







INTERSTATE 95 Multimodal Master Plan TREASURE COAST

I-95 Multimodal Master Plan

Master Plan Report

December 2020

FDOT

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

Prepared by: RS&H, Inc.

I-95 MULTIMODAL MASTER PLAN

MASTER PLAN REPORT

Financial Project ID: 436577-1-22-01

Martin, St Lucie, and Indian River Counties

Prepared For:
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December 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 herby reported for:

Financial Project ID:	436577-1-22-01
Project:	I-95 Multimodal Master Plan MASTER PLAN 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, P.E.

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.

SIGNATURE: _____

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I-95 Multimodal Master Plan Facility Operations and Preservation Element Report, August 2020

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1.0 EXECUTIVE SUMMARY

In May 2017, FDOT initiated a study to prepare a Multimodal Master Plan for the portion of I-95 extending from the Palm Beach/Martin County Line to the Indian River/Brevard County Line, a distance of approximately 71 miles. Preparation of a Multimodal Master Plan is an integral part of the development of the Strategic Intermodal System (SIS) and in reaching overall regional mobility goals. The Master Plan identified short term and long term capacity and operational needs, as well as conceptual improvements necessary to meet SIS targets in future years 2030 and 2045. A tier analysis concluded that immediate conceptual improvements are not needed along the I-95 mainline. The current geometric configuration is sufficient to accommodate current and near future travel demand before the need for the ultimate improvement concepts is recognized in early 2030s.

Extensive multimodal transportation analyses were performed to estimate future travel demand throughout the study area, and ascertain the needs of the transportation system. In addition, the timing of those needs was estimated. Once the needs were determined short term and long term conceptual design improvements were developed and analyzed. These conceptual design improvements, developed in consultation with and approved by the Technical Review Committee, address the forecasted transportation needs within the study area. They were developed in consideration of planning, engineering, and environmental factors. Local public support was also a factor in the development of the conceptual design improvements for this I-95 Multimodal Master Plan.

The ultimate improvement design concepts along the I-95 mainline entail the addition of one managed lane in each direction (northbound/southbound) to the existing six-lane interstate facility. This added capacity is needed from the Palm Beach / Martin County Line to SR 70 / Okeechobee Road by the 2030s. There are 15 bridges that are impacted by the ultimate design concept widening of the I-95 corridor from CR 708 / Bridge Road to SR 70 / Okeechobee Road. These bridges will either need widening or replacement.

I-95 mainline needs also include a conceptual braided ramp system between the Crosstown Parkway and St Lucie West Boulevard interchanges, where a northbound braided ramp system is noted as a short term improvement while the southbound braided ramp is not needed until 2045.

Overall, given the length of the I-95 mainline improvement and its regional nature through Martin and St Lucie counties, FDOT separated the interstate facility improvements into four distinctly defined segments. They are:

- I-95 from Martin/Palm Beach county line to Bridge Road (FM #413253-2)
- I-95 from Bridge Road to High Meadow Avenue (FM #413254-2)
- I-95 from High Meadow Avenue to Martin/St Lucie County line (FM #422681-5)
- I-95 from Martin/St Lucie County line to SR 70/Okeechobee Road (FM #422681-6)

These four segments of I-95 are included in the current FDOT 5-Year Work Program. The Project Development and Environment (PD&E) phase for each is presently funded in fiscal year 2025.

Beyond the needs along the I-95 mainline, there were nine short term (2030) needs identified within the study area. They include:

1. CR 708 / Bridge Road - signalize I-95 ramp termini intersections.
2. CR 714 / SR 714 / Martin Highway - signalize I-95 ramp termini intersections and Stuart Boulevard intersection.
3. Becker Road - add southbound left-turn lane at Village Parkway intersection.
4. Tradition Parkway / Gatlin Boulevard - provide free flow northbound right turn and free flow westbound right turn movements at Village Parkway intersection.
5. St Lucie West Boulevard at Peacock Boulevard intersection improvements.
6. SR 70 / Okeechobee Road - westbound lane utilization and northbound on-ramp concept improvements, as well as signal timing enhancements at the Jenkins Road intersection.
7. SR 68 / Orange Avenue – re-alignment of the I-95 southbound on-ramp and intersection improvements at Kings Highway intersection.
8. Oslo Road – signalize 82nd Avenue intersection.

9. CR 512 / Fellsmere Road - reconstruct and extend a second westbound travel lane west of I-95.

Construction cost estimates of the short term needs identified by this I-95 Multimodal Master Plan total approximately $328 million. Of this, about $315 million is associated with the needs along the I-95 mainline and the northbound braided ramp system.

Given that the I-95 mainline improvement to add a managed lane in each direction is needed by the 2030s, the long-term enhancements needed by 2045 generally focus on the needs within the interchange influence areas. There is one notable exception – the 2045 need to provide a braided ramp on southbound I-95 between St Lucie West Boulevard and Crosstown Parkway. Besides the southbound braided ramp conceptual improvement, there are 16 long term needs identified within the study area. They are:

1. Bridge Road interchange – add turn lane improvements at the I-95 northbound and southbound ramp termini intersections.
2. SR 76 / Kanner Highway interchange – interchange modification, and intersection improvements at Cove Road.
3. High Meadow Avenue at Swallowtail Lane – signalize intersection.
4. SR 714 / CR 714 / Martin Highway - add turn lane improvements at the I-95 northbound and southbound ramp termini intersections.
5. Becker Road interchange – add turn lane improvements at the I-95 northbound and southbound ramp termini intersections, as well as at the Village Parkway intersection.
6. Becker Road at Hallmark Drive – add eastbound and westbound through lane at the intersection.
7. Tradition Parkway / Gatlin Boulevard – interchange modification, add eastbound and westbound through lane at Brescia Street and Savage Boulevard, and add intersection improvements at the Village Parkway intersection.
8. Crosstown Parkway interchange – add turn lane improvements at the I-95 northbound and southbound ramp termini intersections.
9. Crosstown Parkway at California Boulevard – add turn lane improvements at the intersection.
10. St Lucie West Boulevard between I-95 and Peacock Boulevard - widen westbound bridge over I-95, add a third eastbound travel lane, and add a third southbound left-turn lane at the Peacock Boulevard intersection.
11. SR 70 / Okeechobee Road – interchange modification, add turn lane improvements at the Jenkins Road and Kings Highway intersections, and provide signal timing improvements at Crossroads Parkway intersection.
12. Midway Road interchange – add turn lane improvements at the I-95 southbound ramp terminal intersection.
13. Midway Road at Glades Cut-Off Road - add turn lane improvements at the intersection.
14. Fellsmere Road at 108th Avenue – add turn lane improvements at the intersection.
15. I-95 southbound south of SR 614 / Indrio Road – re-alignment of I-95 southbound mainline lane transition to eliminate merge.
16. I-95 Northbound Off-Ramps at SR 60, SR 614/Indrio Rd, and SR 68/Orange Avenue – lengthen the deceleration lane at each interchange.

Construction cost estimates of the long-term (2045) needs identified by this I-95 Multimodal Master Plan total approximately $159 million. This is inclusive of the cost to construct the I-95 southbound braided ramp system between St Lucie West Boulevard and Crosstown Parkway.

The I-95 Multimodal Master Plan report summarizes the key elements evaluated as part of this study. These include the Traffic Element; Facility Enhancement Element (which documents long term, ultimate conceptual design improvements); Facility Operations and Preservation Element (which documents the short-term needs in the study area); Environmental Element; Public Involvement efforts; and estimated Project Funding and Staging of the noted conceptual design improvements. Additional detailed information regarding any of these topics can be found in the corresponding companion documents.

2.0 PROJECT OVERVIEW

2.1 Introduction

Interstate 95/SR 9 is part of Florida's Strategic Intermodal System (SIS), serving regional commerce and long-distance trips, and providing connectivity between major cities and towns along the east coast of the state. In May 2017, FDOT initiated a study to prepare a Multimodal Master Plan for the portion of I-95 extending from the Palm Beach/Martin County line to the Indian River/Brevard County line, a distance of approximately 71 miles. Preparation of a Multimodal Master Plan is an integral part of the continuing process for the development of the SIS and in reaching overall regional mobility goals. The Master Plan identified short-term and long-term capacity and operational needs and conceptual improvements necessary to meet SIS targets in future years 2030 and 2045.

Extensive multimodal transportation analyses were performed to estimate future travel demand throughout the study area, and ascertain the needs of the transportation system. In addition, the timing of those needs was estimated. Once the needs were determined short term and long term conceptual design improvements were developed and analyzed. These conceptual design improvements, developed in consultation with and approved by the Technical Review Committee, address the forecasted transportation needs within the study area. They were developed in consideration of planning, engineering, and environmental factors. Local public support was also a factor in the development of the conceptual design improvements for this I-95 Multimodal Master Plan.

Overall, this Multimodal Master Plan report summarizes the key elements evaluated and documented as part of this study, which includes the following:

- Traffic Element
- Facility Enhancement Element (which documents long term, ultimate conceptual design improvements)
- Facility Operations and Preservation Element (which documents the short term needs in the study area)
- Environmental Element
- Public Involvement efforts
- Estimated Project Funding and Staging of the noted conceptual design improvements.

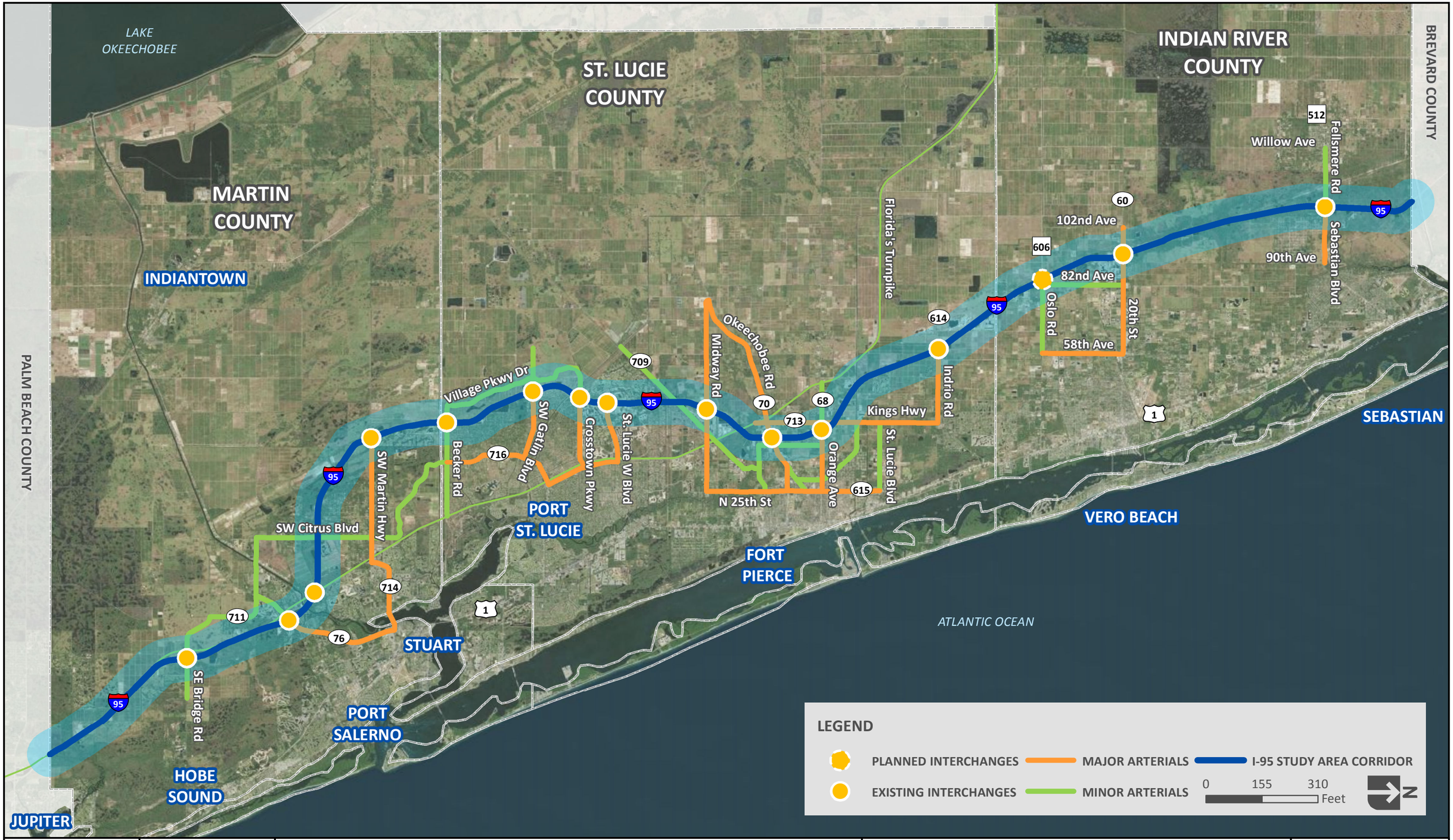
2.2 Study Area

The study area is located in southeastern Florida, and includes the portion of I-95 in Martin County, St Lucie County, and Indian River County, which is known as the Treasure Coast region. The overall study limits for the I-95 Master Plan include this 71-mile portion of I-95 mainline; existing and planned I-95 interchanges at 15 cross roads; and adjacent intersections along each of the 15 cross roads. The adjacent intersections to each of the study interchanges represent the interchange's area of influence. The study area and the roadways within it are shown on Figure 2-1, while the interchange influence area's study intersections are summarized in Table 2-1.

2.3 Purpose and Need

The purpose of the Master Plan is to identify short term and long term capacity and operational improvements necessary to achieve SIS targets through 2030 and 2045, respectively.

There is a need to conduct the Master Plan to identify necessary improvements along the I-95 corridor, and the timeframes for when those improvements should occur. This information will be used by the Department to plan and program necessary improvements for the I-95 corridor through the year 2045 in appropriate Work Program and SIS funding plans. In addition, the Master Plan serves as a reference document to aid the Metropolitan/Transportation Planning Organizations in developing their 2045 Long Range Transportation Plans (LRTPs).



FDOT	I-95 Multimodal Master Plan *FPID No.: 436577-1-22-01* *FDOT - District 4*	*Title:* **STUDY AREA MAP**	*Figure:* **2-1**

Table 2-1 – Study Intersections

Cross Road	Intersection With:
1. Bridge Road	Frontage Road west of I-95
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	1760 Bridge Access Road east of I-95
2. SR 76/Kanner Highway	SW Jack James Drive
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	SW Lost River Road
	Cove Road
3. SW High Meadow Avenue	I-95 NB and SB Ramp Terminal
	Swallowtail Lane
4. SR 714/Martin Highway	SW Green Farms Lane
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	SW Stuart W Boulevard
5. Becker Road	Village Parkway Drive
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	SW Hallmark Street
6. Traditions Parkway/Gatlin Boulevard	Village Parkway Drive
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	SW Brescia Street
	SW Savage Boulevard / Fondura Road
7. Crosstown Parkway	SW Visconti Way
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	SW California Boulevard
8. St. Lucie West Boulevard/Reserve Boulevard	Commerce Centre Drive
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	NW Peacock Boulevard
9. Midway Road	Gordy Exd.
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	Glades Cut-Off Road
10. SR 70/Okeechobee Road	Kings Highway
	Crossroads Parkway
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	Jenkins Road
11. SR 68/Orange Avenue	Kings Highway
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	Jenkins Road
12. SR 614/Indrio Road	AICO Road
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	Koblegard Road
13. CR 606/Oslo Road	86th Avenue (existing) / 90th Avenue (future)
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	82nd Avenue
14. SR 60/20th Street	98th Avenue
	94th Drive
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	90th Avenue
15. CR 512/Fellsmere Road	Willow Street
	I-95 SB Ramp Terminal
	I-95 NB Ramp Terminal
	108th Avenue
	90th Avenue

3.0 TRAFFIC ELEMENT FINDINGS

The I-95 corridor from the Palm Beach/Martin County line to the Indian River/Brevard County line is the focus of the Multimodal Master Plan. Short term and long term capacity and operational improvements necessary to meet Strategic Intermodal System (SIS) targets are identified. The Traffic Element Report describes the existing conditions and existing traffic operations, as well as the forecasted travel demand, future conditions, operational analysis methodology, and future traffic operations for years 2030 and 2045.

The study area includes the I-95 freeway from the Palm Beach/Martin County line to the Indian River/Brevard County line, a distance of approximately 71 miles. I-95 interchanges at 15 arterial cross roads are included within the study area, along with the adjacent intersections within the area of influence.

Annual Average Daily Traffic (AADT) and AM and PM peak hour traffic volumes were estimated for existing (2017) and future (2030 and 2045) years for I-95, 15 arterial cross roads, and 63 study intersections. The traffic counts collected for the study in 2017 were used for the analysis of existing conditions and to forecast the future year traffic volumes. Traffic forecasts for 2030 and 2045 daily volumes and peak hour volumes were developed primarily based on travel demand model outputs, while also considering the historic traffic trends, future land uses, and population and employment growth. A modified version of the Treasure Coast Regional Planning Model (TCRPM) version 4.0, which was updated to a 2045 forecast year, was used to estimate daily 2045 volumes for the study area roadways. The model included the new I-95 interchange at Oslo Road, as well as proposed future Turnpike interchanges within the study area, identified through coordination with Turnpike's PD&E project team (FM# 423374-1).

The AM and PM peak hour traffic operations of the I-95 freeway segments (mainline, merge, diverge and weaving segments), study intersections, and study interchanges were analyzed. Traffic analysis of current operating conditions and estimated future (2030 and 2045) operating conditions without improvements (No Build) and with recommended improvements (Build), was performed.

Analysis of each facility type (freeways and intersections) was completed for the following scenarios:

- Existing (2017) conditions,
- No Build conditions in year 2030,
- No Build conditions in year 2045,
- Build conditions in year 2030, and
- Build conditions in year 2045.

The study roadways were analyzed to identify capacity, operational, and safety needs through year 2045. Improvements are recommended in the Traffic Element Report and are used as the basis for the development of concept plans, cost estimates, and list of proposed projects. The documentation of these items is included in the I-95 Multimodal Master Plan's *Facility Enhancement Element Report,* dated June 2020, and the *Facility Operations and Preservation Element Report,* dated August 2020.

3.1 Summary of Existing Traffic Conditions (2017)

Existing land uses in all three counties along the I-95 study corridor were reviewed and summarized. An analysis of the existing traffic operational performance of the I-95 cross roads and intersections was performed in order to identify any current operational deficiencies. Existing lane geometry, peak hour volumes, speed limits, signal timings, and traffic factors were used to analyze and report the performance of the study roadways. In addition, a crash analysis of the most recent 5 years of data was completed.

Existing Conditions Freeway Analysis Results

During the AM and PM peak hours, all northbound and southbound I-95 freeway segments operate at an acceptable level of service (LOS) throughout the 71-mile study corridor. In addition, all northbound and southbound ramp junction points (merge, diverge and weave areas) operate at LOS D or better. The existing freeway analysis of I-95 operations revealed that no capacity or operational issues are present during either the AM or PM peak hours.

Existing Conditions Intersection Analysis Results

Existing peak hour intersection operational analysis results indicate that almost all study intersections operate at overall LOS D or better. The following five study intersections operate below the target LOS D, which indicate a need for improvement:

1. Bridge Road at I-95 Southbound Ramp Terminal in the AM peak hour,
2. Gatlin Boulevard at Village Parkway Drive in the PM peak hour,
3. St Lucie West Boulevard at NW Peacock Boulevard in both AM and PM peak hours,
4. Midway Road at I-95 Southbound Ramp Terminal in the PM peak hour, and
5. SR 68/Orange Avenue at Kings Highway in both AM and PM peak hours.

Existing Crash Analysis

The Florida Department of Transportation (FDOT)'s Crash Analysis Reporting System (CARS) was used to gather historical crash records for the study area from January 2011 through December 2015. A review was performed of the recent crash history along the I-95 mainline and the 15 interchange influence areas within the study area. Locations that FDOT has determined to be High Crash Locations (HCL) based on statistical analysis were identified within the study area. Crash history for those HCLs were then reviewed in further detail to provide information regarding the recorded crashes along that segment, such as crash type, surface condition, and lighting condition at the time of the crash.

The crash data revealed that 5 areas of the I-95 mainline are identified as "high crash locations" by FDOT during at least one year between 2011 and 2015. These include:

- I-95 near Bridge Road (62 total crashes and listed on the 2013 HCL),
- I-95 near SR 70/Okeechobee Road (80 total crashes and listed on the 2013 HCL),
- I-95 near SR 614/Indrio Road (41 total crashes and listed on the 2012 and 2014 HCL),
- I-95 near SR 60 (75 total crashes and listed on the 2014 HCL), and
- I-95 near Fellsmere Road (59 total crashes and listed on the 2013, 2014, and 2015 HCL).

The crash data revealed that 4 interchange cross streets are identified as "high crash locations" by FDOT during at least one year between 2011 and 2015. These include:

- SR 76/Kanner Highway (193 total crashes and listed on the 2011, 2012, 2013, 2014, and 2015 HCL),
- SR 70/Okeechobee Road (228 total crashes and listed on the 2013 and 2015 HCL),
- SR 68/Orange Avenue (90 total crashes and listed on the 2011, 2012, and 2015 HCL), and
- SR 60 (82 total crashes and listed on the 2014 HCL).

3.2 Transit Assessment

Currently there are three primary bus transit providers in the study area. Each of the three counties has a fixed route bus service and accompanying demand response service. The providers are Martin County Public Transit (Marty) in Martin County, the Treasure Coast Connector (TCC) in St Lucie County, and GoLine in Indian River County. The Marty has four fixed routes, the Treasure Coast Connector has seven fixed routes, and GoLine has 15 fixed routes. Within the three-county study area seven existing transit routes intersect with I-95, including just one route that travels on a portion of I-95, the GoLine Route 15.

Park-And-Ride Facilities

There are 13 existing park-and-ride lot facilities in the study area with a total of 497 parking spaces available. Five lots are in Martin County (302 spaces), four lots are in St Lucie County (115 spaces), and four lots are in Indian River County (80 spaces). Only one existing park-and-ride lot (at SR 76), and one planned park-and-ride lot (at Gatlin Boulevard), are located adjacent to I-95. It is important to plan for and continue to provide park-and-ride lot opportunities as a choice for commuters. Increasing car pool and van pool opportunities at strategic locations can be a beneficial strategy to reduce the number of vehicles on I-95 and other roads.

Express Bus Services

There is a history of express bus service on I-95 in this region. Palm Tran operated an Express Bus Route from Halpatiokee Regional Park (adjacent to SR 76 in Martin County) to Palm Beach County using I-95 in the late 2000s. Peak period service was provided from Martin County to Jupiter, the Palm Beach Gardens Mall and to the TriRail Station in West Palm Beach. The service was funded by a FDOT Transit Development Grant and when the grant expired after three years the local communities did not continue the service. The average daily ridership from October to December 2009 was 52 riders.

Express bus service using the I-95 corridor may be provided again in the future to serve regular long distance commuters between: City of Ft. Pierce and western St Lucie County areas, City of Stuart area, and City of West Palm Beach area. In addition, express bus can work together with planned new park-and-ride lots to be located on Gatlin Boulevard near I-95, and at the I-95 and SR 76/Kanner Highway interchange. Express bus service could pick up and drop off riders at the park-and-ride sites along the corridor, and would be able to serve medium and long distance trips. In addition, express bus service is relatively easy to implement and is a lower cost option to consider within the planning horizon of 2045.

Transit Ridership

To estimate the potential transit demand in the I-95 corridor, transit was generally assumed to be express bus, which would run from a park-and-ride facility near Gatlin Boulevard interchange in St Lucie County to downtown West Palm Beach, with an intermediate stop at a future I-95 and SR 76 park-and-ride facility. A range of potential demand was determined based on Longitudinal Employer-Household Dynamics (LEHD) commute trip data, system-wide ridership data, and specific route ridership data for similar services in the Treasure Coast region and South Florida. At the low end of the range, the transit demand on the I-95 corridor is approximately 50 riders per average weekday. This is based on the average weekday ridership of the 95 Express route that operated along I-95 between Halpatiokee Park in Martin County to West Palm Beach between 2009 and 2012. Based on the County-to-County Home-to-Work flows from the 2015 LEHD data, the high end of the transit ridership range is approximately 270 average weekday riders.

Assuming the high end of the ridership range, the peak hour volume in 2045 on I-95 could be reduced by up to 54 vehicles in each direction during the peak hour. This level of ridership will not decrease the volume on I-95 significantly enough to eliminate the need for additional lanes in some parts of the corridor. However, express buses can provide an alternate modal option for commuters along I-95, and the I-95 Master Plan improvement concepts should not preclude potential future transit such as express buses. Design concepts should consider the potential implementation of

express bus service that may use I-95, as well as park-and-ride lots in the vicinity of I-95 interchanges.

3.3 Summary of Future Year Conditions (2030 & 2045)

Future Land Uses

Most future land uses adjacent to the I-95 corridor in Martin County are expected to remain predominantly Agriculture, particularly west of I-95. In St Lucie County, the future land use adjacent to the I-95 corridor is characterized by several changes as compared to the existing uses.

The southern portion of St Lucie County remains a mixture of land uses, but that mix is changed to reflect Residential, Commercial, and Special Districts (which defines the Western Annexation Area west of I-95 between Becker Road and Crosstown Parkway). Some Industrial uses are projected east and west of I-95 near St Lucie West Boulevard. Further west beyond the I-95 corridor and near the western portion of the County, the future land use is primarily Agriculture. The northern part of St Lucie County also includes a mixture of Agriculture, Residential, Commercial, and Industrial, although Agriculture is the predominant future land use in the western section of St Lucie County.

The future land uses in Indian River County adjacent to the I-95 corridor reflect changes where Commercial and Mixed-use Neighborhood uses are the predominant future land use, especially near current and planned interchanges. In the western portion of Indian River County, Agriculture is the predominant future land use. In June 2018, Emerald Lakes, a proposed new land development in the City of Palm Bay, in Brevard County, was approved to establish a Community Development District for a new mixed-use development. The development encompasses approximately 1,660 acres which straddles I-95 and is located at the new St. Johns Heritage Parkway interchange just north of the Brevard/Indian River County line, south of Grant Road and north of Micco Road. The St. Johns Heritage Parkway interchange is the first interchange located north of the Master Plan northern study limits and is a new interchange under construction by the FDOT.

DRIs

There are a total of 24 Developments of Regional Impact (DRI) located within the I-95 Master Plan study area. These include 2 DRIs in Martin County, 15 DRIs in St Lucie County, and 7 DRIs in Indian River County.

Planned Background Projects

Future year 2030 and 2045 No Build conditions assume that all planned, programmed and under construction projects in the area are completed according to their planned timeframes, but no other improvements are assumed for I-95 or the cross roads. The No Build conditions were analyzed in order to determine expected deficiencies in 2030 and 2045. The Build conditions were analyzed to report the operational benefits with recommended improvements in place. Planned and adopted background roadway improvement projects were researched. These background projects were identified from one of the following sources:

- FDOT 5-year Work Program (FY 2017/2018 – FY 2021/2022),
- FDOT SIS 2nd Five-Year Plan and SIS 2040 Cost Feasible Plan, or
- Martin MPO's, St Lucie TPO's, or Indian River MPO's 2040 Long Range Transportation Plan.

Only projects that were contained in one of these adopted funding plans and that would have an impact on the future year operating conditions of either the I-95 corridor or one of the arterial cross streets or study intersections were identified. Projects that were under construction or were planned to be under construction within the study timeframe (through 2045) were noted. Relevant PD&E studies, interchange documents, and/or design plans were researched to identify the future

year lane geometry as background improvements assumed to be in place for either 2030 and/or 2045 analyses.

The planned background roadway improvement projects relevant to the I-95 Multimodal Master Plan study area are listed herein.

Recently Completed Construction Projects - Included with Existing Conditions

1. I-95 widening from four lanes to six lanes from SR-60 to Indian River/Brevard County line (FM # 413049)
2. SR 614/Indrio Road widening from two lanes to four lanes from west of I-95 to Emerson Avenue (FM # 230338)
3. I-95 at SR-76/Kanner Highway interchange modification (FM #429786)

Projects Expected to be Constructed by 2030

1. SR 614 (Indrio Road) from west of SR 9/I-95 to east of SR 670/Emerson Avenue (FM # 230338-4-52-01) – widening from two-lanes to four-lane divided highway with a raised median; constructing a 6-foot sidewalk along the south side and a 12-foot-wide multi-purpose trail along the north side of Indrio Road; realigning Spanish Lakes Boulevard to connect with Koblegard Road; reconstructing Koblegard Road from Indrio Road north approximately 0.5 mile; and installing new highway lighting, signage and signalization.
    - Construction to be completed by spring 2019
2. SR 76/Kanner Highway widening from Lost River Road to south of Monterey Road (FM # 422641-3-52-01) - widening from a four-lane divided highway to a six-lane divided highway; widening the bridge over the South Fork St Lucie River; signalization upgrades; turn lane and bicycle lane improvements.
    - Construction to be completed by spring 2019
3. SR 9/I-95 at Oslo Road new interchange (FM # 413048-2) – PD&E complete, currently in design, ROW and construction is funded
    - Construction estimated to be completed by 2028
4. SR 713/Kings Highway from 800 feet south of SR 70/Okeechobee Road to north of I-95 overpass (FM # 230256) – Add lanes and reconstruct
    - Construction estimated to be completed by 2027
5. CR 713/High Meadow Avenue widening from I-95 to CR 714.Martin Highway (FM # 441699)
    - Construction estimated to be completed by 2030
6. Midway Road add two lanes from Glades Cut-Off Road to Selvitz Road (FM # 231440-3)
    - Construction estimated to be completed by 2030
7. I-95 at St Lucie West Boulevard interchange improvements (FM # 435337)
    - Construction estimated to be completed by 2030
8. I-95 at Midway Road interchange improvements (FM # 439754)
    - Construction estimated to be completed by 2030
9. I-95 at Gatlin Boulevard interchange improvements (FM # 439761)
    - Construction estimated to be completed by 2030

Projects Expected to be Constructed by 2045

1. Oslo Road from I-95 to 58th Avenue – widen from two lanes to four lanes
2. Fellsmere Road from Willow Street to I-95 – widen from two lanes to four lanes
3. Fellsmere Road from I-95 to CR 510 – widen from four lanes to six lanes
4. Cove Road from SR 76/Kanner Highway to US-1 – widen from two lanes to four lanes

<u>Initial Roadway Capacity Screening</u>

A preliminary, high level failure analysis was performed for the roadways within the study area, including the I-95 mainline. The intent of the screening analysis was to identify roadway segments that are likely to exceed capacity based on the existing lane geometry and when that failure may occur. The failure analysis was conducted using projected daily volumes.

I-95 Mainline - Based on the preliminary screening analysis, the future year AADTs on I-95 from the Palm Beach/Martin County line to High Meadow Avenue will exceed the existing capacity of a six-lane interstate facility. These level of service deficiencies in Martin County are expected to begin to appear by the year 2036.

