MARTIN MPO
Metropolitan Planning Organization

Martin County

Freight & Goods Movement Plan

October 2020

PREPARED BY

MARLIN

Martin County

Freight & Goods Movement Plan

PREPARED FOR

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EXECUTIVE SUMMARY

Background

The Martin County Metropolitan Planning Organization (MPO) has been actively engaged in freight planning for decades and has documented freight and goods movement in previous Long-Range Transportation Plans (LRTPs) and in the Treasure Coast 2040 Regional LRTP Freight Element. The Martin MPO funded the development of the Martin County Freight and Goods Movement Plan for three purposes: 1) to Engage Stakeholders, 2) to Identify, Plan and Develop a Reliable Freight and Goods Movement System and 3) to Integrate Goods Movement into Community Design. This new undertaking represents the first stand-alone freight and goods movement plan for the Martin MPO. The plan explores existing and future transportation and land use conditions to leverage the transportation network to support economic development and the integration of freight into the multi-modal network. This Executive Summary presents the process and framework for the development of a network and the resulting program of projects for consideration of incorporation into the MPO 2045 Long Range Transportation Plan.

A hierarchy of well-connected roadways is pivotal to the efficient movement of goods and services. While limited access highways such as I-95 and Florida's Turnpike are at the highest level for roadways in Martin County, they must be supplemented with a network of state highways such SR 710, US 98 and SR 76/Kanner Highway and arterial facilities such as SR 714/Martin Highway/Martin Downs Boulevard and Cove Road for connectivity to markets and distribution facilities. Martin County does not have a cargo airport, seaport or a major intermodal facility which generates freight activity; however, a significant amount of freight and goods movement passes through the County on major transportation facilities including I-95, Florida's Turnpike, State Road 710 and the CSX and Florida East Coast (FEC) Railroads. Real estate activity data for the past ten years was obtained and indicates that industrial and warehousing development activity was stagnant through the 2010s and is now beginning to prosper in Martin County. Most of the new development is occurring in the area of Florida's Turnpike and SR 714/Martin Highway. In addition to the need for a reliable freight network to serve the industrial and agricultural centers in Martin County, freight and goods movement is also critical to supporting community commercial locations. Vibrant centers of activity in Stuart, Jensen Beach, Hobe Sound and Indiantown need an appropriate balance between accessibility for goods delivery and transit passenger, pedestrian/bicycle-friendly environments. Thriving communities need to provide efficient access for large and small trucks, freight rail, and other modes of goods movement without impeding bicyclists, pedestrians and transit users in urban areas where livability is the goal.

Goals, Objectives and Measures

The Goals, Objectives and Measures (GOMs) for this plan were developed utilizing the freight GOMs from the 2040 Martin County Long Range Transportation Plan, the Florida Department of Transportation (FDOT) State Freight Mobility and Trade Plan (FMTP) as identified in the 2017 Motor Carrier System Plan, and the performance measures required in Title 23 Code of Federal Regulations (CFR). Per Title 23 CFR 450.306(d)(4) it is required that the MPO integrate in the transportation planning process, directly or by reference, the goals, objectives, performance measures, and targets described in the state transportation plans, including the State Freight Plan. The main goals and objectives are given below:

- **Goal 1:** Safety and Security - Leverage multisource data and technology to improve freight system safety and security.
- **Goal 2:** Efficient and Reliable Mobility - Drive innovation to reduce congestion, bottlenecks and improve travel-time reliability.
- **Goal 3:** Economic Competitiveness - Continue to forge partnerships between the public and private sectors to improve trade and logistics and capitalize on emerging freight trends to promote economic development.
- **Goal 4:** Quality Places - Increase freight-related regional and local transportation planning and land use coordination.

Stakeholder Outreach

The multimodal freight system is owned and operated by both the public and private sectors. Private and public stakeholder outreach is critical to successful planning decisions. Federal policy suggests that transportation agencies formalize Freight Advisory Councils to obtain private sector input as part of larger planning processes. Stakeholder engagement took place throughout the development of this plan in order to obtain input and to inform the public on the process and findings. A Stakeholder Advisory Committee (SAC) was implemented including governing agencies and private freight stakeholders in the local community. The members were requested to attend three meetings and provide input and feedback on presentations and deliverables. In addition to the three SAC meetings, the team heard significant input from freight trucking industry private sector participants, including:

Roadway Conditions/Design particularly in the rural areas:

- Shoulder widths are too narrow for trucks and emergency vehicles on the rural western roadways including US 98, SR 710, SR 714 and SR 76.
- Passing lanes and opportunities for U-turns are few and far between.
- Lighting is an issue for trucks particularly on the main rural roads.
- There are opportunities around the lake and in rural areas for truck pull-offs to be built for truckers to rest or wait for accidents to clear.

Truck Parking:

- American Trucking Association (ATA) has now listed truck parking as their number 3 issue in the country. It is to the point that they need to plan and time their day exactly so that they are at a rest location that fits into their schedule and parking rules.
- Congestion related to crashes disrupts daily schedules and there is no place to park to take a break.

Incident Management:

- There are crashes on SR 76 and other rural roads and once they occur there is no opportunity for trucks to turn around. They have to sit and wait for the incident to be cleared.
- Truckers need to have alternative paths, or places to make a U-turn.
- Stretches of road are too long without opportunities to divert.

Local Policy:

- Development codes should require that businesses allow for trucks (any truck delivering to them, not just their fleet) to be able to park and take a break. Third party providers can't park there but their own fleet can.
- Local communities should allow in their codes that retail and commercial locations can provide space for driver breaks.

Public Outreach/Education:

- One of the biggest needs today is education. Florida Trucking Association has a successful program.
- Need to provide for public education on truck safety, driving with trucks in stream (how hard to stop, may be carrying eggs), cross section of people that are truckers, connection to/importance of goods delivery. Reshape the image.

Railroad Crossings:

- The FEC Railway Bridge over the St. Lucie River is a critical location to maintaining the economic engine of Martin County Waterways. The bridge is over 100 years old and maintenance and/or replacement of the bridge is critical.

Network Development

Martin County is located in the heart of Florida's "Treasure Coast" and is an important gateway into the South Florida region as well as the rural communities around Lake Okeechobee where goods and services are delivered primarily via truck to local retailers for purchase and consumption by local residents. The most significant truck volumes are on the major limited access facilities, including I-95 and the Florida's Turnpike. Other significant truck traffic volumes found are on SR 714, US 1, and SR 710 and there are very high percentages of trucks on the western, rural roadways including US 98, SR 710 and SR 76 and a link of US 1 between Salerno Road and Pomeroy Street in eastern Martin County. The County is served by three private rail companies including the FEC, the CSX and the South Florida Central Express (SCXF). Martin County is in close proximity to the Port of Palm Beach which is located approximately 15 miles south of Martin County in Palm Beach County and the Port of Fort Pierce is also located about 15 miles to the north of Martin County in St. Lucie County. Martin County is surrounded by navigable waterways. The main charted course is the Atlantic Intracoastal Waterway (AIW) and other waterways include the St. Lucie River and the St. Lucie C-44 Canal. Martin County's existing local airports are not receiving commercial cargo, the nearest Strategic Intermodal System (SIS) airport is Palm Beach International Airport located in West Palm Beach. The County's freight transportation infrastructure provides the means by which freight and goods move into, out of, and within the County and connectivity to land use is an important factor on what goods move throughout the County.

Freight Corridors were identified as corridors of national and interregional significance including corridors with a Federal Highway Administration (FHWA) National Highway Freight Network (NHFN) designation or a FDOT SIS Highway, Railroad, and Strategic Growth Railroad Designation. In addition to the SIS facilities a network of Non-SIS roadways was added to the Martin County freight network as Freight Supportive Corridors. A Freight Supportive Corridor designation indicates that a roadway is important as a connector that provides access to local freight and goods movement areas. The Freight Supportive Corridor also identifies the corridors where truck movements should be encouraged rather than other corridors with predominantly adjacent residential land uses. The Freight Supportive Corridors include: Bridge Road from

I- 95 to US 1, Kanner Highway from US 98 to I-95, Cove Road from I-95 to Dixie Highway, Monroe Street from US 1 to Commerce Avenue, Indian Street from US 1 to Dixie Highway, SR 714/Martin Highway/Martin Downs Boulevard/Monterey Road from I-95 to Dixie Highway, Citrus Boulevard from St. Lucie County Line to Martin Highway, US 1 from Cove Road to St. Lucie County, Commerce Avenue from Salerno Road to Indian Street, and Dixie Highway from Salerno Road to SR 714. Figure I – shows the proposed Martin County Freight and Goods Movement Network.

Recommendations for a Reliable Network

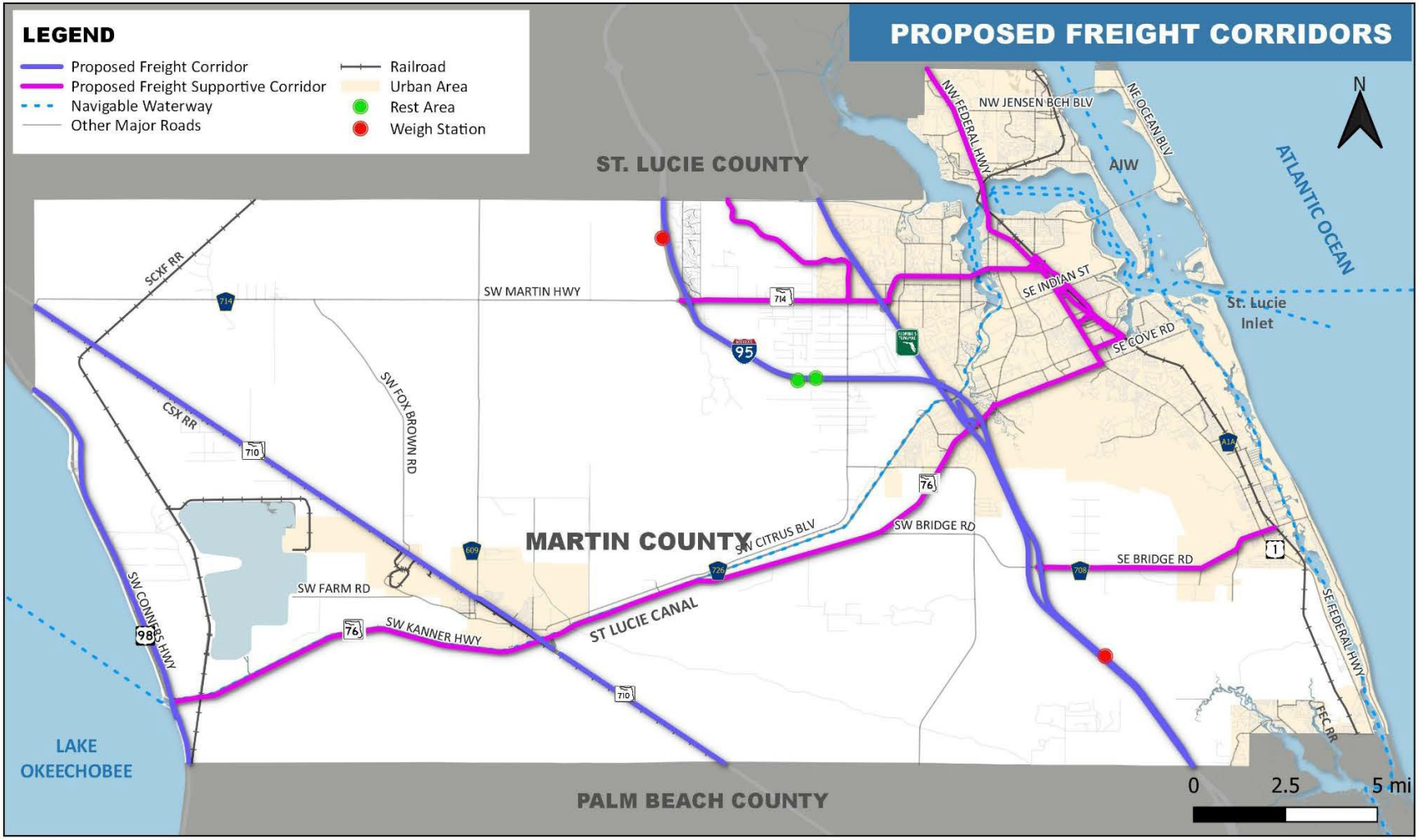
Recommendations for the Freight and Freight Supportive Corridors were developed based on stakeholder input, safety, analysis of roadway design, programmed improvements, projected Year 2045 truck percentages and volume-to-capacity ratios. Investment strategies include safety projects, widened shoulders, new and expanded roads to provide more capacity for freight and commuter travel, operational strategies to improve travel conditions within corridors while minimizing impacts to adjacent land uses and grade separated roadway/railroad crossings to relieve traffic bottlenecks on key freight and commuter corridors. In order to develop a program of projects for Freight Corridors, existing planning documents were reviewed for projects planned and programmed on the freight network. The following documents were reviewed: FDOT Strategic Intermodal System programming documents, FDOT Freight Mobility and Trade Plan Tier 3 Priority Project List, Treasure Coast 2040 Regional LRTP Freight Element, Martin MPO 2040 LRTP Cost Feasible Plan, Martin MPO 2045 LRTP Needs Assessment, and TSM&O Strategic Network Plan Projects.

Proposed Programming of Projects on Martin County Freight Network - This Freight Plan is the first stand- alone freight plan for Martin County and this document has identified a freight network, safety improvements and a list of planned improvements that fall onto the identified Freight and Freight Supportive Corridors. This section of the report establishes a program of projects categorized into short-, mid- and long- range projects for proposed implementation. Table 5.9 lists the projects by project type time frame and Figures 5.3, 5.4 and 5.5 show the projects by location. Short range projects are proposed for Fiscal Years (FY) 2020/2021 to 2024/2025 for consistency with the draft MPO Transportation Improvement Program (TIP), mid-range projects are proposed to fall into the second five years from FY 2025/2026 to 2029/2030 and the long-range projects fall into the last fifteen years which is consistent with the current MPO 2045 LRTP phasing from FY 2031 to 2045.

Proposed Strategies and Policy Initiatives - Freight improvement strategies for a region do not solely depend on the freight roadway facility, but also depend on policy, land use and public/private sector coordination. This plan includes additional recommendations other than roadway projects including leveraging the SAC to form a Freight Stakeholder Advisory Committee; promoting roadway design practices that are inclusive of freight needs through Freight Roadway Design Consideration techniques and to hold events that inform and educate the public on the importance of freight and goods movement.

Implement a Freight Stakeholders Advisory Committee - Establishing positive relationships with freight stakeholders creates a setting for ongoing dialogue that facilitates the identification of win-win solutions to transportation problems and more community-friendly accommodation of freight and goods movement needs. Effective planning for freight requires an understanding of these dynamics and planners need to identify and talk with key industry stakeholders, both public and private including representatives of transportation firms, railroads, shippers, receivers and distribution.

Figure E.1 - Proposed Martin County Freight and Goods Movement Network



At the third SAC Meeting it was recommended that the committee should continue collaboration on projects and meet on a potential semi-annual basis.

Freight Roadway Design Considerations - FDOT prepared the guidelines for freight-friendly roadway design that provides opportunities for the MPO to identify the local context of a specific facility. The compatibility analysis adapted for this study utilizes regional and local land-use planning data and regional truck traffic and percentage data to identify areas where potential conflicts exist between freight activity and community livability. Using Geographic Information System (GIS) applications, the planning information was mapped on a countywide map. The analysis resulted in the identification and designation of four area types (context areas) with different considerations for roadway design appropriate for freight-related transport and livability initiatives. Note that the FDOT concepts were initially developed for the large scale, complex, urban area of Tampa/Hillsborough County. The concept is valid and the descriptions of the areas have been adjusted to fit the context of Martin County.

- **Community-oriented areas** include roadways serving relatively mostly residential areas and can include commercial and/or mixed-use districts where the level of bicycling and pedestrian activity can be expected to be high.
- **Diverse activity areas** have elements of both community-oriented and freight-oriented areas. Diverse activity areas have both levels of localized activity generating a wide variety of person trips as well as moderate truck traffic. There will be industrial and commercial land-use in these areas but there are also fairly dense residential and/or office uses.
- **Freight oriented areas** have higher levels of truck traffic and land uses that are supported by goods movement, such as industrial and commercial designations. These are areas where roads should generally be designed to facilitate truck movements, including design elements like wider travel lanes and wide turn radii at intersections.
- **Low activity areas** are characterized by land uses that would generally be compatible with freight mobility, but actual freight activity (truck traffic) in these areas is low but the percentages are high.

The project team blended the data collected from various sources to develop a context classification map specific to Martin County. The context informs many elements of planning with the intent of balancing goods movement and livability assessing adjacent roadway future land use, truck traffic percentage, Community Redevelopment Agency (CRA) boundaries, parcel size and feedback from stakeholders. Figure 6.1 shows the context classification map for Martin County and Appendix D includes suggested guidelines for roadway planning and design.

Sponsor Educational Events - There is a general negative perception amongst the general public about the trucking industry and there is a lack of understanding of how important their role is in everyday life. The Florida Trucking Association and other local and state agencies provide a list of public awareness programs and events for public education on truck industry and truck safety. The aim is to educate the general public on the importance of the truck industry.

1.0 INTRODUCTION

1.1 Background

The Martin County Metropolitan Planning Organization (MPO) has documented freight in previous Long-Range Transportation Plans (LRTP), and in the Treasure Coast 2040 Regional LRTP Freight Plan Element. In 2019 the Martin Metropolitan Planning Organization (MPO) funded the development of the Martin County Freight and Goods Movement Plan. This plan will be a stand-alone freight and goods movement plan for Martin County with recommendations to be considered for inclusion in the 2045 Long Range Transportation Plan. The purpose of the Plan is to identify the facilities and needs of the Martin County transportation system to promote and maximize the safety, economic vitality and public benefit of the movements of freight and goods. Consistent with the MPO work program, the plan explores conditions to leverage the transportation network to support economic development and the integration of freight into the multi- modal network.

"Freight is the physical manifestation of the economy. The effective and efficient movement of goods supports a vast network of commercial and industrial activities that help create vibrant communities and millions of jobs. Freight delivers food and many of life's other necessities. Freight tonnage is forecasted to increase 45 percent by

2040. Many economic activities rely on "just in time" supply chain management; thus, any disruptions in freight systems can have an immediate ripple effect through the economy.

