectives to minimize driveway connections while maximizing the spacing between those connections.

4.1.1.2 St Lucie County

The Transportation Element of St Lucie County is a streamlined document that is supportive of access management measures in a generalized manner. Policy 2.2.1.5 encourages adjacent developments to share common driveway connections. The intent of this policy is to reduce the number of driveways on key facilities, which would enhance mobility and safety. Adherence to this

Transportation Element policy near interchange influence areas is beneficial for interchange operations and provides further protection of the I-95 corridor from spillbacks originating on the cross street.

4.1.1.3 Indian River County

Indian River County's Comprehensive Plan actively outlines access management spacing minimum values. These are generally applicable to roadways that are not on the state highway system. Minimum connection spacings are based on the functional classification of the roadway; proximity to intersections; and the type of movement served (i.e. a right turn or a left turn). In support of these access management standards are Policies 1.10 and 2.5.

Under Policy 1.10, the County established minimum design standards for median openings and driveway connections, as well as their spacing. Policy 2.5 ensures that Indian River County reviews all new development proposals to ensure that driveways, roadway connections, and internal site circulation are adequate and contribute to a safe transportation system. Finally, the Future Land Use Element establishes regulations for interconnectivity between adjacent commercial developments that have frontage along an arterial roadway. The intent of such regulations is to enhance traffic circulation by providing an alternate route for short trips between adjacent sites without requiring the driver to use the arterial roadway. Overall, the Transportation Element and Future Land Use Element policies and regulations protect vital state transportation facilities, such as I-95 and its corresponding interchange influence areas.

4.1.1.4 City of Port St Lucie

Because the City of Port St Lucie's boundaries straddle I-95 and include several interchanges, a review of the City's access management policies and standards was performed. Overall, the City has developed or incorporated access management standards that are equal to or more stringent than FDOT's standards. It also includes separate policies to address access management for new development and re-development of existing property.

Under City Policy 2.1.2.3, a review of access connections and driveways for a proposed development is performed to ensure safety of the transportation system and compatibility with the existing and future roadway network. This policy also notes that the imposition of such requirements will occur as part of the development approval process.

Similarly, Policy 1.1.7.5 directs the City to evaluate the redevelopment of existing residences that have direct access to an arterial. Mixed-use office-residential uses are encouraged to use such direct access to minimize impacts to traffic flow along the arterial roadway. Overall, City of Port St Lucie access management policies aim to improve mobility and safety, and can be applied directly to interchange influence areas along the I-95 corridor that are within the city's borders.

4.2 Transportation Demand Management

One of the crucial elements to ensure the I-95 corridor and its interchange influence areas function well into the future is managing the demand on those facilities. As defined by FHWA, Transportation Demand Management is a set of strategies aimed at maximizing traveler choices. These include choices about whether they drive alone, work location, route, time of travel, and mode.

A review of the comprehensive planning documents for Martin, St Lucie, and Indian River counties, as well as the City of Port St Lucie was performed to understand the local policies that currently exist that help manage demand. In addition, discussions with staff of these local governments occurred in early 2020 to identify demand management policies and opportunities to enhance them. These focused particularly on trip reduction strategies and policies that promote and enhance non-motorized transportation.

4.2.1.1 Martin County

Martin County's Comprehensive Plan has a robust set of objectives and policies geared towards demand management, reducing vehicular trips, and promoting multimodal transportation. Within the Transportation Element, Policy 5.2B.1 encourages strategies to shift local vehicular traffic away

from SIS facilities, specifically I-95, and onto the local roadway network. Such a policy is consistent with State and Federal policies regarding the interstate system and its intended use for long-distance travel.

The Transportation Element also includes Policies 5.4A.3 and 5.4A.4 that support the development and inclusion of bicycle lanes and sidewalks on collector and arterial roadways, respectively. These multimodal transportation features have been directly incorporated in local planning documents outlining the future paths and connections for bicycle lanes and sidewalks. Such multimodal planning has been incorporated, as appropriate, with the various concepts developed at the interchange influence areas.