In St Lucie County, I-95 mainline segments are expected to exceed the current capacity prior to the year 2045. These segments are from SR 714/Martin Highway (in Martin County) to SR 70/Okeechobee Road (in St Lucie County). Specifically, the portions of I-95 between Gatlin Boulevard and St Lucie West Boulevard are anticipated to exceed the existing capacity prior to the year 2030. The remaining sections in St Lucie County will begin to experience capacity deficiencies between the year 2037 and 2043, given the current lane geometry and capacity.

In Indian River County I-95 is anticipated to operate at acceptable levels of service (LOS D or better) through the year 2045. No anticipated failures for the I-95 mainline were identified via the screening analysis.

Arterial Cross Streets - This screening analysis did not incorporate future planned roadway capacity improvements. The results did reveal that future daily volumes on several interchange cross streets can be expected to exceed the corresponding daily service volume capacity for an arterial facility. Either existing or future capacity deficiencies were identified on eight of the 15 cross streets:

1. SR 76/Kanner Highway
2. High Meadow Avenue
3. Gatlin Boulevard
4. Crosstown Parkway
5. St Lucie West Boulevard
6. SR 70/Okeechobee Road
7. Oslo Road
8. Fellsmere Road

<u>Future Year Operations Analysis</u>

Multiple planned background roadway improvement projects relevant to the I-95 Multimodal Master Plan study area were assumed in place for the appropriate analysis year.

2030 No Build Freeway Analysis Results - All southbound I-95 freeway segments and ramp junctions will operate at LOS D or better during the AM peak hour. However, one northbound I-95 freeway segment and one northbound ramp junction near Crosstown Parkway will operate below LOS D during the AM peak hour. Multiple segments of northbound and southbound I-95 mainline and ramp junctions will operate below LOS D during the PM peak hour.

The I-95 segments from south of Bridge Road to SR 76/Kanner Highway, and from Crosstown Parkway to St Lucie West Boulevard that fail to operate at acceptable levels of service need capacity and operational improvements by 2030. Such improvements will ensure the I-95 corridor can operate acceptably in the future.

2030 No Build Intersection Analysis Results - Seven (7) intersections will operate below the LOS D target in either the 2030 AM or PM peak hours. They are noted below:

1. Bridge Road at the I-95 southbound ramp terminal intersection
2. Bridge Road at the I-95 northbound ramp terminal intersection
3. SW Becker Road at Village Parkway Drive intersection
4. Gatlin Boulevard at Village Parkway Drive intersection
5. St Lucie West Boulevard at Peacock Boulevard intersection
6. SR 70/Okeechobee Road at Jenkins Road intersection
7. CR 606/Oslo Road at 82nd Avenue intersection

2045 No Build Freeway Analysis Results - During the AM peak hour, multiple segments of northbound and southbound I-95 and ramp junctions will operate below LOS D. In addition, many northbound and southbound I-95 mainline and ramp junctions will operate below LOS D during the PM peak hour. The 2045 No Build analysis indicates that much of the I-95 mainline and ramps in Martin County and St Lucie County, from south of Bridge Road to SR 70 will be failing (operating at a LOS E or F) during the 2045 peak hours. The need for added mainline capacity and ramp improvements at interchanges is clearly indicated by 2045.

2045 No Build Intersection Analysis Results - Thirty-four (34) of the 63 study intersections will operate at an overall failing LOS. Therefore, significant intersection capacity and operational improvements are shown to be needed by 2045 to address the deficiencies.

2030 Build Freeway Analysis Results - To address the 2030 No Build freeway analysis deficiencies, necessary improvements were identified. The recommended I-95 freeway and ramp improvements needed by 2030 are listed below.

1. Construct one additional northbound managed lane and one additional southbound managed lane on the I-95 mainline from the Palm Beach/Martin County line to SR 70/Okeechobee Road. Also, extend the existing fourth southbound general use lane that begins south of SR 614/Indrio Road further north to connect to the SR 614/Indrio Road southbound on-ramp. This provides a total of four lanes northbound and four lanes southbound from the county line to SR 614/Indrio Road.
2. Braid the northbound off-ramp to St Lucie West Boulevard and the Crosstown Parkway northbound on-ramp. Widen the northbound off-ramp to St Lucie West Boulevard from one to two lanes and the northbound Crosstown Parkway on-ramp to two lanes, and provide a northbound ramp roadway to accommodate local drivers traveling from Crosstown Parkway to St Lucie West Boulevard.
3. Extend the northbound off-ramp deceleration lane at SR 76/Kanner Highway to 950 feet to improve the level of service from LOS E to LOS C during the PM peak hour.

The 2030 AM and PM peak hour Build freeway analysis results show that these improvements will allow all segments of the I-95 mainline and all ramp junction points to operate at an acceptable LOS D or better in 2030.

2030 Build Intersection Analysis Results - The 2030 Build operational analysis was conducted to evaluate and identify proposed roadway and signal timing improvements to address deficiencies at the intersections which will operate below the LOS target D in either the 2030 AM or PM peak hours. As summarized in Section 5.2, signal improvements, lane reconfigurations, and turn lane improvements were identified at intersections along the following cross streets:

1. Bridge Road
2. SR 714/Martin Highway
3. Becker Road
4. Gatlin Boulevard
5. St Lucie West Boulevard
6. SR 70/Okeechobee Road
7. SR 68/Orange Avenue
8. Oslo Road

The 2030 Build intersection operational results indicate all study intersections will operate at LOS D or better with the recommended Build improvements in place in year 2030.

2045 Build Freeway Analysis Results - Improvements were recommended to address the deficiencies identified with the 2045 No Build traffic analysis along most of the I-95 mainline and ramps in Martin County and St Lucie County, from south of Bridge Road to SR 70. The I-95 mainline

and ramp improvements recommended for 2030 remain needed in 2045 and are assumed as part of the 2045 Build improvements, including constructing one additional managed lane northbound and southbound on I-95 from the Palm Beach/Martin County line to SR 70/Okeechobee Road, and braiding the I-95 northbound and southbound ramps between Crosstown Parkway and St Lucie West Boulevard.

The 2030 Build recommended improvements do not address all of the 2045 I-95 freeway deficiencies. Therefore, additional improvements were identified, including additional ramp acceleration and deceleration lane lengthening, ramp widening, and major interchange modifications.

The additional necessary improvements for 2045 were identified. Ramp improvements are needed along the mainline at the following locations:

1. Bridge Road
2. SR 76/Kanner Highway
3. Gatlin Boulevard
4. Midway Road
5. SR 70/Okeechobee Road
6. SR 68/Orange Avenue
7. Indrio Road
8. SR 60
9. Braid the southbound off-ramp to Crosstown Parkway and the southbound St Lucie West Boulevard on-ramp. Widen the southbound off-ramp to Crosstown Parkway from one to two lanes and the southbound St Lucie West Boulevard on-ramp to two lanes.

This includes interchange configuration modifications needed by 2045 at three interchanges to accommodate heavy future left turn volumes, as well as heavy east-west through traffic. The following three interchanges are proposed to be reconstructed with a Diverging Diamond Interchange (DDI) configuration:

1. SR 76/Kanner Highway
2. Gatlin Boulevard
3. SR 70/Okeechobee Road

The 2045 Build analysis results for the I-95 freeway and ramps, show that with the recommended Build improvements in place, all I-95 freeway segments and ramps - except for one segment - will operate at an acceptable LOS D or better during both peak hours. The southbound segment of I-95 between Midway Road and St Lucie West Boulevard is expected to just exceed the LOS D threshold during the 2045 PM peak hour. The LOS marginally exceeds the target LOS in only this one segment and during only one peak hour. Therefore, additional mainline capacity is not recommended for year 2045, but future operations should be monitored.

2045 Build Intersection Analysis Results - The 2045 No Build intersection analysis indicates that 34 of the 63 study intersections will operate below the LOS D target in either the AM or PM peak hours. Future 2030 recommended interchange and intersection improvements, documented in Section 5.2, are assumed to be in place with the 2045 Build analysis. However, additional deficiencies have been identified that need to be addressed by 2045, which are summarized in Section 4.3. Additional intersection signal improvements, lane reconfigurations, and turn lane improvements have been identified to address the remaining deficiencies.

Additional improvements at intersections along the following cross streets are recommended for the year 2045:

1. Bridge Road
2. SR 76/Kanner Highway

3. High Meadow Avenue
4. SR 714/Martin Highway
5. Becker Road
6. Gatlin Boulevard
7. Crosstown Parkway
8. St Lucie West Boulevard
9. Midway Road
10. SR 70/Okeechobee Road
11. SR 68/Orange Avenue
12. SR 60
13. CR 512/Fellsmere Road

The 2045 Build intersection operational results indicate that almost all study intersections will operate at LOS D or better in 2045. The only exceptions are the Gatlin Boulevard at Village Parkway Drive intersection in both AM and PM peak hours, the SR 70/Okeechobee Road at Kings Highway intersection in the AM peak hour, and CR 512/Fellsmere Road at 90th Avenue in the PM peak hour. With the noted conceptual improvements, these intersections are projected to operate at LOS E during at least one future peak period.

4.0 LONG TERM (2045) IMPROVEMENT NEEDS FINDINGS

The Facility Enhancement Element documents the need, type, extent and estimated cost of long range (2045) SR 9 / I-95 mainline and interchange improvements. For SR 9 / I-95 and other roadways designated as Strategic Intermodal System (SIS) facilities, long term conceptual improvements 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 provided an analysis of physical improvement alternatives and includes analyses of alternative modes, Transportation System Management (TSM) techniques, and multi-modal improvements. The development of improvement concepts was 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 improvements were developed in concert with traffic operational and safety analyses within the study area, as noted in the companion document, *I-95 Multimodal Master Plan Traffic Element Report,* February 2020.

For the I-95 mainline, it was found that one managed lane in each direction is needed from the Palm Beach/Martin County line to SR 70/Okeechobee Road. This results in a wider interstate footprint for approximately 40 miles of I-95. For the 15 study interchanges and their corresponding influence areas, a series of improvements were identified to address future capacity deficiencies specific to each location. Those interchange improvements varied from adding signalization to an intersection to reconfiguring the interchange's geometry to accommodate future volumes. Each interchange improvement was developed and tailored to that location's unique characteristics consistent with federal, state, and local guidelines.

Cost estimates considered a variety of items such as preliminary design, right-of-way acquisition, and construction costs. A preliminary work program phase cost estimate was developed, as well as a staging plan for the implementation of the various improvements. Several individual improvements were grouped together for work program cost estimate purposes. It is noted that FDOT separated the I-95 mainline improvements into four distinctly defined segments. They are:

- I-95 from Martin/Palm Beach county line to Bridge Road (FM #413253-2)
- I-95 from Bridge Road to High Meadow Avenue (FM #413254-2)
- I-95 from High Meadow Avenue to Martin/St Lucie County line (FM #422681-5)
- I-95 from Martin/St Lucie County line to SR 70/Okeechobee Road (FM #422681-6)

Individual interchange improvement needs were generally grouped within the corresponding I-95 segment when work program phase cost estimates were developed.

The four I-95 segments are currently listed in the work program with an initial PD&E phase programmed for 2025. However, the remaining improvement needs not already grouped within these I-95 segments are not currently included in the FDOT work program. Coordination needs to continue to identify and program future funding for PD&E studies, design projects, construction, operation and maintenance of the recommended alternatives.

4.1 Existing I-95 Geometric Conditions

I-95 Mainline Typical Section

SR 9 / I-95 is a limited access facility, and is considered a key part of Florida's Strategic Intermodal System (SIS). There are six different typical sections along SR 9 / I-95 within the study area. The typical section from approximate STA. 116+00.00 (Palm Beach / Martin County line) to STA 145+92.82 is unique. It differs from the rest of the corridor typical sections due to the Florida Turnpike being located immediately adjacent to and is separated by a concrete barrier wall. The other SR 9 / I-95 typical sections have a varying number of travel lanes. These sections contain between three 12-foot lanes and five 12-foot lanes in each direction. Shoulder and median widths vary throughout the study area as well. The typical sections along SR 9 / I-95, existing roadway geometric and cross section data, including design speed, vertical and horizontal alignment, cross section and right-of-way width are included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020.*

Bridge Typical Section

SR 9 / I-95 consists of various grade-separated crossings. Some bridges will have to be replaced or widened due to the conceptual design improvements. The typical section of the bridges throughout the study area vary between three 12-foot lanes and six 12-foot lanes in each direction. Shoulder and Median Widths vary throughout the study area as well.

Right-of-Way Along I-95 Mainline

The right-of-way width varies throughout the corridor, particularly at rest areas, weigh stations and interchanges. The minimum total mainline right-of-way provided for SR 9 / I-95 throughout the study area is 300 feet.

4.1.1 Need for Improvement

As part of the study, the SR 9 / I-95 corridor geometric and cross sectional characteristics were evaluated for compliance with current FDOT /SIS freeway design standards. Substandard elements were identified throughout the study limits. These substandard elements are presented in more detail in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020.*

As the 2045 needs were identified and corresponding improvements developed, consideration was taken to upgrade substandard elements where feasible. The proposed improvements along SR 9 / I-95 include 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. Additional improvements are included for the interchanges and cross roads. Tables 4-1 through 4-4 summarize the substandard elements along SR 9 / I-95 that are not critical to modify. These existing substandard elements do not meet current FDOT criteria, but do meet AASHTO Greenbook (2011) criteria within the project limits.

Table 4-1 – I-95 Substandard Median

STA.	STA.	Existing Median
3850+00.00	4025+60.00	40'
4115+00.00	4245+60.00	40'
8189+00.00	8245+00.00	26'-40'
8301+00.00	8342+00.00	26'-40'
8774+00.00	8841+00.00	26'-40'
9000+00.00	9013+16.03	40'

Table 4-2 – I-95 Substandard Superelevation

STA.	STA.	I-95	Comment
3873+60.00	3874+62.00	SB	Transition -0.02 to -0.037 (4-lanes)
3874+50.00	3875+52.00	NB	Transition 0.02 to 0.037 (4-lanes)
3898+00.00	3899+53.00	NB	Transition 0.037 to 0.02 (5-lanes)
3901+00.00	3903+40.00	SB	Transition -0.02 to 0.02 (2-lanes)
3946+50.00	3949+62.00	SB	Transition -0.02 to -0.072 (4-lanes)
3947+00.00	3950+12.00	NB	Transition 0.02 to 0.072 (4-lanes)
3970+00.00	3974+20.00	SB	Transition -0.072 to -0.02 (4-lanes)
3971+00.00	3975+20.00	NB	Transition 0.072 to 0.02 (4-lanes)
4059+00.00	4060+0.00	SB	Transition 0.02 to 0.037

Table 4-3 – I-95 Bridge Substandard Vertical Curve and Vertical Clearance

Direction	STA.	STA.	K Value	Length	SSD	Vertical Clearance	COMMENTS
SB	497+00.00	524+00.00	502	ok	1040	16.40	Bridge Road- Bridge Replaced
NB	497+00.00	524+00.00	502	ok	1040	ok	Bridge Road- Bridge Replaced
SB	1251+00.00	1272+00.00	396	ok	924	16.36	Martin Hwy- Widening Bridge
NB	1251+00.00	1272+00.00	396	ok	924	16.32	Martin Hwy- Widening Bridge
NB & SB	3229+00.00	3232+00.00	ok	ok	ok	16.35	Gatlin Blvd - Bridge Replaced
NB & SB	3325+00.00	3329+00.00	ok	ok	ok	16.33	Widening Bridge over C-24 & Galiano Rd
NB & SB	3340+00.00	3350+00.00	406	800'	ok	ok	Under Crosstown Pkwy
NB & SB	3412+00.00	3413+00.00	*	*	*	16.47	Under St Lucie West Blvd
SB	3569+00.00	3573+00.00	ok	ok	ok	23	Glades Cut-Off Rd- Rail road
NB	3569+00.00	3573+00.00	ok	ok	ok	20.75	Glades Cut-Off Rd- Rail road
SB	3632+00.00	3654+00.00	457	ok	ok	16.40	Midway Rd - Widening Bridge
NB	3634+00.00	3655+00.00	456	ok	ok	16.40	Midway Rd - Widening Bridge
SB	3654+00.00	3667+00.00	504	ok	ok	n/a	North of Midway Road
NB	3655+00.00	3668+00.00	503	ok	ok	n/a	North of Midway Road
SB	3807+00.00	3826+00.00	293	1600	795	16.1	Okeechobee Rd - Bridge Replaced
NB	3815+00.00	3818+00.00	293	1600	795	ok	Okeechobee Rd - Bridge Replaced
SB	3830+00.00	3839+00.00	293	800	794	n/a	North of Okeechobee Rd
NB	3830+00.00	3838+00.00	293	800	1314	n/a	North of Okeechobee Rd
NB & SB	3865+00.00	3874+00.00	ok	800	*	*	Under Graham Rd
NB & SB	3890+00.00	3899+00.00	ok	800	ok	n/a	South of Orange Ave
SB	3925+00.00	3943+00.00	276	*	772	16.17	Orange Ave - Length not available
NB	3925+00.00	3943+00.00	276	*	772	16.45	Orange Ave - Length not available
NB & SB	3943+00.00	3956+00.00	293	*	796	n/a	north of Orange Rd - Length not available
NB & SB	4071+00.00	4090+00.00	320	ok	830	*	Under Belcher Canal
NB & SB	4090+00.00	4097+00.00	240	600	731	n/a	not a bridge- North of Belcher Canal
NB & SB	4251+00.00	4260+00.00	ok	600	ok	n/a	not a bridge
NB & SB	4268+00.00	4285+00.00	320	1600	830	16.20	Indrio Road
NB & SB	4285+00.00	4295+00.00	ok	600	*	n/a	north of Indrio Road
NB & SB	4295+00.00	4311+00.00	ok	600	ok	n/a	north of Indrio Road

n/a = not applicable
SSD = Stopping Sight Distance
* = information was not found

Table 4-4 – I-95 Substandard Ramp Terminals

STA.	I-95	Comment
291+00.00	NB	I-95 Off ramp to Weight Station
1241+00.00	NB	I-95 Off ramp to Martin Hwy
1279+00.00	SB	I-95 Off ramp to Martin Hwy
3007+00.00	SB	I-95 On ramp from Becker Rd
3215+00.00	SB	I-95 On ramp from Gatlin Blvd
3427+00.00	NB	I-95 On ramp from St Lucie W. Blvd
3430+00.00	SB	I-95 Off ramp to St Lucie W. Blvd
3662+00.00	NB	I-95 On ramp from Midway Rd
4294+00.00	NB	I-95 On ramp from Indrio Rd
8338+00.00	SB	I-95 Off ramp to SR 60 / 20th St

4.2 Conceptual I-95 Mainline Improvements

I-95 Mainline Typical Section

The recommended alternative consists of eight lanes (four lanes in each direction) on SR 9 / I-95 from the Palm Beach / Martin County line to SR 70 / Okeechobee Road, which includes adding one managed lane in each direction. The recommended improvements are sufficient to satisfy the FDOT minimum LOS target for the study area through 2045.

The proposed work is presented in two typical sections. Figure 4-1 depicts the proposed typical section between the Palm Beach / Martin County Line, starting at approximately STA. 116+00.00 and ending at approximately STA 145+92.82. This section consists of a full roadway reconstruction of eight 12-foot lanes (three general purpose and one managed lane in each direction) with a barrier wall on each side and the median. This typical section matches the proposed typical section developed to the south as part of the FDOT *Interstate 95 / SR 9 Managed Lanes Master Plan from South of Linton Boulevard to Palm Beach / Martin County Line*. It is also compatible with Florida's Turnpike Enterprise plans to widen its facility, which is located immediately west of SR 9 / I-95 in this section.

The second typical section starts approximately at STA. 145+92.82 and ends at approximately STA. 3763+54.50, which consists of eight 12-foot lanes (three general purpose and one managed lane in each direction). Northbound and southbound travel lanes will be widened 1 lane towards the inside with 10-foot outside paved shoulders (12 feet if guardrail is needed); a 10-foot inside paved shoulder; and a varied median width. The typical section for the conceptual design alternative within this portion of I-95 is illustrated in Figure 4-2.

Figure 4-1 – Proposed I-95 Typical Section, Part 1
From Station 116+00 to Station 145+92.82

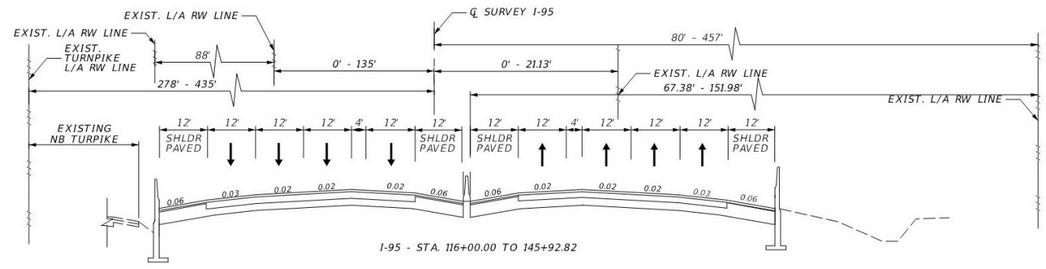
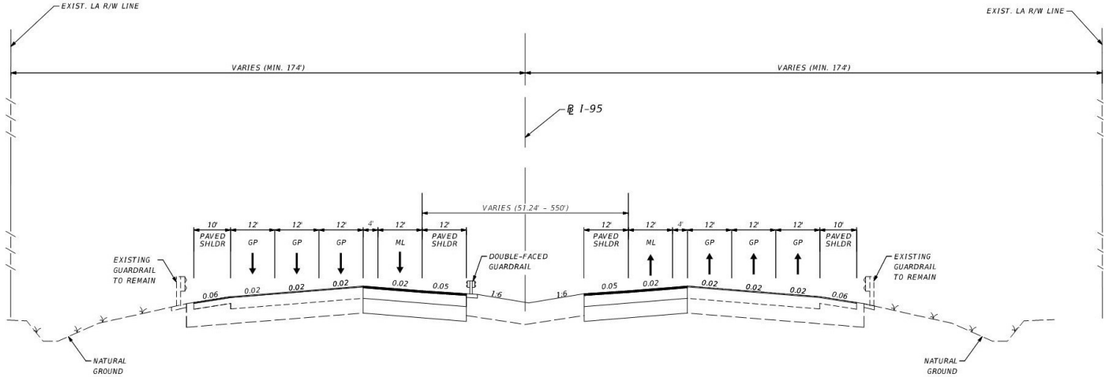


Figure 4-2 – Proposed I-95 Typical Section, Part 2
From Station 145+92.82 to Station 3763+54.50



4.2.1 Structural Improvements

There are 14 bridge locations between the Palm Beach Martin County line to SR 70 / Okeechobee Road that will need to be widened or replaced to accommodate the three existing general purpose lanes and one proposed managed lane in each direction and 12-foot inside and outside shoulders. As summarized in the companion document, *I-95 Multimodal Master Plan Facility Enhancement*

Element Report, *June 2020*, a list of bridges is provided that are recommended to be replaced and widened. A bridge inventory was conducted along the study area to assess the condition of each bridge. This was performed to identify bridges that were not being impacted, but need replacing due to deficiencies.

4.2.2 Interchange Ramp Acceleration and Deceleration Lane Improvements

The configuration of many interchanges within the study area will remain unchanged. This includes the ramp merge and diverge connections to the SR 9 / I-95 mainline. However, there are a handful of locations where future conditions require improvements. Improvements to interchange ramps were considered to meet current FDOT design standards to provide sufficient ramp length to safely merge or exit, and a sufficient number of lanes to accommodate traffic projections. The proposed acceleration and deceleration lengths are summarized in Table 4-5.

Table 4-5 – I-95 Interchange Ramp Proposed Acceleration and Deceleration Lane Lengths

County	Interchange Location	SR 9 / I-95 Ramp Description	1 to 2 Lanes	Acceleration Lane	Deceleration Lane	Lengthened (ft)
Martin	CR 708 / SE Bridge Road	NB Off			X	475
Martin	SR 76 / SW Kanner Highway	NB Off	X		X	950
		SB On	X	X		1,500
		SB Off	X		X	700
St Lucie	Tradition Pkwy. / SW Gatlin Blvd.	NB Off			X	325
		NB On	X	X		1,500
St Lucie	Crosstown Pkwy.	NB Off			X	800
		NB On	X	X		800
		SB Off	X	X		800
St Lucie	St Lucie West Blvd.	NB Off	X		X	800
		SB On	X	X		800
St Lucie	CR 712 / W. Midway Rd.	SB On		X		850
		NB Off			X	400
		SB Off			X	450
St Lucie	SR 70 / Okeechobee Rd.	SB On	X	X		1,500
		SB Off			X	1,500
St Lucie	SR 68 / Orange Ave.	NB Off			X	1,500
St Lucie	SR 614 / Indrio Rd.	SB On				
		NB Off	X		X	1,500
Indian River	SR 60 / 20th St.	NB Off	X		X	1,500

SR 9 / I-95 Between Gatlin Boulevard and Crosstown Parkway

A new auxiliary lane will connect the southbound SR 9 / I-95 on-ramp at Crosstown Parkway and southbound off-ramp to Gatlin Boulevard for a distance of approximately 7,700 feet. This additional travel lane will provide better traffic operations for vehicles entering and exiting from these interchange ramps. The SR 9 / I-95 southbound off-ramp at Gatlin Boulevard will need to be widened from one lane to two lanes.

SR 9 / I-95 Between Crosstown Parkway and St Lucie West Boulevard

The existing interchange spacing between Crosstown Parkway and St Lucie West Boulevard is 1.2 miles, which creates a weaving section along I-95. This interstate segment will function at a failing LOS and congestion is expected in the future. The proposed improvements replace the existing weaving section with a system of braided ramps between the interchanges eliminating congestion that could occur from on ramp traffic and off ramp traffic crossing in the same location on the I-95 mainline. The braided ramps consist of two 12-foot lanes with 12-foot paved shoulders on the outside travel lanes and 8-foot paved shoulders on the inside. The proposed design speed is 45 mph.

The current SR 9 / I-95 northbound exit ramp diverge to the St Lucie West Boulevard interchange will be relocated further south from its current position and the SR 9 / I-95 on-ramp from Crosstown Parkway will be realigned to create a grade separation with the St Lucie West Boulevard off-ramp. Additionally, the SR 9 / I-95 northbound braided ramp system will include a right hand side single lane parallel ramp connection that will by-pass the braided system and avoid entering SR 9 / I-95 providing a direct connection from Crosstown Parkway to St Lucie West Boulevard.

Similarly, the existing SR 9 / I-95 southbound exit ramp diverge to the Crosstown Parkway interchange will be relocated further south. The braided ramp concept will grade separate the SR 9 / I-95 on-ramp from St Lucie West Boulevard such that it vertically passes over the Crosstown Parkway off-ramp.

The proposed design for a southbound braided ramp along SR 9 / I-95 between St Lucie West Boulevard and Crosstown Parkway will impact existing Overhead Transmission Lines. Field investigations and further coordination are recommended during PD&E and Design Phases.

SR 9 / I-95 and St Lucie West Boulevard

St Lucie West Boulevard westbound to southbound SR 9 / I-95 loop on-ramp is proposed to be reconstructed so that it merges with St Lucie West Boulevard eastbound to southbound on-ramp to become the two-lane braided ingress ramp to southbound SR 9 / I-95.

SR 9 / I-95 and SR 614 / Indrio Road

The SR 614 / Indrio Road southbound on-ramp is also proposed to be reconfigured by 2045. The existing southbound on-ramp lane currently merges into three southbound travel lanes. A short distance south of this merge point, the SR 9/ I-95 mainline expands to include a fourth southbound travel lane. This fourth southbound travel lane is currently provided by widening towards the inside. The proposed reconfiguration would eliminate the merge and extend the SR 614 / Indrio Road southbound on-ramp to continue directly into a fourth southbound travel lane. This conceptual alternative creates a smooth transition along southbound SR 9 / I-95 and enhances driver expectancy of lane balance. These conceptual interchange ramp modifications are summarized in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.2.3 I-95 Right-of-Way Needs

To accommodate all recommended improvements needed through 2045, new right-of-way along the I-95 mainline corridor, is only needed in one conceptual alternative location. The proposed braided ramps concept between Crosstown Parkway and St Lucie West Boulevard is expected to exceed the existing right-of-way limits. Right-of-way acquisition for this I-95 segment will be necessary to accommodate this proposed improvement. A detailed estimate of the right-of-way

impacts are summarized in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.2.4 Transportation System Management and Operations (TSM&O) Improvements

Federal Highway Administration (FHWA) defines Transportation System Management and Operations (TSM&O) as "an integrated program to optimize the performance of existing multi-modal infrastructure through implementation of systems, services and projects to preserve capacity and improve the security, safety, and reliability of our transportation system". TSM&O solutions are designated to address three major areas of concern in transportation: congestion, safety and travel-time reliability. TSM&O improvements are recommended along SR 9 / I-95 using closed circuit television (CCTV) at the following locations to allow real-time monitoring of traffic conditions:

- I -95 at Becker Road
- I -95 at Crosstown Parkway
- I -95 at St Lucie West Boulevard
- I-95 at Braided Ramps between Crosstown Parkway and St Lucie West Boulevard
- I -95 at Oslo Road

Dynamic Truck Parking accommodations are recommended for SR 9 / I-95. Utilizing Dynamic Truck Parking signs on SR 9 / I-95 will let truck drivers know the parking availability at common stops along the route. This will allow truck drivers to know which rest stops have availability and in turn will allow them to plan their route more accurately as it nears their time to rest. Thus, drivers can avoid choosing to park at unsafe locations such as on the shoulder of the road, exit ramps or vacant lots.

Touch Screen Information Kiosks should be considered for northbound and southbound SR 9 / I-95 rest areas. As motorists stop at the various Treasure Coast rest stops, a touch screen kiosk would be made available to show tourists places of interest in the area. Conceptually, a person could approach the digital kiosk, most likely a hardened LCD display with a touchscreen, and be able to click parts of a map which would contain activities or places to visit in that area, such as parks, beaches, museums, or other economic draws.

4.3 Conceptual Cross Road Improvements

4.3.1 CR 708/Bridge Road

Near the I-95 interchange area, CR 708 / Bridge Road is a four-lane divided roadway with two 12-foot through lanes in each direction and a left-turn lane at each of the I-95 ramp terminal intersections. The roadway segment between the interchange's two terminal intersections has 18-foot wide paved shoulders and a 22-foot wide raised concrete median. The existing minimum vertical clearance is 16 feet - 4.5 inches. The roadway segments just west and east of the I-95 ramp terminal intersections have two 12-foot through lanes in each direction, 10-foot wide outside shoulders (from 6 to 10 feet paved shoulders), and a raised grass median (width varies from 11 to 24 feet) with curb and gutter Type E.