While freight growth is an indicator of a strong economy, care must be taken to mitigate negative externalities that can impact our communities. Communities must support freight movement, while taking steps to support policies and design forms which attempt to harmonize the movement of freight within the natural and built environment." – American Planning Association

The multimodal freight system is owned and operated by both the public and private sectors. The publicly owned highway network is traversed by truck drivers that may or may not work for the company that ships the goods or receives them and the railroads are privately owned and operated on corridors that are frequently crossed by public rights-of-way. Stakeholder outreach is critical to successful planning decisions. Federal policy suggests that transportation agencies formalize Freight Advisory Councils to provide private sector input as part of larger planning processes. In the process of developing this document a Stakeholder Advisory Committee (SAC) was developed and three meetings were held to share information and feedback on the plan as it was developed. In addition to the SAC meetings the project team actively engaged freight stakeholders in person, on the phone and through video conferencing.

The MPO has been actively engaged in freight and regional planning for many years by including freight sections in previous Long-Range Transportation Plans (LRTP). The MPO also participated in the funding and development of the Treasure Coast 2040 Regional LRTP including the Freight Element prepared by the Florida Department of Transportation District 4 (FDOT DISTRICT 4). The plan included participation from the Martin MPO, the St. Lucie Transportation Planning Organization (TPO) and the Indian River MPO.

The Martin County Freight Plan will be developed based on three key components:

Figure 1.1 - Martin County's Freight Plan Key Elements

1	**STAKEHOLDER ENGAGEMENT** **The freight and goods movement industry stakeholders focus on daily operations dealing with dynamic and complex networks and agreements between suppliers, wholesalers and retailers. It has been a challenge across the region and nation to achieve participation from the private sector in planning studies, particularly, long range planning efforts, as they are rightly focused on day- to-day operational issues. In order to develop an effective plan, the project team will be implementing an outreach program throughout the study with targeted and proactive outreach.**
2	**DEVELOPMENT OF A RELIABLE, MULTI-MODAL FREIGHT PLAN** **Reliability is a measure of the variability of travel times and has been adopted by the FHWA, FDOT and the MPO as the key performance measure for freight. The project team will collect data, analyze alternatives, and make recommendations for a reliable regional and local freight and goods movement transportation system.**
3	**INTEGRATING GOODS MOVEMENT NEEDS INTO COMMUNITY DESIGN** **Martin County experiences significant through freight traffic as part of the regional and statewide supply chain and it is important that this plan identifies a reliable and safe network on the major roadway, waterway and railroad systems. At the community level this plan will consider the needs for commercial and residential goods movement access and mobility in context with the community. The plan will identify contexts including Diverse Activity Areas, Community-Oriented Areas, Freight-Oriented Areas and Low Activity Areas and develop freight approaches which fit into the concerns/needs of sub areas through infrastructure, design and policy recommendations.**

Key documents were reviewed in preparation of the Martin County Freight and Goods Movement Plan, these documents included federal, state, regional, and local plans related to current freight regulatory requirements and historic and current project planning and implementation documents.

1.2 Martin County Profile

Martin County is located in the Treasure Coast region of the State of Florida. The County is bordered by St. Lucie County to the north, the Atlantic Ocean to the east, Palm Beach County to the south and Okeechobee County to the west. The County's scenic barrier islands, mature shade trees and the meandering waterways create a naturally quaint environment. Goal 4.1 of the Future Land Use Element of the Martin County Comprehensive Plan is "to manage growth and development in a way that is fiscally efficient, consistent with the capabilities of the natural and manmade systems and maintains quality-of-life standards acceptable to Martin County's citizens".

The Bureau of Economic and Business Research of the University of Florida estimates the April 1, 2019 population of Martin County at 158,598. The County has five incorporated areas. The City of Stuart is 9.1

square miles in size with 16,504 residents. The Village of Indiantown is 14.3 square miles in size with 6,728 residents. The other jurisdictions include the following towns: Sewall's Point with 4.1 square miles and 2,090 residents; Jupiter Island with 3.6 square miles and 829 residents; and, Ocean Breeze with 0.2 square miles and 303 residents. The unincorporated area of Martin County totals 721.7 square miles with 132,144 residents. Martin County's unincorporated area represents 95.8% of the County's land area and 83.3% of the resident population.

Martin County does not have a cargo airport, seaport or a major intermodal facility which generates freight activity, although a significant amount of freight and goods movement passes through the County on the major transportation facilities of I-95, Florida's Turnpike, State Road 710 and the Florida East Coast (FEC) Railroad. However, freight and goods movement to local manufacturing, trade and retail establishments is very important to the success of the local economy. Real estate activity data for the past ten years reveals industrial and warehousing activity was stagnant through the 2010s but is now beginning to prosper. In 2019, there was almost 250,000 square feet of development construction and more than 400,000 square feet are expected in Martin County this year mostly in the area of Florida's Turnpike and SR 714/Martin Highway.

Farming and ranching were the primary agriculture uses upon which Martin County was built. Agriculture is still a major contributor with over 40,000 acres of sugar cane, cropland, citrus and tropical fruit. Based on the University of Florida's Economic Impacts Study of 2017, agricultural and related industries generate 22.9% of jobs (22,520) in Martin County. There are 587 farms with 175,916.62 acres in agriculture use in Martin County (UF/IFAS study, 2020). The market value of goods sold is $165,453,000. The main crops are citrus, potatoes, beets, cabbage, spinach, sweetcorn, sugarcane, tomatoes, peppers, melon, cucumber, squash, green beans, basil, sod, and shrimp and clams through aquaculture. Other crops are ornamentals, cattle production, an egg farm (producing over 10 million dozen eggs per year), a flour milling facility and a juice concentrate plant.

In addition to the need for a reliable network of roadways and railroads to serve the commercial, industrial and agricultural centers in Martin County, vibrant community centers in Stuart, Jensen Beach, Hobe Sound and Indiantown will require an appropriate balance between accessibility for goods delivery and transit passenger, pedestrian/bicycle-friendly environments. Communities need to provide efficient access for large and small trucks, freight rail, and other modes of goods movement without impeding bicyclists, pedestrians and transit users in urban areas where livability is the goal.

1.3 Recent Freight Planning

1.3.1 Federal Highway Administration Surface Transportation Act

Federal planning for freight and goods movement began in 1991 with the Intermodal Surface Transportation Efficiency Act (ISTEA); and each subsequent transportation bill has strengthened the message that national freight policy is designed to drive United States (US) global competitiveness. The Fixing America's Surface Transportation Act (FAST Act), passed on December 4, 2015 and has further increased the focus on, and available funding for, for freight and goods movement projects.

The FAST Act established the Nationally Significant Freight and Highway Projects (NSFHP) Program. The program has identified the National Highway Freight Network (NHFN) which includes a primary network of highways with a complementary network of additional interstate facilities and critical urban and rural corridors that provide connectivity to the system.

This same philosophy has been incorporated into the development of the Martin County Plan where Freight Corridors were identified as the high-level roadways which move freight through, into and out of Martin County and a network of Freight Supportive Corridors that supplements the network by connecting the agricultural, commercial and industrial locations in the County to the regional and statewide network. Note, I-95 is the only NHFN network facility in Martin County.

Source: US Department of Transportation

Figure 1.2 on the following page illustrates the Martin County Transportation Network including the NHFN designation on I-95.

1.3.2 FDOT Strategic Intermodal System (SIS)

The Florida Department of Transportation (FDOT) established the Strategic Intermodal System (SIS) as a statewide network of multi- modal transportation facilities that are the backbone of the transportation system representing the state's highest priority facilities which support mobility and economic development. SIS infrastructure and efficient operations are critical for interregional, interstate, and international travel and are eligible for additional funding options from the state. At the state level, SIS highway facilities carry 89% of all interregional rail and bus passengers, 55 percent of total traffic, and more than 70% of all truck traffic on the State Highway System.

The Strategic Intermodal System (SIS) includes SIS Airports and Seaports, Freight Rail, Passenger Terminals and Urban Fixed Guideway Terminal; Highways, Railroads, Urban Fixed Guideways, Waterways Corridors, and a system of Connectors. These facilities are designated by meeting objective criteria and thresholds based on quantitative transportation measures and economic activity within the state. There are two types of facilities that make up the SIS Highways and Railroad corridors: designated SIS facilities and Strategic Growth facilities. Strategic Growth facilities are projected to meet the established SIS criteria. Martin County is in FDOT DISTRICT 4 and Figure 1.3 on the next page depicts the FDOT DISTRICT 4 SIS District Atlas.

Figure 1.2 - Martin Roadway, Rail, Air and Waterway Network

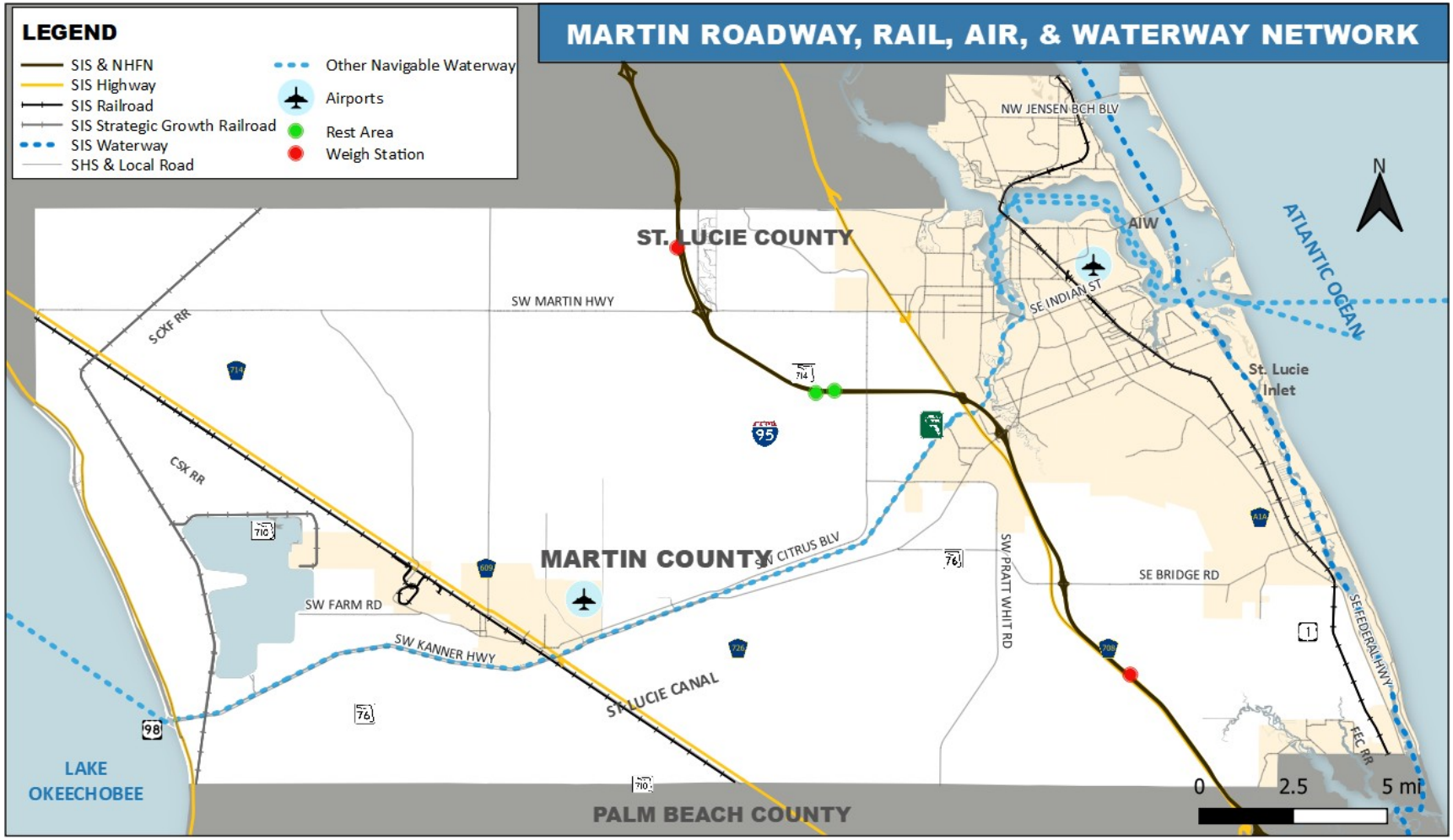
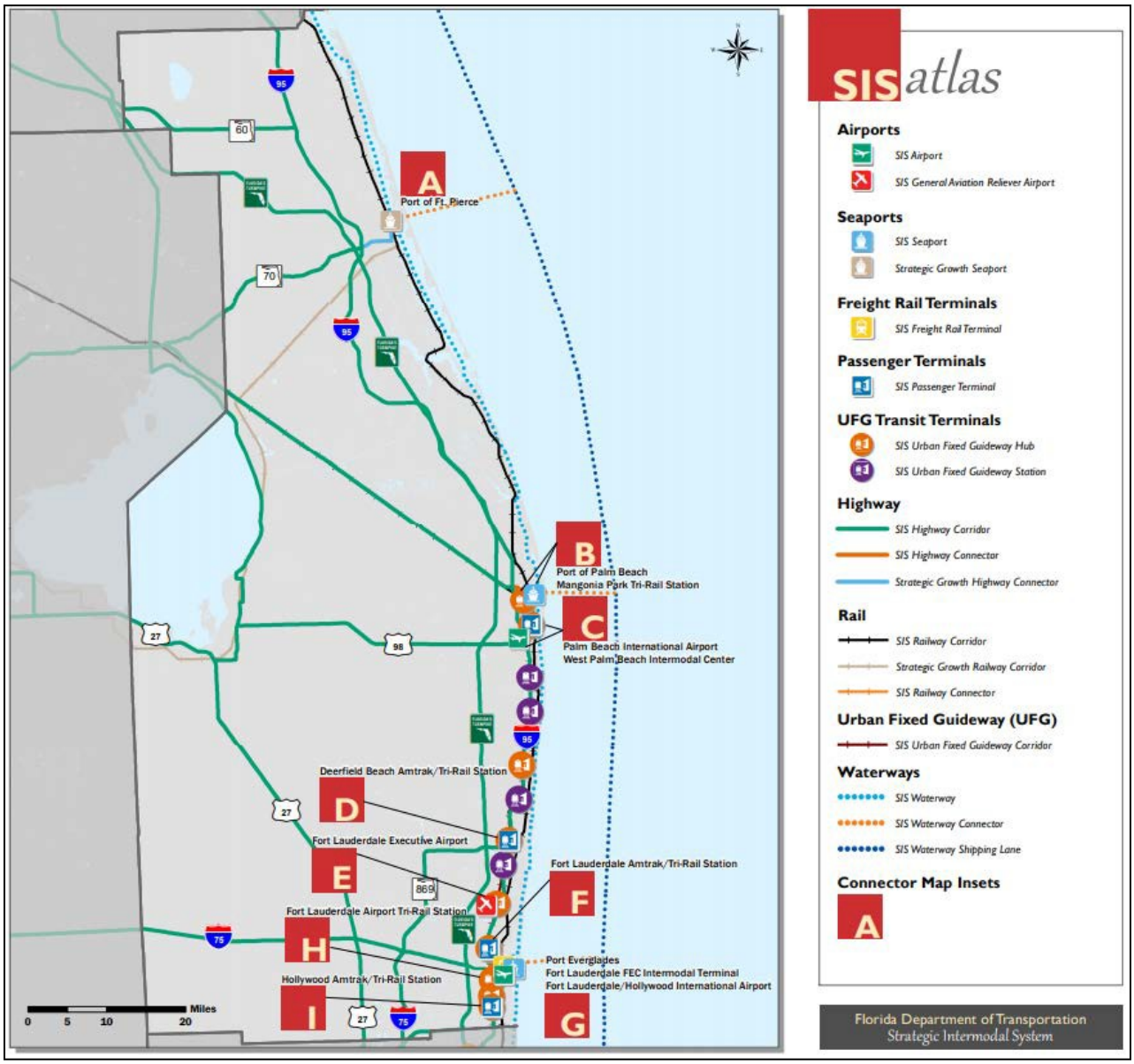


Figure 1.3 - FDOT District 4 Strategic Intermodal System Atlas



It is anticipated these facilities may be eligible for funding not traditionally used on SIS facilities. SIS objectives include Economic Competitiveness, Interregional Connectivity, Efficiency, Choices, Intermodal Connectivity, Energy, Air Quality and Climate, and Emergency Management and Safety.

SIS Facilities in Martin County include:

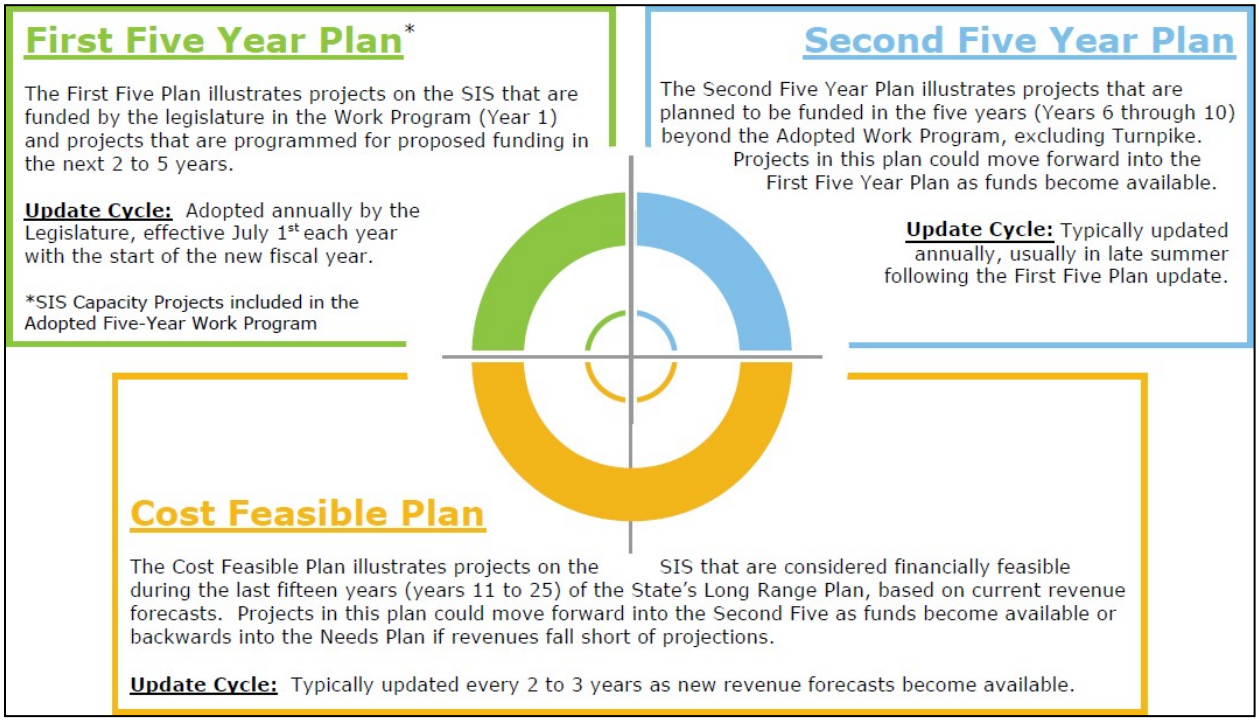
- **Roadways:** I-95, Florida's Turnpike, SR 710, US 98
- **Railroads:** Florida East Coast (FEC) Railroad, CSX Transportation Railroad
- **Waterways:** Atlantic Intracoastal Waterway

SIS Strategic Growth Facilities in Martin County include:

- **Railroads:** South Florida Central Express

The FDOT Systems Planning Office produces a document set known as the SIS Funding Strategy, which includes three inter-related sequential documents that identify potential SIS capacity improvement projects in various stages of development. All projects identified within the SIS Funding Strategy are considered financially feasible for implementation within the next 25-year period. The currently adopted SIS Funding Strategy includes the following sequential the First Five Year Plan, the Second Five Year Plan and the Cost Feasible Plan. A fourth document, titled the SIS 2045 Unfunded Multi-Modal Needs Plan, identifies all other SIS needed projects which are not funded in the SIS plan. Figure 1.4 summarizes the SIS Funding Strategy.