Martin County's Transportation Element includes Policies 5.5A.7 and 5.5A.8 that relate to public transportation. Policy 5.5A.7 encourages employers to promote public transportation for its employees and offer trip reduction programs such as flexible work hours and car/vanpools. Similarly, Policy 5.5A.8 requires major industrial developments to include access to public transportation, such as bus stop or bus loop. Each are intended to promote multimodal transportation options and supports methods to reduce trips on the transportation network.

From a land use perspective, Martin County actively supports strategies that promote mixed-use development. Consistent with Policies 5.1B.6 and 5.3B.7, mixed-use developments that contain compatible uses are proven to reduce trips on roadways by collocating attractors and generators. Martin County also promotes intermodal facilities for land and water-based travel intended to reduce vehicular travel. These policies support the objectives noted in the Future Land Use Element, specifically Objective 4.3A.

4.2.1.2 St Lucie County

St Lucie County's Comprehensive Plan is supportive of reducing reliance upon SIS facilities and encouraging transit and non-motorized travel. This is characterized by its Transportation Element

Policy 2.1.1.8 which indicates that SIS facilities should not be used a local circulator for local trips. Instead, alternative routes using arterials and collectors are identified in the Comprehensive Plan to facilitate local travel.

Policies, such as 2.6.2.3, support the recommendations from its Transit Development Plan for park-and-ride lots. It also encourages preserving right-of-way for arterials and limited access roadways such that they are constructed based on future land uses and projected population estimates. The Future Land Use Element includes Policy 1.2.1.2 that supports transit stop locations within appropriate developments and promotes transit usage, as well as bicycles and pedestrian facilities. Supporting the Future Land Use Element, a similar policy is present in the Transportation Element (Policy 2.3.2.11) that encourages additional sidewalks to connect or complete sidewalk connectivity to promote a pedestrian circulation system.

St Lucie County also promotes policies that encourage a reduction in vehicular demand and vehicle miles travelled. Transportation Element Policy 2.1.3.3 states the County will support demand management programs that modify peak hour demand and reduce the amount of vehicle miles travelled within the community. Similarly, Future Lane Use Element Policy 1.2.1.6 is supportive of funding practices that discourage development sprawl, such as mobility fees that vary with the number of vehicles miles travelled.

4.2.1.3 Indian River County

Indian River County has transportation and land use objectives and policies in its Comprehensive Plan that support reduced or managed vehicular demand and multimodal travel. Under the Future Land Use Element, Objective 4 states that the land use pattern will limit trips and the length of those trips to explicit levels. Further, Policy 8.1 limits urban sprawl and strip commercial development, and promotes urban infill, public transportation, and increased densification in urban areas. Such a policy encourages fewer vehicular trips and shorter trip lengths through strategic land use development.

Congestion Management Plans are supported via Policy 1.8,a while Policy 4.6 requires developments fronting on thoroughfare plan roadways to provide bicycle and pedestrian improvements consistent with the County's Bicycle/Pedestrian Plan and the Greenways Plan. Policies 7.2 and 7.3 support the County's current fixed route transit system, and incorporates the Transit Development Plan. Overall, these policies support multimodal mobility and improved safety for all transportation users.

Finally, SR 60 is acknowledged as a critical east-west arterial roadway in Indian River County that links much of the population. The Future Land Use Element of the Comprehensive Plan specifies that policies are intended to limit commercial development near the I-95 and 58th Street nodes on SR 60 to avoid continuous strip commercial development along the SR 60 corridor. By requiring a 1.5-mile separation between commercial nodes, compatible residential development is encouraged near commercial sites. Locating compatible land uses near each other is an effective travel demand management strategy as it reduces trips and shortens trip lengths.

4.2.1.4 City of Port St Lucie

The City of Port St Lucie has objectives and policies that support and encourage multimodal travel throughout the city. Its Comprehensive Plan also includes policies that employ travel demand management strategies to reduce vehicle miles travelled and a reduced dependence on motorized vehicles.

Policies 2.3.1.3, 2.6.1.1, and 2.6.1.2 outline requirements for development regulations that promote various transportation objectives. These include provisions for bicycles facilities and sidewalks along major collectors and arterials, as well as a local grid network of streets and regional connections to accommodate the transportation demands of the Western Annexation Area. Policy 2.6.1.6 encourages the provision of bus stops and shelters for all development projects.