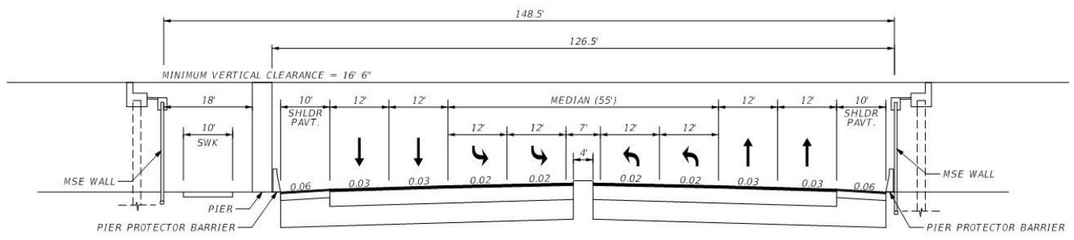
The proposed roadway improvements for CR 708 / Bridge Road are as follows:

- Signalization of the I-95 northbound and southbound ramp terminal intersections.
- Adding second eastbound and westbound left turn lanes from CR 708 / Bridge Road onto the I-95 northbound and southbound ramps.
- Adding two eastbound through lanes and one westbound through lane on CR 708 / Bridge Road at the I-95 northbound and southbound ramp terminal intersections.
- Adding a shared use path to the north side of CR 708 / Bridge Road.
- Modifying the free flow right turn movements at the I-95 northbound and southbound ramp terminal intersections to operate under signal control (i.e. urbanizing the intersections at I-95 ramp terminals.)

The proposed typical sections for CR 708 / Bridge Road below I-95 are shown in Figure 4-3, and will have two 12-foot through lanes in each direction. The proposed roadway segment between the interchange's two terminal intersections will have 10-foot wide paved shoulders with pier protection

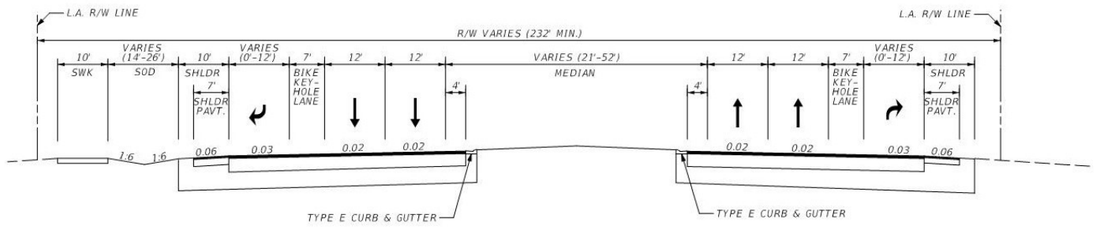
barriers on each side and a 55-foot wide raised concrete median. A 10-foot wide sidewalk is located on the north side of the road between the proposed bridge end bent and pier.

Figure 4-3 –Proposed Typical Section - CR 708 / Bridge Road below I-95



The proposed roadway segments west and east of the I-95 ramp terminal intersections are depicted in Figure 4-4. It will have two 12-foot through lanes in each direction, 10-foot wide shoulders (which includes 7-foot wide paved shoulders), and a raised grass median that is between 21 feet and 52 feet wide. A 10-foot wide sidewalk is located on the north side of the road.

Figure 4-4 –Proposed Typical Section - CR 708 / Bridge Road



4.3.1.1 Benefit-Cost Analysis of CR 708/Bridge Road Improvements

Drivers along CR 708 / Bridge Road are projected to experience increasing congestion and travel time delay within the interchange influence area. Adding capacity and reducing intersection delay provides motorists with shorter overall travel times, which is a benefit that can be quantified.

A quantitative benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the study area. The peak hour delay cost was calculated for the No Build scenario, and was compared to the conceptual improvements. The proposed conceptual alternatives will result in travel time savings of $8.2 million in 2030 and $45.4 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated given a discount rate of 4%, which is consistent with NPV analysis assumptions used by FDOT. Assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $194.8 million in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $4.0 million, this equates to a benefit-cost ratio of approximately 49.0 and an NPV of approximately $190.8 million. The benefit-cost analysis for the CR 708 / Bridge Road interchange conceptual improvements is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020.*

4.3.2 SR 76 / Kanner Highway

SR 76 / Kanner Highway in Martin County is one the critical arteries for the area. It accommodates the flow of large numbers of people and goods while linking the City of Stuart to other population and employment centers. The interchange at I-95 and SR 76/Kanner Highway is heavily travelled.

As part of this Master Plan study, the I-95 interchange at SR 76 / Kanner Highway was defined to include intersections and segments of roadway immediately adjacent to the interchange. This

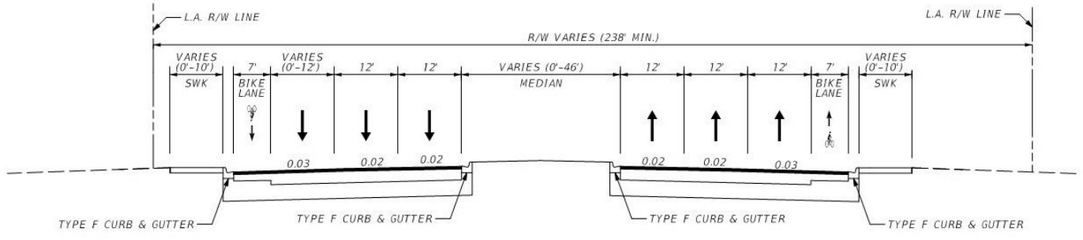
interchange influence area is from west of Jack James Drive (which is west of the I-95 interchange) to east of Cove Road. SR 76 / Kanner Highway is a six-lane divided roadway with three 11-foot through lanes in each direction. The roadway segment between west of Jack James Drive and Cove Road has a variable typical section. Generally, it includes a bicycle lane that varies in width from 4 feet to 5.5 feet along with Type F curb and gutter. A raised grass median that is between 6 feet and 30 feet wide is also present. A 6-foot sidewalk is typically located on the south side of SR 76 / Kanner Highway, except near Cove Road where a sidewalk is present on both sides of the roadway.

By 2045, capacity deficiencies were noted for the SR 76/Kanner Highway interchange. To address these deficiencies, the following roadway improvements are suggested for consideration:

- Modify the interchange from its current partial cloverleaf design to a Diverging Diamond Interchange (DDI) type configuration.
- Signal modifications at the I-95 northbound and southbound ramp terminal intersections.
- Signal modifications at SR 76 / Kanner Highway and Cove Road.
- Signal retiming of the intersection at SR 76 / Kanner Highway and Jack James Drive, as well as at Lost River Road.
- Add missing sidewalk sections on both sides of SR 76 / Kanner Highway.
- Relocate the existing Park and Ride lot.
- At the Cove Road intersection add two northbound left turn lanes and convert the existing shared left/right turn lane to an exclusive right-turn lane.
- As part of the Diverging Diamond Interchange configuration, add a fourth eastbound lane along SR 76 / Kanner Highway from I-95 to Cove Road, where it drops as a right-turn lane.
- Improve the bridge over the St Lucie River Canal.

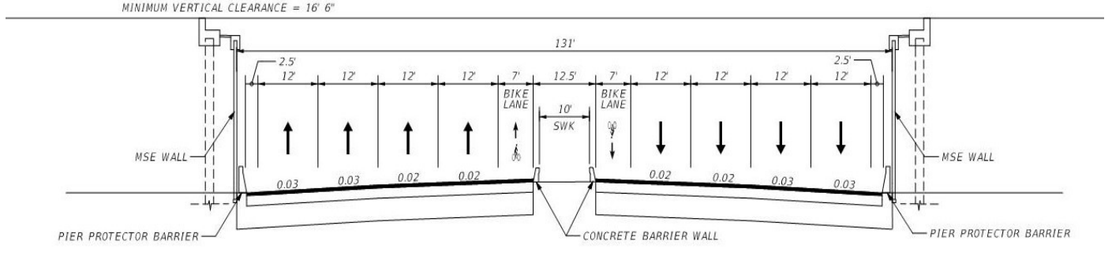
There are five conceptual typical sections (Figure 4-5 through Figure 4-9) for SR 76 / Kanner Highway. The proposed roadway segment between west of Jack James Drive and I-95 southbound Bridge consists of three 12-foot through lanes in each direction. However, just west of Jack James Drive the road transitions to two 12-foot through lanes in the west direction. The facility has Type F curb and gutter, 7-foot wide bicycle lanes, and a raised grass median that has a varying width between 0 feet and 46 feet. A sidewalk of varying width between 0 and 10 feet will be provided on both sides of the road.

Figure 4-5 –Proposed Typical Section - SR 76 / Kanner Highway between west of Jack James Drive and I-95



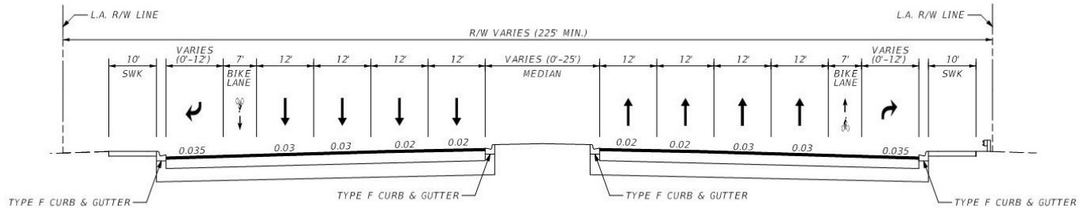
The proposed SR 76 / Kanner Highway roadway segment beneath I-95 has four 12-foot through lanes in each direction. It also includes 2.5-foot paved shoulders with pier protection barriers on each side, 7-foot wide bicycle lanes, and a 12.5-foot wide median containing a 10-foot sidewalk protected with concrete barrier walls.

Figure 4-6 –Proposed Typical Section - SR 76 / Kanner Highway below I-95



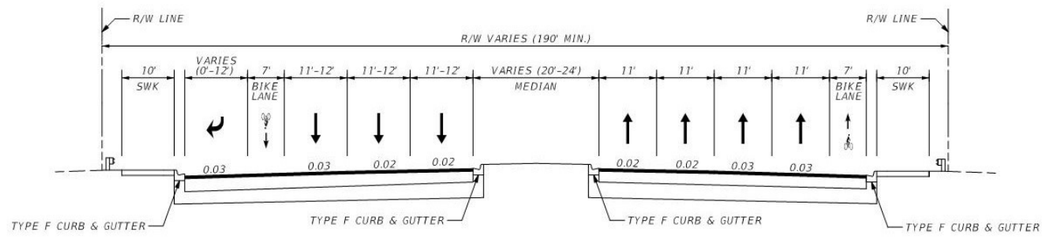
On the east side of the interchange, the proposed roadway segment between I-95 and Lost River Road consists of four 12-foot through lanes in each direction with Type F curb and gutter. The roadway will include 7-foot wide bicycle lanes and a raised grass median up to 25 feet wide. A 10-foot wide sidewalk will be provided on both sides of the road.

Figure 4-7 –Proposed Typical Section - SR 76 / Kanner Highway between I-95 and Lost River Road



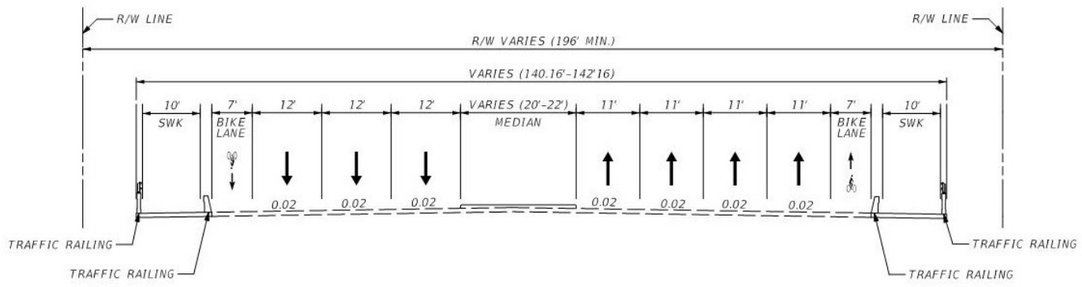
The proposed roadway segment between Lost River Road and Cove Road has four through lanes in both directions of travel with Type F curb and gutter. The through lanes will be between 11 feet and 12 feet wide. The roadway will include 7-foot wide bicycle lanes and a raised grass median that varies between 20 feet and 24 feet wide. A 10-foot sidewalk will be provided on both sides of the road.

Figure 4-8 –Proposed Typical Section - SR 76 / Kanner Highway between Lost River Road and Cove Road



The proposed typical section for the bridge over the South Fork of the St Lucie River between Lost River Road and Cove Road consists of four 11-foot through lanes in the east direction and three 12-foot through lanes in the west direction. It also has 7-foot wide buffered bicycle lanes, and a raised concrete median between 20 feet and 22 feet wide. A 10-foot wide sidewalk will be provided on both sides of the road protected with traffic railings.

Figure 4-9 –Proposed Typical Section - SR 76 / Kanner Highway-Bridge over the South Fork of the St Lucie River



Benefit-Cost Analysis of SR 76/Kanner Highway Improvements

By 2045, drivers along SR 76 / Kanner Highway are expected to experience substantial congestion and travel time delay within the interchange influence area. Providing more capacity will reduce intersection delay resulting in shorter duration trips and reduced overall travel time. Such benefits to the motoring public can be quantified. Consequently, a benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the study site.

The cost for peak hour delay was calculated for the No Build scenario and the noted conceptual improvements. The resultant costs were then compared to determined total travel time savings. That analysis revealed the following savings due to reduced delay:

- Conceptual Alternative cost savings from delay savings: = $2.1 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Assuming a discount rate of 4% and an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $7.3 million in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $19.4 million, this equates to a benefit-cost ratio of approximately 0.4. The resultant NPV is about -$12.1 million. The benefit-cost analysis for these conceptual improvements is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.3 High Meadow Avenue

High Meadow Avenue is a non-state roadway located in Martin County. The interchange influence area is from south of the I-95 bridge to SW Swallowtail Lane (which is located north of the interstate). High Meadow Avenue varies between a two-lane and four-lane divided roadway. The roadway segment below I-95 consists of one 15-foot through lane in each direction with outside paved shoulder between 4 feet and 5 feet wide. The roadway also includes a 32-foot wide concrete median containing 13.75-foot wide shoulders. The existing minimum vertical clearance of the I-95 bridge structure is 16 feet - 6 inches.

No additional roadway capacity or expansion is needed to accommodate future travel demands along High Meadow Avenue within the interchange influence area. However, a single proposed improvement was noted to address future operations:

- Signalization of the High Meadow Avenue and SW Swallowtail Lane intersection.

Benefit-Cost Analysis of High Meadow Avenue Improvements

Drivers at the intersection of High Meadow Avenue and SW Swallowtail Lane are projected to experience delay on the minor street by 2045. The conceptual improvement of signalizing the intersection would alleviate that minor street delay and allow the intersection to operate at an acceptable level of service. Reducing intersection delay is a tangible benefit that can be financially quantified.

Thus, a benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the subject intersection. The peak hour delay cost was calculated for the No Build scenario, as well as for the signalized intersection alternative. The resultant costs were then compared which indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = - $271,341 in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvement. Given a discount rate of 4%, which is consistent with the NPV analysis conducted by FDOT, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $950,076 in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $311,767 this equates to a negative benefit-cost ratio and a negative NPV. This benefit-cost analysis is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.4 CR 714 / SR 714 / Martin Highway

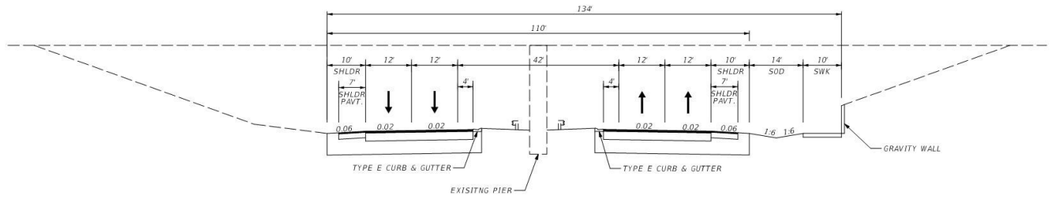
CR 714 / SR 714 / Martin Highway is a roadway located in Martin County. The limits of the section being studied are from Green Farms Lane west of I-95 to Stuart West Boulevard located east of I-95. Martin Highway currently is a four-lane divided roadway with two 12-foot through lanes in each direction. The roadway segment between the interchange's two ramp terminal intersections has 10-foot wide paved shoulders and a 40-foot wide raised grass median with curb and gutter Type E. The existing minimum vertical clearance of the I-95 bridge overpass is 16 feet - 3.8 inches.

The conceptual roadway improvements for CR 714 / SR 714 / Martin Highway include:

- Signalize the northbound and southbound I-95 ramp terminal intersections.
- Signalize the CR 714 / SR 714 / Martin Highway at Stuart Boulevard intersection.
- Add a shared use path on the south side of CR 714 / SR 714 / SW Martin Highway through the interchange influence area.
- Add a second eastbound and westbound left-turn lane at the I-95 northbound and southbound ramp terminal intersections.
- Convert the free flow right-turn movement to signal control at the interchange by urbanizing the I-95 ramp terminal intersections.

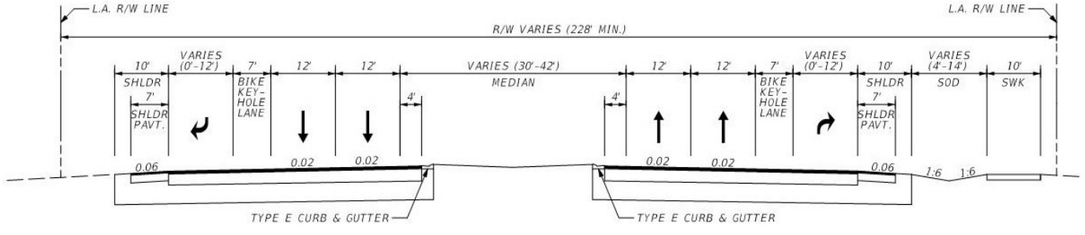
The conceptual typical sections for CR 714 / SR 714 / Martin Highway shown in Figure 4-10 and Figure 4-11 depict two 12-foot through lanes in each direction. The proposed roadway segment between the interchange's two ramp terminal intersections has 10-foot wide shoulders (of which 7 feet are paved) and a 42-foot wide raised grass median with curb and gutter Type E. A 10-foot wide sidewalk is proposed along the south side of the road.

Figure 4-10 –Proposed Typical Section - CR 714 / SR 714 / Martin Highway below I-95



The proposed roadway segments west and east of the I-95 ramp terminal intersections have two 12-foot through lanes in each direction, 10-foot wide shoulders, and a raised grass median. The median varies in width from between 30 feet and 42 feet. A 10-foot wide sidewalk is proposed along the south side of the road.

Figure 4-11 –Proposed Typical Section - CR 714 / SR 714 / Martin Highway



Traffic operational analyses indicated that drivers along Martin Highway will experience intersection delay and increasing travel times through the interchange influence area. The noted conceptual improvements are intended to reduce travel time and vehicular delay. To ascertain the benefits of the improvements, a quantitative benefit-cost analysis was performed. It assessed the value of reducing travel time for drivers through the study area. The peak hour delay cost was calculated for the No Build scenario and the conceptual improvements, and the results were compared. They indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = -$1.5 million in 2030 and $3.7 million in 2045.

This calculation of savings is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements, assuming a discount rate of 4%. Travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $6.5 million in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $4.5 million this equates to a benefit-cost ratio of approximately 1.4 and NPV of approximately $2.0 million. The benefit-cost analysis for the Martin Highway interchange conceptual improvements is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.5 Becker Road

Located in St Lucie County, Becker Road is an east-west, non-state facility. It has an interchange with I-95 that allows access to the interstate system. The limits of the interchange influence area are from west of Village Parkway to east of Hallmark Street, which is located east of the interstate. Becker Road is a six-lane divided roadway with three through lanes in each direction that vary in width between 11 feet and 12 feet. The roadway segment between the interchange's two ramp terminal intersections consists of a bridge crossing over I-95, with 11-foot wide paved shoulders and a 52-foot wide median. An 8-foot wide sidewalk protected with traffic railings is located on both sides of the road. The existing minimum vertical clearance for the I-95 bridge overpass is 16 feet - 11 inches.

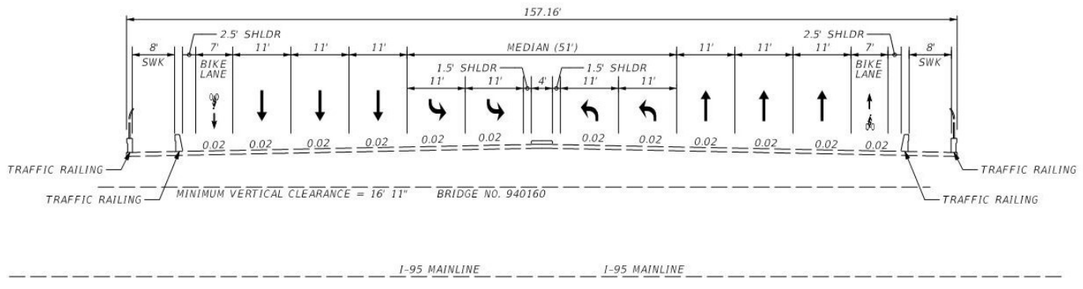
The conceptual roadway improvements identified within the Becker Road interchange influence area are:

- Add a second northbound left-turn lane at the I-95 northbound ramp terminal intersection.
- Add a second southbound right-turn lane at the I-95 southbound ramp terminal intersection.
- Add two southbound left-turn lanes at the intersection of Village Parkway and Becker Road.
- Channelize the westbound right-turn lane at Becker Road and Village Parkway.

- Add two westbound through lanes at the intersection of Becker Road and Village Parkway.
- Construct the south approach of the Becker Road at Village Parkway intersection to include one exclusive northbound right turn lane, one northbound shared left-through lane, and receiving travel lanes.
- Add a third eastbound and westbound through lane on Becker Road from east of I-95 to east of Hallmark Street.
- Signal modifications at Becker Road and Village Parkway.
- Signal modifications of the I-95 northbound and southbound ramp terminal intersections.
- Signal retiming at the intersection of Becker Road and Hallmark Street.

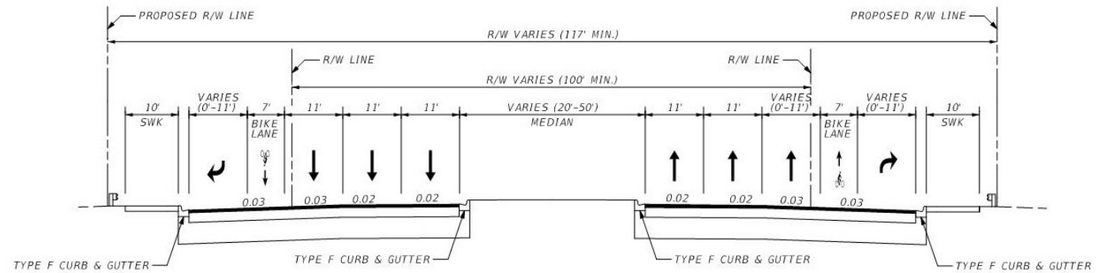
The proposed typical sections shown in Figure 4-12 and Figure 4-13 for Becker Road depict three 11-foot through lanes in each direction. The proposed roadway segment between the interchange's two ramp terminal intersections has 7-foot wide bicycle lanes, 2.5-foot wide shoulders, and a 51-foot wide median. An 8-foot wide sidewalk protected with traffic railings is proposed along both sides of the road.

Figure 4-12 –Proposed Typical Section - Becker Road over I-95



The proposed roadway segments west and east of the I-95 ramp terminal intersections have three 11-foot through lanes in each direction; however, the road transitions to two 11-foot through lanes in the eastbound direction just east of the Hallmark Street intersection. Additionally, the facility is proposed to have Type F curb and gutter, 7-foot wide bicycle lanes, and a raised grass median whose width varies from 20 feet to 50 feet. A 10-foot wide sidewalk is proposed along both sides of the road.

Figure 4-13 –Proposed Typical Section - Becker Road



Benefit-Cost Analysis of Becker Road Improvements

In the future, drivers along Becker Road within the interchange influence area are expected to experience increased congestion and travel time delay. The noted conceptual improvements will add needed capacity and reduce travel time delays. Such travel time benefits are quantifiable. As such, a benefit-cost analysis was conducted to evaluate the magnitude of the congestion improvements.

The benefit-cost analysis of the Becker Road conceptual improvements was performed to assess the value of reducing travel time for drivers through the study area. The peak hour delay cost was calculated for the No Build and conceptual improvements, which were then compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $2.3 million in 2030 and $47.7 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4% and an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $176.9 million in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $22.6 million, this equates to a benefit-cost ratio of approximately 7.8 and NPV of approximately $154.3 million. This benefit-cost analysis is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.6 Gatlin Boulevard / Tradition Parkway

Gatlin Boulevard / Tradition Parkway is a non-state roadway located in St Lucie County. The interchange influence area surrounding Gatlin Boulevard is defined from west of Village Parkway to east of Savage Boulevard, which is located east of the interchange. Gatlin Boulevard is a six-lane divided roadway with three through lanes in each direction east of Village Parkway. The lane widths in this section vary between 11 feet and 12 feet.

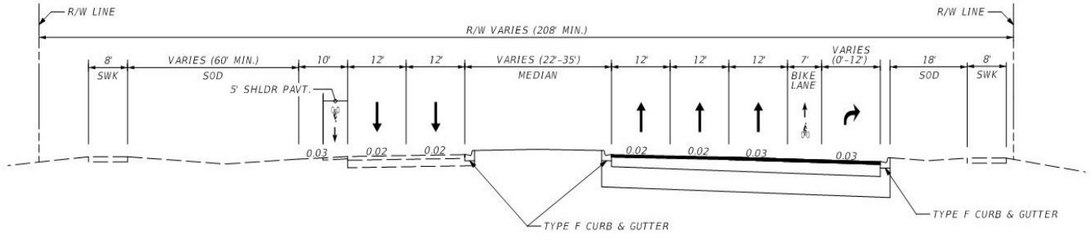
The roadway segment west of Village Parkway has two 12-foot wide travel lanes in each direction, along with 10-foot wide shoulders (that include 5-foot paved shoulders), and a raised grass median that varies in width between 22 feet and 35 feet. It also includes Type F curb and gutter. An 8 to 10-foot wide sidewalk will be provided on both sides of the road.

By 2045, the interchange area near I-95 and Gatlin Boulevard was identified to need substantial capacity improvements to accommodate the future travel demand. The conceptual roadway improvements for the Gatlin Boulevard interchange influence area are:

- Modify the existing interchange to a Diverging Diamond type interchange configuration.
- Signal retiming at Gatlin Boulevard and Brescia Street, and at Savage Boulevard.
- Signal modifications at the I-95 northbound and southbound ramp terminal intersections.
- Adding a westbound through lane on Gatlin Boulevard from east of the I-95 interchange to east of Savage Boulevard.
- Adding a third eastbound through lane on Gatlin Boulevard from east of Community Boulevard to east of Savage Boulevard.
- Bridge improvements for the structure located on Village Parkway 200 feet north of Gatlin Boulevard.
- Adding a third southbound left-turn lane at the Village Parkway and Gatlin Boulevard intersection.
- Adding a third southbound through lane at the Village Parkway and Gatlin Boulevard intersection.
- Adding a free flow, northbound right-turn lane at the Village Parkway and Gatlin Boulevard intersection.
- Adding a free flow, westbound right-turn lane at the Village Parkway and Gatlin Boulevard intersection.
- Signal modifications at Gatlin Boulevard and Village Parkway.

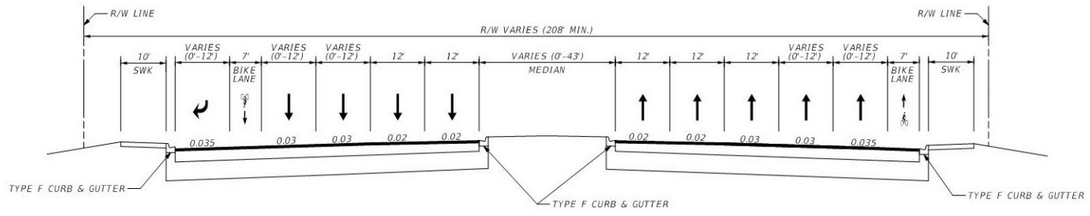
There are five proposed typical sections (Figure 4-14 through Figure 4-18) for Gatlin Boulevard within the interchange influence area. The proposed roadway segment west of SW Village Parkway has two 12-foot through lanes in the west direction (matching existing) and three 12-foot through lanes in the east direction with Type F curb and gutter, 7-foot wide bicycle lanes, and a variable width raised grass median (width varies from 22 feet to 35 feet) with Type F curb and gutter. An 8-foot wide sidewalk is proposed along both sides of the road.

Figure 4-14 –Proposed Typical Section - Tradition Parkway west of SW Village Parkway



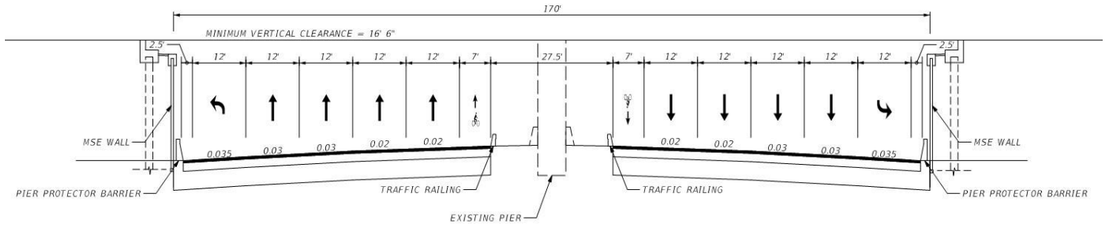
The proposed roadway segment between SW Village Parkway and I-95 varies from three 12-foot to five 12-foot though lanes in each direction. For westbound Gatlin Boulevard / Tradition Parkway, the roadway merges from four 12-foot through lanes to two 12-foot through lanes as the facility approaches SW Village Parkway. On the eastbound direction of travel, the roadway transitions from three 12-foot through lanes to five 12-foot through lanes approaching the I-95 interchange. Within the mentioned limits the roadway has Type F curb and gutter, 7-foot wide bicycle lanes, and a raised grass median that varies between 0 feet and 43 feet wide. A 10-foot wide sidewalk is proposed along both sides of the road.

Figure 4-15 –Proposed Typical Section - Tradition Parkway between SW Village Parkway and I-95



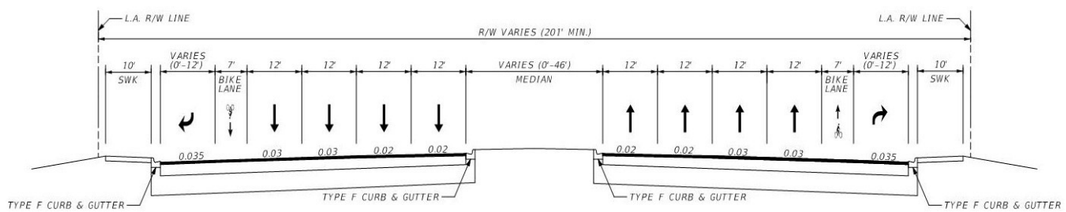
The proposed roadway segment below I-95 has five 12-foot through lanes in each direction, 2.5-foot wide paved shoulders with pier protection barriers on each side, and 7-foot wide bicycle lanes. It also includes a 27.5-foot wide raised concrete median protected with traffic railings.