Figure 1.4 - SIS Funding Strategy



1.3.3 2060 Florida Transportation Plan

The Florida Department of Transportation (FDOT) has strategically developed policies and investment strategies for freight transportation. The highest-level document is the 2060 Florida Transportation Plan (FTP) which sets the stage for how Florida will evolve over the next 50 years. The Plan proactively supports the transformation of Florida's economy and communities with a significant focus on trade and cargo movement. The FTP defines transportation goals, objectives, and strategies to make Florida's economy more competitive, Florida's communities more livable, and Florida's environment more sustainable for future generations. In 2016, the State's transportation system will be as profoundly different as today's system is from the one 50 years ago, including:

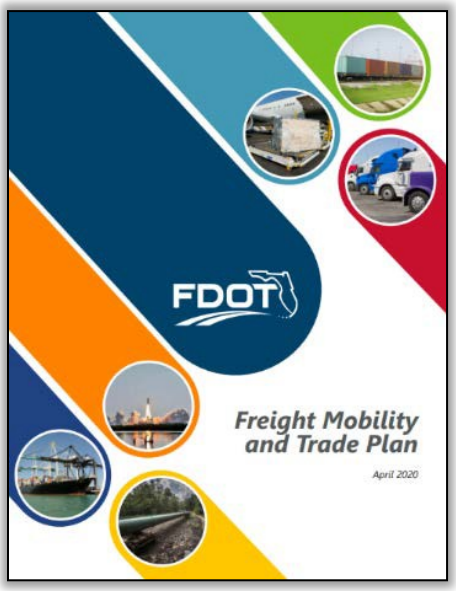
A statewide, multi-modal transportation system which supports Florida's economic and livability goals by providing:

- Better connectivity to both urban and rural areas;

- Greater reliance on public transportation systems for moving people, including a statewide passenger rail network and enhanced transit systems in Florida's major urban areas;
- A statewide, multimodal system of trade gateways, logistics centers, and transportation corridors to position Florida as a global hub for commerce and investment;
- An evolving air-and-space transportation system enabling Florida to remain a global leader for moving people and cargo between Florida and destinations in other states, nations, and orbit;
- A new generation of infrastructure, vehicles, fuels, and technologies to enable travel with fewer crashes, reduced delay, and fewer emissions.

1.3.4 FDOT Freight Mobility and Trade Plan

The FDOT Freight Mobility and Trade Plan (FMTP), adopted in April 2020, is a comprehensive plan which identifies freight transportation facilities critical to the economic growth of Florida and guides the state's multimodal freight investments. The FMTP objectives were developed by examining goals and objectives from the FTP, FDOT Modal Plans, partner agency plans, as well as by incorporating feedback provided by the Florida Freight Advisory Committee (FLFAC). This study ensured that the FMTP objectives reflect Florida's collective freight vision and set the stage for collaborative implementation of the FMTP recommendations.



The plan identified two prioritized projects for Martin County as shown in Table 1.1. The Monterey Road/FEC Railroad grade separation (underpass) was identified as a second-priority grade separation project and the I-95 segment from High Meadow Avenue to Becker Road is shown as a third-level priority interchange modification project.

Table 1.1 - List of Prioritized Projects for Martin County from the FMTP

Crossing ID	Project Name	Description/Type	Color
272353M	Florida East Coast Railway at Monterey Rd. / SR 714	Grade Separation	Yellow/ Second Priority
	I-95 from High Meadow Ave. to Becker Rd.	Modify Interchange	Orange/ Third Priority

1.3.5 Martin MPO 2040 Long Range Transportation Plan

The Martin County MPO 2040 Long Range Transportation Plan (LRTP) sets the vision for transportation for all the modes of travel within the County and updates the list of projects every five years. Note, the 2045 Martin County LRTP is also underway, concurrent with this project.

The 2040 plan identified freight and goods movement as an important component of the local economy since critical goods and services are delivered primarily via truck to local retailers for purchase and consumption by local residents. The plan also reported that western Martin County is an agricultural area supplying food products to the local, regional, state, and national economy. Improvements to Martin County roadways facilitate the efficient delivery of important goods and services and often serve as "Last Mile" connectors for truck movements. "Last Mile" involves the final leg of a truck move, which in the case of Martin County could generally include a lot of the off-system/local road moves for final delivery to the retailer or end consumer. No specific freight projects were identified in the plan; however, the prioritization scoring provided in the appendix awarded a high score of 10 (State Truck Route) to the SR 714/Martin Highway Project and a medium score of 5 (County Truck Route) to the Cove Road Project and High Meadow Project. The plan also made a recommendation for the MPO to undertake an FEC railroad grade separation study which was completed in 2018. Table 1.2 summarizes these projects.

Table 1.2 - Martin MPO 2040 Cost Feasible Plan Freight Projects

Project	Description	Estimated Implementation Timeframe
SR 714/Martin Hwy from Citrus Blvd to Martin Downs Boulevard	Widen from 2 lanes to 4 lanes	2021-2025
High Meadow Ave from I-95 to CR 714/Martin Hwy	Widen from 2 lanes to 4 lanes	2021-2025
Cove Rd from SR 76/Kanner Hwy to US 1[3]	Widen from 2 lanes to 4 lanes	2031-2040
Cove Rd from US 1 to CR A1A	Widen from 2 lanes to 4 lanes	2031-2040
Florida East Coast Railway Corridor	Study Feasibility of Grade Separations	Completed in 2018

[1] Non-Motorized projects will be prioritized in a future Martin MPO Action Plan.

[2] The application of Federal TMA funds to roadway maintenance needs will be for roadways on the federal aid highway system.

[3] ROW and Design costs are included in the 2026-2030 planning timeframe.

1.3.6 2040 Treasure Coast Regional Long-Range Transportation Plan Freight Element

This document was sponsored by FDOT District 4 and was developed to supplement the 2040 Treasure Coast Regional Long-Range Transportation Plan. The plan describes the freight system of the Treasure Coast region as a multimodal network consisting of roadways, railways, airports, a seaport and waterways. Other supporting infrastructure such as warehouses, distribution centers, and truck-parking facilities further indicates a well-connected network of roadways are pivotal to the efficient movement of goods and services.

The plan included a map of the regional freight network and produced a scoring and ranking system for the roadway network. In total, 53 projects were identified on the network and the number three and two projects tied for fourth are in Martin County. These projects include adding two lanes to I-95 from Bridge

Road to High Meadow Avenue, adding 2 lanes to I-95 from High Meadow Avenue to St. Lucie County and the US 1 Corridor Retro Fit from Cove Road to St. Lucie County. Table 1.3 provides a summary of the Martin County roadway facilities identified in the 2040 Treasure Coast Regional Long-Range Plan Freight Element.

Table 1.3 - Martin MPO Freight Projects from the Treasure Coast 2040 LRTP Freight Element

Project	Description	Regional Ranking
I-95 from Bridge Road to High Meadow Ave	Widen 6 to 8 lanes	3
I-95 from High Meadow Ave to St. Lucie County	Widen 6 to 8 lanes	4
US 1 from Cove Rd to St. Lucie County	Corridor Retrofit	4
Florida's Turnpike from Indiantown Rd to SR 714	Widen 4 to 6 lanes	13
Florida's Turnpike from SR 714 to St. Lucie County	Widen 4 to 6 lanes	14
I-95 from Palm Beach County to Bridge Rd	Widen 4 to 6 lanes	15
SR 714/Kanner Martin Hwy from Citrus Blvd to Martin Downs Blvd	Widen 2 to 4 lanes	25
Cove Road from SR 76/Kanner Highway to Willoughby Blvd	Widen 2 to 4 lanes	32
Indian Street from SR 76/Kanner Hwy to Willoughby Blvd	Widen 2 to 4 lanes	32
Cove Road from US 1 to CR A1A	Widen 2 to 4 lanes	36
High Meadow Ave from I-95 to CR 714/Martin Hwy	Widen from 2 lanes to 4 lanes	44

1.3.7 Transportation Improvement Program

Martin MPO developed the Transportation Improvement Program (TIP) to provide a comprehensive and prioritized listings of Transportation projects for fiscal years (FY 2020/21 – 2024/25) with consistency of MPO's 2040 Long Range Transportation Plan. TIP is based on the funding data contained within the FDOT work program. The major freight projects, prioritized by Martin MPO and also included in FDOT work program is described below:

- FM # 4192522 – SR 710/ Warfield Blvd from MP 9.771 to MP 14.967: A PD & E study from Martin Power Plant to Allapattah Road to add and construct traffic lanes. The total length of this project is 5.174 miles. The draft FY 2020/2021 to 2024/2025 TIP showed construction funding for FY 2024/2025.
- FM # 4368701 – SR 714/SW Martin Hwy from Citrus Blvd to SW Martin Downs Blvd: A PD & E study for adding lanes and reconstruct. This 1.12-mile project will start at FY 2020/21 and will complete at 2022/23.
- FM # 4419951 – Martin Weigh Station (Northbound) – Signing and Pavement Marking (S & PM) SIS: The northbound Weight Station needs signings/pavement markings and project FY will be 2022/23.

- FM # 4453151 – Martin Weight Station – Signing & Pavement Markings: MCCO Weigh Station signings and pavement markings and project FY will be 2021/22.
- FM # 4453152 – Martin Weight Station – Lighting and Electrical: MCCO Weigh Station lighting and electrical works and the FY will be 2021/22.

1.3.8 Martin/St. Lucie Regional Waterways Plan

The Treasure Coast Regional Planning Council (TCRPC) was authorized by the Martin MPO and St. Lucie Transportation Planning Organization (TPO) to produce a Martin/St. Lucie Regional Waterways Plan. This effort was funded by the MPO and TPO, with matching funds provided by the Florida Inland Navigational District (FIND). Martin and St. Lucie counties are characterized by extensive waterways that traverse the area. The Intracoastal Waterway (ICW), also known as the Atlantic Intracoastal Waterway (AIW), spans roughly 44 miles through the two counties and provides connections to both the Fort Pierce and St. Lucie Inlets. The St. Lucie River, including its north and south forks, provides connections to the ICW, water access inland, and a connection to Lake Okeechobee via the St. Lucie Canal (C-44).

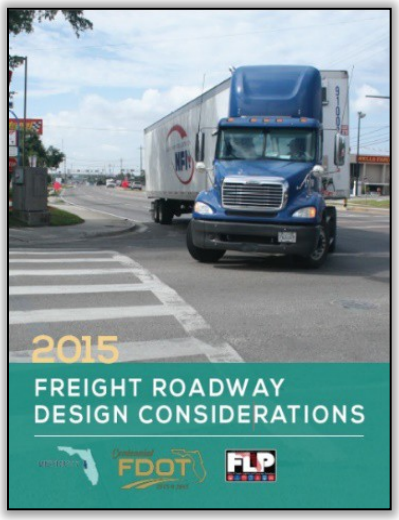
In the development of the waterways plan, participants expressed strong concerns about the need to maintenance dredge the St. Lucie Inlet. The plan highlights the critical importance of maintaining access through the canal and Inlet vis-à-vis the local locks and railroad bridges, especially the FEC Railroad bridge across the St. Lucie River.

This Plan is a multi-tiered, multi-agency document that details and recommends dozens of different projects and programs in the next five to ten years. For the purposes of this study the recommendations were filtered for marine industries and cargo related initiatives in Martin County including:

- Continue to seek funding and prioritize maintenance dredging of the St. Lucie Inlet.
- Develop Dredging Work Groups in each County to assess shoaling and dredging needs throughout the waterways, determine desired depths, conduct annual assessments following storm seasons, and identify opportunities to reduce costs by better coordinated dredging activities.
- Work with FDOT to evaluate impacts on marine transportation due to railroad bridge impacts, including consideration of freight redistribution, waterborne cargo, and inland logistics centers. Analyses should consider modernization of bridge infrastructure, bridge replacement, regulatory modifications, increased vertical and horizontal bridge clearance, and allocation of funding as appropriate through the FDOT Strategic Intermodal System for improvements.
- Expand the development of a marine industries district along the C-44/St. Lucie Canal in the Indiantown CRA.
- Advance protection of identified “marine transportation routes” in Martin County to further support marine industries and vessel transport to waterways, including adoption of appropriate regulatory language. Special consideration should be given to railroad crossing infrastructure.

- Develop a regional Marine Industries dataset to further develop knowledge of the industry, workforce and training needs, and geographic clusters.
- Develop a "Marine Industries Career Track" at the high school level to enhance the local workforce and augment a potential maritime/logistics academy, including identification of appropriate certifications, business partners, and opportunities for field training. Advanced career training should be explored with Indian River State College and CareerSource Research Coast.

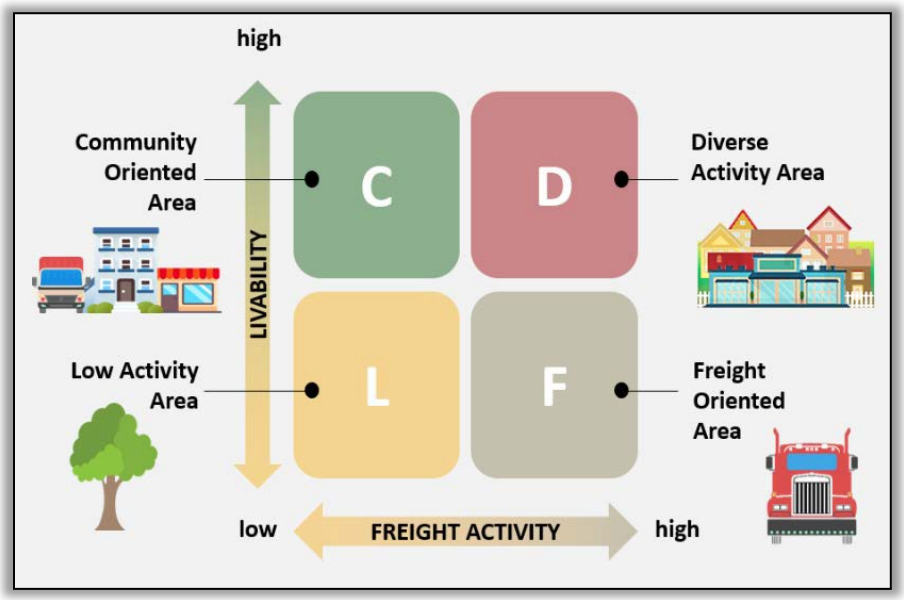
1.3.9 FDOT Freight Roadway Design Considerations



The document is a resource for transportation planners and design engineers for considering and implementing truck-friendly design solutions in a variety of planning and design activities. The document identifies considerations for selecting appropriate strategies relative to the function of the Regional Freight Network, the multimodal aspects of certain corridors, and various land-use contexts.

The document expands upon modal planning and design concepts in other FDOT manuals applicable statewide. The purpose of this document is intended to aid those involved in the planning and operations of goods movement, land planning and management to have a multi-modal approach related to the interaction of freight and goods movement with vulnerable users including pedestrians and bicyclists. Context-sensitive goods movement strategies are developed with a recognition that the balance between truck traffic and other roadway users depends on the purpose and intensity of the goods movement and the nature and intensity of the local land-use patterns. The land use patterns affect travel demand by all modes, including freight.

Figure 1.5 - Freight Activity & Land Use Compatibility Analysis



Source: FDOT Freight Roadway Design Considerations

1.3.10 Transportation Systems Management and Operations (TSM&O) Master Plan

The Transportation Systems Management and Operations (TSM&O) TSM&O has been actively developed and implemented across the state aiming to optimize funding and to maximize the existing transportation system safety, efficiency, and effectiveness through real-time monitoring and effective management as opposed to adding capacity through lane additions. Due to increasing travel demands and limited resources and right-of-way, FDOT District 4 and local and regional transportation agencies cannot fully address mobility and congestion without actively implementing TSM&O solutions.

Traffic Management develops systems to monitor traffic flow and roadway conditions, and provide strategies such as traffic monitoring, traffic information/warning, signal control/metering, and congestion mitigation to improve the flow of traffic on the corridor or region space, effectively "taking back" lost capacity. FDOT District 4 staff reviewed existing and future transportation service supply/demand conditions for all public roads in Martin, St. Lucie, and Indian River Counties, and decided to continue using roadways with functional classification of minor arterial and above as the basis for the second phase of TSM&O Master Plan for the Treasure Coast. To ensure that the base network also includes development opportunities and important regional corridors, additional roadways (collectors) were added if they are included in transportation improvement plans or were identified for inclusion by M/TPO staff.

FDOT prioritize potential projects for implementation based on a comprehensive assessment of traffic, transit, safety and priority scores as well as factors that could impact a project development, operation, and maintenance. Figure 1.6 shows TSM&O's strategic network system and Figure 1.7 show the priority projects for Martin County.

1.3.11 FEC Railroad Grade Separation Feasibility Study

The Martin Metropolitan Planning Organization (MPO) initiated this feasibility study to identify, evaluate and plan for potential roadway and non-motorized pedestrian/bicycle grade separations along the Florida East Coast Rail Line (FEC) through Martin County. The study was performed in phases including:

- **Tier 1:** Perform an initial assessment of all the mainline rail at grade crossings (25) in Martin County and identify 10 roadway candidate crossings for potential grade separation. Review adjacent land uses between crossings and known areas of pedestrian trespassing on the rail corridor to identify 5 candidate locations for non-motorized crossings.