Policy 2.1.4.2 outlines coordination efforts with St Lucie County for Transportation Demand Management measures to reduce traffic congestion and improve levels of service. In conjunction with that effort, Policy 1.1.9.7 notes that future annexed property should develop with a mixture of compatible land uses to reduce vehicle miles travelled. Park-and-ride lots and commuter parking facilities should be encouraged. Collectively, these policies encourage travel demand management programs, and support St Lucie County efforts with the same goals and objectives.

The City of Port St Lucie also encourages, via Policies 1.1.11.3 and 1.1.11.4, pedestrian and bicyclist infrastructure to create an interconnected network of routes for these non-motorized transportation users. Such networks also include routes along local streets to promote linkages between neighborhoods.

5.0 FINDINGS AND RECOMMENDATIONS

The FDOT is preparing a Multimodal Master Plan for SR 9 / I-95 between the Palm Beach/Martin County Line to the Indian River/Brevard County Line, a distance of approximately 71 miles. The plan includes the SR 9 / I-95 mainline, interchanges, and other road segments and intersections within the anticipated area of influence for the project. The Master Plan study conducted a prioritization assessment to determine improvement needs required for 2030 and 2045. The horizon year of the Master Plan study is 2045.

This Facility Operations and Preservation Element report documents the need, type, extent and estimated cost of interim and short range (2030) SR 9 / I-95 mainline and interchange improvements. These seven (7) short term improvements are intended to preserve and improve, where possible, the existing level of service until the ultimate design concept can be implemented. (Some of the ultimate improvements were identified as having to be implemented by 2030, but are not considered short-term improvements for the purposes of this document.) The noted projects in this report consist of interim improvements that correspond to minor intersection, interchange, and/or roadway improvements that enable the preservation of the level of service until the ultimate project can be implemented.

The needs assessment provides an analysis of physical improvement alternatives and includes analyses of alternative modes, Transportation System Management (TSM) techniques, and multi-modal improvements. Cost comparisons consider a variety of elements such as preliminary design, right-of-way acquisition, and construction costs.

Land development regulations, land use strategies, and comprehensive plan goals, objectives, and policies of Martin, St Lucie, and Indian River counties were reviewed with a focus upon elements that affect the I-95 corridor and interchange influence areas. Each of the local government's Code

of Ordinances and corresponding zoning and Land Development Regulations (LDR) were also reviewed.

Areas of specific interest to the I-95 corridor and its interchange influence areas include Access Management and Transportation Demand Management. Local access management policies along non-state roadways that have interchanges with I-95 have the potential to significantly affect the safety and mobility at those interchanges and I-95. Well managed access connections and median openings result in increased capacity and traffic flow coupled with a safer driving environment. Conversely, the presence of numerous and closely spaced driveway connections results in reduced capacity and mobility, and a less safe environment for all transportation users. While each of the three counties and the City of Port St Lucie have varying policies and standards regarding access management, all generally adhere to or exceed FDOT Access Management driveway and median opening spacing criteria.

As defined by FHWA, Transportation Demand Management is a set of strategies aimed at maximizing traveler choices. These include choices about whether they drive alone, work location, route, time of travel, and mode. A review of the comprehensive planning documents for Martin, St Lucie, and Indian River counties, as well as the City of Port St Lucie, was performed to understand the local policies that currently exist that help manage demand. In addition, discussions with staff of these local governments occurred in early 2020 to identify demand management policies and opportunities to enhance them.

- Martin County's Comprehensive Plan policy is consistent with State and Federal policies regarding the interstate system and its intended use for long-distance travel. From a land use perspective, Martin County actively supports strategies that promote mixed-use development.
- St Lucie County's Comprehensive Plan promotes policies that encourage a reduction in vehicular demand and vehicle miles travelled.



- Indian River County has transportation and land use objectives and policies in its Comprehensive Plan that support reduced or managed vehicular demand and multimodal travel.
- The City of Port St Lucie has objectives and policies that support and encourage multimodal travel throughout the city. Its Comprehensive Plan also includes policies that employ travel demand management strategies to reduce vehicle miles travelled and a reduced dependence on motorized vehicles