Figure 4-16 –Proposed Typical Section - Tradition Parkway / Gatlin Boulevard below I-95



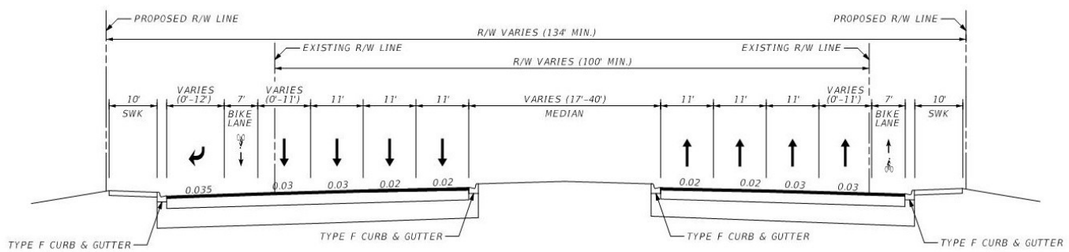
The proposed roadway segment from east of I-95 to SW Brescia Street consists of four 12-foot through lanes in each direction with Type F curb and gutter. It also consists of 7-foot wide bicycle lanes and a raised grass median (width varies from 0 to 46 feet) with Type F curb and gutter. A 10-foot wide sidewalk is proposed on both sides of the road.

Figure 4-17 –Proposed Typical Section - Gatlin Boulevard between I-95 and SW Brescia Street



The proposed roadway typical section of Gatlin Boulevard from east of SW Brescia Street to SW Kensington Street has three to four 11-foot though lanes in each direction with Type F curb and gutter. It also includes 7-foot wide bicycle lanes and a raised grass median whose width varies from 17 feet to 40 feet. A 10-foot wide sidewalk is proposed on both sides of the road.

Figure 4-18 –Proposed Typical Section - Gatlin Boulevard between SW Brescia Street and SW Kensington Street



Benefit-Cost Analysis of Gatlin Boulevard Improvements

Congestion and travel delay are present along Gatlin Boulevard within the interchange influence area, and projected to worsen through 2045. Providing more capacity and reduced intersection delay results in a shorter duration trip and reduced overall travel time. Such results are quantifiable.

Consequently, a benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the study area. The peak hour delay cost was calculated for the No Build scenario, as well as for the conceptual improvements. The resultant costs were then compared, which indicate total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $6.3 million in 2030 and $41.0 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4%, consistent with the NPV analysis conducted by FDOT, and assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $170,757,418 in travel time savings benefits. Since the estimated cost of the Conceptual Alternative is $30.1 million this equates to a benefit-cost ratio of approximately 5.7. The resultant NPV is about $140.7 million. The benefit-cost analysis for the Gatlin Boulevard interchange conceptual improvements are included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.7 Crosstown Parkway

Crosstown Parkway is an east-west, non-state roadway in St Lucie County. Its study area limits are from SW Visconti Way west of the I-95 interchange to east of SW California Boulevard, which is approximately one mile east of I-95. Crosstown Parkway is a six-lane divided roadway with three

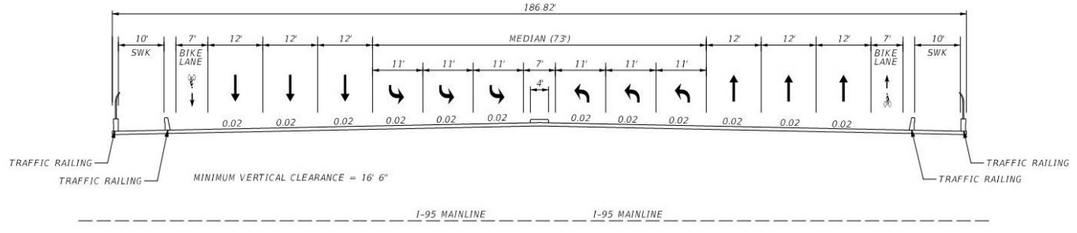
12-foot through lanes in each direction. Linking the interchange's two ramp terminal intersections is a bridge passing over I-95, which includes 8-foot wide bicycle lanes and a 50-foot wide raised concrete median. Sidewalks that are 6 feet wide on the north side and 8 feet wide on the south side are present and protected with traffic railings. The I-95 overpass bridge's existing minimum vertical clearance is 16 feet – 7 inches.

The conceptual roadway improvements for Crosstown Parkway are:

- Adding a third eastbound and westbound left-turn lane at the Crosstown Parkway at I-95 northbound and southbound ramp terminal intersections.
- Adding a second westbound right-turn lane at the Crosstown Parkway and I-95 northbound ramp terminal intersection.
- Adding a second northbound right-turn lane at the I-95 northbound ramp terminal intersection.
- Adding a southbound right-turn lane at the California Boulevard and Crosstown Parkway intersection.
- Adding a second northbound and southbound through lane at the California Boulevard intersection.
- Signal modifications for the I-95 northbound and southbound ramp terminal intersections.
- Signal modifications for the Crosstown Parkway and California Boulevard intersection.
- Signal retiming of the intersection of Crosstown Parkway and SW Visconti Way.

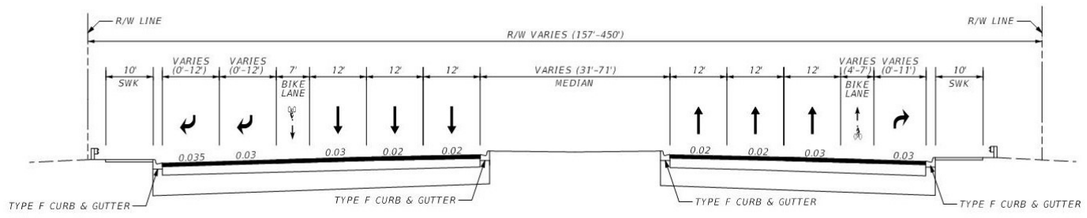
The proposed typical sections for Crosstown Parkway include three 12-foot through lanes in each direction. The overpass bridge between the interchange's two ramp terminal intersections includes 7-foot wide bicycle lanes and a 73-foot wide median. A 10-foot wide sidewalk protected with traffic railings is also proposed on both sides of the road, as shown in Figure 4-19.

Figure 4-19 –Proposed Typical Section - Crosstown Parkway over SR 9 / I-95



Similarly, the proposed roadway segments west and east of the ramp terminal intersections have three 12-foot through lanes in each direction. They include Type F curb and gutter, 7-foot wide bicycle lanes, and a raised grass median that has a variable width between 31 feet and 71 feet. A 10-foot wide sidewalk is proposed on both sides of the road, as shown in Figure 4-20.

Figure 4-20 –Proposed Typical Section - Crosstown Parkway



Benefit-Cost Analysis of Crosstown Parkway Improvements

In the near future, drivers along Crosstown Parkway will experience congestion and travel time delay within the interchange influence area. Conceptual improvements were developed to add capacity and reduce travel times for transportation users. A quantitative benefit-cost analysis was performed to assess the value of those travel time reducing improvements. The costs associated

with peak hour delay for the No Build scenario and the conceptual improvements were calculated and compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $10.5 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. With a discount rate of 4% and an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $36,593,127 in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $24.9 million this equates to a benefit-cost ratio of approximately 1.5. The resultant NPV is about $11.7 million. The benefit-cost analysis for the conceptual alternatives along Crosstown Parkway is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.8 St Lucie West Boulevard

St Lucie West Boulevard is an east-west facility in St Lucie County that has an interchange with I-95. The study area limits extend east and west of the interchange from Commerce Centre Drive to Peacock Boulevard.

St Lucie West Boulevard is a five-lane divided roadway consisting of three eastbound 11-foot through lanes and two westbound 11-foot through lanes. The roadway segment passing over I-95 consists of two separate bridges that are approximately 10 feet apart. The facility includes 8-foot and 10-foot wide paved shoulders. An 8-foot wide sidewalk protected with traffic barriers is located on both bridges. For the cross street bridges over I-95, the existing minimum vertical clearance is approximately 16 feet -7.8 inches.

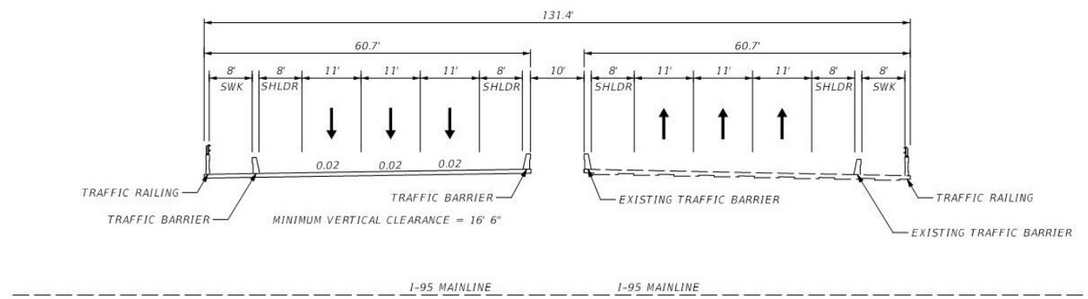
East and west of I-95, St Lucie West Boulevard consists of two 11-foot through lanes in each direction, 10-foot wide shoulders (7-foot paved shoulders), and 7-foot wide bicycle lanes. A raised grass median whose width varies from 22 feet to 44 feet is present along with Type F curb and gutter. A 6-foot wide sidewalk will be provided on both sides of the road.

The conceptual roadway improvements for St Lucie West Boulevard include:

- Adding a third westbound through lane to St Lucie West Boulevard from the I-95 southbound loop off-ramp to east of Peacock Boulevard. This includes a bridge structure over I-95 that consists of three lanes.
- Adding a third eastbound left-turn lane and a third eastbound through lane at the St Lucie West Boulevard and Peacock Boulevard intersection.
- Adding a second westbound left-turn lane, a third westbound through lane, and a second westbound right-turn lane to the St Lucie West Boulevard and Peacock Boulevard intersection.
- Adding a second northbound through lane to the Peacock Boulevard and St Lucie West Boulevard intersection.
- Adding a third southbound left-turn lane, a second southbound through lane, and a second southbound right-turn lane to the Peacock Boulevard and St Lucie West Boulevard intersection.
- Signal modifications for the St Lucie West Boulevard at I-95 northbound on-ramp terminal and Peacock Boulevard intersections.

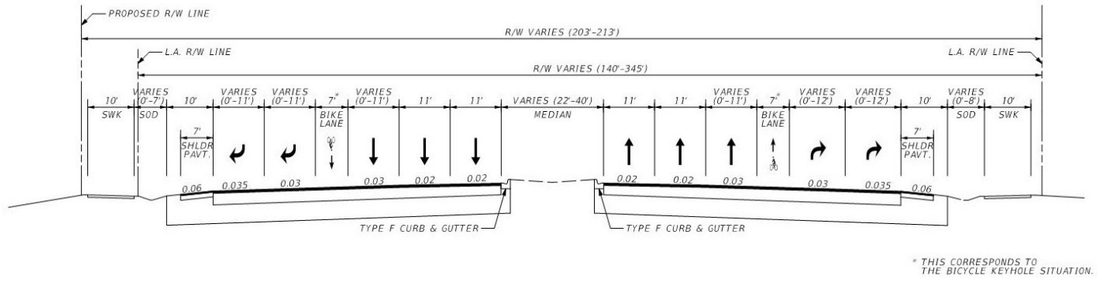
The proposed typical section for St Lucie West Boulevard has three 11-foot through lanes in each direction. The proposed roadway segment passing over I-95 consists of two bridges that remain 10 feet apart, along with 8-foot wide inside and outside shoulders. An 8-foot wide sidewalk protected by traffic barriers is proposed on both bridges, as shown in Figure 4-21.

Figure 4-21 –Proposed Typical Section - St Lucie West Boulevard over SR 9 / I-95



The proposed roadway segments west and east of I-95 have two or three 11-foot through lanes in each direction. It also consists of 10-foot wide outside shoulders (7-foot paved shoulders), and a raised grass median. The median width varies from 22 feet to 40 feet, and includes Type F curb and gutter. A 10-foot wide sidewalk is proposed on both sides of the road, as shown in Figure 4-22.

Figure 4-22 –Proposed Typical Section - St Lucie West Boulevard



Benefit-Cost Analysis of St Lucie West Boulevard Improvements

Given current and projected congestion along the St Lucie West Boulevard corridor, drivers experience varying degrees of congestion and travel time delay. Reducing intersection delay provides motorists with a shorter duration trip which has quantifiable benefits. Therefore, a benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the interchange influence area. The peak hour delay cost was calculated for the No Build scenario, as well as for the conceptual improvement alternative. The resultant costs were then compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $4.7 million in 2030 and $12.2 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4%, consistent with the NPV analysis conducted by FDOT, and assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $63.2 million in travel time savings benefits. The estimated cost of the Conceptual Alternative improvements is $15.1 million, which equates to a benefit-cost ratio of approximately 4.2 and NPV of about $48.2 million. This benefit-cost analysis is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.9 CR 712 / Midway Road

CR 712 / Midway Road is located in St Lucie County. The interchange influence area that was evaluated as part of this study extends from west of Gordy Exd, which is a minor cross street west of the I-95 interchange, to east of Glades Cut-Off Road. Midway Road is a four-lane divided roadway with two 12-foot through lanes in each direction. The roadway segment between the two

I-95 terminal ramp intersections has 8-foot wide inside paved shoulder and a variable width outside paved shoulder between 10 feet and 11 feet. The roadway also includes a 24-foot wide concrete median. The existing minimum vertical clearance of the existing structure is approximately 16 feet - 4.75 inches.

The conceptual roadway improvements for CR 712 / Midway Road are:

- Add a second southbound left-turn lane to the I-95 southbound off-ramp terminal intersection.
- Add a second westbound left-turn lane at the CR 712 / Midway Road and Glades Cut-Off Road intersection.
- Signal retiming for the CR 712 / Midway Road at I-95 northbound and southbound ramp terminal intersections.
- Signal retiming and modifications at the CR 712 / Midway Road and Glades Cut-Off Road intersection.

Benefit-Cost Analysis of Midway Road Improvements

These conceptual improvements are intended to alleviate the expected congestion and travel time delay within the interchange influence area. Reduced intersection delay provides motorists with a shorter overall travel time which equates to a tangible benefit. To quantify that benefit, an analysis was performed to determine the financial value of reducing travel time through the study area. The peak hour delay cost was calculated for the No Build and Conceptual Alternative scenarios, and the resultant costs were compared. Results indicate that the total travel time savings based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters are:

- Conceptual Alternative cost savings from delay savings: = $1.7 million in 2045.

The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4% and an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045. The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $6.1 million in travel time savings benefits. With an estimated cost of $2.8 million for the Conceptual Alternative improvements, this equates to a benefit-cost ratio of approximately 2.2 and NPV of about $3.4 million. The benefit-cost analysis is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.10 SR 70 / Okeechobee Road

SR 70 / Okeechobee Road is a critical east-west roadway in St Lucie County and part of the Strategic Intermodal System. It provides a vital link between Florida's Turnpike and I-95, thereby facilitating the movement of people and goods between the two facilities.

This study evaluated the segment of SR 70 / Okeechobee Road between SR 713 / Kings Highway located west of I-95, and Jenkins Road, located east of I-95. SR 70 / Okeechobee Road is six-lane divided roadway with three 12-foot through lanes in each direction. The roadway segment beneath I-95 has 2.5-foot wide inside paved shoulders, 5-foot wide bicycle lanes, 12.5-foot wide ramp-only lanes with Type F curb and gutter, and a 14.5-foot wide raised concrete median. A 6-foot wide sidewalk is located on both sides of the road next to the bridge end bents. The existing minimum vertical clearance is 16 feet - 5.5 inches.

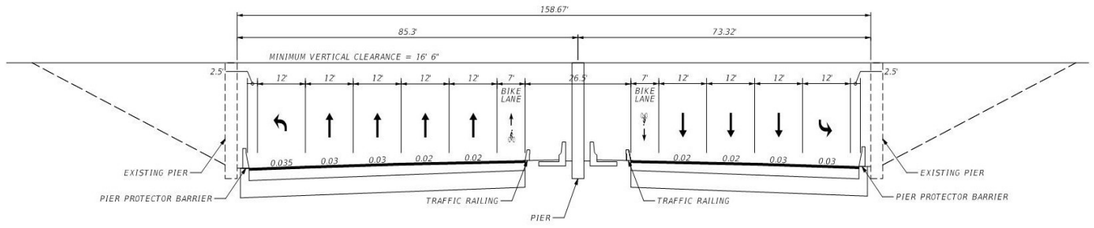
By 2045, capacity deficiencies were noted for the SR 70/Okeechobee Road interchange. To address these deficiencies, the following roadway improvements are suggested for consideration:

- Modify the interchange configuration to a Diverging Diamond Interchange (DDI) configuration as a potential solution. Eastbound and westbound traffic along the arterial would cross over from the right-hand-side of the roadway to the left-hand-side of the roadway through the interchange. This continues along a tangent of approximately 100 feet before traffic reverts back to its original position. Traffic traveling through the interchange along the arterial passes through signalized intersections in each direction.

- Adding a proposed third northbound right-turn lane to the SR 713 / Kings Highway and SR 70 / Okeechobee Road intersection.
- Adding a third northbound left-turn lane at the intersection of Jenkins Road and SR 70 / Okeechobee Road.
- Signal retiming of the signalized intersection at SR 70 / Okeechobee Road and Crossroad Parkway.
- Signal timing modifications at SR 70 / Okeechobee Road and the I-95 northbound and southbound ramp terminals, SR 713 / Kings Highway, and Jenkins Road intersections.

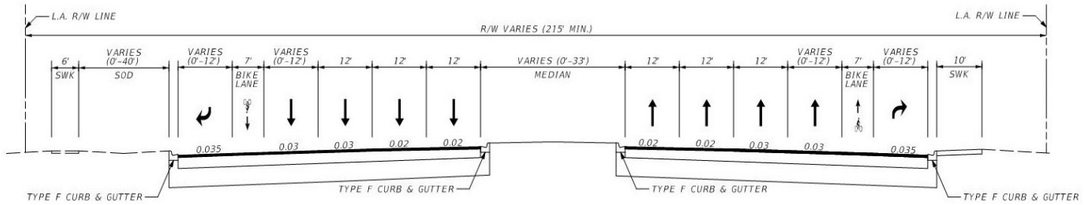
The proposed typical section for SR 70 / Okeechobee Road has three to four 12-foot through lanes in each direction. The roadway segment below I-95 has 2.5-foot paved shoulders with pier protection barriers, 7-foot wide bicycle lanes, and a 26.5-foot wide concrete median that accommodates a 10-foot sidewalk protected by traffic railings on both sides, as shown in Figure 4-23.

Figure 4-23 –Proposed Typical Section – SR 70/Okeechobee Road over SR 9 / I-95



The proposed typical section for the roadway segments west and east of I-95 have either three or four 12-foot through lanes in each direction with Type F curb and gutter. It includes 7-foot wide bicycle lanes and a raised grass median, with a width that varies from 0 to 33 feet, with Type F curb and gutter. A variable width (6 to 10 feet) sidewalk is proposed on both sides of the road, as shown in Figure 4-24.

Figure 4-24 –Proposed Typical Section – SR 70/Okeechobee Road



Benefit-Cost Analysis of SR 70/Okeechobee Road Improvements

Drivers along SR 70 / Okeechobee Road currently experience congestion and travel time delay through the study intersections, particularly at Jenkins Road. Providing more intersection capacity and, consequently, reduced intersection delay provides motorists with shorter overall travel times.

A quantitative benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the study site. The peak hour delay cost was calculated for the No Build scenario, as well as for the conceptual improvements. The resultant costs were then compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $419,373 in 2030 and $12.7 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4%, consistent with the NPV analysis conducted by FDOT, and assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $46.1 million in travel time savings benefits. Since the estimated cost of the Conceptual Alternative is $22.1 million this equates to a benefit-cost ratio of approximately 2.1. The corresponding NPV is about $24.0 million. This benefit-cost analysis is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.11 SR 68 / Orange Avenue

Situated in St Lucie County, SR 68 / Orange Avenue is an east-west roadway that consists of a 4-lane divided section. The study limits are from west of SR 713 / Kings Highway (which is located west of I-95) to Jenkins Road. SR 68 / Orange Avenue generally consists of two 12-foot through lanes in each direction, although occasional auxiliary lanes are present. Beneath I-95 the roadway has 4-foot wide bicycle lanes with Type F curb and gutter, and a 29.5-foot wide raised concrete median with curb Type D. A 6-foot wide raised sidewalk is located on both sides of the road between the bridge end bent and pier. The existing minimum vertical clearance is 16 feet – 2 inches.

The conceptual roadway improvements for SR 68 / Orange Avenue include:

- Relocate the I-95 southbound on-ramp approximately 500 feet east of the existing location to improve the weaving operation along SR 68 / Orange Avenue.
- Add a second westbound right-turn lane at the intersection of SR 68 / Orange Avenue and SR 713/ Kings Highway.
- Increase deceleration lane lengths along the eastbound and southbound approaches of the SR 68 / Orange Avenue and SR 713 / Kings Highway intersection.
- Signalization modifications at SR 68 / Orange Avenue and the SR 713 / Kings Highway intersection.
- Signal retiming for the intersection at SR 68 / Orange Avenue and SR 9 / I-95 northbound and southbound ramp terminal intersections.
- Signal retiming at the intersection of SR 68 / Orange Avenue and Jenkins Road.

Benefit-Cost Analysis of SR 68/Orange Avenue Improvements

Drivers along SR 68 / Orange Avenue are projected to experience increased congestion and travel time delay through the study intersections. Providing more intersection capacity and reduced intersection delay provides motorists with a shorter overall travel time.

A quantitative benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the interchange influence area. The cost for peak hour delay was calculated for the No Build scenario and the conceptual improvement alternative, which were then compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = -$92,244 in 2030 and $6.8 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4% and an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $23.3 million in travel time savings benefits. Since the estimated cost of the Conceptual Alternative is $2.4 million this equates to a benefit-cost ratio of approximately 9.6 and NPV of about $20.8 million. The detailed benefit-cost analysis for this conceptual alternative is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.12 SR 614 / Indrio Road

SR 614 / Indrio Road is a 4-lane divided roadway located in northern St Lucie County. The interchange influence area under study includes the segment from Aico Road west of I-95 to

Koblegard Road. SR 614 / Indrio Road consists of two 12-foot through lanes in each direction. The roadway segment between the two I-95 ramp terminal intersections has 10-foot wide outside paved shoulders and a 40-foot wide grass median. The existing minimum vertical clearance is 16 feet – 5 inches.

The need for extensive capacity enhancements at the SR 614/Indrio Road interchange are minimal through 2045. However, some minor traffic signal improvements were identified. They include:

- Signal retiming for the signalized intersections at SR 614 / Indrio Road and the I-95 northbound and southbound ramp terminal intersections.
- Signal retiming at the signalized intersection of SR 614 / Indrio Road and Koblegard Road.

4.3.13 CR 606 / Oslo Road

Located in Indian River County, CR 606 / Oslo Road was studied from 86th Avenue west of I-95 to 82nd Avenue which is located east of the interstate. Presently, FDOT is designing a new interchange at this location (FM # 413048-2) with project letting anticipated for 2025.

The under-design interchange configuration was determined to function acceptably through 2045. No additional infrastructure improvements were identified to accommodate future travel demand needs, with the exception of the following minor improvement.

- Proposed signalization at CR 606 / Oslo Road and 82nd Avenue.

Benefit-Cost Analysis of SR 614/Indrio Road Improvements

This ultimate conceptual improvement will reduce congestion and travel time delay through the study intersection for motorists. A quantitative benefit-cost analysis was performed to assess the value of reducing travel time for drivers through the study site. The peak hour delay cost was calculated for the No Build scenario, as well as for the conceptual improvement alternative. The resultant costs were then compared. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $335,913 in 2030 and $3.7 million in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements, given a discount rate of 4%. Assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the ultimate conceptual improvement were amortized to a present day value of $14.3 million in travel time savings benefits. The estimated cost of signalizing the intersection of Oslo Road and 82nd Avenue is $330,747 and this equates to a benefit-cost ratio of approximately 43.2 with the resultant NPV about $14.0 million. The NPV analysis for this ultimate conceptual alternative is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

4.3.14 SR 60

SR 60 / 20th Street is a critical east-west facility in Indian River County. West of I-95, SR 60 is a designated Strategic Intermodal System (SIS) roadway that links the east coast of Florida with the west coast and provides mobility for people and goods. SR 60 east of I-95 also links the county's population with the north-south transportation interstate facilities. The study limits are from 94th Drive west of I-95 to 98th Avenue located east of the interstate.

SR 60 / 20th Street is a six-lane divided roadway with three 12-foot through lanes in each direction. The roadway segment between the two I-95 terminal intersections has paved shoulders (width varies from 11 feet to 15 feet), and a 41.5-foot wide raised concrete median with curb and gutter

Type E in the eastbound direction. A 5-foot wide sidewalk is located on both sides of the road. The existing minimum vertical clearance is approximately 16 feet - 10 inches.

The need for improvements at the SR 60 / I-95 interchange is minimal through 2045. However, some minor traffic signal improvements were identified. They include:

- Signal retiming for the signalized intersections of SR 60 / 20th Street and I-95 northbound and southbound ramp terminals, 98th Avenue, 90th Avenue, and 94th Drive.

4.3.15 CR 512 / Fellsmere Road

CR 512 / Fellsmere Road is located in Indian River County and includes study area limits from east of Willow Street (which is west of I-95) to 106th Avenue (which is located east of the interstate). Immediately at the I-95 interchange, CR 512 / Fellsmere Road is a four-lane divided roadway with two 12-foot through lanes in each direction. The roadway segment between the two I-95 ramp terminal intersections has 12-foot wide paved shoulders and a 47-foot wide concrete median. An 8-foot wide sidewalk is located on the north side. The existing minimum vertical clearance is 16 feet - 9 inches.

Based on the future 2045 travel demand, the following roadway improvements for CR 512 / Fellsmere Road are suggested:

- Adding a westbound right-turn lane at CR 512 / Fellsmere Road and Fellsmere Trailhead Preserve to eliminate a westbound merge prior to the driveway immediately west of the I-95 southbound off-ramp intersection.
- Proposed southbound right-turn lane at the intersection of 108th Avenue and CR 512 / Fellsmere Road.
- Proposed signalization at CR 512 / Fellsmere Road and 108th Avenue.
- Signal retiming of the CR 512 / Fellsmere Road and I-95 northbound and southbound ramp terminal intersections.
- Signal retiming for the signalized intersection of CR 512 / Fellsmere Road and Willow Street.

Benefit-Cost Analysis of CR 512/Fellsmere Road Improvements

Drivers along CR 512 / Fellsmere Road are expected to experience congestion and travel time delay through the study intersections by 2045. Providing more intersection capacity and reduced intersection delay provides motorists with a shorter overall travel time.

A quantitative benefit-cost analysis was performed to assess the value of reducing travel time for drivers along the study portions of the Fellsmere Road corridor. The peak hour delay cost was calculated for the No Build scenario and the conceptual improvement alternative, and a comparative analysis was conducted. Results indicate that the total travel time savings are:

- Conceptual Alternative cost savings from delay savings: = $761,871 in 2045.

This is based on a conservative estimate of the monetized value of delay of $16.80 per vehicle-hour for South Florida commuters. The Net Present Value (NPV) of these benefits was also calculated relative to the current cost of the conceptual improvements. Given a discount rate of 4%, consistent with the NPV analysis conducted by FDOT, and assuming an opening year of 2030, the travel time savings were calculated for each year between 2030 and 2045.

The annual travel time savings for the Conceptual Alternative were amortized to a present day value of $2.7 million in travel time savings benefits. Given that the estimated cost of the Conceptual Alternative is $3.7 million this equates to a negative benefit-cost ratio and NPV. The benefit-cost analysis for this conceptual alternative is included in the companion document, *I-95 Multimodal Master Plan Facility Enhancement Element Report, dated June 2020*.

5.0 SHORT TERM (2030) IMPROVEMENT NEEDS FINDINGS

The *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report, dated August 2020*, documents the need, type, extent and estimated cost of interim and short range (2030) improvements along the I-95 mainline, as well as the corresponding interchanges. These improvements are intended to preserve and enhance, where possible, the existing level of service until the ultimate design concept can be implemented.

The needs assessment evaluated physical improvement alternatives and included 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; physical, operational, and environmental impacts; and state and local agency input. The improvements were developed in concert with traffic operational and safety analyses within the study area, as noted in the companion document, *I-95 Multimodal Master Plan Traffic Element Report, dated February 2020*.

5.1 Interim I-95 Mainline Improvement Needs

The ultimate improvement design concepts along the I-95 mainline entail the addition of one managed lane in each direction (northbound/southbound) from the Palm Beach / Martin County Line to SR 70 / Okeechobee Road. It also includes a conceptual 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 ultimate design concept widening of the I-95 corridor from CR 708 / Bridge Road to SR 70 / Okeechobee Road. These bridges will either need widening or replacement.

Analysis of year 2030 conditions, found that interim or immediate conceptual improvements are not needed along the I-95 mainline. The current geometric configuration is sufficient to accommodate current and near future travel demand before the need for the ultimate improvement concepts is realized in the early 2030s. Additional details regarding the I-95 mainline widening and other ultimate improvement design concepts are included in the *I-95 Multimodal Master Plan Facility Enhancement Report*, *dated June 2020*.

5.2 Interim Cross Road Improvement Needs

Interim conceptual improvements within the interchange influence areas were found to be needed for nine of the 15 cross road study interchange locations. These improvements are generally intended to address operational or safety concerns such that the intersection or interchange's function is preserved until the ultimate design concept can be implemented. With the exception of the interim improvement at I-95 and SR 70 / Okeechobee Road, all of the interim concepts correspond to intersection capacity and operation improvements that become part of the ultimate improvement configuration.

The prioritized nine interim / short term improvements needed by 2030 include:

1. CR 708 / Bridge Road - signalize I-95 ramp termini intersections.
2. CR 714 / SR 714 / Martin Highway - signalize I-95 ramp termini intersections and Stuart Boulevard intersection.
3. Becker Road - add a southbound left-turn lane at Village Parkway intersection.
4. Tradition Parkway / Gatlin Boulevard - provide a free flow northbound right-turn and free flow westbound right-turn movement at Village Parkway intersection.
5. St Lucie West Boulevard at Peacock Boulevard intersection improvements:
    a. Add a third eastbound left-turn lane and a third eastbound through lane;
    b. Add a second westbound left-turn lane, third westbound through lane, and second westbound right-turn lane with a protected right-turn overlap phase;
    c. Add a second northbound through lane and provide a protected northbound right-turn overlap phase; and
    d. Add a second southbound through lane and a second southbound right-turn lane with a protected right-turn overlap phase.