Figure 1.6 - TSM&O Strategic Network (On State and Off State Highway System)

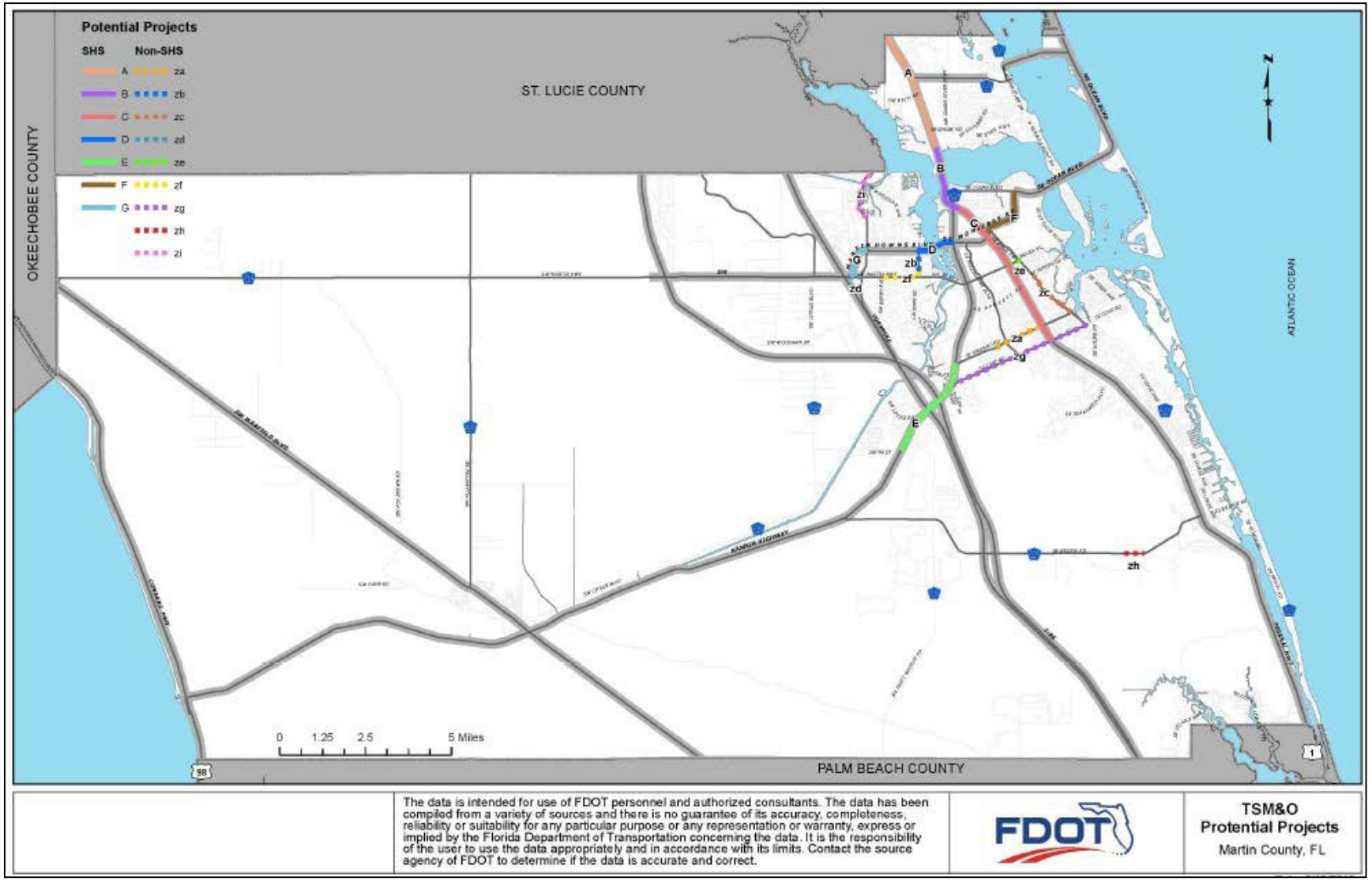
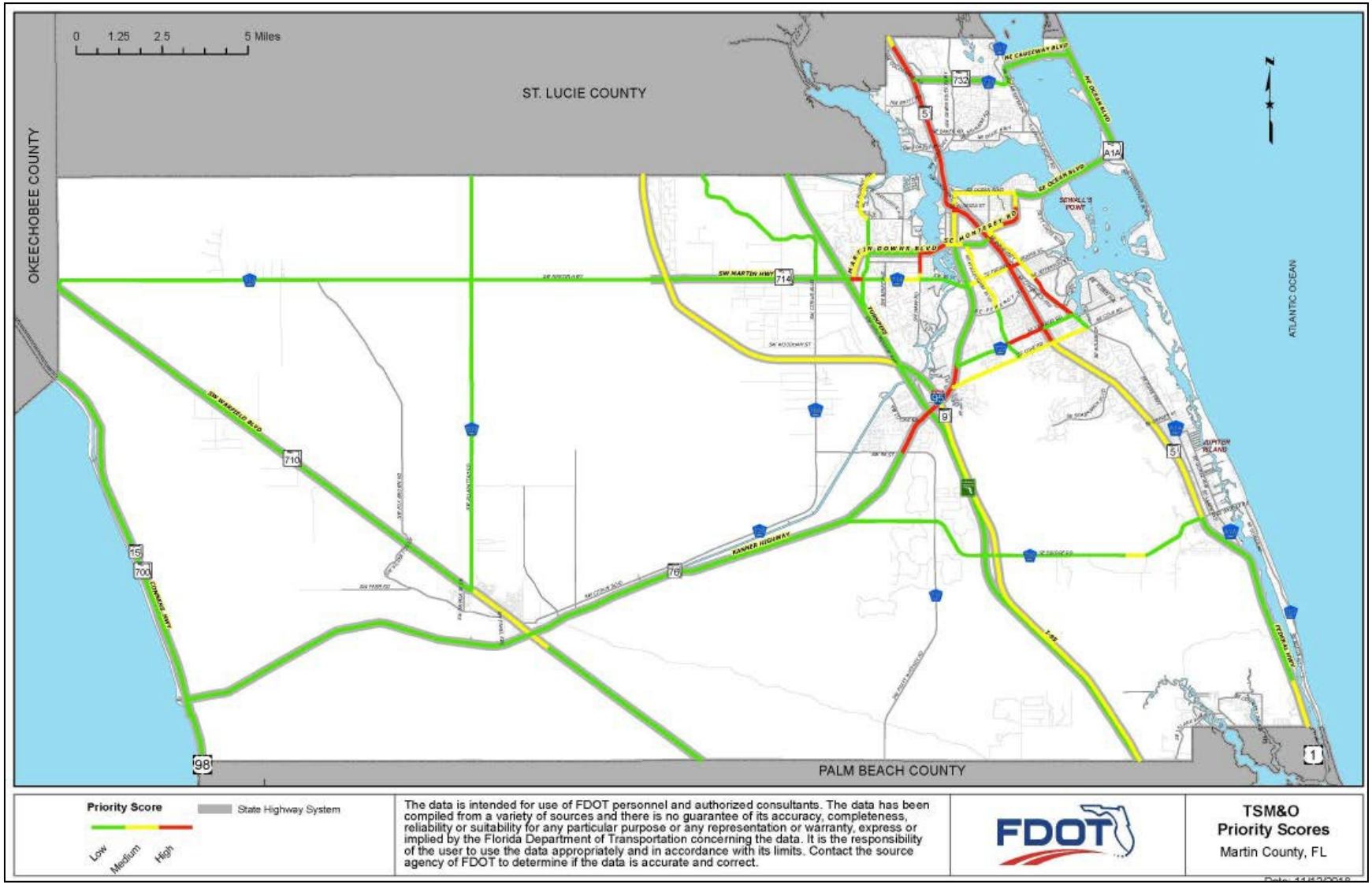
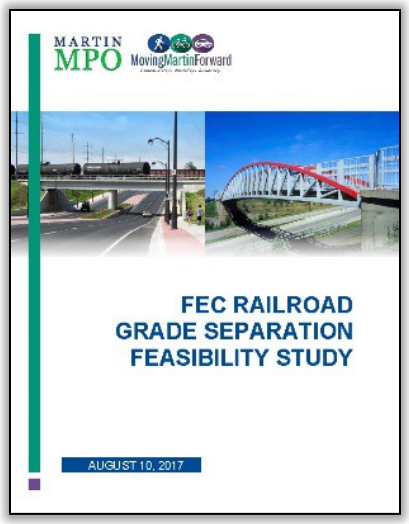


Figure 1.7 - TSM&O Projects Priority Scores





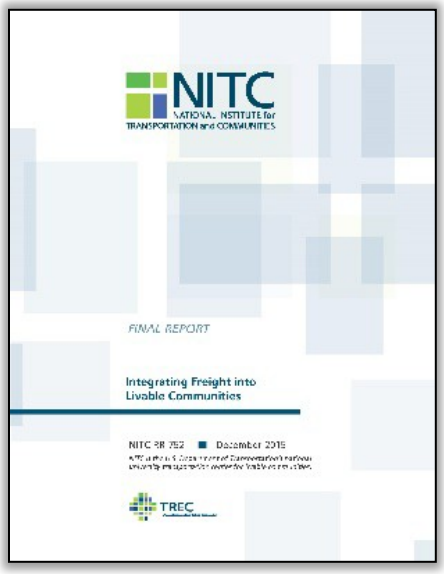
- **Tier 2:** Perform detailed evaluation and rank the roadway and non- motorized candidates for the need and justification to implement grade separations.
- **Tier 3:** Prepare concepts and assess the feasibility and impacts of grade separations at 4 potential crossing locations:
  - Conceptual plans for up to 2 crossings for roadway grade separation, and
  - Conceptual plans for up to 2 crossings for non-motorized uses
  - Assess the impacts and cost-benefit of the concepts developed for this study.

The final results include concepts developed for an Indian Street/Dixie Highway elevated roadway crossing, a Monterey Road/Dixie Highway depressed roadway crossing, a Railroad Avenue to Commerce Boulevard elevated pedestrian/bicycle grade separation and a Downtown Stuart elevated pedestrian/bicycle grade crossing. Each concept is provided below from south to north by category. The top recommendations include.

- Monterey Road Underpass - The concept cost estimate is $68.5
- Indian Street Overpass - The concept cost estimate is $83.6 Million
- Railroad Avenue to Commerce Avenue Pedestrian Bridge – The concept cost estimate is $3.7 Million
- Downtown Stuart Pedestrian Plaza Over the FEC Corridor - The concept estimate is $4.7 Million

1.3.12 Integrating Freight into Livable Communities

The Integrating Freight into the Livable Communities report was prepared for National Institute for Transportation and Communities (NITC), by Kristine M. Williams and Alexandria Carroll, University of South Florida Center for Urban Transportation Research, December 2015.



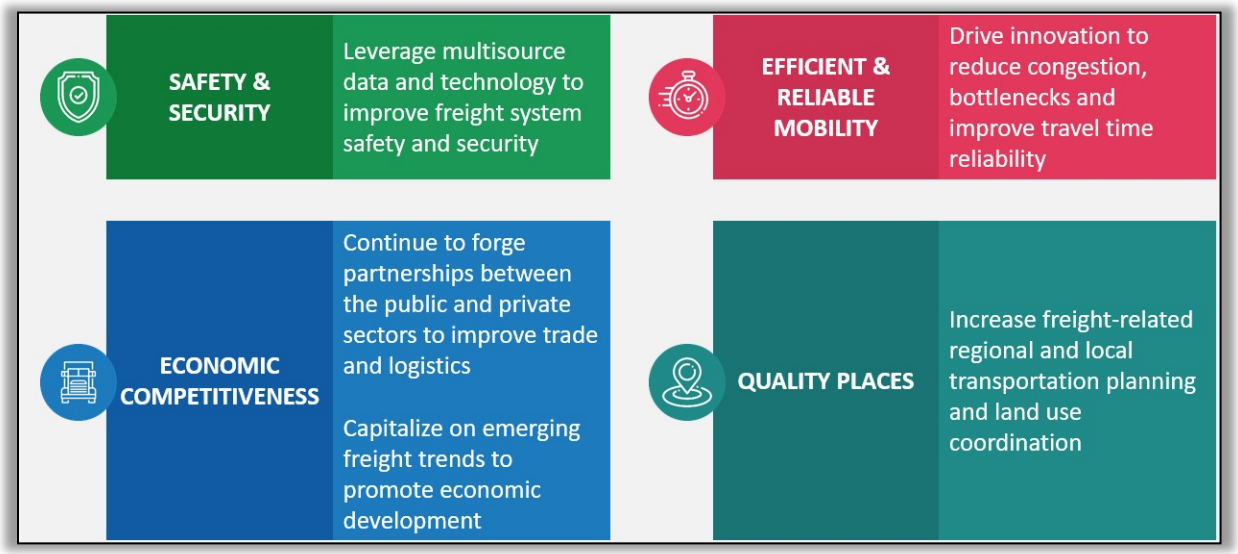
Efficient freight movement enables stores and restaurants to be stocked, manufacturers get the raw materials required and local businesses can get packages and office supplies. Often referred to as the “last-mile” freight activity, can be costly and compete for public space and also create negative impacts and congestion. Road diets which support pedestrian and bicycle activities may reduce turning radii and provide narrower pavement widths and on-street parking. These designs can make truck traffic flow more difficult creating congestion, crashes and curb damages. The report provides options for planners and decision makers to consider in advancing freight movement and livability objectives, thereby minimizing the conflicts between freight movement and livability. Five case studies are presented to provide varying scenarios on freight challenges and strategies. Context-sensitive strategies from this document are included in the strategies for this plan.

2.0 FREIGHT GOALS, OBJECTIVES AND MEASURES AND OUTREACH

2.1 Summary: Goals, Objectives, and Measures

Goals, Objectives and Measures (GOMs) for this plan were developed utilizing the freight GOMs from the 2040 Martin County Long Range Transportation Plan, the FDOT State Freight Mobility and Trade Plan as identified in the 2017 Motor Carrier System Plan, and Performance Measures required in Title 23 Code of Federal Regulations (CFR). Per Title 23 CFR 450.306(d)(4) the MPO is required to integrate the transportation planning process, directly or by reference, the goals, objectives, performance measures, and targets described in the host state transportation plans, including the State Freight Plan.

Figure 2.1 - Goals of Martin County's Freight Movement & Goods Plan



2.1.1 Goal 1: Safety and Security

- **Objective 1.1:** Leverage multisource data and technology to improve freight system safety and security.
    - Measure 1.1.1: Utilize available information from Federal, State and other resources to summarize the number of truck and rail incidents, injuries and fatalities on Federal, State, County and local Martin County roadways and private railroads.
    - Measure 1.1.2: Plan and prioritize transportation improvement needs to reduce truck and rail incidents, injuries and fatalities on Federal, State, County and local Martin County roadways and private railroads.
    - Measure 1.1.3: Plan and program transportation system improvements to enhance safety for all modes.
    - Measure 1.1.4: Place a high priority on preserving and maintaining the physical condition of the existing freight transportation network.

2.1.2 Goal 2: Efficient and Reliable Mobility

- **Objective 2.1:** Drive innovation to reduce congestion, bottlenecks and improve travel time reliability.
    - Measure 2.1.1: Provide annual reports on the FHWA Truck Travel Time Reliability (TTTR) Index for Martin County for Federal, State, County and local roadways.

- Measure 2.1.2: Continue to work with stakeholders to identify and support funding projects consistent with industry priorities.
- Measure 2.1.3: Utilizing information from truck and rail incidents together with input from stakeholders to identify bottlenecks on roadways in Martin County.
- Measure 2.1.4: Support grade separation improvements at railroad crossings which accommodate freight and passenger traffic.
- Measure 2.1.5: Encourage and support Complete Street design standards that can accommodate trucks movements.

2.1.3 Goal 3: Economic Competitiveness

- **Objective 3.1:** Continue to forge partnerships between the public and private sectors to improve trade and logistics.
  - Measure 3.1.1: Support improvement projects that increase the transportation system's efficiency, productivity and workforce preparation.
  - Measure 3.1.2: Plan for the future growth of freight and goods movement.
- **Objective 3.2:** Capitalize on emerging freight trends to promote economic development.
  - Measure 3.2.1: Support and assist strategic investments to maintain and modernize the multimodal freight transportation system with innovative approaches, advanced technology and travel time reliability to reduce congestion.
  - Measure 3.2.2: Support and develop transportation improvements that enhance the linkages between centers of employment, freight clusters, retail businesses fostering economic development and business vitality.

2.1.4 Goal 4: Quality Places

- **Objective: 4.1:** Increase freight-related regional and local transportation planning and land-use coordination.
  - Measure 4.1.1: Participate in Statewide and Regional freight and transportation planning initiatives.
  - Measure 4.1.2: Coordinate with local governments to support context-sensitive freight and land use planning.
  - Measure 4.1.3: Investigate the feasibility of establishing truck routes on roadway facilities which can accommodate freight traffic safely and efficiently and examine how the roadways should be regulated.
  - Measure 4.1.4: Consider the noise and air quality impacts of freight transportation systems when locating freight land uses and truck routes adjacent to residential, recreation and medical uses.

2.2 Stakeholder Outreach

Robust stakeholder engagement took place throughout the development of this plan to inform the public on the process and findings and to engage the private sector. Achieving participation from the private sector in planning studies, particularly long-range planning efforts, is challenging as they are justifiably focused on day-to-day operational issues. The project team implemented an outreach program throughout the study with targeted and proactive outreach.

Initial efforts included the development of a plan brochure which utilized infographics to describe the scope of the project and the importance of participating in the effort. A Stakeholder Advisory Committee

(SAC) was implemented made up of governing agencies and freight stakeholders in the local community. The members were requested to provide input to the plan by attending three meetings and to provide essential input and feedback on the recommendations and comments of the presentations and deliverables.

In addition to the three SAC meetings, numerous interviews took place throughout the community with key stakeholders. The project team visited the Walmart General Merchandise Distribution Center located in St. Lucie County to discuss commercial loading activity at the Stuart Walmart store. The team also had an on- site interview with the Port Salerno Fishing Dock Authority to discuss local truck activity at the waterfront including development of new truck parking spaces and sidewalks.

Due to the Covid-19 Pandemic many outreach meetings were held through video conferencing, teleconferencing and on the phone including discussions with: the operations supervisor at Southeast Milk about concerns on speeding traffic on SR 710, SLC Realty and Transatlantic Holdings LLC on commercial and warehousing developments and trends, and with Brightline management on the status of the St. Lucie River railroad bridge reconstruction.

Other contacts and discussions included the owners and developers of the Venture Park and Florida Commerce Park developments in Indiantown, the Village of Indiantown Mayor and Village Administrator, staff from multiple offices at the FDOT District 4 including Traffic Operations and Safety, the Rail Section in the Office of Modal Development, the District Freight Coordinator, the Institute of Food and Agricultural Sciences (IFAS) at University of Florida (UF) and staff from the City of Stuart and Martin County.

Presentations were also made to various groups in the community to share information on the plan and elicit feedback. Presentations were made to the Treasure Coast Regional Planning Council (TCRPC) Comprehensive Economic Development Strategy (CEDS) Committee and the Village of Indiantown Council.

2.2.1 What We Heard

The first SAC meeting took place on Friday, January 24, 2020 from 10:30 to 11:30 A.M. at the Board of County Commissioners 4th Floor Workshop Room, 2401 SE Monterey Road, Stuart, FL 34996. Eleven stakeholders attended the meeting. The second and third SAC meetings were held virtually via GoToMeeting due to the COVID-19 Pandemic. SAC Meeting #2 was held on March 18, 2020 from 2:00 P.M. to 3:30pm and sixteen stakeholders remotely attended the meeting via phone or Go-To-Meeting to discuss existing conditions and draft recommendations. The third SAC meeting took place on Wednesday,

May 20, 2020 from 10:00 A.M. to 11:30 A.M. and twelve stakeholders attended. Attendees did not have objections to the recommendations and it was agreed a collaboration in the form of a Freight Committee was a good idea with a format of semi- annual meetings with substantive agendas. Summary of what we heard from the private sector:

Roadway Conditions/Design:

- Shoulder widths are too narrow for trucks and emergency vehicles on the rural western roadways including US 98, SR 710, SR 714
- Lighting is an issue for trucks particularly on the main rural roads
- There are fog issues also on the long stretches of rural roadways
- Passing lanes are too far apart
- In rural areas there are tight turning radii with drainage ditches too close to the turn. Some trucks end up in the ditches.
- There are opportunities around Lake Okeechobee and in rural areas for truck pull-offs. In California they allow truck parking in rural/isolated areas just off the side of the road.

Truck Parking:

- American Trucking Association (ATA) has now listed truck parking as their number 3 issue in the country. It is to the point that truckers need to plan and time their day exactly, so they are at a rest location that fits into their schedule and parking rules.
- Congestion from crashes cannot be predicted and has significant impacts on efficient scheduling.
- There is a staging area just south of Martin County in Jupiter. It was asked why this area can't be used for overnight truck parking. Opportunity for tandem staging and hurricane supply staging coordination.
- Consider refurbishing the Park and Ride at the Turnpike access to Martin Highway to allow for truck parking.
- Truckers want a safe and secure place to park [Martin County supposedly has a surplus of truck parking, perhaps that is only along I-95 and not along the Turnpike].
- Federal hours-of-service laws are very strict, and the drivers are monitored electronically all day. The time they are delayed by crashes impacts their day significantly.
- If truckers know how many parking spaces are available ahead of time, they can plan accordingly.

Incident Management:

- There are crashes on SR 710, and when an incident occurs, there is often no opportunity for trucks to turn around. They have to sit and wait for the incident to be cleared. They do have alternative paths, but the stretches of roadway are too long without a turn around to another road.

Local Policy:

- Development codes should require that businesses allow for trucks (any truck delivering to them, not just their fleet) to be able to park and take a break. In other words, third party providers can't park there but their own fleet can.

- Palm Beach just built a warehouse that is all robotic. The entire business park bars any truck parking for breaks utilizing bollards. The trucks are expected to come and go and not to take a break.
- Local communities need to allow in their codes that retail and commercial locations can provide space for driver breaks.
- The private sector pushes back on public truck parking. Need a tax incentive.

Public Outreach/Education:

- One of the biggest needs today is public education. Florida Trucking Associations has a successful program. Need to provide for public education on truck safety, driving with trucks in stream (how hard to stop, may be carrying eggs), cross section of people that are truckers, connection to/importance of goods delivery. Reshape the image.
- Using Twitter to share experiences.
- Law enforcement education also.
- There are programs like "Touch A Truck" which can be part of larger events.

Autonomous vehicles:

- Need to design and plan for them. They are not adaptable to the last mile, in particular on-site circulation inside of parking lots. Parking lot design for green space and landscape islands are not maneuverable.
- Believe that autonomous vehicles are a long way away. Connected vehicles are happening now.

Cargo Theft

- Cargo theft is a real issue in Florida and providing safe and secure truck parking is a real need.

Railroad Crossings:

- The FEC Bridge over the St. Lucie River is a critical location to maintaining operations of the economic engine of Martin County Waterways. The bridge is over 100 years old and maintenance and/or replacement of the bridge is critical.
- In Jacksonville there was an incident where a bridge broke down and the bridge was so old there were no replacement parts. Bridge blocked maritime traffic for 30 days while new part was manufactured

Waterways:

- There are barges in the waterways. Barges hit the railroad bridge on a regular basis.

There was a high level of synergy that evolved during the SAC meetings. The open discussions between the private and public sector were engaging, informative and educational and there some discussions that led to immediate and specific actions. Some notable results include:

- At the conclusion of SAC Meeting #1 the TCRPC representative thanked the MPO for a new learning experience and that freight and goods movement has significant social impacts.

- After SAC Meeting #1 the MPO received an email from FDOT District 4 Freight Coordinator indicating "that was one of the most sincere and productive meetings with industry I have observed since my time as the freight coordinator. Very well done."
- A depth of understanding of the need for truck parking as a safety and industry issue. One local community set forth a proposal to allow trucks to park and rest at delivery locations and the Florida Turnpike indicated they were open to requesting policy change at the Palm Beach Gardens Staging area to allow truck parking. The Turnpike also indicated they are open to all suggestions during the Project Development & Environment Phase to introduce expanded truck parking at plazas. They directed the team to coordinate with FDOT District 4 as the District will be managing parking at the plazas.
- Information on narrow shoulders and FDOT design guidelines resulted in a County request to add twelve-foot shoulders to the scope of services of the US 98 Highway resurfacing project.
- SAC discussions on the severity and reliability of impacts of crashes on rural highways led to a heightened awareness resulting in safety criteria being developed and safety projects moving to top of project lists.
- In June of 2020 US 1 and Dixie Highway were closed over the St. Lucie River creating a significant gap in the regional network. The FDOT District 4 Freight Coordinator reached out to the MPO to obtain the SAC contact list to reach out to the community and share FDOT updates on restoration projects.
- During SAC Meeting #3 a trucking industry representative indicated that they have a volunteer in Miami-Dade County that needs a staging area to hand out Personal Protective Equipment to drivers. The Turnpike representative moved to coordinate and the project team connected the trucking industry representative with District 4 and the privately owned I-595 Truck Stop in Broward County.

3.0 MARTIN COUNTY FREIGHT TRANSPORTATION SYSTEM

3.1 Regional and Local Roadway System Overview

Martin County is located in the heart of Florida's "Treasure Coast" which includes Martin, St. Lucie and Indian River Counties. Martin County is an important gateway into the South Florida region, which is comprised of Palm Beach, Broward, Miami-Dade and Monroe counties. Figure 3.1 illustrates the regional context of Martin County, and how the County connects to the Treasure Coast and South Florida regions.

Freight operators do not recognize County or municipal jurisdictions and are focused on overall freight mobility and access to markets. The South Florida region includes the State's largest consumption market and agglomeration of freight portals including:

- Port Miami
- Port Everglades
- Port of Palm Beach
- Miami International Airport

Much of the Florida import and export trade that occurs in South Florida travels by truck on the highways that traverse through Martin County. Western Martin County is also an agricultural area supplying food products to the local, regional, state, and national economy.

In addition to the regional freight movement, local commercial deliveries and goods movement is an important component of the economy. Critical goods and services are delivered primarily via truck to local retailers for purchase and consumption by local residents. Improvements to Martin County roadways facilitate the efficient delivery of important goods and services and often serve as "First Mile/Last Mile" connectors for truck movements.

Figure 3.2 illustrates the 2018 Average Annual Daily Traffic (AADT) on the major roadways in Martin County. Major roadways in Martin County are inclusive of Highways, Expressways, Principal Arterials, Minor Arterials and Major Collectors. The most significant volumes are on the major expressways, including I-95 and the Florida Turnpike. Other significant traffic volumes are on SR 76, US 1, and SR 710. More significant for the movement of freight is the volume of trucks moving on these roadways. Figure 3.3 displays the 2018 Average Annual Daily Truck Traffic (AADTT) within Martin County. Roadways with high volumes of AADTT include the Florida Turnpike and I-95 expressway. Figure 3.4 shows the top 10 existing truck percentage roadways in Martin County and 70% of the top 10 truck percentages are located in the western part of the County. SR 76/ Kanner Highway from US 98 to SR 710 has the highest percentages of truck volumes (40.4%), followed by US 98 (38.7%), SR 710 (27%), US 1 (22.8%), etc.

Figure 3.1 - Treasure Coast and South Florida Regional Freight Network

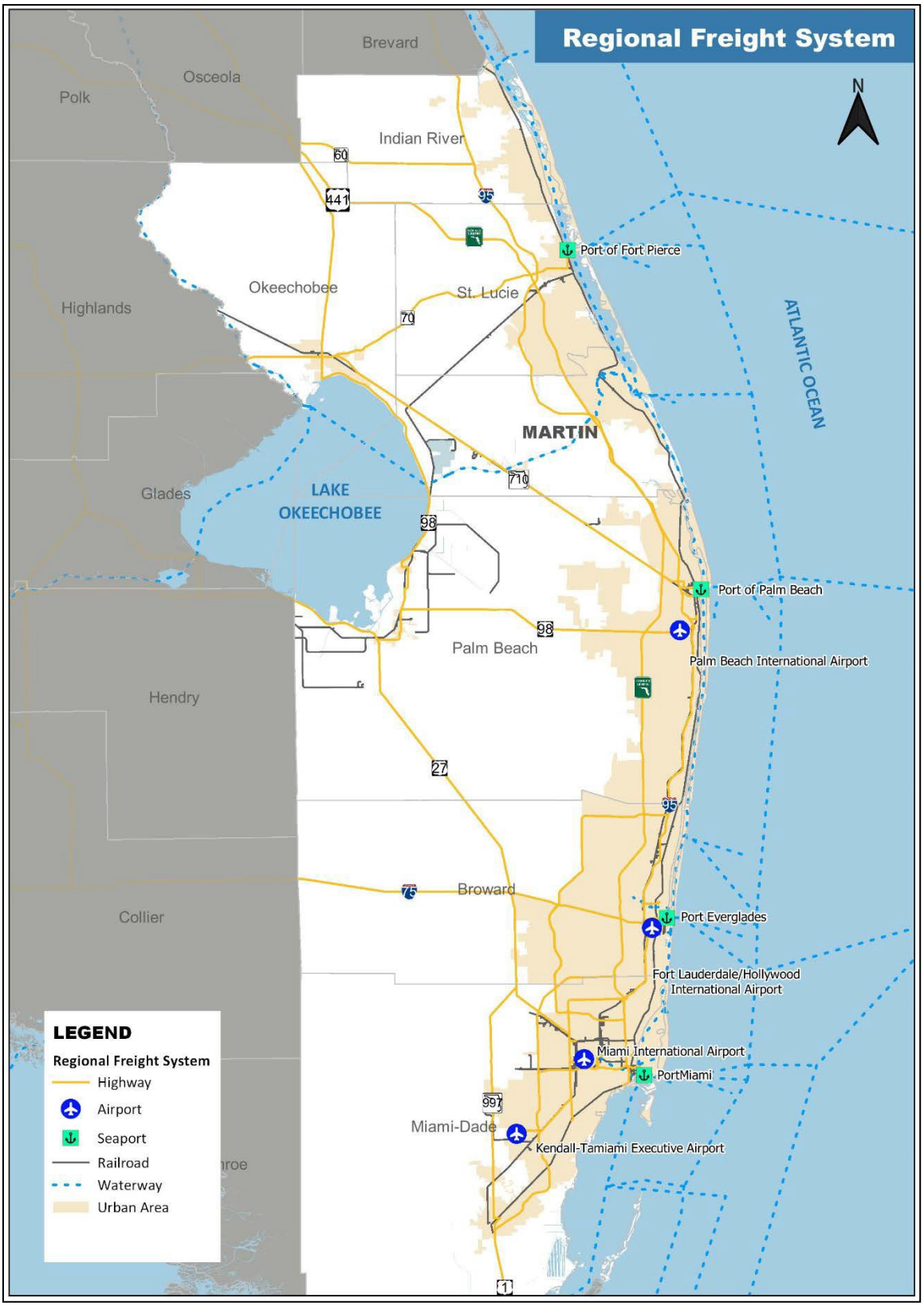


Figure 3.2 - 2018 Martin County Average Annual Daily Traffic

Figure 3.3 - Truck AADT on Martin County Highway System

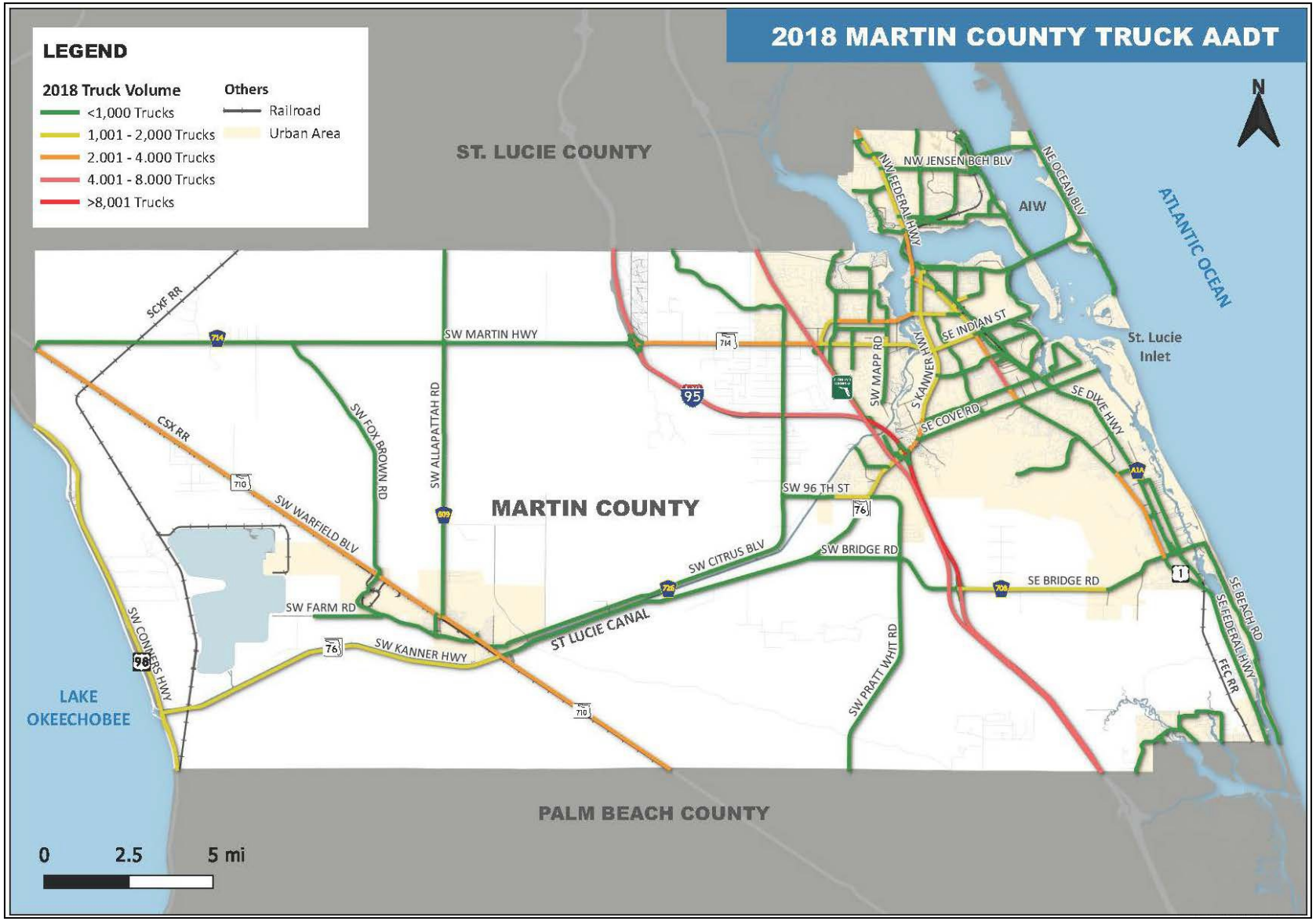
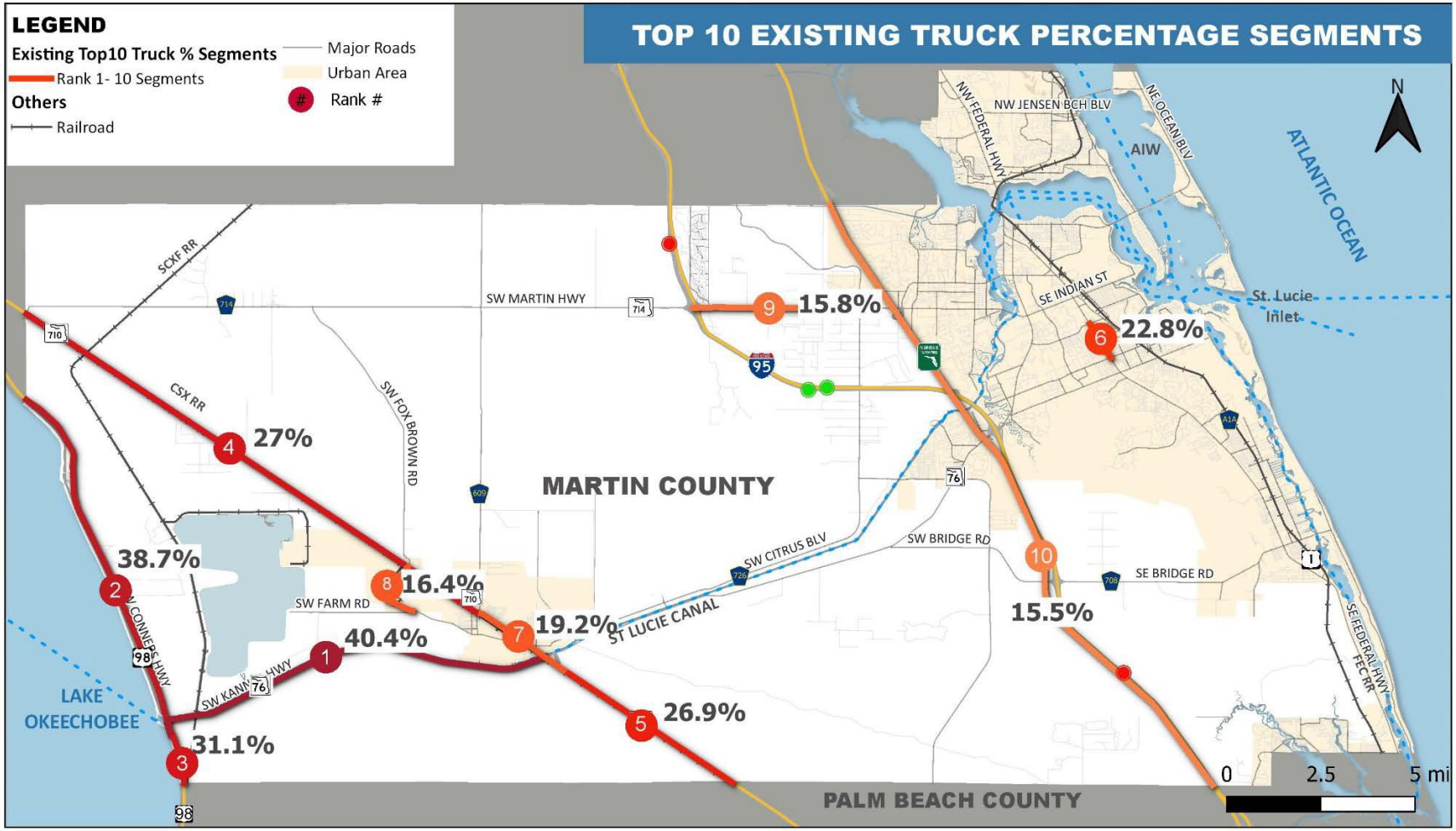


Figure 3.4 - Top 10 Truck Percentage on Martin County Highway System (2018)



3.2 Railroads

The County is served by three private rail companies including the Florida East Coast Railroad (FEC), the CSX and the South Florida Central Express (SCXF).