6. SR 70 / Okeechobee Road – improve westbound lane utilization with northbound on-ramp concept improvements, as well as signal timing enhancements at the Jenkins Road intersection.
7. SR 68 / Orange Avenue – re-align the I-95 southbound on-ramp and add turn lanes? at the Kings Highway intersection. These represent the ultimate conceptual improvement for this interchange, although they are needed by 2030.
8. Oslo Road – signalize the 82nd Avenue intersection. This is the ultimate conceptual improvement for this interchange, although it is needed by 2030.
9. CR 512 / Fellsmere Road - reconstruct and extend a second westbound travel lane west of I-95.

The interim improvements needed at each of the nine interchanges listed above, are described in more detail below.

5.2.1 CR 708 / Bridge Road

I-95 Ramp Terminal Intersections

The proposed improvements include signalization of the I-95 northbound and southbound ramp terminals at Bridge Road. 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 (such as conduit, conductor, and electric service). Additional details regarding cross road improvements are included in the *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report*, *dated August 2020*.

Right-of-way acquisition will not be necessary to accommodate these interim conceptual improvements. The design improvements can be accommodated within the existing right-of-way limits.

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.

5.2.2 CR 714 / SR 714 / Martin Highway

I-95 Ramp Terminal Intersections

The conceptual short term improvements include signalization of both I-95 ramp terminal intersections at CR 714 / SR 714 / Martin Highway. 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 various ancillary features.

Stuart Boulevard Intersection

The conceptual signal improvements include signalization of the CR 714 / SR 714 / Martin Highway and Stuart Boulevard intersection to address vehicular delays during 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 other features. Right-of-way acquisition is unnecessary for these interim conceptual improvements as sufficient right-of-way is present.

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. Additional details regarding the interim improvements on CR 714 / SR 714 / Martin Highway are included in the *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report*, *dated August 2020*.

5.2.3 Becker Road

Village Parkway Intersection

At Becker Road and Village Parkway, conceptual interim improvements include the addition of one northbound and one southbound lane divided by a median of 19 to 29 feet wide on the south approach. On the north approach, a second southbound left-turn lane was considered. These improvements require widening of the existing roadway and new traffic signal heads.

Right-of-way acquisition is necessary at the Becker Road and Village Parkway intersection to construct the full intersection on the south side of Village Parkway. An approximate total of 26,478 square feet of right-of-way needs to be obtained to accommodate the conceptual improvements for the facility and for future developments. Additional details regarding these right-of-way impacts are included in the *I-95 Multimodal Master Plan Facility Enhancement Element Report*, *dated June 2020*, and the *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report*, *dated August 2020*.

The LRE construction cost estimate for the Becker Road and Village Parkway intersection improvements includes the addition of the south approach leg; a second left-turn lane on the north approach, and signalization improvements. Overall, the construction cost for these intersection improvements is approximately $60,000.

5.2.4 Tradition Parkway / Gatlin Boulevard

Village Parkway Intersection

The conceptual interim improvements at Gatlin Boulevard and Village Parkway include the conversion of the existing westbound right-turn lane to free flow operations. This improvement would require a new steel mast arm and new traffic signal heads. The existing bridge on Village Parkway north of the intersection would need to be widened to accommodate an additional new receiving lane. Finally, the existing northbound right-turn lane would be modified to operate as a free flow lane. Some right-of-way acquisition is necessary to construct these conceptual interim improvements.

The LRE cost estimate for the Tradition Parkway / Gatlin Boulevard at Village Parkway intersection improvements is nearly $1.4 million. Additional details regarding the noted improvements, right-of way impacts, and construction cost estimates are included in the *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report*, *dated August 2020*.

5.2.5 St Lucie West Boulevard

Peacock Boulevard Intersection

The conceptual improvements at the Peacock Boulevard and St Lucie West Boulevard intersection include adding a third left-turn lane and a third through lane along the eastbound direction of St Lucie West Boulevard. Also, a second westbound left-turn lane, a third westbound through lane, and a second westbound right-turn lane with a protected right-turn overlap phase have been identified as interim improvements. On Peacock Boulevard, the addition of a second northbound through lane, a second southbound through lane, and a second southbound right-turn lane with a protected right-turn overlap phase are to be added. These improvements would require a new steel mast arm and new traffic signal heads at the intersection. To accommodate the conceptual improvements, right-of-way acquisition is necessary.

Overall, the construction cost estimate for the St Lucie West Boulevard at Peacock Boulevard intersection improvements is about $4 million. This cost estimate is fully documented in the *I-95 Multimodal Master Plan Facility Operations and Preservation Element Report*, *dated August 2020*.

5.2.6 SR 70 / Okeechobee Road

SR 70 / Okeechobee Road Corridor east of I-95

SR 70 / Okeechobee Road, which is part of the Strategic Intermodal System (SIS), represents critical infrastructure for the movement of people and goods. The segment east of I-95 was identified for interim improvements to address immediate safety and operational concerns for the westbound direction of travel. This is a high prioritized improvement project that affects multiple modes of transportation.

The westbound SR 70 / Okeechobee Road typical section consists of four through lanes and a bicycle lane near 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, while the bike lane continues across the interchange.

Presently, an unequal lane utilization exists within this roadway segment causing delay and safety concerns. Drivers travelling along westbound SR 70 / Okeechobee Road approaching Jenkins Road currently must position their vehicle in a single outside lane if their destination is I-95 northbound or southbound; the retail development; or northbound Jenkins Road. This results in excessive queues and vehicular delays in the outside lane of westbound SR 70 / Okeechobee Road.

To address this lane imbalance, the interim conceptual improvement for westbound SR 70 / Okeechobee Road would restripe and modestly re-design the roadway such that the third westbound travel lane operates as a shared through/right-turn lane. Coupled with the outside travel lane, this would allow westbound drivers to access the I-95 northbound/southbound on-ramps from two separate lanes. Such an interim conceptual improvement would balance westbound traffic volume more evenly across all four travel lanes, thereby reducing queues and delay.

In addition to the restriping, to accommodate the improvement the I-95 northbound on-ramp must be slightly realigned to relocate the ramp gore limits further west. This expands and lengthens the weaving area to better manage lane changing maneuvers. The existing bicycle lane will be maintained along westbound SR 70 / Okeechobee Road via an alternative route. This would permit bicyclists to continue along the westbound SR 70 / Okeechobee Road outside paved shoulder onto the marked crosswalk location eventually linking to the existing sidewalk near the ramp terminal intersection.

It is noteworthy that this interim conceptual improvement can be constructed within the existing right-of-way.

Jenkins Road Intersection

The conceptual signal improvement includes retiming existing phases to maximize the operational efficiency of the current SR 70 / Okeechobee Road at Jenkins Road intersection. Such retiming will account for a more balanced lane utilization on westbound SR 70 / Okeechobee Road consistent with this area's interim conceptual improvements. Right-of-way acquisition will not be necessary at this intersection as the design improvements will be accommodated within the existing right-of-way limits.

The LRE cost estimate for the I-95 northbound/southbound on-ramp improvements along westbound SR 70 / Okeechobee Road to improve lane utilization, as well as signalization improvements at the Okeechobee Road and Jenkins Road intersection, is nearly $1 million.

5.2.7 SR 68 / Orange Avenue

SR 68 / Orange Avenue Corridor west of I-95

The improvements along SR 68 / Orange Avenue noted in Section 4.3 reflect the ultimate conceptual design that addresses the transportation needs through this study's design year. However, the need for implementing these conceptual improvements is estimated to be 2030. That is when motorists are expected to experience congestion and travel time delays through the study area. The ultimate conceptual improvements will provide additional intersection capacity and reduce overall travel times.

5.2.8 CR 606 / Oslo Road

82nd Avenue Intersection

Presently, FDOT is designing a new interchange at I-95 and Oslo Road (FM # 413048-2) with project letting anticipated for 2025. As described in Section 4.3, the under-design interchange configuration will operate well through 2045. However, the currently unsignalized intersection at Oslo Road and 82nd Avenue was noted to need signalization by 2030 to function properly with the future travel demand. This short-term improvement will reduce congestion and travel time delay through the study intersection for everyday motorists. Overall, the construction cost for this intersection improvement is approximately $300,000.

5.2.9 CR 512 / Fellsmere Road

CR 512 / Fellsmere Road Corridor west of I-95

During consultations with Indian River County officials, Fellsmere Road west of I-95 was identified as a conceptual improvement location to address lane geometry, lane reductions, and driving maneuvers. West of the I-95 interchange, westbound Fellsmere Road consists of two travel lanes. Prior to the driveway serving the Fellsmere Trailhead Preserve, westbound Fellsmere Road narrows to a single westbound travel lane. The location of this lane narrowing causes confusion as drivers are unsure if a vehicle is continuing westbound on Fellsmere Road or accessing the Fellsmere Trailhead Preserve.

The conceptual improvement eliminates the lane merge that is present by extending the second westbound travel lane to the Fellsmere Trailhead Preserve driveway. At the driveway, the outside travel lane becomes an exclusive right-turn lane. This creates a more predictable and safer driving environment for motorists. Right-of-way acquisition is not necessary for the conceptual design improvement.

The LRE cost estimate for the extension of second westbound travel lane on Fellsmere Road is approximately $500,000.

6.0 SUMMARY OF KEY 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 on 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. Areas of specific interest to the I-95 corridor and its interchange influence areas include Access Management and Transportation Demand Management.

6.1 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.

6.1.1 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 promote 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.

6.1.2 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.

6.1.3 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.

6.2 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.

6.2.1 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 a bus stop or bus loop. Each are intended to promote multimodal transportation options and support 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.

6.2.2 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 as 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 Land 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.

6.2.3 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.

6.2.4 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.

7.0 ENVIRONMENTAL ELEMENT FINDINGS

The purpose of the Environmental Element Report is to document the existing and project-related environmental conditions and constraints. These findings support the Efficient Transportation Decision Making (ETDM) process to aid in identifying major environmental issues for subsequent analysis in a Project Development and Environment (PD&E) Study Phase. During a PD&E Phase, the latest version of the FDOT PD&E Manual would be used to evaluate environmental impacts and benefits of the project (e.g., park-and-ride lots, water quality improvements, and noise walls for impacted residences). In addition, the information enables FDOT to develop PD&E Study scopes-of-work for future highway and public transportation projects.

Environmental information pertaining to the I-95 mainline in each of the three counties is presented below, followed by environmental information for each of the 15 study interchange areas. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.1 I-95 Mainline Widening in Martin County

Widening of I-95 within Martin County is needed between Station 116+00 (Palm Beach County / Martin County line) and 1425+00 / 3000+00 (Martin County / St Lucie County line). The beginning of the project at Station 116+00 connects to FDOT's I-95 Master Plan in Palm Beach County to the south. The following summarizes some of the critical environmental features for the I-95 mainline widening area within Martin County. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.1.1 Special Activity Sites and Social & Cultural Features

Conceptual widening of I-95 to the outside between Station 116+00 and Station 146+00 and to the inside between Station 116+00 and 1425+00 / 3000+00 in Martin County is anticipated to impact special activity sites and social features. Jonathan Dickinson State Park is a designated Section 4(f) Resource located at the beginning of the project corridor. Based on the current design concept, widening of I-95 may impact existing right-of-way in the southernmost portion of the project (between Station 116+00 and 117+20) if the I-95 mainline, shoulders, and lane widths satisfy all minimum design standards. This would result in permanent right-of-way acquisition of a segment of Jonathan Dickinson State Park. If impacts to this Section 4(f) Resource are unavoidable, some level of Section 4(f) Evaluation will be required. In addition, temporary use of this resource could occur during construction due to proposed bridge improvements. During the PD&E Study phase, further evaluation of the Section 4(f) use of Jonathan Dickinson State Park will be required consistent with the latest version of Part 2, Chapter 7 (Section 4(f) Resources) of the FDOT PD&E Manual. Additional coordination will be required between the FDOT, South Florida Water Management District (SFWMD), the Official With Jurisdiction (OWJ) over the park, and the Office of Environmental Management (OEM) concerning any permanent or temporary Section 4(f) uses from the proposed project.

The Northwest Fork of the Loxahatchee River that crosses I-95 is a National Park Service (NPS) designated Wild and Scenic River, and has a primary recreational function, and therefore is considered to be a Section 4(f) resource. Additionally, the Loxahatchee River is designated as an Outstanding Florida Water (OFW). Widening of I-95 between Station 116+00 and 117+20 would potentially impact the Northwest Fork of the Loxahatchee River. Potential impacts to this Wild and Scenic River will need to be assessed in accordance with the latest version of Part 2, Chapter 12 (Wild and Scenic Rivers) of the FDOT PD&E Manual. Potential impacts to this OFW will need to be assessed in accordance with the latest version of Part 2, Chapter 10 (Aquatic Preserves and Outstanding Florida Waters) of the FDOT PD&E Manual.

Multiple recreational trails cross underneath I-95 where widening is proposed. These trails appear to have a primary recreational function and, therefore, are considered a Section 4(f) Resource. The recreational trails that cross underneath I-95 where widening is proposed include:

- Jupiter Waterway Trail within Cypress Creek (Station 183+00)
- Jessup Trail (Station 215+20)
- Martin County Blueway Trail within the St Lucie Canal (Station 815+00)

- Robert B Jenkins Trail (Station 3000+00)
- Name Cross County Trail 2 (Station 3000+00)

The proposed improvements are not anticipated to require additional right-of-way within these recreational trails. Therefore, it is anticipated that there will be no permanent Section 4(f) use within the meaning of Section 4(f), in accordance with Section 4(f) of the USDOT Act of 1966. However, a Section 4(f) temporary occupancy of these trails may occur due to the temporary construction activities from proposed widening of I-95. Access to the Jupiter Waterway Trail, Jessup Trail, Martin County Blueway Trail, Robert B Jenkins Trail, and Name Cross County Trail 2 should continue to be provided except during construction activities. During the PD&E Study phase, further evaluation of temporary use of these resources will be needed consistent with the latest version of Part 2, Chapter 7 (Section 4(f) Resources) of the FDOT PD&E Manual. Direct and indirect (e.g. change of access) impacts to potential Section 4(f) Resources should be avoided.

7.1.2 Hydrological and Natural Features

Conceptual widening of I-95 in Martin County to the outside between Station 116+00 and Station 146+00 and to the inside between Station 116+00 and 1425+00 / 3000+00 is anticipated to have minimal impacts to hydrological and/or natural features. Four wetlands and three Other Surface Waters (OSWs) could potentially be impacted by the conceptual widening of the I-95 mainline.

In addition, stormwater management areas that are part of the permitted I-95 stormwater management system are present where I-95 is conceptually widened and could potentially be impacted. Wetlands and OSWs will be identified and assessed for potential impacts during a PD&E Study Phase in accordance with the latest version of Part 2, Chapter 9 (Wetland and Other Surface Water) of the FDOT PD&E Manual. Coordination with the US Army Corps of Engineers (USACE), SFWMD, and US Fish and Wildlife Service (USFWS) will be necessary if there are potential impacts to these areas. Wetland impacts should be avoided and minimized to the maximum extent possible.

The I-95 mainline conceptual improvements between Station 116+00 and 1425+00 / 3000+00 in Martin County are within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, West Indian manatee, crested caracara, Florida bonneted bat, and the Florida grasshopper sparrow. In addition, the I-95 widening area is within five (North Fork St Lucie River, Sewal Point MC2 – Bird Island, Ballen Isles, Solid Waste Authority, and Cypress Creek Bluefield Road) of the 18.6-mile Core Foraging Areas (CFAs) of the wood stork. No critical habitat occurs within the 400-foot buffer of the I-95 mainline widening area in Martin County.

7.1.3 Hazardous Waste and Potential Contamination Sites

A preliminary records review of Florida Department of Environmental Protection's (FDEP's) EDMS OCULUS database was conducted to assign preliminary site risk rankings. The majority of sites evaluated within the contamination buffer areas were fuel spills along Florida's Turnpike and I-95. Two fuel spill sites were identified south of the Bridge Road I-95 interchange that potentially have a High risk of contamination (IDs: 1 and 4). Four additional fuel spill sites (IDs 4, 6, 8, and 19) and three industrial storage facilities (IDs: 11, 12, and 22) have been identified as Medium risk sites.

7.1.4 Noise Impacts

The land use within the I-95 interchange influence areas in Martin County is primarily rural with a majority of the existing land use being Activity Category F: Non-Sensitive Developed. Noise sensitive sites are present within the 1,000-foot buffer of I-95 in Martin County primarily on the east side of I-95 and in the vicinity of the interchanges. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of I-95 in Martin County. There are 15 Noise Study Areas (NSAs) within the 1,000-foot buffer of I-95. The conceptual widening of I-95 to the inside between Station 116+00 and 1425+00 / 3000+00 in Martin County will result in noise impacts and require consideration of noise abatement measures. Noise impacts will be evaluated

during a PD&E Study in accordance with the FHWA's noise regulations (23 CFR Part 772) and the latest version of Part 2, Chapter 18 (Highway Traffic Noise) of the FDOT PD&E Manual. The latest version of the FHWA's Traffic Noise Model (TNM) will be used to evaluate noise impacts as well as the feasibility and reasonableness of noise abatement for sites predicted to be impacted.

7.1.5 Potential Relocation Impact Areas

No parcel relocations are required to accommodate the conceptual I-95 mainline improvements between Station 116+00 and 1425+00 / 3000+00 in Martin County. In addition, no right-of-way is being acquired in this area.

7.2 I-95 Mainline Widening in St Lucie County

Widening of I-95 to the inside within St Lucie County is identified between Station 1425+00 / 3000+00 (Martin County / St Lucie County line) to Station 3786+00. No widening is identified between Station 3786+00 to Station 4442+00 / 8000+00 (St Lucie County / Indian River County line). The following summarizes critical environmental features within the I-95 mainline widening area within St Lucie County. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.2.1 Special Activity Sites and Social & Cultural Features

The conceptual widening of I-95 to the inside between Station 1425+00 / 3000+00 to Station 3786+00 in St Lucie County is anticipated to have minimal impacts to special activity sites and social features. Two trails cross underneath I-95 where widening is proposed. These trails appear to have a primary recreational function and, therefore, are considered Section 4(f) Resources. The recreational trails that cross underneath I-95 where widening is proposed include:

- Saint Lucie River Trail within Tenmile Creek (Station 3764+00) and
- Jenkins Road Connector (3764+00).

The proposed improvements are not anticipated to require additional right-of-way within these recreational trails. It is anticipated that there will be no permanent Section 4(f) use within the meaning of Section 4(f), in accordance with Section 4(f) of the USDOT Act of 1966.

7.2.2 Hydrological and Natural Features

Conceptual widening of I-95 to the inside between Station 1425+00 / 3000+00 to Station 3786+00 is anticipated to have minimal impacts to hydrological and/or natural features. Two wetlands and five OSWs could potentially be impacted by the widening of I-95 in St Lucie County. Widening to the inside between Station 3762+00 and 3770+00 in the vicinity of Tenmile Creek would impact the Tenmile Creek OSW ID: 181 (Natural River, Stream, Waterway: FLUCFCS: 5110) and adjacent Wetland IDs: 182 and 184 (Mixed Wetland Hardwoods; FLUCFCS 6170). Widening of I-95 to the inside between Station 3326+00 and 3328+00 would potentially impact the C-24 Canal (OSW ID: 117; FLUCFCS: 5120; Channelized Waterways, Canals). In addition, widening of I-95 to the inside between Station 4247+00 and 4248+00 would potentially impact OSW ID: 207 (FLUCFCS: 5120; Channelized Waterways, Canals). If new piers are placed within OSW IDs: 182 and 184 (Tenmile Creek) or if new shading to wetland vegetation occurs, wetland impacts would be anticipated.

The braided ramps conceptual alternative between Crosstown Parkway and St Lucie West Boulevard could potentially impact 2 stormwater management areas (OSW IDs: 149 and 150; FLUCFCS: 5300; Reservoirs). In addition, stormwater management areas are present within the conceptually widened areas along I-95 and could potentially be impacted. These are part of the permitted I-95 stormwater management system. During a PD&E phase, the potential impacts to any wetlands and OSWs will be assessed in accordance with the latest version of Part 2, Chapter 9 (Wetland and Other Surface Water) of the FDOT PD&E Manual.

The conceptual I-95 mainline widening between Station 1425+00 / 3000+00 to Station 3786+00 in St Lucie County is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. In addition, the I-95 widening area is within three (North Fork St Lucie River, Sewal Point MC2 – Bird Island,

and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. No critical habitat occurs within the 400-foot buffer of the I-95 mainline widening area in St Lucie County.

The undeveloped, natural areas along the project corridor represent usable habitat for larger mammals (deer, hog, bears, etc.). When these lands are present on both sides of I-95, there is a higher risk of collisions with animals attempting to cross the interstate. To facilitate wildlife movement and reduce the risk of vehicular collisions with animals, any existing structure that could function as a wildlife crossing (i.e. culvert or bridge) should remain or be enhanced.

Agricultural ditching is present outside of the existing FDOT right-of-way but within the 400-foot buffer of the I-95 mainline widening area in St Lucie County. No impacts to these features from the conceptual I-95 widening are anticipated. One hundred and one (101) wetlands and OSWs were identified within the 400-foot buffer of the I-95 mainline in St Lucie County. Two wetlands (Wetland IDs: 182 and 184) and five OSWs (OSW IDs: 181, 117, 149, 150, and 207) could potentially be impacted by the conceptual widening of I-95 in St Lucie County.

7.2.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign site risk rankings. Two fuel spills were identified within the designated buffers along I-95 within St Lucie County that potentially have a High risk of contamination (IDs: 32 and 34). One landfill within the 500-foot buffer was classified as Medium risk (ID: 30).

7.2.4 Noise Impacts

The land use within the I-95 interchange influence areas in southern and northern St Lucie County is primarily rural with a majority of the existing land use being Activity Category F: Non-Sensitive Developed. The land is more developed and a higher number of noise sensitive sites exist between Gatlin Boulevard and Glades Cut-Off Road. Noise sensitive sites within the 1,000-foot buffer of I-95 in St Lucie County include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

The recreational trails that are not associated with roadways are considered Activity Category C. There are two existing noise barriers within St Lucie County; one is for the Golden Ponds Manufactured Homes, directly west of Belcher Canal; and one is for the Spanish Lakes Community just south of Indian River / St Lucie County Boundary. There are 25 NSAs within the 1,000-foot buffer of I-95. The conceptual widening of I-95 to the inside between Station 1425+00 / 3000+00 to Station 3786+00 in St Lucie County will result in noise impacts and require consideration of noise abatement measures. Noise impacts will be evaluated during a PD&E Study in accordance with the FHWA's noise regulations (23 CFR Part 772) and the latest version of Part 2, Chapter 18 (Highway Traffic Noise) of the FDOT PD&E Manual. The latest version of the FHWA's TNM will be used to evaluate noise impacts as well as the feasibility and reasonableness of noise abatement for sites predicted to be impacted.

7.2.5 Potential Relocation Impact Areas

Right-of-way will be required to accommodate the conceptual braided ramps alternative between Crosstown Parkway and St Lucie West Boulevard. No parcel relocations will be required.

7.3 I-95 Mainline Widening in Indian River County

No physical widening of the I-95 mainline has been identified within Indian River County. Therefore, no impacts to environmental features within the 400-foot buffer of the I-95 mainline are anticipated.

7.4 Bridge Road Interchange (Martin County)

Within the interchange influence area at Bridge Road and I-95, a set of roadway improvements as described in Sections 4 and 5, were identified to address future needs. These conceptual designs were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of some of the key findings is provided herein. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.4.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Bridge Road interchange influence area in Martin County are not anticipated to impact special activity sites and social and cultural features.

7.4.2 Hydrological and Natural Features

The design concept proposes shifting the westbound Bridge Road sidewalk to the north between I-95 northbound and the I-95 northbound on-ramp. This would result in wetland impacts (Freshwater Marshes / Graminoid Prairie – Marsh; Florida Land Use, Cover and Forms Classification System (FLUCFCS) 6410; ID: 13). In addition, stormwater management areas are present within the Bridge Road interchange influence area and could potentially be impacted where interchange improvements are identified. These stormwater management areas are part of the permitted I-95 stormwater management system.

The Bridge Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite (*Rostrhamus sociabilis plumbeus*), Florida scrub-jay (*Aphelocoma coerulescens*), red cockaded woodpecker (*Picoides borealis*), crested caracara (*Caracara cheriway*), Florida bonneted bat (*Eumops floridanus*) and the Florida grasshopper sparrow (*Ammodramus savannarum floridanus*). In addition, the interchange influence area is within 3 (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Ballen Isles) of the 18.6-mile Core Foraging Areas (CFA) of the wood stork (*Mycteria americana*). No critical habitat occurs within the Bridge Road interchange influence area.

7.4.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's Electronic Document Management System (EDMS) OCULUS database was conducted to assign preliminary site risk rankings. No facilities were identified within the designated contamination buffers along the Bridge Road interchange influence area that potentially have a High risk of contamination. One active generator tank in close proximity to the project right-of-way was classified as Medium Risk (ID: 3). Two additional closed storage tanks were located within the 1,000-foot buffer and classified as Low risk (IDs: 1 and 2).

7.4.4 Noise Impacts

No noise sensitive sites or existing noise barriers are within the 1,000-foot buffer of the Bridge Road interchange influence area. This interchange is rural and undeveloped with only Activity Category F: Non-Sensitive Developed and Activity Category G: Vacant Land; within the 1,000-foot buffer of the interchange influence area.

7.4.5 Potential Relocation Impact Areas

No parcel relocations are required to accommodate the conceptual improvements to the Bridge Road interchange influence area. In addition, no right-of-way is needed in this area.

7.5 SR 76 / Kanner Highway Interchange (Martin County)

The conceptual design for the SR 76/Kanner Highway interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of some of the key environmental findings is provided concerning this interchange location. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.5.1 Special Activity Sites and Social & Cultural Features

The conceptual design alternative developed for the SR 76/ Kanner Highway interchange influence area is anticipated to have minimal impacts to special activity sites and social and cultural features.

The design concept includes widening of SR 76/Kanner Highway over the St Lucie River which contains the Martin County Blueway Trail (paddling trail within the St Lucie River). Widening of SR 76/Kanner Highway is also proposed adjacent to Halpatiokee Regional Park. The Martin County Blueway Trail and Halpatiokee Regional Park appear to have a primary recreational function and, therefore, are considered Section 4(f) Resources. The proposed improvements are not anticipated to require additional right-of-way within the recreational trail or park. It is anticipated that there will be no permanent Section 4(f) use within the meaning of Section 4(f), in accordance with Section 4(f) of the USDOT Act of 1966.

7.5.2 Hydrological and Natural Features

The design concept proposes widening of SR 76/ Kanner Highway over the St Lucie River which would result in wetland (Mixed Wetland Hardwoods; FLUCFCS 6170; ID: 40B and 40C) and OSW (Streams and Waterways; FLUCFCS 5110; ID: 40) impacts. In addition, stormwater management areas are present within the SR 76/SW Kanner Highway interchange influence area and could potentially be impacted where interchange improvements are proposed. One of these features identified in the SFWMD land use data (1.0-acre Reservoir; FLUCFCS 5300: ID: 32) is expected to be impacted.

According to National Marine Fisheries Service (NMFS) GIS data, the area of the St Lucie River that flows underneath SR 76/ Kanner Highway is not considered Essential Fish Habitat (EFH). EFH is present approximately 2.7 miles southeast of the noted study area within the South Fork of the St Lucie River. If submerged aquatic vegetation (SAV) is present within the St Lucie River that flows underneath SR 76/ Kanner Highway, NMFS may consider the area EFH. Potential impacts to EFH will be assessed in accordance with the latest version of Part 2, Chapter 17 (Essential Fish Habitat) of the FDOT PD&E Manual. Widening of SR 76/ Kanner Highway over the St Lucie River between Lost River Road and Cove Road would result in impacts to Type AE floodplain (100-year floodplain). In addition, this section of the St Lucie River is a regulatory floodway according to the FEMA Flood Map Service Center. Floodplain compensation may be required. During a PD&E phase, the potential impacts to floodplains will be assessed following the latest version of Part 2, Chapter 13 (Floodplains) of the FDOT PD&E Manual.

The SR 76/ Kanner Highway interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, Florida bonneted bat, and the Florida grasshopper sparrow. In addition, the interchange influence area is within two (North Fork St Lucie River and Sewal Point MC2 – Bird Island) of the 18.6-mile CFAs of the wood stork. No critical habitat occurs within the SR 76/ Kanner Highway interchange influence area.

7.5.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Three facilities were identified within the designated contamination buffers along the SR 76/ Kanner Highway interchange influence area that potentially have a High risk of contamination (IDs: 4, 6, and 10). These three facilities are gas stations with either a documented discharge or a potential for a discharge to have occurred. Two facilities with Aboveground Storage Tanks (AST) were classified as Medium risk (IDs: 5 and 7).

7.5.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed SR 76/ Kanner Highway interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of the SR 76/ Kanner Highway interchange influence area.

There are five NSAs within the 1,000-foot buffer of the SR 76/ Kanner Highway interchange influence area. The conceptual improvements noted for SR 76/ Kanner Highway will result in noise impacts and require consideration of noise abatement measures. Noise impacts will be evaluated during a PD&E Study in accordance with the FHWA's noise regulations (23 CFR Part 772) and the latest version of Part 2, Chapter 18 (Highway Traffic Noise) of the FDOT PD&E Manual. The latest version of the FHWA's TNM will be used to evaluate noise impacts as well as the feasibility and reasonableness of noise abatement for sites predicted to be impacted.

7.5.5 Potential Relocation Impact Areas

No parcel relocations are required to accommodate the conceptual improvements to the SR 76/ Kanner Highway interchange influence area. In addition, no right-of-way is being acquired in this area.

7.6 High Meadow Avenue Interchange (Martin County)

The conceptual designs for the High Meadow Avenue interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of key environmental findings is provided concerning this interchange location. A complete accounting of the environmental findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.6.1 Special Activity Sites and Social & Cultural Features

Impacts to special activity sites and social and cultural features within the High Meadow Avenue interchange influence area are not expected as no physical improvements are needed to the interchange at this time.

7.6.2 Hydrological and Natural Features

Wetlands are present within the High Meadow Avenue interchange influence area but impacts are not expected as improvements are not identified to this area at this time. Stormwater management areas that are part of the permitted I-95 stormwater management system are also present within the High Meadow Avenue interchange influence area. Wetlands and Other Surface Waters (OSWs) will be identified and assessed for potential impacts during a PD&E Study Phase in accordance with the latest version of Part 2, Chapter 9 (Wetland and Other Surface Waters) of the FDOT PD&E Manual.

The High Meadow Avenue interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, West Indian manatee, crested caracara, and the Florida grasshopper sparrow. The interchange is also within two (North Fork St Lucie River and Sewal Point MC2 – Bird Island) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the High Meadow Avenue interchange influence area.