- The Florida East Coast (FEC) Railroad is based in Jacksonville, Florida. The FEC is the only railroad which follows the state's eastern coastline operating 351 miles of Class II freight rail with approximately 26 miles through Martin County.
- The CSX, also based in Jacksonville, operates about 21,000 route miles (including 2,800 miles in Florida) in 23 states, the District of Columbia, and Canada. CSX is one of North America's Class I railroads and operates 25 miles of railway in Martin County, where it provides limited carload service.
- South Central Florida Express (SCFE), based in Clewiston, was created in 1994 by U.S. Sugar Corp. as a wholly-owned subsidiary and operates independently as a common carrier. SCFE is a short line railroad governed by the Federal Railroad Administration.

Information from the USDOT Federal Railroad Administration (FRA) was analyzed for the 42 strategic crossing locations indicating that there are generally 21 trains per day on the FEC railroad and there are 5 trains per day on the CSX railroad and 2 per day on the SCFX.

3.3 Seaports & Waterways

Martin County's is in close proximity to the Port of Palm Beach which is located approximately 15 miles south of Martin County, in Palm Beach County and the Port of Fort Pierce is located about 15 miles to the north of Martin County in St. Lucie County. Port Everglades in Fort Lauderdale, Port Miami, and Port Canaveral can also be reached from Martin County within two hours of driving.

The Port of Palm Beach is the 4th busiest seaport (by value) in Florida and the 18th busiest container port in the U.S., located in Riviera Beach, the majority of traffic is related to container traffic, accounting for over 1 million tons each year. Other niche markets include break-bulk, cement, sugar, molasses, asphalt, and scrap metal. Though the Port of Palm Beach has had a decline in cargo volume, most commodities are expected to increase or remain constant, and container traffic is also expected to have steady growth.

Port of Fort Pierce is located in the City of Fort Pierce, within St. Lucie County. The port has historically served St. Lucie, Indian River, Okeechobee, Highlands, Hendry, Glades, and Martin counties. No container cargo has been handled at the Port since 2012, however, the port does export break, neo and dry bulk cargo via barges. However, in the past year the Port has been successful in securing its first mega-yacht docked at the Port of Fort Pierce, helping the County fulfill its promise of turning the Port into a repair center

Source: TCPalm: -The Saint Nicholas, 230-foot Yacht docked Ft. Pierce Oct. 2019

for luxury vessels. In May 2019, a private firm, Derecktor was awarded a 30-year, $37 million contract from the County to operate a mega-yacht repair center on 12 acres of County-owned land at the Port. Derecktor took possession of the property in November 2019, a month after it completed demolition of the citrus packinghouse, according to its lease with the County. The County still owns the property. Derecktor plans to create a training program with Indian River State College, where residents will learn how to repair mega-yachts. Derecktor estimates hiring 83 employees in the first year and 173 employees by year five.

It is anticipated the spinoff from these recent events will be a boon for the region including the Martin County maritime industries located along the Atlantic Intracoastal Waterway (AIW), the Manatee Pocket and the St. Lucie River. American Custom Yachts (ACY) is located on the St. Lucie River between the Florida Turnpike and I-95 on the south side of the river with 36 acres of marine facilities which accommodate the construction of large custom yachts as well a full range of marine services on site, including yacht repair, repowering and refitting, complete painting services and storage for over 300 vessels.

The Atlantic Intracoastal Waterway (AIW) runs parallel to the east coast of the U.S. and serves as a mixed-use transportation corridor, transporting cargo, goods. It is home to the yacht building and service industry. The St. Lucie River's and the C-44 Canal make up the eastern half of the Okeechobee Waterway which is Florida's only cross-state waterway, connecting the cities of Stuart and Ft. Myers through Lake Okeechobee, and is the only waterway connecting the Atlantic Ocean and the Gulf of Mexico.

Cargo movements in both the AIW and St. Lucie Canal have dropped off significantly in the last several years. Cargo movement in the AIW has dropped off substantially since 2012 as cargo had been 90% to 99% related to shipping petroleum to Florida Power and Light South Florida plants which were converted from petroleum to natural gas in prior years. Since 2012 petroleum cargo has been reduced to zero and now very little cargo moves through the AIW. Freight activity along the St. Lucie Canal is also beginning to drop off significantly. The Port Mayaca Lock has experienced a 32.3% drop-in cargo activity from 31 barges in 2018 to 21 barges in 2019 and the St. Lucie Lock has experienced a 57.1% drop from 91 barges in 2018 to 39 in 2019. Note, that during the latest FDOT update of the FDOT SIS, the St. Lucie Canal/Okeechobee Waterway was removed from the system perhaps due to this decline in activity.

3.4 Airports

Martin County's existing local airports are not receiving commercial cargo, but the County is located within two-hours driving distance of six major international airports within the region:

- Palm Beach International Airport (22 miles south)
- St. Lucie Airport (24 miles north)
- Fort Lauderdale-Hollywood International Airport (65 miles South)
- Melbourne Airport (70 miles North)
- Miami International Airport (89 miles South)
- Orlando International Airport (125 miles Northwest)

The general aviation airports in Martin County are Witham Field, located in the City of Stuart, and Indiantown Airport, located in Indiantown. The nearest SIS airport is Palm Beach International Airport, located in West Palm Beach.

The Witham Field airport (SUA) is located one mile southeast of the central business district of the City of Stuart in Martin County. The SUA field has three runways, with the longest runway measuring 5,828 feet long by 100 feet wide and can accommodate most General Aviation (GA) aircrafts. Witham Field primarily supports business and corporate traffic. Witham Field also supports recreational activity, flight training, and chartered flights. Law enforcement and air ambulance operations are also supported. The field's fixed base operators (FBOs) serve both local and transient users. The SUA control tower is open from 7:00 AM to 8:00 PM daily.

According to 2014 Florida Aviation System (FAS) Plan data, there were 198 aircrafts based at SUA with 4,990 commercial operations and 74,784 GA operations. FAS data from 2017 illustrates there were 313 Aircrafts based on the field (single engine aircraft 188, multi-engine airplanes 56, jet airplanes 58, helicopters 10, and glider aircraft 1), and average aircraft operation was 330 flights per day (52% transient general aviation, 44% local general aviation, 4% air taxi and <1% military).

3.5 Truck Parking

Truck parking facilities fulfill an important role in the freight industry by providing a space for drivers to stop for breaks, fuel, food, restroom breaks, and sleeping. These facilities can provide a range of services, based on how a particular location is used. For instance, some drivers work locally and only need a space to park overnight. Facilities serving these drivers will typically only offer the bare minimum of a space to park, along with a fence and security. On the other hand, drivers who are making long-haul movements and need a place to sleep overnight would be more apt to look for a facility offering more amenities such as showers, a restaurant, and restrooms. Truck parking plays a pivotal role in keeping drivers and our roadways safe.

The Hours of Service (HOS) regulations for Florida Truck Drivers are issued by the Federal Motor Carrier Safety Administration (FMCSA) and establish the working hours that truck drivers can operate commercial vehicles. This rule limits the number of daily and weekly hours truck drivers spend driving. HOS regulations also restrict the number of hours a truck driver can drive consecutively without rest. An understanding of these HOS mandates is an important component of understanding continued parking shortages, despite efforts to expand existing facilities or build new ones. To maximize their working hours, drivers would ideally stop just short of their maximum hours of service. However, a parking facility may not be located at that exact moment in time. Further, the closest available parking facility may already be full. As a result, drivers must risk exceeding hours of service, or utilize valuable hours of service to locate a place to park. Time wasted can be significant as some areas have very limited truck parking and many over-the-road/long-haul drivers may not be familiar with a local geography. What we heard from the SAC trucking industry members is that the time spent in back-ups caused by crashes can severely impact their driving hours especially when they do not have the ability to turn around. Parking challenges also exist for local drivers as well. Most residential communities have restrictions which require a driver to park his/her truck elsewhere. Throughout the region, this restriction has created a significant demand for overnight truck parking lots.

There are four facilities within Martin County where trucks can legally park which provide 166 public spaces in total: two are at the I-95 rest areas and two at the I-95 weigh stations. Table 3.1 illustrates each of these truck parking facilities along with the municipality, available spaces and a maximum time limit of each location. Note, a 2017 truck parking availability study reported there is still a shortfall of between 73

to 81 spaces when these facilities are included. Furthermore, all of these facilities are on I-95 and do not serve the vast majority of the trucks on the network.

Table 3.1 - Truck Parking Locations in Martin County

	Trucking Parking Facility	Route	Municipality	Type	Truck Spaces	Limit
1	Martin County Rest Area (Northbound)	I-95N	Palm City	Public	57	3 hours (by rule)
2	Martin County Rest Area (Southbound)	I-95S	Palm City	Public	57	3 hours (by rule)
3	Martin I-95 Weigh Station (Northbound)	I-95N	Hobe Sound	Public	18	No limit
4	Martin I-95 Weigh Station (Southbound)	I-95S	Palm City	Public	34	No limit
Total Truck Spaces					166	

Source: U.S. Department of Transportation Federal Highway Administration.

3.6 Martin County Freight and Goods Movement Related Land Use

The County's freight transportation infrastructure provides the means by which freight and goods move into, out of, and within the County. In addition, land use is an important factor which impacts how freight and goods move throughout the County. Three categories of land use are defined as having a propensity for freight and goods movement as follows:

- **Agricultural land uses** (e.g., farms, packing facilities). Martin County is home to an established agricultural community, located largely to the south and west. In 2017, approximately 219,547 acres were designated for some type of agricultural use. The County has three separate agricultural land uses: Agricultural, AgRanchette, and AgTEC. Data from the University of Florida Institute of Food and Agricultural Services (UF/IFAS) indicates that 69% of the agricultural land in Martin County is for pasture grazing followed by sugar cane (13.32%), cropland (9.23%) and various other uses at less than 2% of total use. The main crops grown in Martin County include citrus, potatoes, beets, spinach, sweetcorn, sugarcane, tomatoes, peppers, melon, cucumber, squash, green beans, basil, sod, and shrimp and clams through aquaculture. Other products are ornamentals, cattle production, an egg farm (producing over 10 million dozen eggs per year), a flour milling facility, juice concentrate plant and cabbage farm complete the agriculture segment.
- **Commercial Property** (e.g., retail, office, supermarkets, restaurants). Commercial land uses in Martin County totaled 3,180 acres in 2017. The County has four commercial land use categories: general commercial, commercial limited, waterfront commercial, and commercial office residential. Figure 3.5 illustrates the location of commercial land uses in red. The figure clearly identifies the center of commercial activity is along the US 1 corridor through the eastern section of County and it intensifies as it traverses through the more densely populated areas from Cove Road to St. Lucie County. Note, Downtown Stuart has a specified Downtown land use category. Other corridors of significance are along SR 714/Martin Highway and Martin Downs Boulevard, SR 710 through the Village of Indiantown and Jensen Beach Boulevard in northern Martin County. Connecting these locations to the regional roadway network upon appropriately designed and designated arterials will assist in facilitating the freight and goods movement in Martin County.

- **Industrial land uses** (e.g., warehousing/distribution centers). Industrial land uses represent warehouses, distribution centers, light manufacturing, marine industries and other light and heavy industrial uses. Historic real estate data was obtained and analyzed to review where development is occurring. Figure 3.6 shows a histogram of historic industrial property development in Martin County. The chart indicates that industrial development activity was very low from the period of the great recession in 2009 to 2016. Since 2017, activity has picked up dramatically especially at the northwest corner of the interchange at Florida's Turnpike and Martin Highway where Cargo Way Buildings 16 and 17 have recently been constructed. Figure 3.5 shows the location of industrial these facilities in purple. The map shows several areas where industrial properties are prevalent including: The Village of Indiantown, the SR 714 Martin Highway/Florida's Turnpike area, the area located off of SR 76 (Kanner Highway) between I-95 and the Florida's Turnpike, at the southern terminus of Commerce Avenue area between US 1 and Dixie Highway and on Bridge Road just west of US 1.

Figure 3.5 - Martin County Future Land Use map

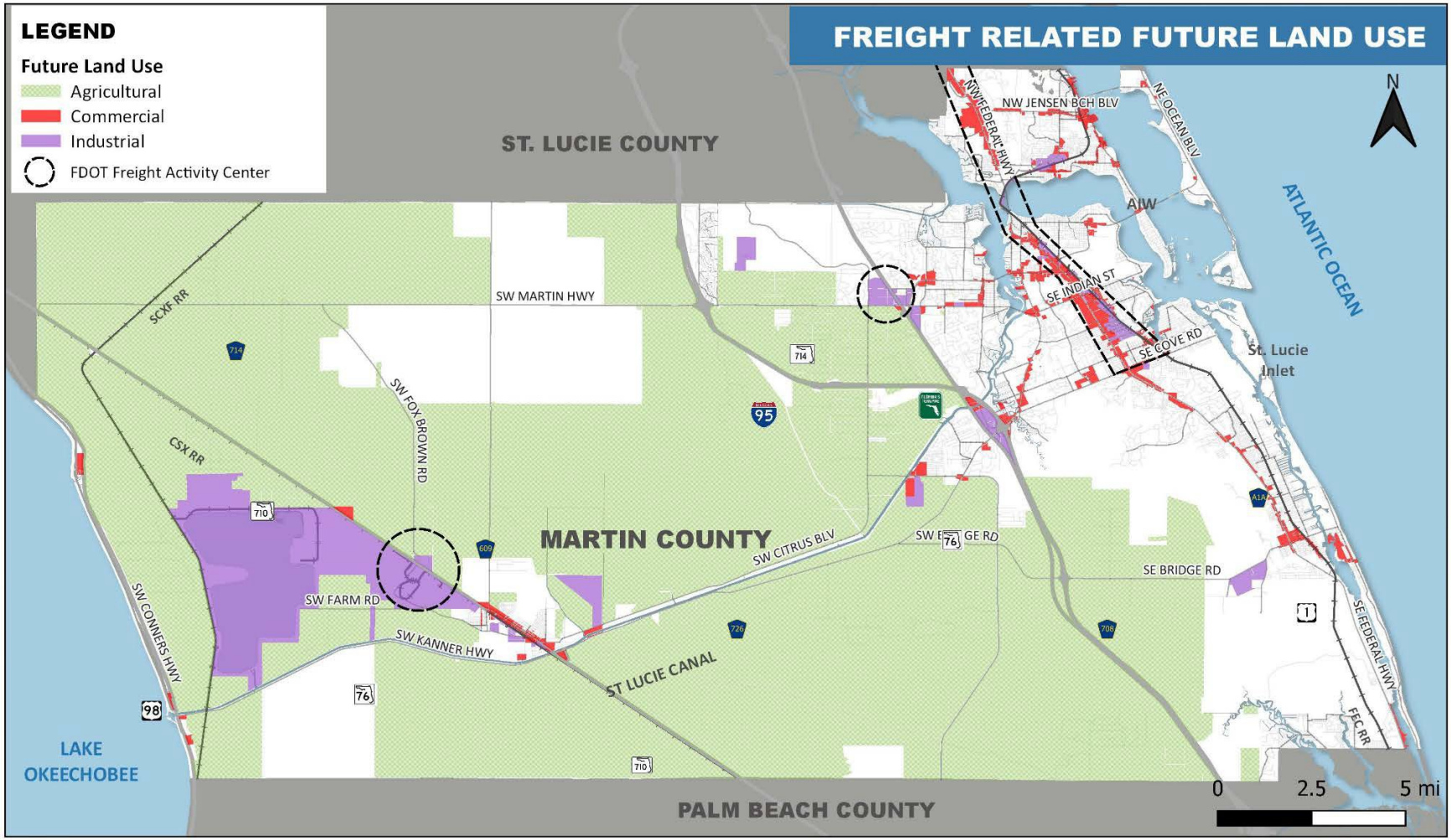
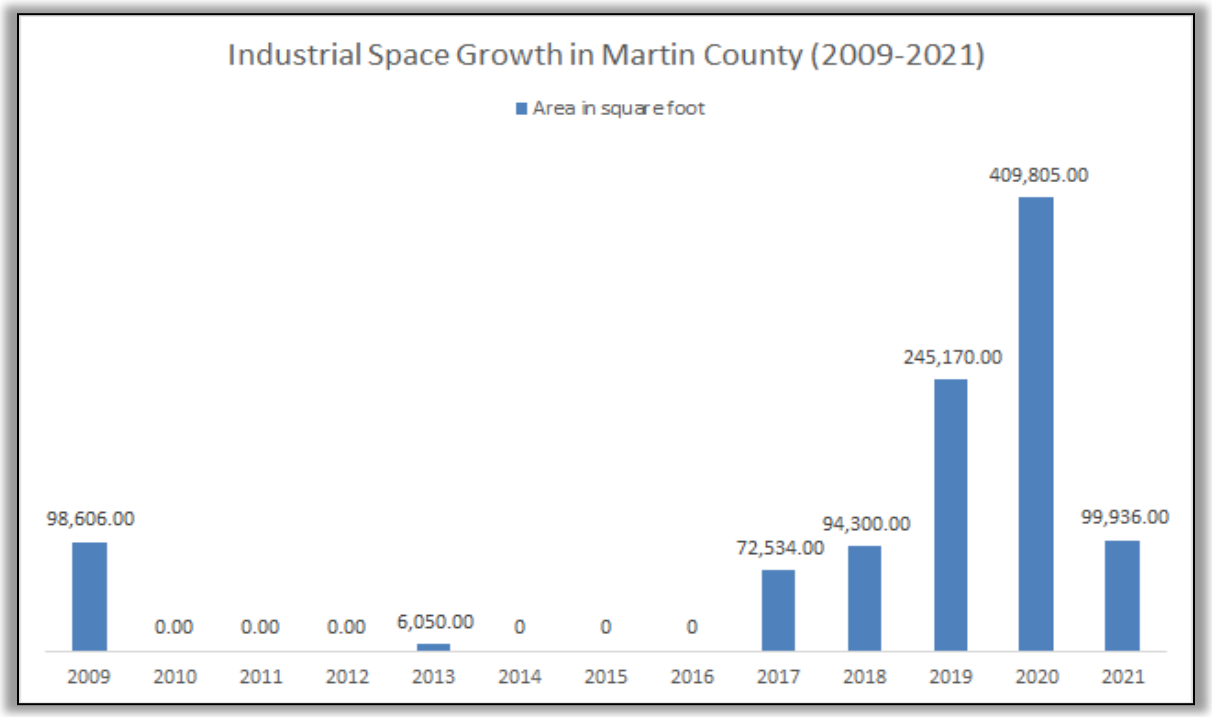


Figure 3.6 - Martin County Historic and Approved Industrial Space Development



Source: Transatlantic Holdings LLC, CoStar Real Estate Database

3.7 Foreign Trade Zones

In the United States, Foreign Trade Zones (FTZ) are secure areas under U.S. Customs and Border Protection supervision, these areas are located in or near ports of entry. They are the U.S. version of what are known as free-trade zones internationally. The benefit of an FTZ is that goods receive the same U.S. Customs treatment as if they were still outside the United States, but may be reconfigured or manufactured on U.S. soil. Duties are only paid when the goods are transferred to the U.S. consumer market. This lowers the number of tariffs and taxes paid by companies engaging in international trade by eliminating and/or delaying payment. Effective use of FTZs creates economic opportunities and competitive advantages for a region. Martin County originally did not include an FTZ within the County boundary, but one was incorporated into the Port of Pam Beach FTZ 135.