7.6.3 Hazardous Waste and Potential Contamination Sites

A preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. One site was identified within the designated contamination buffers within the High Meadow Avenue interchange influence area that potentially has a High risk of contamination (ID: 11). This was a chemical spill of Roundup WeatherMAX herbicide that occurred from a truck onto I-95 and surrounding soils.

7.6.4 Noise Impacts

The land use near the High Meadow Avenue interchange is primarily rural and undeveloped (Activity Category G: Vacant Land) with some low-medium density residential development on the east side of I-95. Noise sensitive sites are present within the 1,000-foot buffer of the High Meadow Avenue interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use

While no existing noise barriers are within the 1,000-foot buffer of the High Meadow Avenue interchange, there are two NSAs within the 1,000-foot buffer of the interchange influence area. Since improvements to High Meadow Avenue are not identified at this time, noise impacts are not anticipated.

7.6.5 Potential Relocation Impact Areas

No parcel relocations or right-of-way are required as improvements to High Meadow Avenue are not identified at this time.

7.7 CR 714 / SR 714 / Martin Highway Interchange (Martin County)

The conceptual designs for the Martin Highway interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.7.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Martin Highway interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features. Martin Highway is a State Historic Preservation Offices (SHPO) Resource Group but is ineligible for National Register of Historic Places (NRHP) listing per previous SHPO evaluation.

7.7.2 Hydrological and Natural Features

Wetlands are present within the Martin Highway interchange influence area but are not expected to be impacted by the conceptual improvements. Stormwater management areas are also present and could potentially be impacted where interchange improvements are identified. These are part of the permitted I-95 stormwater management system. Wetlands and OSWs will be identified and assessed for potential impacts during a subsequent PD&E Study Phase.

The Martin Highway interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. In addition, the interchange is located within three (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. No critical habitat occurs within the Martin Highway interchange influence area.

7.7.3 Hazardous Waste and Potential Contamination Sites

A records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Two facilities were identified within the designated contamination buffers along the Martin Highway interchange influence area that potentially have a medium risk of contamination (IDs: 12 and 14). These are FDOT facilities; one is a solid waste facility pre-authorized for hurricane debris staging, while the other is an aboveground generator tank.

7.7.4 Noise Impacts

The land use within the Martin Highway interchange influence area is primarily rural and undeveloped (Activity Category F: Non-Sensitive Developed and Activity Category G: Vacant Land) with some low-density residential development. Noise sensitive sites are present within the 1,000-foot buffer of the Martin Highway interchange influence area. These noise sensitive sites include Activity Category B: Residential.

No existing noise barriers are within the 1,000-foot buffer of the Martin Highway interchange. However, there is one NSA within the 1,000-foot buffer. The conceptual improvements to Martin Highway will result in noise impacts and require consideration of noise abatement measures. Noise impacts will be evaluated during a subsequent PD&E Study in accordance with the FHWA's noise regulations (23 CFR Part 772) and the latest version of Part 2, Chapter 18 (Highway Traffic Noise) of the FDOT PD&E Manual. The latest version of the FHWA's TNM should be used to evaluate noise impacts as well as the feasibility and reasonableness of noise abatement for sites predicted to be impacted.

7.7.5 Potential Relocation Impact Areas

No parcel relocations are required to accommodate the conceptual improvements to the Martin Highway interchange influence area. In addition, no right-of-way is required in this area.

7.8 Becker Road Interchange (St Lucie County)

The conceptual designs for the Becker Road interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.8.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Becker Road interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features. The Crosstown Parkway Corridor and unnamed multi-use trail follow the Becker Road and Village Parkway Drive sidewalks. These trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize.

The SHPO Resource Group (Canal 9) identified within the 400-foot buffer of the Becker Road interchange is ineligible for NRHP listing per previous SHPO evaluation.

7.8.2 Hydrological and Natural Features

Wetlands are present within the Becker Road interchange influence area but are not expected to be impacted by the conceptual improvements. Stormwater management areas that are part of the permitted I-95 stormwater management system are also present within the Becker Road interchange influence area. Agricultural ditching is present outside of the existing FDOT right-of-way but within the 400-foot buffer of the interchange. No impacts to these features from the conceptual ecker Road interchange improvements are anticipated.

The Becker Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. The interchange is also is within three (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the Becker Road interchange influence area.

7.8.3 Hazardous Waste and Potential Contamination Sites

No potential contaminated facilities were identified within the designated contamination buffers of the Becker Road interchange influence area.

7.8.4 Noise Impacts

The land use within the Becker Road interchange influence area on the west side of I-95 is primarily rural, agricultural (Activity Category F: Non-Sensitive Developed), while the area on the east side is developed with medium density residential. Noise sensitive sites are present within the 1,000-foot buffer of the Becker Road interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of the Becker Road interchange influence area, but there are four NSAs within this buffer. Overall, the conceptual improvements to Becker Road will result in noise impacts and require consideration of noise abatement measures.

7.8.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to the Becker Road interchange and adjacent intersections. No parcel relocations will be required.

7.9 Gatlin Boulevard Interchange (St Lucie County)

The conceptual designs for the Gatlin Boulevard interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The

complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.9.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Gatlin Boulevard interchange and adjacent study area intersections are anticipated to have minimal impacts to special activity sites and social and cultural features. The Southwest Tradition Parkway Multi-Use Trail and Southwest Gatlin Boulevard Multi-Use Trail follow the Gatlin Boulevard sidewalk and the Crosstown Parkway Corridor, while an unnamed multi-use trail follows the Village Parkway Drive sidewalk. These trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize. Finally, access to social and cultural features (such as Tradition Medical Center and Sunshine Pediatrics) inside of the Gatlin Boulevard interchange influence area will not be impacted by the conceptual design.

7.9.2 Hydrological and Natural Features

The 2045 design concept shifts the I-95 northbound on-ramp from eastbound Gatlin Boulevard to the west which would result in wetland impacts (Freshwater Marshes / Graminoid Prairie – Marsh; FLUCFCS 6410; ID: 137B). The conceptual widening of Village Parkway to the west (west of I-95 and north of Gatlin Boulevard) would also result in OSW impacts (Channelized Waterways, Canals, FLUCFCS 5120; ID 139 and Reservoir; FLUCFCS 5300; ID: 139A). In addition, stormwater management areas are present within the Gatlin Boulevard interchange influence area and could potentially be impacted where interchange improvements are identified. These are part of the permitted I-95 stormwater management system.

The Gatlin Boulevard interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. In addition, it is within 3 (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the Gatlin Boulevard interchange influence area.

7.9.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Four facilities were identified within the designated contamination buffers of the Gatlin Boulevard interchange influence area that potentially have a High risk of contamination (IDs: 18, 20, 22 and 23). These sites include three gas stations, two of which have had gasoline discharges, and a fuel spill. Three additional facilities were classified as Medium risk (IDs: 15, 21, and 24).

7.9.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed Gatlin Boulevard interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category C D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of the Gatlin Boulevard interchange influence area, but there are six NSAs within it. The conceptual improvements to Gatlin Boulevard will result in noise impacts and require consideration of noise abatement measures.

7.9.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to Gatlin Boulevard. No parcel relocations will be required.

7.10 Crosstown Parkway Interchange (St Lucie County)

The conceptual designs for the Crosstown Parkway interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The

complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.10.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Crosstown Parkway interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features. The Crosstown Parkway Corridor and unnamed multi-use trail follow Crosstown Parkway sidewalk within the interchange influence area. These trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize.

The Western Greenway Trail appears to follow the eastern C-24 Canal right-of-way at the very western edge of the 400-foot buffer. Impacts to this trail are not anticipated by the design concept and therefore, there will be no use within the meaning of Section 4(f) of the Western Greenway Trail. Direct and indirect (e.g. change of access) impacts to this potential Section 4(f) resource should be avoided.

7.10.2 Hydrological and Natural Features

Wetlands are present within the Crosstown Parkway interchange influence area but are not expected to be impacted by the conceptual improvements. The shift of the braided I-95 southbound off-ramp to Crosstown Parkway to the west would result in an OSW impact (Reservoir; FLUCFCS 5300; ID: 149). Additionally, the provision of a local ramp roadway that allows drivers from Crosstown Parkway to travel directly to St Lucie West Boulevard would result in an OSW impact (Reservoir; FLUCFCS 5300; ID: 150). Stormwater management areas are also present within the Crosstown Parkway interchange influence area and could potentially be impacted where interchange improvements are identified. These are part of the permitted I-95 stormwater management system.

The Crosstown Parkway interchange is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red-cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. In addition, it is within 3 (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. It is noteworthy, however, that no critical habitat occurs within the Crosstown Parkway interchange influence area.

7.10.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. One facility was identified within the designated contamination buffers of the Crosstown Parkway interchange influence area that potentially has a medium risk of contamination (ID:26). This site involves a Publix with an Aboveground Storage Tank (AST).

7.10.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed Crosstown Parkway interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of the interchange influence area. However, there are 10 NSAs within this buffer. The conceptual improvements to Crosstown Parkway will result in noise impacts and require consideration of noise abatement measures.

7.10.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to Crosstown Parkway. No parcel relocations will be required.

7.11 St Lucie West Boulevard Interchange (St Lucie County)

The 2045 conceptual designs for the St Lucie West Boulevard interchange were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange

location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.11.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements within the St Lucie West Boulevard interchange influence area are not anticipated to impact special activity sites and social and cultural features. Access to social and cultural features (such as Pediatric Associates of St Lucie) will not be impacted by the conceptual design.

7.11.2 Hydrological and Natural Features

Wetlands are present within the St Lucie West Boulevard interchange influence area but are not expected to be impacted by the conceptual improvements. An OSW (Reservoir; FLUCFCS 5300; ID: 151) would potentially be impacted by the I-95 off-ramp to Crosstown Parkway. Stormwater management areas are present near the St Lucie West Boulevard interchange and could potentially be impacted where improvements are identified.

The St Lucie West Boulevard interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. In addition, it is within three (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, it is noted that no critical habitat occurs within the St Lucie West Boulevard interchange influence area.

7.11.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. One facility was identified within the designated contamination buffers of the St Lucie West Boulevard interchange influence area that potentially has a High risk of contamination (ID: 28). This site is a gas station with a gasoline discharge. Three additional facilities were classified as Medium risk (IDs: 29, 30, and 31).

7.11.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed St Lucie West Boulevard interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

No existing noise barriers are within the 1,000-foot buffer of the St Lucie West Boulevard interchange. However, there are eight NSAs within the buffer. The conceptual improvements to St Lucie West Boulevard will result in noise impacts and require consideration of noise abatement measures during subsequent PD&E studies.

7.11.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to St Lucie West Boulevard. No parcel relocations will be anticipated.

7.12 Midway Road Interchange (St Lucie County)

The minor 2045 conceptual designs for the Midway Road interchange improvements were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.12.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements to the Midway Road interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features. The Midway Road

Connector Corridor follows the Midway Road sidewalk within the interchange influence area. The Treasure Coast N-S Rural to Urban Connector Corridor follows the Glades Cut-off Road sidewalk at the eastern end of it. These trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize.

7.12.2 Hydrological and Natural Features

Wetlands are present within the Midway Road interchange influence area but are not expected to be impacted by the long range conceptual improvements. Stormwater management areas are present within the interchange influence area and could potentially be impacted by intersection improvements are identified at Midway Road and Glades Cut-Off Road.

The Midway Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. It also is within three (North Fork St Lucie River, Sewal Point MC2 – Bird Island, and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the Midway Road interchange influence area.

7.12.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Two facilities were identified within the designated contamination buffers of the Midway Road interchange influence area that potentially have a High risk of contamination (IDs: 34 and 36). These sites include a gas station with a previous discharge with remedial cleanup activities in progress and a previous fuel spill along I-95.

7.12.4 Noise Impacts

The land use within the Midway Road interchange influence area is primarily rural, agricultural (Activity Category F: Non-Sensitive Developed) with some medium density residential at the very east end. Noise sensitive sites are present at the east end of the 1,000-foot buffer, and include Activity Category B: Residential.

No existing noise barriers are within the 1,000-foot buffer of the Midway Road interchange influence area. However, there is one NSA within the buffer area. The conceptual improvements noted within the Midway Road interchange influence area will result in noise impacts and require consideration of noise abatement measures.

7.12.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements identified within the Midway Road interchange influence area. No parcel relocations will be required.

7.13 SR 70 / Okeechobee Road Interchange (St Lucie County)

The 2045 long range conceptual designs for the SR 70/Okeechobee Road interchange improvements were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.13.1 Special Activity Sites and Social & Cultural Features

The long term conceptual improvements noted within the SR 70/Okeechobee Road interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features.

The Okeechobee Road Trail Corridor follows the Okeechobee Road sidewalk, while the Kings Highway Corridor follows the Kings Highway sidewalk at the western end of the interchange influence area. These trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize.

Access to social and cultural features outside of the SR 70 / Okeechobee Road interchange influence area but whose access is via Okeechobee Road (such as Holiday Inn Express & Suites Fort Pierce West – Civic Center), will not be impacted by the conceptual design.

7.13.2 Hydrological and Natural Features

There are three components of the conceptual interchange design that affect nearby wetlands. They are:

- The proposed ramp from northbound I-95 to westbound SR 70/Okeechobee Road would result in wetland impacts (Freshwater Marshes / Graminoid Prairie – Marsh; FLUCFCS 6410; ID: 188).
- Also, the proposed SR 70/Okeechobee Road eastbound on-ramp to northbound I-95 would impact the wetland (Freshwater Marshes / Graminoid Prairie – Marsh; FLUCFCS 6410; ID: 189).
- Wetland ID: 187C (Freshwater Marshes / Graminoid Prairie – Marsh; FLUCFCS 6410) would be impacted by the widening of SR 70/Okeechobee Road to the west of Kings Highway and by the improvements to Kings Highway/Florida's Turnpike ingress and egress south of SR 70/Okeechobee Road.

In addition, stormwater management areas are present within the SR 70/Okeechobee Road interchange influence area and could potentially be impacted where interchange improvements are identified. These are part of the permitted I-95 stormwater management system.

The SR 70/Okeechobee Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. It is also within two (North Fork St Lucie River and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the SR 70/Okeechobee Road interchange influence area.

7.13.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Ten facilities were identified within the designated buffers of the SR 70/Okeechobee Road interchange influence area that potentially have a High risk of contamination (IDs: 37, 38, 39, 40, 41, 44, 45, 47, 52, and 55). These sites include discharges from six gas stations with cleanup ongoing, two additional sites with fuel discharges, and two roadside fuel spills. Two additional facilities were classified as Medium risk (IDs: 42 and 49). These sites include a gas station with a previous gasoline discharge that has been granted a No Further Action, and a roadside FDOT generator tank.

7.13.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed Okeechobee Road / SR 70 interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category E: Sensitive Commercial

A majority of the noise sensitive sites within near the interchange are Activity Category E and include pool areas associated with hotels and outdoor seating associated with restaurants. No existing noise barriers are within the 1,000-foot buffer of the SR 70/Okeechobee Road interchange. However, there are six NSAs within the buffer. The conceptual improvements to SR 70/Okeechobee Road will result in noise impacts and require consideration of noise abatement measures.

7.13.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to SR 70/Okeechobee Road. No parcel relocations will be required.

7.14 SR 68 / Orange Avenue Interchange (St Lucie County)

The 2045 long range conceptual designs for the SR 68/Orange Avenue interchange improvements were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.14.1 Special Activity Sites and Social & Cultural Features

The long term conceptual improvements within the SR 68/Orange Avenue interchange influence area are anticipated to have minimal impacts to special activity sites and social and cultural features. The Florida Cracker Trail Corridor follows the SR 68/Orange Avenue sidewalk, while the Kings Highway Corridor follows the Kings Highway sidewalk at the western end of the interchange study area. The SR 68/Orange Avenue Trail starts at the intersection of SR 68/Orange Avenue and Kings Highway, and follows the SR 68/Orange Avenue sidewalk to the west. Trails that utilize the sidewalks are not considered Section 4(f) Resources as they are for transportation use. The conceptual improvements will either maintain or replace the sidewalks that these trails utilize.

7.14.2 Hydrological and Natural Features

Wetlands are present within the SR 68/Orange Avenue interchange influence area, but are not expected to be impacted by the conceptual improvements. Stormwater management areas are also present interchange and could potentially be impacted where improvements are identified at SR 68/Orange Avenue west of Kings Highway.

The SR 68/Orange Avenue interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. In addition, it is within two (North Fork St Lucie River and Cypress Creek Bluefield Road) of the 18.6-mile CFAs of the wood stork. However, no critical habitat is within the SR 68/Orange Avenue interchange influence area.

7.14.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Three facilities were identified within the designated contamination buffers of the SR 68/Orange Avenue interchange influence area that potentially have a High risk of contamination (IDs: 60 and 62). These sites include discharges from two gas stations and a truck repair facility with ongoing cleanup. Two additional facilities were classified as Medium risk (IDs: 59 and 64). These sites include a gas station with ongoing remedial activities and a tractor company within the 200-foot buffer.

7.14.4 Noise Impacts

The land use near the SR 68/Orange Avenue interchange study area is primarily rural, agricultural (Activity Category F: Non-Sensitive Developed) with some medium density residential near the eastern edge. Also near the eastern edge of the 1,000 buffer area are noise sensitive sites. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category E: Sensitive Commercial

No existing noise barriers are within the 1,000-foot buffer of the SR 68/Orange Avenue interchange influence area. However, there are two NSAs within this buffer. The conceptual improvements to SR 68/Orange Avenue will result in noise impacts and require consideration of noise abatement measures.

7.14.5 Potential Relocation Impact Areas

Some minor right-of-way will be required to facilitate the long-term conceptual improvements noted within the SR 68/Orange Avenue interchange influence area. No parcel relocations will be required.

7.15 SR 614 / Indrio Road Interchange (St Lucie County)

The 2045 long range conceptual designs for the SR 614/Indrio Road interchange improvements were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.15.1 Special Activity Sites and Social & Cultural Features

Impacts to special activity sites and social and cultural features within the SR 614/Indrio Road interchange influence area are not expected as conceptual improvements are not identified within this area.

7.15.2 Hydrological and Natural Features

No wetlands are identified within the SR 614/Indrio Road interchange influence area. Stormwater management areas that are part of the permitted I-95 stormwater management system are present near the interchange. Agricultural ditching is also present outside of the existing FDOT right-of-way but within the 400-foot buffer of the SR 614/Indrio Road interchange influence area. Impacts are not expected as improvements are not noted for this area.

7.15.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. One facility, an FDOT roadside generator tank, was classified as medium risk within the designated contamination buffers of the SR 614/Indrio Road interchange influence area (ID: 69).

7.15.4 Noise Impacts

No noise sensitive sites or existing noise barriers are within the 1,000-foot buffer of the SR 614/Indrio Road interchange influence area. This interchange is rural, agricultural (Activity Category F: Non-Sensitive Developed) within the 1,000-foot buffer.

7.15.5 Potential Relocation Impact Areas

No parcel relocations or right-of-way are required for the long-term conceptual improvements identified for the SR 614/Indrio Road interchange.

7.16 Oslo Road Interchange (Indian River County)

Beyond a recommendation to signalize the intersection at 82nd Avenue and Oslo Road, there were no 2045 long range conceptual improvements needed for the I-95 at Oslo Road interchange. Nevertheless, environmental features that are within the interchange influence area and designated buffer distance were reviewed. A summation of the key environmental findings is provided and the complete environmental analysis is included in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.16.1 Special Activity Sites and Social & Cultural Features

Impacts to special activity sites and social and cultural features within the Oslo Road interchange influence area are not expected as additional improvements beyond those currently under design are not needed.

7.16.2 Hydrological and Natural Features

Wetlands are present within the Oslo Road interchange influence area but are not expected to be impacted beyond what has already been addressed as part of the interchange project under design. Stormwater management areas that are part of the permitted I-95 stormwater management system are present within the Oslo Road study area. Agricultural ditching is also present outside of the existing FDOT right-of-way but within the 400-foot buffer of the interchange influence area. Impacts to stormwater management areas or agricultural ditching are not anticipated.

The Oslo Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. In addition, it is within two (Wabasso and Pelican Island) of the 18.6-mile CFAs of the wood stork. No critical habitat is situated within the Oslo Road interchange area.

7.16.3 Hazardous Waste and Potential Contamination Sites

No potential contaminated sites were identified within the designated contamination buffers of the Oslo Road interchange influence area.

7.16.4 Noise Impacts

No noise sensitive sites or existing noise barriers are within the 1,000-foot buffer of the Oslo Road interchange influence area. This interchange is rural, agricultural (Activity Category F: Non-Sensitive Developed) within the 1,000-foot buffer. Since no additional conceptual improvements are noted for this area, noise impacts are not anticipated.

7.16.5 Potential Relocation Impact Areas

No parcel relocations or right-of-way are required as no additional improvements to the Oslo Road at I-95 interchange are needed.

7.17 SR 60 / 20th Street Interchange (Indian River County)

The 2045 long range analysis of the Oslo Road interchange revealed that besides some minor signal timing changes no extensive capacity improvements are needed at the interchange. Despite this finding, environmental features within the interchanges and designated buffer distance were evaluated. A summation of the key environmental findings is provided herein, while the complete environmental analysis is included in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.17.1 Special Activity Sites and Social & Cultural Features

No special activity sites or social and cultural features exist within the 400-foot buffer of the SR 60/20th Street interchange influence area.

7.17.2 Hydrological and Natural Features

Wetlands are present within the SR 60/20th Street interchange influence area. However, since there are no interchange improvements identified no impacts are expected to this area. Stormwater management areas that are part of the permitted I-95 stormwater management system are also present within the SR 60/20th Street interchange. Impacts to these features are also not anticipated.

The SR 60/20th Street interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, crested caracara, and the Florida grasshopper sparrow. The interchange is situated within five (Grange Island BC49, Micco North BC51, Micco South BC52, Pelican Island, and Wabasso) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the SR 60/20th Street interchange influence area.

7.17.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. Five facilities were identified within the designated buffers of the SR 60/20th Street interchange influence area that potentially have a High risk of contamination (IDs: 77, 80, 81, 92, and 83). One of these sites is a diesel fuel truck spill and the remaining four include gas stations that have had underground storage tank discharges. Four facilities, including three gas stations and an FDOT roadside generator tank, were classified as Medium risk (IDs: 74, 78, 79, and 84).

7.17.4 Noise Impacts

The land use within the SR 60/20th Street interchange influence area is primarily rural (Activity Category G: Vacant Land) with some minimal development surrounding the interchange. There are a handful of noise sensitive sites present within the 1,000-foot buffer of the interchange and include:

- Activity Category B: Residential
- Activity Category E: Sensitive Commercial

While no existing noise barriers are within the 1,000-foot buffer of the SR 60/20th Street interchange influence area, there are three NSAs present.

7.17.5 Potential Relocation Impact Areas

Parcel relocations or right-of-way are not required as roadway capacity improvements to SR 60/20th Street or the interchange are not needed through 2045.

7.18 CR 512 / Fellsmere Road Interchange (Indian River County)

The 2045 long range conceptual designs for the CR 512/Fellsmere Road interchange improvements were overlaid with environmental features that are within the interchanges design concept or designated buffer distance. A summation of the key environmental findings is provided concerning this interchange location. The complete environmental analysis and findings is provided in the companion document titled *I-95 Multimodal Master Plan Environmental Element Technical Document report, dated May 2020*.

7.18.1 Special Activity Sites and Social & Cultural Features

The conceptual improvements within the Fellsmere Road interchange influence area are not anticipated to impact special activity sites and social and cultural features. The St. Sebastian River Preserve State Park Trail is within St. Sebastian River Preserve State Park west of I-95. The Ten Mile Ridge / Sand Lakes Conservation Area Corridor connects the area to the north (St. Sebastian River Preserve State Park) and south of Fellsmere Road. The Trans-Florida Railroad Corridor is at the eastern end of the interchange influence area and runs parallel and north of Fellsmere Road. No improvements are noted in these areas so no impacts to these trails are anticipated. In addition, improvements will not impact St. Sebastian River Preserve State Park, Fellsmere Trailhead Preserve, or North County Regional Park, or access to these sites, and therefore, there will be no use within the meaning of Section 4(f).

7.18.2 Hydrological and Natural Features

The conceptual interchange design depicts improvements on the north side of Fellsmere Road that would result in wetland impacts (Freshwater Marshes / Gramanoid Prairie – Marsh; FLUCFCS 6410; ID: 322A). In addition, stormwater management areas are present within the Fellsmere Road interchange influence area and could potentially be impacted where interchange improvements are noted. These are part of the permitted I-95 stormwater management system.

The Fellsmere Road interchange influence area is within the USFWS Consultation Area of the Everglade snail kite, Florida scrub-jay, red cockaded woodpecker, crested caracara, and the Florida grasshopper sparrow. The interchange is also within six (Grange Island BC49, Grange Farm Island BC46, Micco North BC51, Micco South BC52, Pelican Island, and Wabasso) of the 18.6-mile CFAs of the wood stork. However, no critical habitat occurs within the Fellsmere Road interchange.

7.18.3 Hazardous Waste and Potential Contamination Sites

Preliminary records review of FDEP's EDMS OCULUS database was conducted to assign preliminary site risk rankings. A gas station that had a prior discharge of gasoline was identified within the designated contamination buffers of the Fellsmere Road interchange that potentially has a High risk of contamination (ID 89). Six facilities, including four gas stations, an aquatic center with a chlorine discharge, and an FDOT roadside generator tank were classified as Medium risk (IDs: 86, 87, 88, 90, 91, and 92).

7.18.4 Noise Impacts

Noise sensitive sites are present within the 1,000-foot buffer of the moderately developed Fellsmere Road interchange influence area. These noise sensitive sites include:

- Activity Category B: Residential
- Activity Category C: Other Sensitive Land Use
- Activity Category D: Institutional (Interior)
- Activity Category E: Sensitive Commercial

The recreational trails that are not associated with roadways are considered Activity Category C. No existing noise barriers are within the 1,000-foot buffer of the Fellsmere Road interchange, but there are 10 NSAs within the buffer. The conceptual improvements to Fellsmere Road will result in noise impacts and require consideration of noise abatement measures.

7.18.5 Potential Relocation Impact Areas

Right-of-way will be required to facilitate the conceptual improvements to Fellsmere Road. However, no parcel relocations will be required.

8.0 PUBLIC INVOLVEMENT

8.1 Introduction to Public Involvement Plan

The Public Involvement Plan (PIP) for the I-95 Multimodal Master Plan was developed and approved by FDOT in October 2017. It has guided the collaborative and cooperative process to achieve regional consensus for the ultimate I-95 multimodal improvements among the stakeholders. The FDOT-approved PIP is available as a companion document.

The development of a Master Plan is a result of a collaborative, consensus-building process. It entailed significant coordination with FDOT, the Metropolitan / Transportation Planning Organizations (M/TPOs) and other relevant state, regional and local government agencies to ensure proper coordination with affected parties as well as consistency with all regional and local transportation plans, as depicted in Figure 8-1. It reflects the values and needs of the communities it is designed to benefit.

The PIP allowed stakeholders along the corridor to identify potential issues, needs, and possible solutions in the development of the Master Plan. Public involvement helped shape the recommendations for planned improvements identified in the Multimodal Master Plan, and all activities were in compliance with existing FDOT policies and procedures.

Gaining community consensus among the many stakeholders throughout the Treasure Coast was essential to achieving a successful project outcome. The keys to gaining community consensus were:

- Include project stakeholders early in the study process,
- Maintain regular communication with project stakeholders, and
- Provide multiple opportunities and methods for stakeholders to participate in the process.

This approach allowed stakeholders to provide meaningful input and shape the future of capacity, operational, safety, and access needs along the project corridor.

Figure 8-1 – Project Decision-Making Framework

8.2 Stakeholders

Stakeholders identified include administrators and elected officials from local, regional, state, and federal agencies. They have either jurisdictional review or expressed interest in the project.

- United States Senate
- United States House of Representatives, Districts 8 and 18
- Federal Aviation Administration, Orlando District Office, Manager
- Federal Emergency Management Agency, Region IV, Regional Administrator
- Federal Highway Administration, Florida Division Administrator
- Federal Highway Administration, District IV Transportation Engineer
- Federal Railroad Administration, Regional Administrator

- Federal Railroad Administration, Office of Railroad Policy and Development, Environment and Systems Planning, Division Chief
- U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement
- U.S. Army Corps of Engineers, Permit Section Chief
- U.S. Coast Guard, Rear Admiral Commander
- U.S. Coast Guard, District Seven, Bridge Branch Chief
- U.S. Department of Agriculture, Southern Region, Regional Forester
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Southeast Regional Administrator
- U.S. Department of Housing and Urban Development, Region IV Field Environmental Officer
- U.S. Department of the Interior, Bureau of Land Management, Southeastern States, District Manager
- U.S. Department of the Interior, Bureau of Indian Affairs, Eastern Region, Regional Director
- U.S. Department of the Interior, National Park Service, Southeast Region, Regional Director
- U.S. Department of the Interior, U.S. Fish and Wildlife Conservation Service, Planning and Resource Conservation
- U.S. Department of the Interior, U.S. Fish and Wildlife Conservation Service, South Florida Ecological Services Office, Field Supervisor
- U.S. Department of the Interior, U.S. Geological Survey, Environmental Affairs Program, Chief
- U.S. Environmental Protection Agency, Region 4, NEPA Program Office, Chief
- Seminole Tribe of Florida
- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- Seminole Nation of Oklahoma
- Florida Senate, Districts 25 and 17
- Florida House of Representatives, Districts 80, 82, 83, 84
- Florida Department of Agriculture and Consumer Services, Florida Forest Service, Everglades District
- Florida Department of Economic Opportunity, Division of Community Development, Development of Regional Impact
- Florida Department of Economic Opportunity, Division of Community Planning and Development, Areas of Critical State Concern
- Florida Department of Transportation - Central Environmental Management Office
- Florida Department of Transportation, District 4, Secretary
- Florida Department of Transportation, District 4, Planning and Environmental Management Office, Environmental Administrator
- Florida Department of Transportation, District 4, Public Information Director
- Florida Department of Transportation, District 4, Environmental Programs Coordinator
- Florida Fish and Wildlife Conservation Commission, South Region, Regional Director
- Florida Fish and Wildlife Conservation Commission, South Region, Division of Habitat & Species Conservation, Regional Wildlife Administrator
- Florida Fish and Wildlife Conservation Commission, Northeast Region, Regional Director
- Florida Fish and Wildlife Conservation Commission, Northeast Region, District Regional Biologist
- Florida Highway Patrol, Ft. Pierce Troop L, Commander
- Florida Highway Patrol, Florida's Turnpike Troop K, Commander
- Florida's Turnpike Enterprise, Environmental Administrator
- Florida's Turnpike Enterprise, Headquarters, Planning Manager
- Florida's Turnpike Enterprise, Public Information Officer
- Martin Metropolitan Planning Organization, Administrator
- St Lucie Transportation Planning Organization, Executive Director
- Indian River County Metropolitan Planning Organization, Director

- Treasure Coast Regional Planning Council, Executive Director
- South Florida Water Management District, Executive Director
- St. Johns River Water Management District, Executive Director
- Martin County
- Martin County School Board
- City of Stuart
- Town of Sewall's Point
- Town of Jupiter Island
- Town of Ocean Breeze
- St Lucie County
- St Lucie School Board
- City of Fort Pierce
- City of Port St Lucie
- Town of St Lucie Village
- Indian River County
- Indian River County School Board
- City of Vero Beach
- City of Sebastian
- City of Fellsmere
- Town of Orchid
- Town of Indian River Shores
- Treasure Coast Regional Planning Council
- Chambers of Commerce/Economic Development

8.3 Technical Review Committee

The Technical Review Committee (TRC) validated the planning process and provided a direct conduit between the agency staff, elected officials and the public for developing a successful Master Plan. The established review committee maintained a broad base of local interests, viewpoints, and concerns to develop the foundation for building consensus amongst stakeholders.