FTZ 135 of Palm Beach County includes Site #4 with 66 acres at Witham Field Airport, that is related to the new U.S. Customs and Border facility at the airport. The U.S. Customs Facility at Witham Field is the first intermodal clearance facility of its kind built in Florida. This facility provides boat owners, pilots, residents, and visitors a convenient opportunity to clear U.S. Customs without the need to travel to Fort Pierce or West Palm Beach for clearance.

3.8 Functional Classification

FDOT 's functional classification (Figure 3.7) is the process to group the streets and highways into different classes according to the service they provide. The roadways are generally categorized by five (5) categories that is common to rural and urban roads; Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local roads. The Arterial system serves the highest degree of through-traffic movement and the largest proportion of travel volume. In Martin County, both I-95 and Florida's Turnpike are designated

as Principal Arterials (Interstate and Expressway) as well as SR 710, US 1, CR 714/Martin Highway from I-95 to US 1, Kanner Highway from I-95 to Downtown Stuart, Cove road from I-95 to US 1, SE Indian Street from Kanner Highway to US 1, and Jensen Beach Boulevard from US 1 to Atlantic Intercoastal Waterway designated as Principal Arterials. US 98, Kanner Highway from US 98 to I-95, Dixie Highway, Bridge Road, NE Ocean Boulevard, SW Citrus Boulevard, SW Pratt Whitney Road and others are designated as Minor Arterials in Martin County.

3.9 Freight Network

Two levels of freight corridors were developed for the Martin County Freight and Goods Movement Plan including Freight Corridors and Freight Supportive Corridors. Freight Corridors were identified as corridors of national and interregional significance including corridors with a Federal Highway Administration (FHWA) NHFN designation or a FDOT SIS Highway, Railroad, and Strategic Growth Railroad designation. In addition to the SIS facilities a network of Non-SIS roadways was added to the Martin County freight network as Freight Supportive Corridors. A Freight Supportive Corridor is an arterial roadway that has high truck volumes or percentages and provides access to local freight and goods movement and/or has been identified in the 2040 Martin MPO Long Range Transportation and/or the 2040 Treasure Coast Regional Long-Range Transportation Plan Freight Element as a freight corridor. The Freight Supportive Corridors include:

- Bridge Road from I-95 to US 1
- Kanner Highway from US 98 to Cove Road
- Cove Road from Kanner Highway to Dixie Highway
- Monroe Street from US 1 to Commerce Avenue
- Indian Street from US 1 to Dixie Highway
- SR 714/Martin Highway/Martin Downs Boulevard/Monterey Road from I-95 to Dixie Highway
- Citrus Boulevard from St. Lucie County Line to Martin Highway
- US 1 from Cove Road to St. Lucie County
- Commerce Avenue from Salerno Road to Indian Street
- Dixie Highway from Salerno Road to SR 714

Figure 3.7 - Martin County Roadway Functional Classification

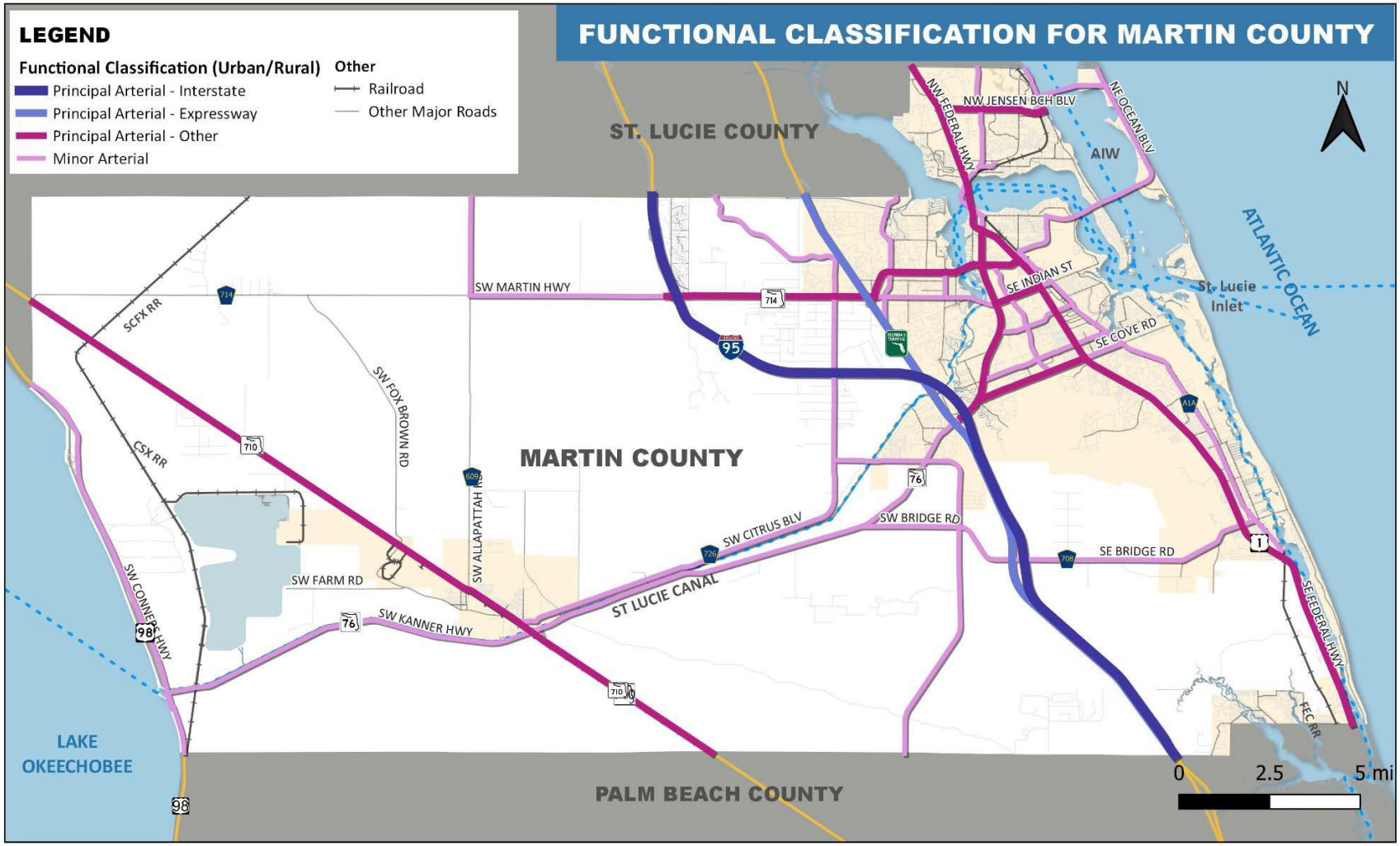
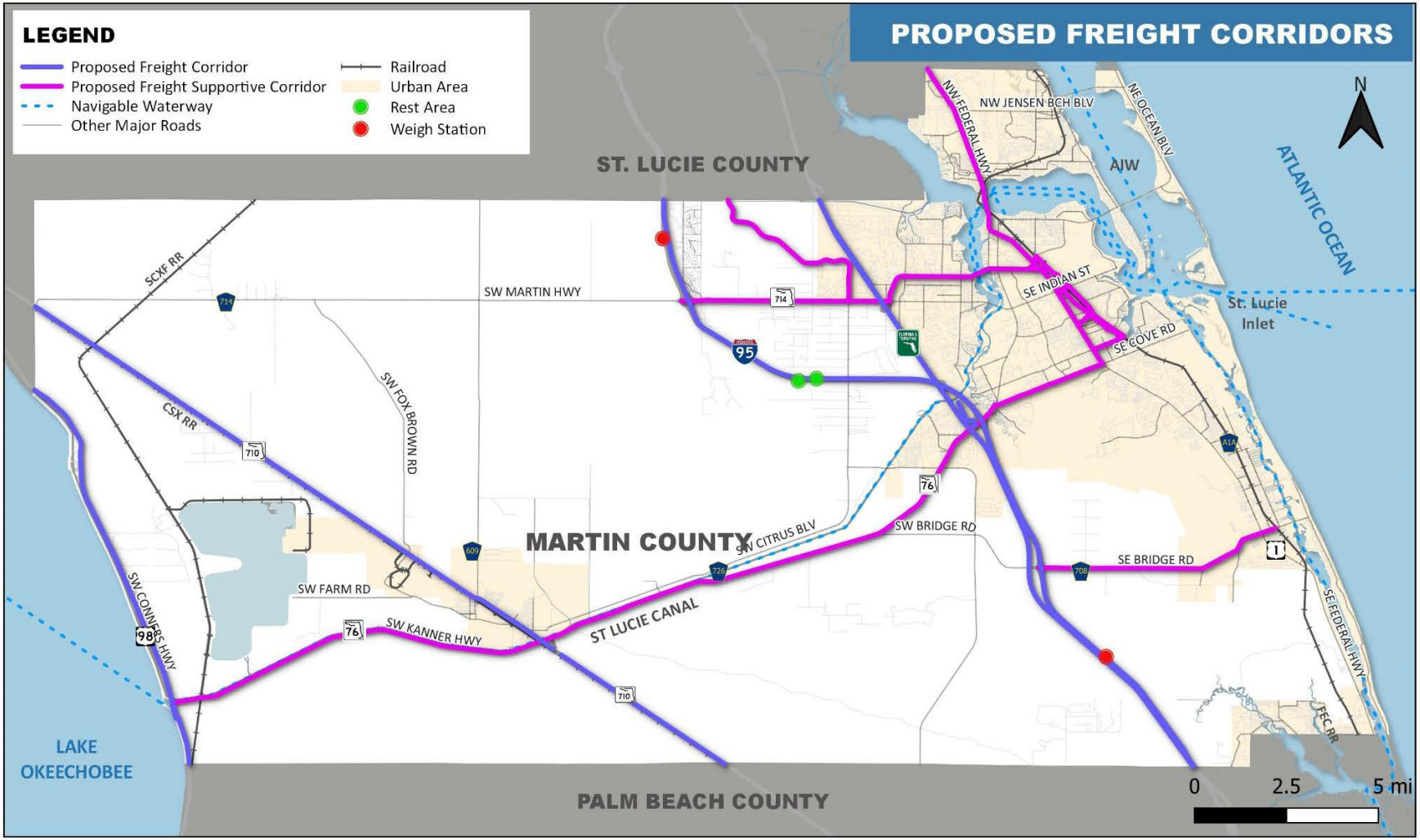


Figure 3.8 - Martin County Proposed Freight Corridors



4.0 SYSTEM PERFORMANCE

4.1 Background

One of the key provisions of the FAST Act's predecessor, Moving Ahead for Progress in the 21st Century (MAP-21), was the establishment of a performance and outcome-based program. The objective was for states to invest resources in projects which would support progress towards the achievement of national goals. Performance goals were established in seven areas: Safety, Infrastructure Condition, Congestion Reduction, System Reliability, Freight Movement and Economic Vitality, Environmental Sustainability, and Reduced Project Delivery Delays.

When the FAST Act, was passed, these provisions remained unchanged, with three exceptions, including one for freight which reads as follows:

MAP-21 required DOT to establish performance measures in a number of areas, including the assessment of freight movement on the Interstate System. MAP-21 also required each State to set performance targets for these measures. The FAST Act now requires that if the Administrator determines that a State has failed to meet (or to make significant progress toward meeting) its freight performance targets within two years after the establishment of the targets, the State must describe in its next performance report to DOT the actions it will take to achieve these targets.

https://www.fhwa.dot.gov/fastact/factsheets/performancemgmtfs.cfm

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The rules establish national performance measures; state Departments of Transportations (DOTs) and Metropolitan Planning Organizations (MPOs) will establish targets for applicable measures.

4.2 FHWA Freight System Performance

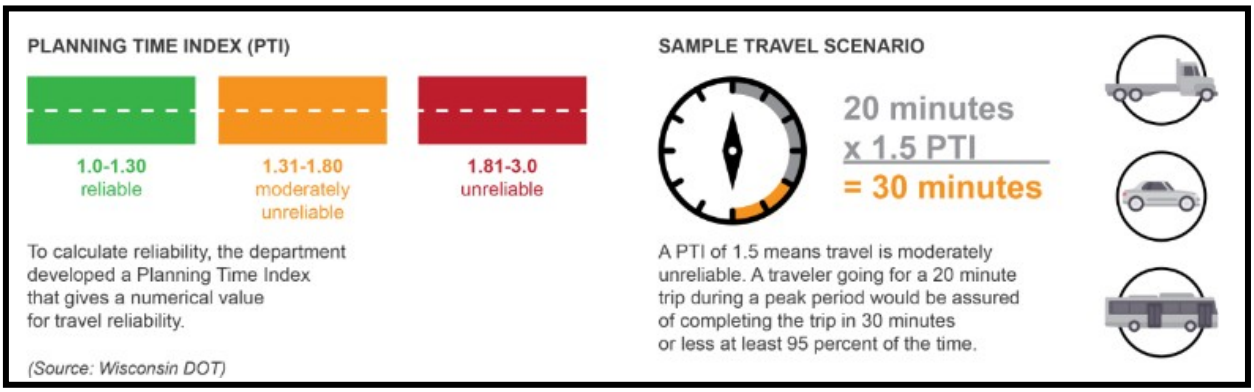
The US Department of Transportation's FHWA has published the performance measures to assess the system performance, freight movement. The FHWA has acquired average travel times on the National Highway Systems for use in its performance measures. The FHWA has finalized the applicable targets for the National Highway System (NHS) and the Non-NHS performance measures.

Implementation differs for the Interstate and non-Interstate NHS measures for the first performance period. State DOTs must have established two and four-year targets for the Interstate, but only a four-year target for the non-Interstate NHS, by May 20, 2018. Those targets were reported in the State's baseline performance period report due by October 1, 2018. The State DOTs have the option to adjust four-year targets in their mid- performance period progress report, due October 1, 2020. For the first performance period only, there is no requirement for States to report baseline condition/performance or two-year targets for the non- Interstate NHS before the mid performance period progress report. This will allow State DOTs to consider more complete data. The process will align for both Interstate and non-Interstate measures with the beginning of the second performance period on January 1, 2022. MPOs must either support the State target or establish their own quantifiable four-year targets within 180 days of the State target establishment.

Level of Travel Time Reliability (LOTTR) is defined as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), using data from FHWA's National Performance Management Research Data Set (NPMRDS) or equivalent. Data is collected in 15-minute segments during all time periods between 6 A.M. and 8 P.M. local time. The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable. Person-miles take into account the users of the NHS. Data to reflect the users can include bus, auto, and truck occupancy levels.

The TTRI is a relatively new performance measure and several agencies are using it as a supplement measures of average congestion. Travel time Index - represented as a percentage of the ideal travel time (Travel Time / Free-flow Travel Time). The Travel Time Reliability Index (TTRI) is related to a "Planning Time Index" (PTI) which incorporates expected travel time plus the time needed to "pad" the trip because the roadway and travel time can be unpredictable. The PTI referenced in Figure 4.1 is the same as the TTR Index.