The TRC met at major milestones throughout the course of the study to guide the planning and engineering development process. The project team provided the TRC with information and materials needed for meaningful input and recommendations during the process. The project team met with the TRC a total of five times to discuss study goals and objectives; provide study information; present data collection and results of the technical analysis; obtain feedback on preliminary alternatives; present results of the alternatives analysis; and seek recommendations for the multimodal improvements.

The TRC also shared information with their respective agencies and municipalities by communicating the needs of their agencies and constituents to the project team. It also ensured their constituents were aware of the study and the alternatives under consideration. The TRC members included the following representatives.

Technical Review Committee Members

Treasure Coast Regional Planning Council

- Tom Lanahan, Treasure Coast Regional Planning Council
- Kim Delaney, Treasure Coast Regional Planning Council

Martin County

- Beth Beltran, Martin Metropolitan Planning Organization
- Lisa Wichser, Martin County Engineering
- Claudette Mahan, Martin County Transit
- Sam Amerson, City of Stuart, City Manager
- Tim Voelker, City of Stuart, Engineering

St Lucie County

- Peter Buchwald, St Lucie Transportation Planning Organization
- Marceia Lathou, St Lucie Transportation Planning Organization
- Kimberly Graham, St Lucie County, Engineering
- Michael Harvey, St Lucie County, Engineering
- John Wiatrak, Treasure Coast International Airport
- Leslie Olson, St Lucie County, Planning and Development
- Murriah Dekle, St Lucie County, Transit
- James Angstadt, City of Port St Lucie, Engineering
- Roxanne Chesser, City of Port St Lucie, Engineering
- Heath Stocton, City of Port St Lucie, Public Works
- Jack Andrews, City of Fort Pierce, Engineering

Indian River County

- Phil Matson, Indian River County Metropolitan Planning Organization
- Brian Freeman, Indian River County Metropolitan Planning Organization
- James Ennis, Indian River County, Engineering
- Eric Menger, Vero Beach Regional Airport
- Karen Deigl, Indian River County, Transit
- Monte Falls, City of Vero Beach, Public Works
- Jason Nunemaker / Mark Mathes, City of Fellsmere, City Manager

FDOT

- Jason Learned, FDOT D5, Planning & Environmental Management
- Brian Ribaric, FDOT, Florida's Turnpike Enterprise (Atkins)

8.3.1 Technical Review Committee Meetings

The Technical Review Committee met five times over the course of the study. All meetings were held centrally at the St Lucie Transportation Planning Organization Board Room on the following dates:

- August 30, 2017
- March 9, 2018
- November 7, 2018
- April 17, 2019
- November 13, 2019

These meetings were strategically held to guide the I-95 Multimodal Master Plan through critical milestones of the study. These critical milestones included an introductory discussion at the outset of the project; findings from the existing conditions analyses; findings from the future conditions analyses, including conceptual improvements; discussion of project prioritization and needs; and a review of recent policy changes regarding managed lanes on interstate facilities.

8.4 Public Workshops

Public workshops were held in Martin, St Lucie and Indian River counties with an open house format on May 1, 2019, May 8, 2019, and May 16, 2019, respectively. The meetings blended a PowerPoint video presentation about the I-95 Multimodal Master Plan project with mounted board renderings of conceptual improvements that were on display for public viewing. Attendees were able to provide comments and speak with project representatives, and bilingual team members were available to assist those not proficient in English. Public involvement summary reports were submitted at the conclusion of these meetings.

Figure 8-2 – Stakeholder gets an in-depth explanation from project team members at the Martin County public workshop

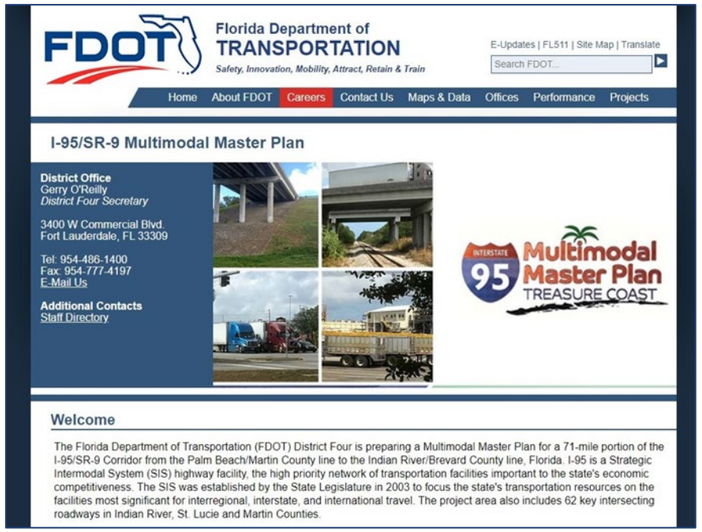
Figure 8-3 – Stakeholders watch the Public Workshop video presentation at the St Lucie County public workshop

Figure 8-4 – Stakeholders engage with project team members during the Indian River County public workshop

Public information tools and strategies were utilized to inform stakeholders prior to and after the public workshops. To attract attendance for the public workshops, a series of notifications and advertisements were prepared through a variety of mediums. These included:

Project website: A project website was developed at the onset of the project, https://www.fdot.gov/projects/i95tcmp, to keep stakeholders informed about the project. Key information included the study's objectives, progress of the project, the study location map, schedule and milestones, study details, contacts, public information activities, FAQs, presentations and reports. The project website, which is depicted in Figure 8-5, was also utilized as a tool to engage the public to sign-up for updates and to gather public comments.

Figure 8-5 – Project Website Home Page

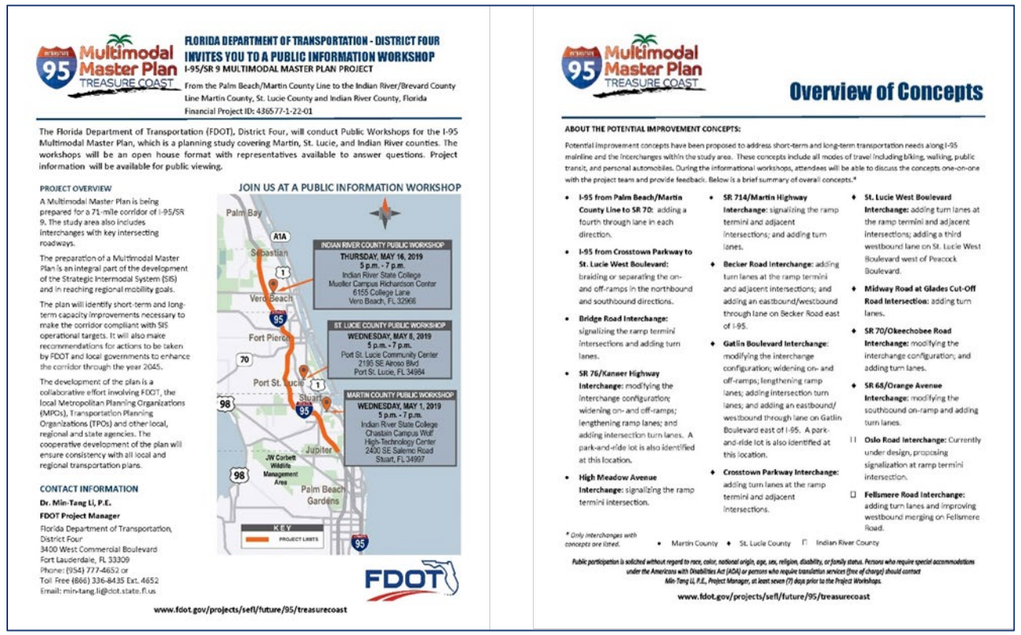


Invitational letters: Invitational letters were sent to elected and appointed officials, agency staff and other interested parties, as directed by and coordinated with the FDOT, to announce the public outreach events. The team also utilized local agencies and community groups to expand outreach efforts.

Media release: News releases were submitted to the FDOT 10 days prior to each public workshop. The project team prepared and submitted a press release electronically to FDOT's Public Information Office. In turn, FDOT's Public Information Office distributed the press release to the local media outlets.

Project Flyer: A two-sided flyer with the meeting dates and locations was developed, which also included a project summary and overview of concepts within each county. The flyer, shown in Figure 8-6, was shared with stakeholders via email.

Figure 8-6 – Project Flyer, Front and Back



Advertisements: Public meeting ads were posted in compliance with the Florida Administrative Code and Florida Administrative Register. They were posted in the following issues: Volume 45/75 (ID #21751685), Volume 45/78 (ID #21751782) and Volume 45/85 (ID #21751879).

Paid advertisements ran from April 25, 2019, through May 16, 2019. They were placed in the printed editions of Stuart News (main section on Friday April 26th, Saturday, April 27th and Sunday, April 28th), St Lucie News (main section on Friday, May 3rd, Saturday, May 4th and Sunday, May 5th), Indian River Press Journal (main section on Friday, May 10th, Saturday May 11th and Sunday, May

12th) and online edition of TCPalm. The digital ads in the TCPalm resulted in 98,564 impressions, a 0.17% Click Through Rate, and 344 webpage views to the project website. An example of the digital ad is shown in Figure 8-7.

Figure 8-7 – Example Digital Ad Placed in TCPalm

8.4.1 Presentations to M/TPOs

The project team made 33 presentations at regularly scheduled M/TPO and committee public meetings to update local officials about the I-95 Multimodal Master Plan. These presentations also informed the public of the study's progress and helped gather critical feedback as the Master Plan was developed, as these meetings were held at key project milestones.

In the summer of 2020, the public meetings held at the M/TPOs resulted in all three Boards accepting the recommendations from the I-95 Multimodal Master Plan. A summary of the meeting dates for these M/TPO presentations is provided.

SUMMARY OF M/TPO PRESENTATIONS

Martin County

Bicycle-Pedestrian Advisory Committee

October 2, 2017

Technical Advisory Committee

October 2, 2017
February 4, 2019
February 3, 2020
June 1, 2020

Citizens Advisory Committee

October 2, 2017
February 6, 2019
February 5, 2020
June 3, 2020

MPO Board

October 30, 2017
February 18, 2019
February 17, 2020
June 15, 2020

St Lucie County

Technical Advisory Committee

March 19, 2019
January 21, 2020
July 21, 2020

Citizens Advisory Committee

March 19, 2019
January 21, 2020
July 21, 2020

Bicycle-Pedestrian Advisory Committee

January 23, 2020
July 23, 2020

TPO Board

April 3, 2019
February 5, 2020
August 5, 2020

Indian River County

Technical Advisory Committee

December 1, 2017
February 22, 2019
November 22, 2019
May 22, 2020

Citizens Advisory Committee

December 5, 2017
March 5, 2019
December 3, 2019
June 2, 2020

MPO Board

December 13, 2017
March 13, 2019
December 11, 2019
June 10, 2020

9.0 PROJECT FUNDING AND 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 District Four staff. The resulting prioritization summary for 2030 and 2045 improvements is included in Appendix A. 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.

9.1 2030 Prioritization

There are 14 separate improvements needed by 2030 that were prioritized. A high prioritized improvement project is the short term enhancements at SR 70/Okeechobee Road on the west side of the interchange extending east to Jenkins Road. 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 next prioritized project is the addition of a managed lane in each direction of the I-95 mainline from the Martin/Palm Beach County line to SR 70/Okeechobee Road. This improvement is needed by 2030 to proactively address capacity deficiencies along the I-95 mainline which will ensure the continued efficient movement of people and goods throughout the region and state. Given the length of this improvement and its regional nature through two counties, FDOT separated the I-95 mainline improvements into four distinctly defined segments. They are:

- I-95 from Martin/Palm Beach County line to Bridge Road (FM #413253-2)
- I-95 from Bridge Road to High Meadow Avenue (FM #413254-2)
- I-95 from High Meadow Avenue to Martin/St Lucie County line (FM #422681-5)
- I-95 from Martin/St Lucie County line to SR 70/Okeechobee Road (FM #422681-6)

Another high priority improvement project for 2030 is the braided ramp improvement for northbound I-95 between Crosstown Parkway and St Lucie West Boulevard. It benefits multiple modes of transportation; and directly addresses potential safety concerns along this weaving section of the I-95 mainline. It does, however, require right-of-way to be acquired.

The complete priority list of 2030 needed improvements is included in Appendix A. A full description of the short-term (2030) needs is provided in the companion documented, *I-95 Multimodal Master Plan Facility Preservation and Operations Element report, dated August 2020*.

9.2 2045 Prioritization

Improvements that are needed by 2045 were separately prioritized from the more urgent needs identified for 2030. Sixteen separate improvements were prioritized based on the criteria described herein. The list of those improvements is included in Appendix A.

Given that the I-95 mainline improvement to add a managed lane in each direction is needed by 2030, the enhancements needed by 2045 generally focus on the needs within the interchange

influence areas. There is one notable exception – the 2045 need to provide a braided ramp on southbound I-95 between St Lucie West Boulevard and Crosstown Parkway. Similar to the northbound direction, this project benefits multiple modes of transportation; and directly addresses potential safety concerns within the I-95 weaving section. It also requires right-of-way to be acquired. The braided ramp improvement for the subject section of southbound I-95, coupled with interchange improvements at St Lucie West Boulevard, is a high priority project for 2045.

Other high priority projects are interchange improvements at SR 76/Kanner Highway, Gatlin Boulevard, Crosstown Parkway, and SR 70/Okeechobee Road. Each includes substantial interchange upgrades needed to address future capacity deficiencies. All include multi-modal improvements, while SR 76/Kanner Highway and SR 70/Okeechobee Road are intended to address a defined safety concern. Right-of-way is needed at each location, except at SR 76/Kanner Highway.

A complete priority list of 2045 improvements is included in Appendix A.

9.3 Funding

The prioritized improvements for 2030 and 2045 were reviewed to identify each project's future work program phases. There are five separate phases that were reviewed, and they include:

- Project Development and Environment (PD&E)
- Design
- Right-of-Way
- Construction
- Construction Engineering and Inspection (CEI)

Construction cost estimates were developed based on conceptual designs developed for each improvement and are included in the *I-95 Multimodal Master Plan's Facility Enhancement Element Report, dated June 2020*. Additionally, coordination with the FDOT District Four Right-Of-Way Office resulted in conceptual cost estimates of right-of-way for those alternatives where it is needed.

Unlike other work program phases, cost estimates for the Design (Phase 32) and CEI (Phase 62) phases are based on FDOT District Four cost estimates as a percentage of the construction cost estimate. Such an estimated percentage is multiplied against the construction cost estimate to calculate the estimated Design or CEI phase cost. In general, the Design and CEI cost percentages provided by FDOT District Four are applied on a graduated scale. As the construction cost of an improvement increases, the percentage of the Design and CEI phase cost decreases. A tabular summary of the work program phase cost estimate percentages is provided in Appendix A.

9.4 2030 Work Program Needs

A summary of the work program needs for the 14 identified improvements identified for 2030 is included in Appendix A. The sequence of the improvements matches the list noted in Section 4.0, beginning with the improvement project at SR 70/Okeechobee Road and ending with the signalization project at Oslo Road and 82nd Avenue. Each noted improvement includes an applicable work program phase and its corresponding estimated cost, which are reported as 2019 dollars.

Several improvements are coupled together for work program purposes. This includes the braided ramp improvement along I-95 between Crosstown Parkway and St Lucie West Boulevard. Although the braided ramp improvement for the southbound I-95 weaving section is needed by 2045, it is packaged together with the northbound I-95 braided ramp improvement when estimating the PD&E work program phase as these two improvements are expected to be evaluated under a single PD&E study.

Similarly, it was assumed the four defined segments of I-95 from the Martin/Palm Beach County line to SR 70/Okeechobee Road will incorporate each of the corresponding interchange improvements. This was true even if the interchange need was identified for 2045, since a 20-year design year horizon for a 2025 study would encompass 2045. For example from a work program standpoint, I-95 from Martin/Palm Beach County line to Bridge Road (FM #413253-2) will include the addition of two managed lanes as well as interchange improvements at Bridge Road, while I-95 from north of

Bridge Road to High Meadow Avenue (FM #413254-2) will include two managed lanes and interchange improvements at SR 76/Kanner Highway and High Meadow Avenue.

As noted in Section 4.0, the I-95 corridor where a managed lane is planned has been differentiated into four subsegments. Each of these I-95 subsegments has an estimated PD&E phase capped at a cost of $3.0 million, regardless of the construction cost, as these PD&E studies are expected to require the most rigorous evaluation. Improvements that are anticipated to have fewer impacts were assigned a cost estimate for the PD&E work program phase with a lesser value. Projects with the fewest impacts and necessitating the least rigorous National Environmental Policy Act (NEPA) action were assigned a minimum PD&E phase cost of $0.3 million. An example of such a PD&E work program cost is the improvements at SR 68/Orange Avenue from Kings Highway to I-95. The remaining work program phase cost estimates are based on a percentage of the construction cost estimate, as specified in Table 9-1.

9.5 2045 Work Program Needs

Given that the individual interchange improvements are packaged with the corresponding I-95 subsegment for work program purposes, the remaining 2045 improvements are comprised of off-system intersection improvements located outside of the immediate interchange footprint. These improvements also include minor I-95 mainline and ramp enhancements located north of SR 70/Okeechobee Road. A summary of these long-term work program needs is included in Appendix A.

Work program phase cost estimates for the Design (Phase 32) and CEI (Phase 62) phases are based on FDOT District Four cost estimates as a percentage of the construction cost estimate. These were applied to the estimated construction cost of each project to develop costs for each phase. Each of the off-system intersection improvements will require right-of-way, as well as a minor NEPA action. Improvements at the various ramps along I-95, as well as the lane transition improvement on southbound I-95 south of SR 614/Indrio Road, do not require right-of-way and will unlikely need a PD&E work program phase.

10.0 OTHER CONSIDERATIONS

During the course of the development of the I-95 Multimodal Master Plan, numerous discussions occurred regarding various components of the study area. Many have been addressed and directly incorporated into the analyses. Others, however, remained beyond the limits of this study. Nevertheless, these considerations have been noted by FDOT and documented herein. They represent critical issues for the local communities that leaders expressed a desire to have resolved. It is recommended that the subsequent appropriate analyses and studies focus on these areas to directly address the concerns noted below by the local community.

10.1 Aspirational Interchange at 53rd Street

Located in Indian River County, 53rd Street is an east-west roadway that is about 4 miles north of SR 60 and about 5 miles south of Fellsmere Road. Its current western terminus is at 74th Street, which is about 4 miles east of I-95. Indian River County officials have expressed their desire for an interchange with I-95 at a future extension of 53rd Street.

Indian River County's 2040 Long Range Transportation Plan has identified 53rd Street at I-95 as an aspirational interchange. According to local officials, the need for an interchange at 53rd Street and I-95 would result primarily from the City of Fellsmere's vision to develop its annexed areas, along with other private development. The 53rd Street corridor is approximately halfway between the two existing interchanges at SR 60 and Fellsmere Road, making it a logical geographic location for a new interchange.

A new interchange with I-95 must undergo a rigorous process to justify its need. An Interchange Justification Report (IJR) must be prepared that evaluates the need for the interchange, as well as the operational and safety impact of the proposed access changes. The impact the changes will have on the environment, potential economic development, the local street system, and safety, both on and off of the Interstate System, must also be studied.

Upon discussions with local officials, FDOT conditionally agreed to such an interchange justification study. Those conditions are the study will not be initiated until 53rd Street has been committed to be extended to I-95, and the aspirational interchange rises in Indian River County's Priority List. If those conditions are satisfied, FDOT will seek to program a federally funded study of an interchange at I-95 and 53rd Street.

10.2 I-95 Mainline Weaving Section Between Crosstown Parkway and St Lucie West Boulevard

Along the 71-mile I-95 corridor through Martin, St Lucie, and Indian River Counties, there is only one interstate segment that is identified as a weaving section. That occurs in St Lucie County between Crosstown Parkway and St Lucie West Boulevard. These two existing interchanges are closely spaced together, and their respective on- and off-ramps are approximately 0.5 miles apart.

The traffic flow within this weaving section was analyzed, and results indicated that this section of I-95 would experience degrading traffic operations in the future due to increasing weaving volumes. Conceptual improvements to address those capacity deficiencies specify a braided ramp configuration to physically separate the ramp movements that create the weaving section. The northbound braided ramp system is estimated to be needed by 2030, while the southbound braided ramp will be needed by 2045.

Concerns were expressed by St Lucie TPO and City of Port St Lucie officials that a braided ramp system would restrict local travel between Crosstown Parkway and St Lucie West Boulevard via I-95. As a result, they requested that the braided ramp concept be modified to incorporate a local ramp roadway adjacent to the braided ramps to accommodate the local "ramp-to-ramp" movement. Such a local ramp roadway was requested for both the northbound and southbound side of I-95 within the weaving section for the braided ramp concept.

On August 5, 2020, St Lucie TPO conditionally approved the I-95 Multimodal Master Plan provided two items were addressed. The first condition is that a local ramp roadway be included in a braided ramp concept to replace the local "ramp-to-ramp" movement residents currently enjoy. The second

condition is if a braided ramp system is ultimately approved that the southbound braided ramp not be constructed until it is needed, which is estimated to be approximately 2045. These conditions should be considered during the upcoming I-95 PD&E Study from Martin/St Lucie County line to SR 70/Okeechobee Road (FM #422681-6), which is programmed to begin in fiscal year 2025.

10.3 Northern and Airport Connectors

FDOT, St Lucie County, and the St Lucie TPO are conducting a Corridor Feasibility Study to evaluate the implications of extending St Lucie Boulevard (CR-608) to connect with I-95. This extension is known as the St Lucie Treasure Coast Airport Connector (FM #441957-1 and #437086-1). St Lucie Boulevard currently stretches from King's Highway to Old Dixie Highway east of US-1. It provides the major access to the Treasure Coast International Airport and Business Park.

The Northern Connector is a proposed new roadway link between I-95 and Florida's Turnpike that represents an extension of the Airport Connector. The Northern Connector is a private developer initiative that includes interchanges with I-95 and Florida's Turnpike. New interchanges at both of those facilities are subject to required interchange justification studies and various approvals from jurisdictional agencies.

The Airport Connector and the Northern Connector projects are listed in the St Lucie 2040 Long Range Transportation Plan (LRTP) as part of the Roadways Needs plan. It is noted that the Northern Connector and the Airport Connector projects were not included in this I-95 Multimodal Master Plan Study, since FDOT had committed to evaluating the effects of extending St Lucie Boulevard to I-95 under a separate study. Consequently, the St Lucie TPO requested that FDOT incorporate by reference the findings from the Airport Connector Study into the I-95 Multimodal Master Plan. This represents a condition of approval for the I-95 Multimodal Master Plan by the St Lucie TPO.

10.4 SR 76 / Kanner Highway Interchange Configuration

The interchange at I-95 and SR 76 / Kanner Highway represents the primary access to the interstate for much of the population in Martin County. Recent improvements to the interchange have added capacity that should accommodate future traffic volumes through the short term. However, long term travel demand forecasts indicate this interchange will experience congestion and delays by 2045 unless capacity is added.

Given the heavy left-turn movements projected on SR 76 / Kanner Highway and the right-of-way constraints of the interchange, a Diverging Diamond Interchange (DDI) configuration was explored. Analysis revealed that such an interchange configuration could accommodate the future traffic volumes, including the large left-turn volumes, while operating at an acceptable level of service. Further, the geometric footprint of a DDI would fit within the existing right-of-way.

Concerns were expressed by the Martin County MPO Board that a DDI configuration might prove confusing for local residents, and therefore, represent a potential safety issue. Some skepticism was noted that local support for such an interchange configuration would be forthcoming during the upcoming PD&E Study of I-95 from Bridge Road to High Meadow Avenue (FM #413254-2). Martin County MPO board members requested that this PD&E Study, which FDOT has programmed for fiscal year 2025, consider alternate interchange configurations besides a DDI that would be more amenable to the driving population of Martin County.

11.0 FINDINGS AND RECOMMENDATIONS

In May 2017, FDOT initiated a study to prepare a Multimodal Master Plan for the portion of I-95 extending from the Palm Beach/Martin County line to the Indian River/Brevard County line, a distance of approximately 71 miles. One of the objectives of the Master Plan was to identify short term and long term capacity and operational needs along the corridor, as well as determine conceptual improvements necessary to meet SIS targets in future years 2030 and 2045.

Results of the subsequent analysis revealed that the I-95 corridor presently operates at an acceptable level of service, and will continue to do so until the early 2030s. At that time, it is estimated that an additional lane of capacity in both directions is needed to ensure that I-95 will continue to operate acceptably through 2045. This added capacity that creates 8 travel lanes on I-95 is needed from the Palm Beach/Martin County line to SR 70 / Okeechobee Road. The current number of lanes on I-95 north of SR 70 / Okeechobee Road will function at acceptable levels of service through 2045. (Presently, I-95 between SR 70 / Okeechobee Road and SR 614 / Indrio Road consists of 8 lanes. North of SR 614 / Indrio Road, I-95 narrows to 6 travel lanes.)

In addition to the I-95 mainline needs, an assessment of the 15 existing interchanges (which includes the Oslo Road interchange that is under design) and their influence areas was performed. This assessment focused on short term (2030) improvement needs, as well as long term (2045) needs. Overall, there were nine interchange locations where short term needs were identified within the study area intended to address capacity deficiencies. The conceptual improvements vary from signalizing intersections to additional turn lanes and reconstructed portions of arterials.

Construction cost estimates of the short term needs identified by this I-95 Multimodal Master Plan total approximately $328 million. Of this, about $315 million is associated with the needs along the I-95 mainline and the northbound I-95 braided ramp system. The remaining $13 million in costs are estimated for the nine short term interchange improvements.

Given that the I-95 mainline improvement to add a managed lane in each direction is needed by the 2030s, the long term enhancements needed by 2045 generally focus on the ultimate needs within the interchange influence areas. There is one notable exception – the 2045 need to provide a braided ramp on southbound I-95 between St Lucie West Boulevard and Crosstown Parkway. Besides the southbound braided ramp conceptual improvement, there are 16 long-term needs identified within the study area. These improvements generally involve substantial interchange modifications that are needed to ensure the interchange influence area will operate at an acceptable level of service through 2045.

Construction cost estimates of the long term (2045) needs identified by this I-95 Multimodal Master Plan total approximately $159 million. This is inclusive of the cost to construct the I-95 southbound braided ramp system between St Lucie West Boulevard and Crosstown Parkway.

Transit ridership estimates along the I-95 corridor indicated demand will exist for modest Express Bus systems, but large-scale infrastructure investments in transit systems are not supported for the foreseeable future. This is due in part to the lack of population and employment density within the Treasure Coast region, and the distance that I-95 is located away from those population and employment centers. However, it is recommended that future improvements along the I-95 corridor and within the interchange influence areas be designed for all transportation users, including pedestrians, bicyclists, automobile drivers, and transit users, where feasible.

Technological advances in transportation systems are rapidly occurring. Breakthroughs in autonomous driving platforms and other intelligent transportation devices are projected within the analysis period of this I-95 Multimodal Master Plan, which will significantly reduce crashes and improve safety. However, the specific form of those breakthroughs is unknown at this time. Therefore, it is recommended that future improvements along I-95 and the interchange influence areas accommodate technological advances wherever possible. Future proofing the I-95 corridor, in particular, will allow the requisite flexibility to smoothly incorporate cutting edge technology, create resiliency in the transportation network, and improve safety and mobility within the Treasure Coast region of Florida through the middle of the 21st century.

APPENDICES

Appendix A

Needs Summary Table and Prioritization of Interchange and Ramp Needs Summary Table

SUMMARY OF WORK PROGRAM NEEDS
SHORT TERM (2030) PROJECTS
I-95 Multimodal Master Plan

Short Term 2030

PROJECT	FACILITY	FROM	TO	ROADWAY ID	BEGIN MILEPOST	END MILEPOST	IMPROVEMENT TYPE	COSTS[1]				
								PD&E (Phase 22)	Design (Phase 32)	ROW (Phase 4x)	Construction (Phase 5x)	CEI (Phase 6x)
1	SR 70/Okeechobee Rd	Jenkins Rd	I-95 NB Ramp Termini	94030000	21.347	21.583	- WB lane utilization and NB on-ramp concept; - Jenkins Rd intersection (signal timing improvements or SBR overlap phase)	n/a	$0.24 M	n/a	$0.95 M	$0.13 M
2	I-95	Martin/Palm Beach line	Bridge Rd	89095000	0.000	7.809	- Add 2 Managed Lanes	$3.0 M	$6.6 M	n/a	$54.8 M	$5.8 M
2	I-95	north of Bridge Rd	High Meadow Ave	89095000	7.810	14.010	- Add 2 Managed Lanes & bridge widening/ replacement	$3.0 M	$7.0 M	n/a	$58.1 M	$6.1 M
2	I-95	north of High Meadow Ave	Martin/St Lucie line	89095000	14.011	24.835	- Add 2 Managed Lanes & bridge widening/ replacement	$3.0 M	$7.6 M	n/a	$63.2 M	$6.6 M
2	I-95	Martin/St Lucie line	SR 70/Okeechobee Rd	94001000	0.000	15.803	- Add 2 Managed Lanes & bridge widening/ replacement	$3.0 M	$13.3 M	n/a	$110.5 M	$11.6 M
a	I-95 NB Braided Ramps	Crosstown Parkway	St Lucie West Blvd	94001000	6.520	7.800	- Braided Ramps (Northbound) with 2-lane ramp configuration & local ramp roadway	$2.5 M	$3.5 M	$0.6 M	$28.9 M	$3.8 M
	I-95 SB Braided Ramps[2]	St Lucie West Blvd	Crosstown Parkway	94001000	6.520	7.800	- Braided Ramps (Southbound) with 2-lane ramp configuration		$1.72 M	$0.6 M	$14.3 M	$1.86 M
	St Lucie West Blvd	at Peacock Blvd					At Peacock Blvd intersection: Eastbound : Add a third left-turn lane and third through lane - Westbound: Add a second left-turn lane, third through lane, and second right-turn lane; and provide a protected right-turn overlap phase. - Northbound: Add a second through lane, and provide a protected right-turn overlap phase. - Southbound: Add a second through lane and second right turn lane; and provide a protected right-turn overlap phase.	$1.5 M	$0.67 M	$10.6 M	$3.9 M	$0.55 M
b	SR 68/Orange Avenue	Kings Hwy	I-95	94070000	17.174	17.366	- Move I-95 SB on-ramp entrance for EB traffic on Orange Ave about 400 ft east. - At Kings Hwy: Add a second WB right-turn lane, and provide a protected WB right-turn overlap phase. Provide a protected NB right-turn overlap phase.	$0.3 M	$0.44 M	$0.215 M	$2.4 M	$0.27 M
	Gatlin Blvd	at Village Parkway Drive					- At Village Pkwy, provide free flow NB right turn and free flow WB right turn	$0.3 M	$0.49 M	$9.8 M	$1.4 M	$0.19 M
	Becker Road	at Village Parkway Drive					- At Village Pkwy, add SB left-turn lane	$0.3 M	$0.05 M	n/a	$0.1 M	$0.02 M
c	SR 714/Martin Hwy	I-95 SB Off Ramp	Stuart Blvd	89090000	5.222	6.033	- Signalize both I-95 ramp termini intersections with turn lanes. - Signalize Stuart Blvd	n/a	$0.29 M	n/a	$1.6 M	$0.18 M
12	Bridge Rd	I-95 SB Off Ramp	I-95 NB Off Ramp				- Signalize i-95 ramp termini intersections.	n/a	$0.49 M	n/a	$1.4 M	$0.19 M
13	Fellsmere Rd	west of I-95 (driveway)	west of I-95 SB Ramp Termini				- Reconstruct & widen WB Fellsmere Rd west of I-95 for 500 feet to driveway.	n/a	$0.18 M	n/a	$0.5 M	$0.07 M
14	Oslo Road	82nd Avenue					- Signalize 82nd Ave intersection	n/a	$0.14 M	n/a	$0.3 M	$0.06 M

NOTES

1. *Costs are in 2019 dollars.*
2. *I-95 SB Braided Ramp improvement is needed by 2045. It is included with the I-95 NB Braided Ramp project (needed by 2030) for the purpose of programming the PD&E phases (Phase 22).*

SUMMARY OF WORK PROGRAM NEEDS
LONG TERM (2045) PROJECTS
I-95 Multimodal Master Plan

Long Term 2045

PROJECT	FACILITY	FROM	TO	ROADWAY ID	BEGIN MILEPOST	END MILEPOST	IMPROVEMENT TYPE	COSTS [1]				
								PD&E (Phase 22)	Design (Phase 32)	ROW (Phase 4x)	Construction (Phase 5x)	CEI (Phase 6x)
1	I-95 SB Braided Ramps	St Lucie West Blvd	Crosstown Parkway				- Braided Ramps (Southbound) with 2-lane ramp configuration	combined in 2030 with NB I-95 into an existing PD&E study	$1.72 M	$0.6 M	$14.3 M	$1.86 M
	St Lucie West Blvd	west of I-95 SB Ramp Termini	Peacock Blvd				- Replace 2L WB bridge with 3L bridge to add 3rd WB through lane from east of Peacock Blvd to WB-to-SB loop ramp; - At I-95 NB Ramp terminal: Add a third westbound through lane and at Peacock Blvd, Add a third SB left-turn lane.	Combine into an existing I-95 PD&E study	$1.34 M	n/a	$11.1 M	$1.45 M
2	SR 76/Kanner Hwy	Jack James Rd	Cove Road				- DDI configuration - At Cove Road: Add a second and third northbound left-turn lane, and restripe the shared left and right-turn lane to an exclusive right-turn lane	Combine into an existing I-95 PD&E study	$2.33 M	n/a	$19.4 M	$2.53 M
3	Gatlin Blvd	Village Parkway Drive	Savage Blvd				- Provide DDI configuration - Add EB/WB through lane east of interchange at Brescia St and Savage Blvd - At Village Pkwy: Add a third SB left-turn lane. Add a third EB through lane.	Combine into an existing I-95 PD&E study	$4.31 M	$19.6 M	$28.7 M	$3.74 M
4	Crosstown Parkway	west of I-95 SB Ramp Termini	east of I-95 NB Ramp Termini				- At I-95 SB Ramp terminal: Add a third WB left-turn lane; Add a sixth EB through lane - At I-95 NB Ramp terminal: Add a third EB left-turn lane; Add a second NB left-turn lane; Add a second WB right-turn lane, and add a 6th WB through lane.	Combine into an existing I-95 PD&E study	$3.24 M	n/a	$21.6 M	$2.81 M
5	SR 70/Okeechobee Road	Kings Highway	Jenkins Road				- DDI configuration; - At Jenkins Rd add a 3rd NB left turn lane - At Kings Highway: Add a third NB right-turn lane, and provide a protected NB right-turn overlap phase. - At Crossroads Parkway: Provide signal retiming improvements, including protected right-turn overlap phase for northbound right-turn, southbound right-turn, and westbound right-turn lane.	Combine into an existing I-95 PD&E study	$2.54 M	$1.2 M	$21.1 M	$2.75 M
6	SR 714/Martin Hwy	west of I-95 SB Ramp Termini	east of I-95 NB Ramp Termini				At I-95 SB Ramp Intersections: Add a second WB left-turn lane and Add an EB right-turn lane. At I-95 NB Ramp Intersection: Add a second EB left-turn lane and Add a WB right-turn lane.	n/a	$0.53 M	n/a	$2.9 M	$0.32 M
7	Becker Rd	Village Parkway Drive	east of I-95 NB Ramp Termini				- At I-95 SB Ramp Terminal: Add a second southbound right-turn lane. At I-95 NB Ramp Terminal: Add a second northbound left-turn lane - At Village Parkway Drive: Add a third SB left-turn lane, and a SB right-turn lane. Channelize the WB right-turn lane, and add a second WB through lane. Add an exclusive NB right-turn lane and restripe NB shared lane to shared left/through lane.	Combine into an existing I-95 PD&E study	$2.72 M	$1.4 M	$18.1 M	$2.36 M

Long Term 2045

PROJECT	FACILITY	FROM	TO	ROADWAY ID	BEGIN MILEPOST	END MILEPOST	IMPROVEMENT TYPE	COSTS [1]				
								PD&E (Phase 22)	Design (Phase 32)	ROW (Phase 4x)	Construction (Phase 5x)	CEI (Phase 6x)
8	Bridge Rd	west of I-95 SB Ramp Termini	east of I-95 NB Ramp Termini				At I-95 SB Ramp Intersection: Add a second WB left-turn lane and Add a third and fourth EB through lane. At I-95 NB Ramp Intersection: Add a second EB left-turn lane and Add a third WB through lane.	Combine into an existing I-95 PD&E study	$0.5 M	n/a	$2.6 M	$0.29
9	Midway Rd	I-95 SB Ramp Termini					At I-95 SB Ramp Intersection: Add a second SB left-turn lane.	n/a	$0.36 M	n/a	$0.8 M	$0.11 M
10	Crosstown Parkway	California Blvd					- Provide a protected EB right-turn overlap phase. Add a second NB through lane. Add a second SB through lane, second SB right-turn lane, and provide a protected SB right-turn overlap phase.	$0.3 M	$0.61 M	$0.32 M	$3.2 M	$0.36 M
11	Fellsmere Rd	108th Avenue					At 108th Ave intersection: Add a SB exclusive right-turn lane and restripe SB shared lane to shared left/through lane.	$0.3 M	$0.61 M	$0.8 M	$3.2 M	$0.36 M
12	Becker Road	Hallmark Street					- Add E/W bound through lane improvement at Hallmark St.	$0.3 M	$0.75 M	$2.0 M	$4.4 M	$0.62 M
13	Midway Rd	Glades Cut-Off Rd					- Add an exclusive EB right-turn lane and channelize the EB right-turn lane. - Add a second WB left-turn lane, Add an exclusive WB right-turn lane and channelize the WB right-turn lane.	$0.3 M	$0.38 M	$1.0 M	$2.0 M	$0.22 M
14	High Meadow Avenue	Swallowtail Lane					Signalize Swallowtail Ln intersection	n/a	$0.14 M	n/a	$0.3 M	$0.06M
15	I-95 Southbound south of SR 614/Indrio Road	SR 614/Indrio Rd	south of SR 614/Indrio Rd				Adjust SB I-95 lane transition to eliminate merge	n/a	$0.37 M	n/a	$2.3 M	$0.26 M
16	Various Ramps	n/a	n/a				Lengthen NB off-ramp deceleration lanes at SR 60, SR 614/Indrio Rd, and SR 68/Orange Avenue	n/a	$0.6 M	n/a	$3.2 M	$0.4 M

NOTES *1. Costs are in 2019 dollars.*

SUMMARY OF WORK PROGRAM NEEDS
SHORT TERM (2030) PROJECTS - Combined Interchange and Mainline Projects. *No Change in Project Limits*
I-95 Multimodal Master Plan

Short Term 2030

PROJECT	FACILITY	FROM	TO	ROADWAY ID	BEGIN MILEPOST	END MILEPOST	IMPROVEMENT TYPE	COSTS[1]				
								PD&E (Phase 22)	Design (Phase 32)	ROW (Phase 4x)	Construction (Phase 5x)	CEI (Phase 6x)
2	I-95	Martin/Palm Beach line	Bridge Rd	89095000	0.000	7.809	- Add 2 Managed Lanes. Plus interchange improvements at Bridge Rd	$3.0 M	$7.1 M	n/a	$58.8 M	$6.2 M
2	I-95	north of Bridge Rd	High Meadow Ave	89095000	7.810	14.010	- Add 2 Managed Lanes & bridge widening/ replacement. Plus interchange improvements at SR 76 and High Meadow Ave	$3.0 M	$9.3 M	n/a	$77.8 M	$8.2 M
2	I-95	north of High Meadow Ave	Martin/St Lucie line	89095000	14.011	24.835	- Add 2 Managed Lanes & bridge widening/ replacement. Plus interchange improvements at SR 714	$3.0 M	$8.1 M	n/a	$67.7 M	$7.1 M
2	I-95	Martin/St Lucie line	SR 70/Okeechobee Rd	94001000	0.000	15.803	- Add 2 Managed Lanes & bridge widening/ replacement. Plus NB & SB braided ramps and interchange improvements at Becker Rd, Gatlin Blvd, Crosstown Pkwy, St Lucie West Blvd, Midway Rd, and SR 70.	$3.0 M	$31.4 M	$11.0 M	$261.5 M	$27.5 M
	St Lucie West Blvd	at Peacock Blvd					At Peacock Blvd intersection: - Eastbound : Add a third left-turn lane and third through lane - Westbound: Add a second left-turn lane, third through lane, and second right-turn lane; and provide a protected right-turn overlap phase. - Northbound: Add a second through lane, and provide a protected right-turn overlap phase. - Southbound: Add a second through lane and second right turn lane; and provide a protected right-turn overlap phase.	$1.5 M	$0.67 M	$10.6 M	$3.9 M	$0.55 M
b	SR 68/Orange Avenue	Kings Hwy	I-95	94070000	17.174	17.366	- Move I-95 SB on-ramp entrance for EB traffic on Orange Ave about 400 ft east. - At Kings Hwy: Add a second WB right-turn lane, and provide a protected WB right-turn overlap phase. Provide a protected NB right-turn overlap phase.	$0.3 M	$0.44 M	$0.215 M	$2.4 M	$0.27 M
13	Fellsmere Rd	west of I-95 (driveway)	west of I-95 SB Ramp Termini				- Reconstruct & widen WB Fellsmere Rd west of I-95 for 500 feet to driveway.	n/a	$0.18 M	n/a	$0.5 M	$0.07 M
14	Oslo Road	82nd Avenue					- Signalize 82nd Ave intersection	n/a	$0.14 M	n/a	$0.3 M	$0.06 M

NOTES *1. Costs are in 2019 dollars.*

SUMMARY OF WORK PROGRAM NEEDS

LONG TERM (2045) PROJECTS - Combined Interchange and Mainline Projects. *No Change in Project Limits*

I-95 Multimodal Master Plan

Long Term 2045

PROJECT	FACILITY	FROM	TO	ROADWAY ID	BEGIN MILEPOST	END MILEPOST	IMPROVEMENT TYPE	COSTS [1]				
								PD&E (Phase 22)	Design (Phase 32)	ROW (Phase 4x)	Construction (Phase 5x)	CEI (Phase 6x)
10	Crosstown Parkway	California Blvd					- Provide a protected EB right-turn overlap phase. Add a second NB through lane. Add a second SB through lane, second SB right-turn lane, and provide a protected SB right-turn overlap phase.	$0.3 M	$0.61 M	$0.32 M	$3.2 M	$0.36 M
11	Fellsmere Rd	108th Avenue					At 108th Ave intersection: Add a SB exclusive right-turn lane and restripe SB shared lane to shared left/through lane.	$0.3 M	$0.61 M	$0.8 M	$3.2 M	$0.36 M
12	Becker Road	Hallmark Street					- Add E/W bound through lane improvement at Hallmark St.	$0.3 M	$0.75 M	$2.0 M	$4.4 M	$0.62 M
13	Midway Rd	Glades Cut-Off Rd					- Add an exclusive EB right-turn lane and channelize the EB right-turn lane. - Add a second WB left-turn lane, Add an exclusive WB right-turn lane and channelize the WB right-turn lane.	$0.3 M	$0.38 M	$1.0 M	$2.0 M	$0.22 M
15	I-95 Southbound south of SR 614/Indrio Road	SR 614/Indrio Rd	south of SR 614/Indrio Rd				Adjust SB I-95 lane transition to eliminate merge	n/a	$0.37 M	n/a	$2.3 M	$0.26 M
16	Various Ramps	n/a	n/a				Lengthen NB off-ramp deceleration lanes at SR 60, SR 614/Indrio Rd, and SR 68/Orange Avenue	n/a	$0.6 M	n/a	$3.2 M	$0.4 M

NOTES *1. Costs are in 2019 dollars.*

DISTRICT IV DESIGN CONSULTANT MANAGEMENT

DESIGN COST (PHASE 32) AS A PERCENTAGE OF CONSTRUCTION COST (PHASE 52)

(FOR PROGRAMMING PURPOSES ONLY)

CONSTRUCTION COST ESTIMATE		UNDER $500K		$500K to $1.5 M		$1.5M to $3.5 M		$3.5M to $5M		$5M to $10 M		OVER $10M	
DESIGN COST ESTIMATE	ON-SYSTEM	SW AVG - 53% D4 AVG - 47%	40%	SW AVG - 30% D4 AVG - 31%	25%	SW AVG - 22% D4 AVG - 23%	18%	SW AVG - 20% D4 AVG - 19%	16%	SW AVG - 17% D4 AVG - 16%	13%	SW AVG - 15% D4 AVG - 15%	12%
	OFF-SYSTEM	SW AVG - 65%	45%	SW AVG - 37%	35%	SW AVG - 24%	19%	SW AVG - 20%	17%	SW AVG - 20%	15%	SW AVG - 19%	15%

PERCENTAGES ABOVE ARE BASED ON STATEWIDE (SW) AND D-4 HISTORICAL DATA COMPARING ACTUAL COMPLETED DESIGN COST (PHASE 32) TO ACTUAL CONSTRUCTION COST (PHASE 52) OVER A FIVE YEAR PERIOD FROM FY 2010 TO FY 2015

PERCENTAGES ABOVE HAVE BEEN REDUCED FROM THE ACTUAL DATA FOR ALLOWANCE OF DESIGN SUPPLEMENTAL AGREEMENTS

POST-DESIGN COST (PHASE 62-40) AS A PERCENTAGE OF CONSTRUCTION COST (PHASE 52)

(FOR PROGRAMMING PURPOSES ONLY)

POST-DESIGN COST ESTIMATE	ON-SYSTEM		8%		4%		2.5%		1.7%		1.5%		1.5%
	OFF-SYSTEM		9%		5%		3.5%		2.5%		1.7%		1.5%

PRIORITIZATION PLAN
SHORT TERM (2030) PROJECTS
I-95 Multimodal Master Plan

Short Term 2030

Updated March 16, 2020

PRIORITIZATION RANKING	LOCATION	COUNTY	PROJECT DESCRIPTION	MODES IMPACTED	SAFETY IMPROVEMENTS	RIGHT-OF-WAY NEEDED	CONSTRUCTION COST* (FROM LRE)	PROGRAMMING				COMMENTS
			INTERCHANGE AND/OR MAINLINE					PHASE(S)	SIS	MPO/LOCAL	OPERATIONAL	
1	SR 70/Okeechobee Road	St Lucie	- WB lane utilization and NB on-ramp concept; - Jenkins Rd intersection (signal timing improvements or SBR overlap phase)	Auto, Bike, Pedestrian	**X**		$0.95 M	- Design - Construction	**X**	**X**	**X**	Coordinate construction with Jenkins Rd project
2	I-95 from Martin/Palm Beach line to Bridge Rd	Martin	Add 2 Managed Lanes	Auto, Transit			$54.8 M	- PD&E - Design - Construction	**X**			Widening to the inside is proposed. PD&E (FM #413253.2) is already listed in second 5-year for 2024/2025
2	I-95 from Bridge Rd to High Meadow Ave	Martin	Add 2 Managed Lanes & bridge widening/ replacement	Auto, Transit			$58.1 M	- PD&E - Design - Construction	**X**			Widening to the inside is proposed. PD&E (FM #413254.2) is already listed in second 5-year for 2024/2025
	SR 76/Kanner Hwy	Martin	NB off-ramp termini intersection (signal timing improvements). Lengthen NB off-ramp to provide 275 feet of deceleration lane.	Auto, Transit				- Design - Construction	**X**			Ramp lengthening coupled with adding 2 I-95 Managed Lanes (FM #413254.2)
2	I-95 from High Meadow Ave to Martin/St Lucie county line	Martin	Add 2 Managed Lanes & bridge widening/ replacement	Auto, Transit			$63.2 M	- PD&E - Design - Construction	**X**			Widening to the inside is proposed. PD&E (FM #422681.5) is already listed in second 5-year for 2024/2025
2	I-95 from Martin/St Lucie county line to SR 70	St Lucie	Add 2 Managed Lanes & bridge widening/ replacement	Auto, Transit			$110.5 M	- PD&E - Design - Construction	**X**			Widening to the inside is proposed. PD&E (FM #422681.6) is already listed in second 5-year for 2024/2025
6	I-95 NB Ramp between Crosstown Pkwy and St Lucie West Blvd	St Lucie	Braided Ramps (Northbound) with 2-lane ramp configuration and local access ramp roadway	Auto, Transit	**X**	**X**	$28.9 M	- PD&E - Design - ROW - Construction	**X**			Weaving movement fails by 2030, requiring this improvement. This is coupled with the mainline improvement, and PD&E phase will be combined with the corresponding I-95 mainline project (FM #422681.6).
7	St Lucie West Blvd	St Lucie	At Peacock Blvd intersection: - Eastbound : Add a third left-turn lane and third through lane - Westbound: Add a second left-turn lane, third through lane, and second right-turn lane; and provide a protected right-turn overlap phase. - Northbound: Add a second through lane, and provide a protected right-turn overlap phase. - Southbound: Add a second through lane and second right turn lane; and provide a protected right-turn overlap phase.	Auto, Bike, Pedestrian		**X**	$3.9 M	- Design - ROW - Construction		**X**		If FDOT leads projects, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.
8	SR 68/Orange Avenue	St Lucie	- Relocate EB right turn lane from Kings Hwy to SB on-ramp location. - At Kings Hwy: Add a second WB right-turn lane, and provide a protected WB right-turn overlap phase. Provide a protected NB right-turn overlap phase.	Auto, Bike, Pedestrian		**X**	$2.4 M	- Design - ROW - Construction		**X**		Discuss if this can be combined with Kings Hwy construction. If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.

PRIORITIZATION PLAN
SHORT TERM (2030) PROJECTS
I-95 Multimodal Master Plan

Short Term 2030

Updated March 16, 2020

PRIORITIZATION RANKING	LOCATION	COUNTY	PROJECT DESCRIPTION	MODES IMPACTED	SAFETY IMPROVEMENTS	RIGHT-OF-WAY NEEDED	CONSTRUCTION COST* (FROM LRE)	PROGRAMMING				COMMENTS
			INTERCHANGE AND/OR MAINLINE					PHASE(S)	SIS	MPO/LOCAL	OPERATIONAL	
9	Gatlin Blvd	St Lucie	- At Village Pkwy, provide free flow NB right turn and free flow WB right turn	Auto, Bike, Pedestrian		X	$1.4 M	- Design - ROW - Construction		X		If FDOT leads projects, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.
10	Becker Rd	St Lucie	Add SB left-turn lane at Village Pkwy intersection.	Auto, Bike, Pedestrian		X	$0.1 M	- Design - ROW - Construction		X		Pavement already exists for turn lane improvement. If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.
11	SR 714/Martin Hwy	Martin	- Signalize both i-95 ramp termini intersections. - Signalize Stuart Blvd	Auto, Bike, Pedestrian			$1.6 M	- Design - Construction	X		X	No turn lane improvements needed in 2030. Continue monitoring and coordinate with Traffic Operations. Intersections can be signalized when warranted.
12	Bridge Rd	Martin	Signalize i-95 ramp termini intersections.	Auto, Bike, Pedestrian			$1.4 M	- Design - Construction	X		X	No turn lane improvements needed in 2030. Continue monitoring and coordinate with Traffic Operations. Intersections can be signalized when warranted.
13	Fellsmere Rd	Indian River	Reconstruct & widen WB Fellsmere Rd west of I-95 for 500 feet to driveway.	Auto, Bike	X		$0.5 M	- Design - Construction		X	X	Provide WB drop right-turn lane to eliminate WB merge prior to driveway immediately west of SB Off-Ramp termini intersection. Bike lanes may also be a component of this concept.
14	Oslo Rd	Indian River	Signalize 82nd Ave intersection	Auto			$0.3 M	- Design - Construction	X	X	X	Include with Oslo Rd interchange project scheduled to be let by 2024 and built by 2028. (FM #413048.2)

** Preliminary cost estimates. Does not include Right-of-Way costs. Costs of some projects are still under development.*
Individual state roadways are color coded.

LEGEND

	= SR 70/Okeechobee Road
	= I-95 Mainline
	= SR 76/Kanner Highway
	= SR 68/Orange Avenue
	= SR 714/Martin Highway

PRIORITIZATION PLAN
LONG TERM (2045) PROJECTS
I-95 Multimodal Master Plan

Long Term 2045

Updated March 16, 2020

PRIORITIZATION RANKING	LOCATION	COUNTY	PROJECT DESCRIPTION INTERCHANGE AND/OR MAINLINE	MODES IMPACTED	SAFETY IMPROVEMENTS	RIGHT-OF-WAY NEEDED	CONSTRUCTION COST* (FROM LRE)	PROGRAMMING PHASE(S)	SIS	MPO/LOCAL	OPERATIONAL	COMMENTS
1	I-95 SB Ramp between Crosstown Pkwy and St Lucie West Blvd	St Lucie	Braided Ramps (Southbound) with 2-lane ramp configuration	Auto, Transit	X	X	$14.3 M	- PD&E - Design - ROW - Construction	X			Weaving movement operates acceptably in 2030. Improvement requires extensive bridge reconstruction at St Lucie West Blvd. This is coupled with the mainline improvement, and the PD&E phase will be combined with the corresponding I-95 mainline project (FM #422681.6).
	St Lucie West Blvd	St Lucie	- Replace 2L WB bridge with 3L bridge to add 3rd WB through lane from east of Peacock Blvd to WB-to-SB loop ramp; - At I-95 NB Ramp terminal: Add a third westbound through lane and at Peacock Blvd, Add a third SB left-turn lane.	Auto, Bike, Pedestrian		X	$11.1 M	- PD&E - Design - ROW - Construction	X			Improvements coupled with adding Braided Ramps between St Lucie West Blvd and Crosstown Pkwy (SB direction) [Priority #1]
2	SR 76/Kanner Hwy	Martin	- DDI configuration - At Cove Road: Add a second and third northbound left-turn lane, and restripe the shared left and right-turn lane to an exclusive right-turn lane	Auto, Transit, Bike, Pedestrian	X		$19.4 M	- PD&E - Design - Construction	X			PD&E phase will be completed with I-95 mainline project (FM #413254.2).
3	Gatlin Blvd	St Lucie	- Provide DDI configuration - Add EB/WB through lane east of interchange at Brescia St and Savage Blvd - At Village Pkwy: Add a third SB left-turn lane. Add a third EB through lane.	Auto, Transit, Bike, Pedestrian		X	$28.7 M	- PD&E - Design - ROW - Construction	X	X		PD&E phase will be completed with I-95 mainline project (FM #422681.6).
4	Crosstown Parkway	St Lucie	- At I-95 SB Ramp terminal: Add a third WB left-turn lane; Add a sixth EB through lane - At I-95 NB Ramp terminal: Add a third EB left-turn lane; Add a second NB left-turn lane; Add a second WB right-turn lane, and add a 6th WB through lane.	Auto, Bike, Pedestrian		X	$21.6 M	- Design - ROW - Construction	X	X		PD&E phase will be completed with I-95 mainline project (FM #422681.6). If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.
5	SR 70/Okeechobee Road	St Lucie	- DDI configuration; - At Jenkins Rd add a 3rd NB left turn lane - At Kings Highway: Add a third NB right-turn lane, and provide a protected NB right-turn overlap phase. - At Crossroads Parkway: Provide signal retiming improvements, including protected right-turn overlap phase for northbound right-turn, southbound right-turn, and westbound right-turn lane.	Auto, Bike, Pedestrian	X	X	$21.1 M	- PD&E - Design - ROW - Construction	X			PD&E phase will be completed with I-95 mainline project (FM #422681.6).

PRIORITIZATION PLAN
LONG TERM (2045) PROJECTS
I-95 Multimodal Master Plan

Long Term 2045

Updated March 16, 2020

PRIORITIZATION RANKING	LOCATION	COUNTY	PROJECT DESCRIPTION INTERCHANGE AND/OR MAINLINE	MODES IMPACTED	SAFETY IMPROVEMENTS	RIGHT-OF-WAY NEEDED	CONSTRUCTION COST* (FROM LRE)	PROGRAMMING PHASE(S)	SIS	MPO/LOCAL	OPERATIONAL	COMMENTS
6	SR 714/Martin Hwy	Martin	At I-95 SB Ramp Intersections: Add a second WB left-turn lane and Add an EB right-turn lane. At I-95 NB Ramp Intersection: Add a second EB left-turn lane and Add a WB right-turn lane.	Auto, Bike, Pedestrian			$2.9 M	- Design - Construction		X	X	Turn lane improvements needed in 2045 (but not 2030). PD&E phase will be completed with I-95 mainline project (FM #422681.5).
7	Becker Rd	St Lucie	- At I-95 SB Ramp Terminal: Add a second southbound right-turn lane. At I-95 NB Ramp Terminal: Add a second northbound left-turn lane - At Village Parkway Drive: Add a third SB left-turn lane, and a SB right-turn lane. Channelize the WB right-turn lane, and add a second WB through lane. Add an exclusive NB right-turn lane and restripe NB shared lane to shared left/through lane.	Auto, Bike, Pedestrian		X	$18.1 M	- PD&E - Design - ROW - Construction		X		PD&E phase will be completed with I-95 mainline project (FM #422681.6).
8	Bridge Rd	Martin	At I-95 SB Ramp Intersection: Add a second WB left-turn lane and Add a third and fourth EB through lane. At I-95 NB Ramp Intersection: Add a second EB left-turn lane and Add a third WB through lane.	Auto, Bike, Pedestrian			$2.6 M	- Design - Construction		X	X	PD&E phase will be completed with I-95 mainline project (FM #413253.2)
9	Midway Rd	St Lucie	At I-95 SB Ramp Intersection: Add a second SB left-turn lane.	Auto, Transit			$0.8 M	- Design - Construction	X	X	X	Turn lane improvements needed in 2045 (but not 2030).
10	Crosstown Parkway at California Blvd Intersection	St Lucie	- Provide a protected EB right-turn overlap phase. Add a second NB through lane. Add a second SB through lane, second SB right-turn lane, and provide a protected SB right-turn overlap phase.	Auto, Bike, Pedestrian	X	X	$3.2 M	- Design - ROW - Construction		X		If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.
11	Fellsmere Rd	Indian River	At 108th Ave intersection: Add a SB exclusive right-turn lane and restripe SB shared lane to shared left/through lane.	Auto, Bike, Pedestrian		X	$3.2 M	- Design - ROW - Construction		X		No interchange improvements.
12	Becker Road at Hallmark Street Intersection	St Lucie	- Add E/W bound through lane improvement at Hallmark St.	Auto, Bike, Pedestrian		X	$4.4 M	- Design - ROW - Construction		X		If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds.

PRIORITIZATION PLAN
LONG TERM (2045) PROJECTS
I-95 Multimodal Master Plan

Long Term 2045

Updated March 16, 2020

PRIORITIZATION RANKING	LOCATION	COUNTY	PROJECT DESCRIPTION	MODES IMPACTED	SAFETY IMPROVEMENTS	RIGHT-OF-WAY NEEDED	CONSTRUCTION COST* (FROM LRE)	PROGRAMMING				COMMENTS
			INTERCHANGE AND/OR MAINLINE					PHASE(S)	SIS	MPO/LOCAL	OPERATIONAL	
13	Midway Rd at Glades Cut-Off Rd	St Lucie	- Add an exclusive EB right-turn lane and channelize the EB right-turn lane. - Add a second WB left-turn lane, Add an exclusive WB right-turn lane and channelize the WB right-turn lane.	Auto, Bike, Pedestrian		X	$2.0 M	- PD&E - Design - ROW - Construction		X		If FDOT leads the project, environmental documentation is likely to be Type 1 CE completed using Phase 22 funds. Improvements are impacted by potential Turnpike interchange at Midway Road.
14	High Meadow Avenue	Martin	Signalize Swallowtail Ln	Auto, Bike, Pedestrian			$0.3 M	- Design - Construction		X	X	No interchange improvements. Continue monitoring and coordinate with Traffic Operations. Intersection can be signalized when warranted.
15	I-95 Southbound south of SR 614/Indrio Road	St Lucie	Adjust SB I-95 lane transition to eliminate merge	Auto, Transit			$2.3 M	- Design - Construction	X			Minor realignment of southbound. I-95 mainline to match 4-lane section.
16	Various Ramps	St Lucie/ Indian River	Lengthen Northbound I-95 Off-Ramp deceleration lanes	Auto, Transit			$3.2 M	- Design - Construction	X			Minor lengthening of NB off-ramp deceleration lane at SR 60, SR 614/Indrio Road, and SR 68/Orange Avenue interchanges.

** Preliminary cost estimates. Does not include Right-of-Way costs. Costs of some projects are still under development.*
Individual state roadways are color coded.

LEGEND

	= SR 70/Okeechobee Road
	= I-95 Mainline
	= SR 76/Kanner Highway
	= SR 68/Orange Avenue
	= SR 714/Martin Highway