Figure 4.1 - Infographic for PTI/TTR Index



The NPMRDS system also has an index for trucks called the Truck Travel Time Reliability Index (TTTRI). Per the FHWA requirements, Martin MPO adopted FDOT's performance measure targets including, TTTRI, and agreed to support FDOT's statewide system performance targets on October 22, 2018. Table 4.1 presents the Martin MPO's TTTR Index targets:

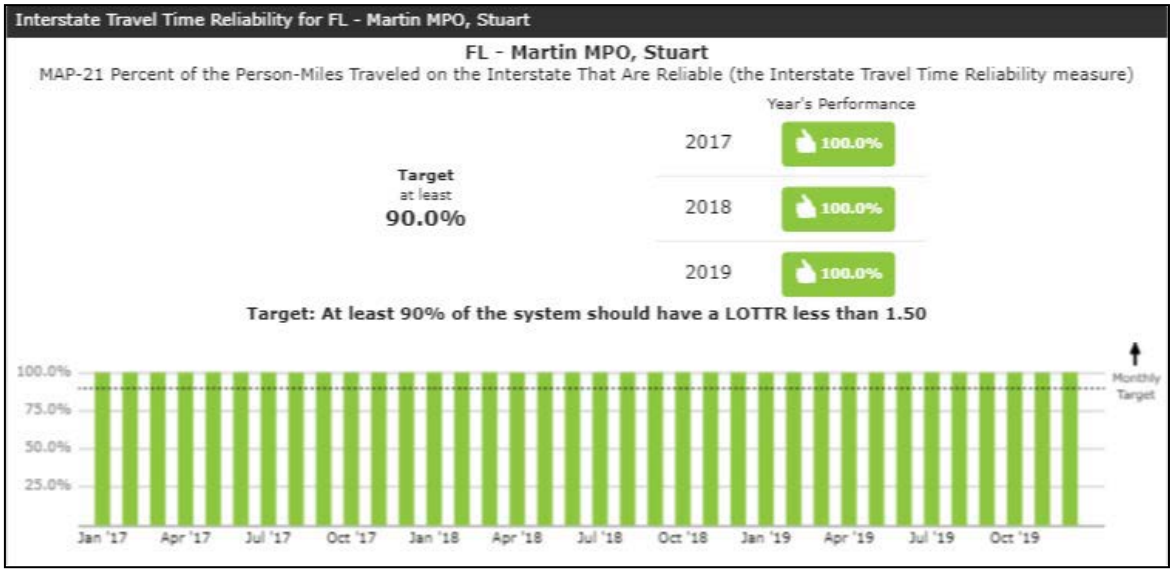
Table 4.1 - Martin MPO Pavement, Bridge & System Performance Measure Targets

Martin MPO Pavement, Bridge & System Performance Measure Targets	4-Year Target
Interstate Pavement in GOOD Condition	60%
Interstate Pavement in POOR Condition	5%
Non-Interstate NHS Pavement in GOOD Condition	40%
Non-Interstate NHS Pavement in POOR Condition	5%
NHS Bridge Deck Area in GOOD Condition	50%
NHS Bridge Deck Area in POOR Condition	10%
Person-Miles Traveled on Interstates that are Reliable	70%
Person-Miles Traveled on Non- Interstates NHS that are Reliable	50%
Truck-Travel Time Reliability Index (TTTRI) on the Interstate	**2.00**

4.2.1 National Highway System (NHS) Travel Time Reliability

Figures 4.2 shows the NHFN (I-95) Person-Miles traveled TTRI for Martin County from 2017 to 2019. The Figure shows that I-95 in Martin County operates better than the 70% target adopted by the County. The percent of the person-miles traveled on the interstate in Martin County are reliable which indicates the TTRI is consistent from day to day or across different times of the day in Martin County.

Figure 4.2 - I-95 Travel Time Reliability for Martin County, FL (2017-2019)



4.2.2 Non-National Highway System (Non-NHS) Travel Time Reliability

Figure 4.3 shows the Non-Interstate facilities in Martin County; that includes the Florida's Turnpike, SR 710, US 98, US 1, Kanner Highway from I-95 to US 1, Martin Highway from I-95 to US 1. The Non-Interstate system was 96.6% reliable in 2019 for Martin County, and Figure 4.4 illustrates Non-Interstate TTRI from 2017 to 2019 for Martin County. Non-interstate travel time was found reliable. The rating shows a travel time reliability of approximately 96.6% for the County from 2017 to 2019.

Figure 4.3 - Non-interstate Roadway at Martin County, FL

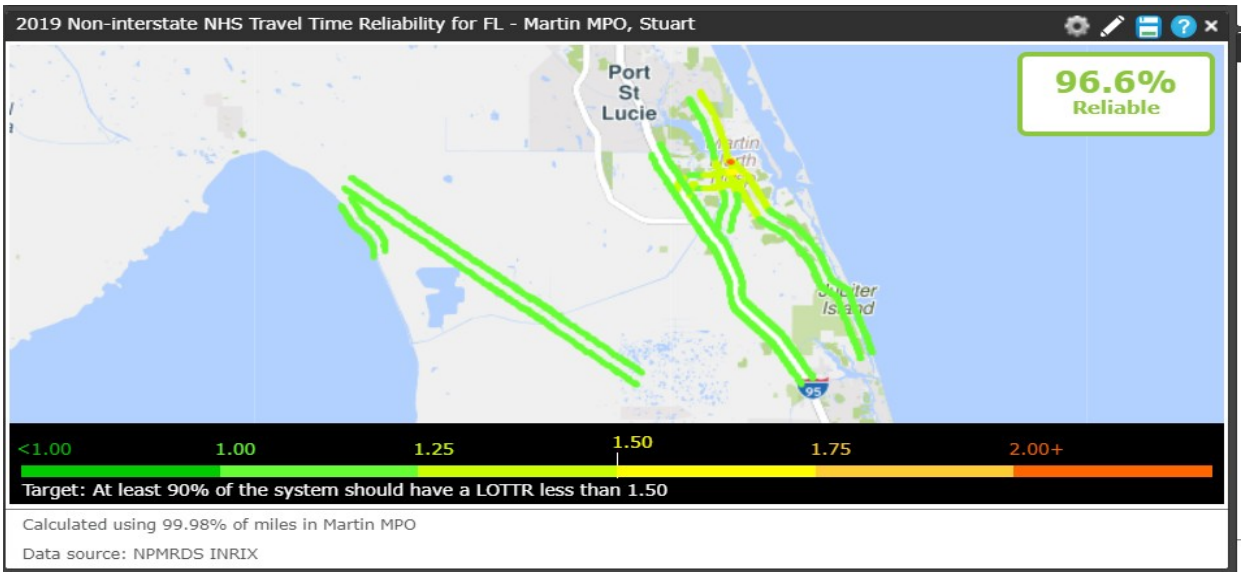


Figure 4.4 - Non-NHS Travel Time Reliability for Martin County, FL (2017-2019)

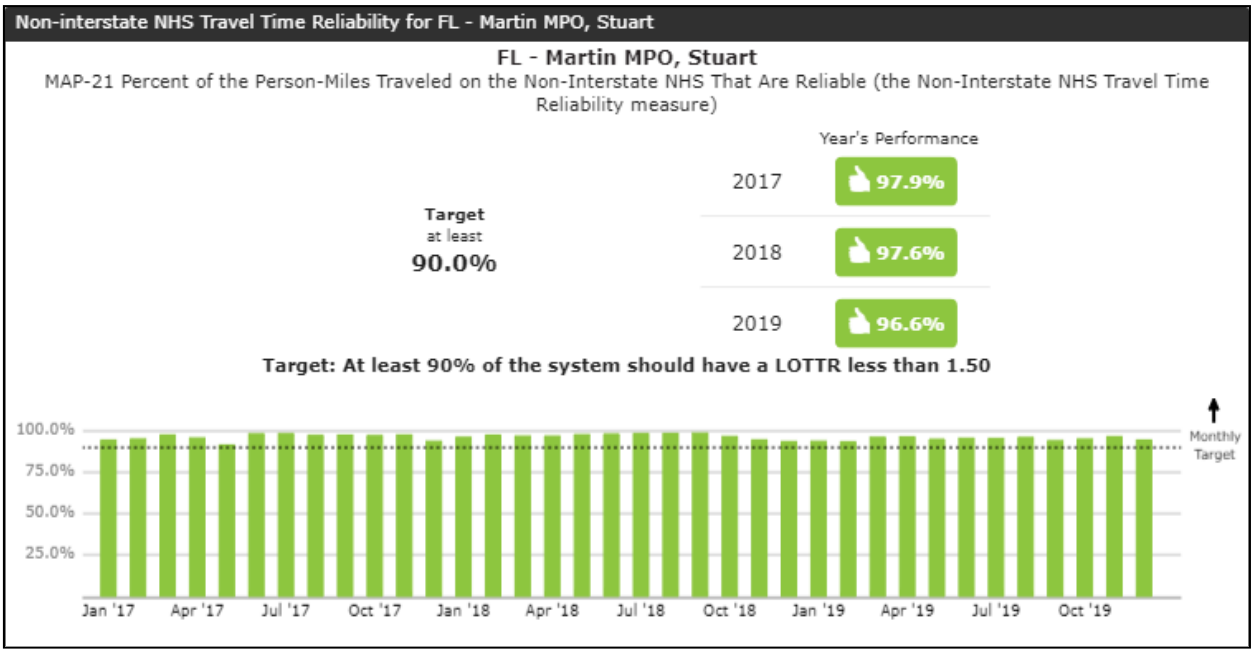


Figure 4.5 shows the 2019 Martin County TTRI. The TTRI value is below 1.20 in the I-95, Florida's Turnpike, SR 710, and US 98 but east side of the County's TTRI value is higher than 1.20. US 1 TTRI values vary from 1.10 to 1.70; in the Downtown Stuart area, the TTI at US 1 is high (Above 1.40), which indicates the congested roadway at that segments. The TTI value at Cove Road from I-95 to US 1, Martin Downs Boulevard from I-95 to US 1 is also greater than 1.40. Kanner Highway /SR 76's TTI value is also in high range (from 1.30 to 1.70).

4.2.3 Truck Travel Time Reliability

Martin MPO adopted a 2.0 TTTRI to represent the level at which truck travel times becomes unreliable. The data base only shows TTTRI for Martin County from 2017 to 2019. The TTTRI varies from 1.12~1.18, which is less than the Martin MPO's target value 2.00, illustrating the interstate travel time is reliable for trucks in the County.

Figure 4.5 - Travel Time Reliability Index (TTI) for Martin County, FL (2019)

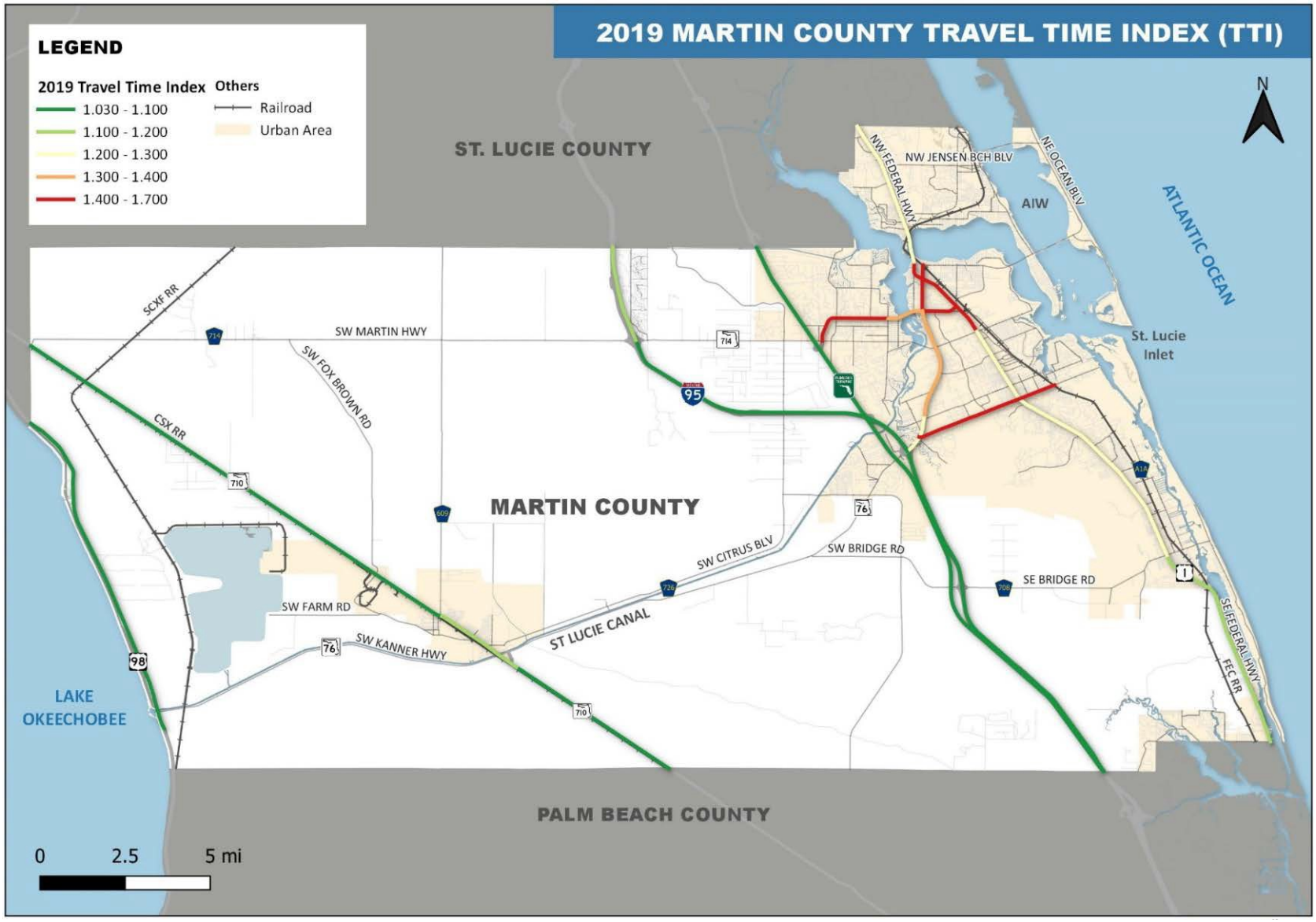
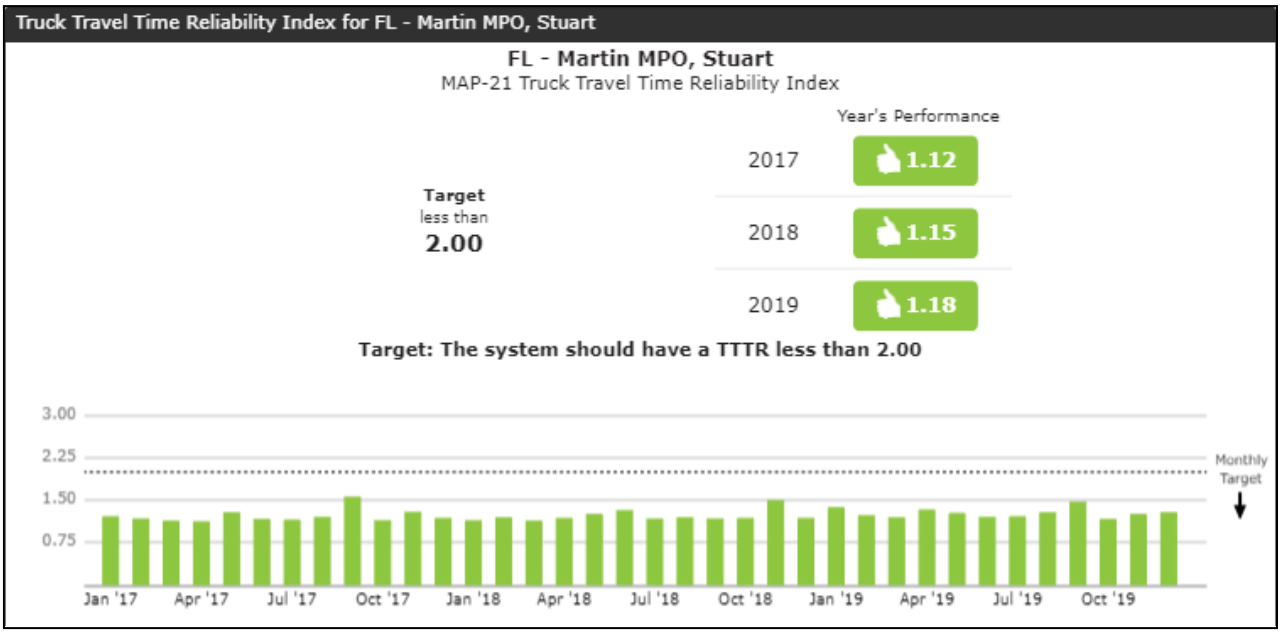


Figure 4.6 - Truck Travel Time Reliability Index for Martin County, FL (2017-2020)



4.3 Roadways

Recommendations were developed for the Freight and Freight Supportive corridors based on freight corridor designation, programmed improvements, analysis of roadway design, projected Year 2045 volume to capacity ratios and stakeholder input. With a clear understanding of the primary freight network and function in Martin County, the freight improvement needs were analyzed to determine the appropriate type of investment strategy to address freight needs, while also making it compatible with the community context and land use. Investment strategies include safety improvements, new and expanded roads to provide more capacity for freight and commuter travel; operational strategies to improve travel conditions within corridors while minimizing impacts to adjacent land uses; separated grade crossings to relieve traffic bottlenecks on key freight and commuter corridors.

4.3.1 2045 Volume Capacity (V/C) Ratio

The 2045 LRTP needs assessment reports identified roadways with high volume capacity (V/C) road network projections. The 2045 Needs Assessment Study identified roadway segments with V/C ratio greater than 1.0. Most of the Martin County's roadway volume capacity ratio varies from 1.01 to 1.52. Table 4.2 identifies the 2045 LRTP roadway needs assessment which is also exhibited in figure 4.7.

Table 4.2 - Roadway Needs Assessment, 2045 LRTP

Facility	From	To	Project Description	Avg. V/C Ratio
Federal Hwy/US 1	NW Mall Entry S	SE Westmoreland Blvd	TSM&O Improvements	1.12
Federal Hwy/US 1	SW Ocean Blvd	NW Wright Blvd	TSM&O Improvements	1.09
Federal Hwy/US 1	SE Heritage Blvd	SE Osprey St	TSM&O Improvements	1.05

Kanner Hwy (S Colorado Ave)	SE Lonita St	SE Martin Luther King Jr Blvd	TSM&O Improvements	1.08
Kanner Hwy	I-95	SE Cove Rd	TSM&O Improvements	1.21
NE Causeway Blvd	NE Indian River Dr	NE Ocean Blvd	TSM&O Improvements	1.23
NE Indian River Dr	Jensen Beach Blvd	Hibiscus Dr	TSM&O Improvements	1.01
NE Ocean Blvd	S Sewalls Point Rd	NE MacArthur Blvd	TSM&O Improvements	1.12
NW Dixie Hwy	SW Joan Jefferson Way	US 1 / Federal Hwy	TSM&O Improvements	1.14
Old Dixie Hwy	SE Salerno Rd	SE Seaward St	TSM&O Improvements	1.06
S Ocean Dr	North County Line	NE Causeway Blvd	TSM&O Improvements	1.52
SE Bridge Rd	Powerline Ave	US 1 / Federal Hwy	TSM&O Improvements	1.21
SE Green River Pkwy	NW Wright Blvd	NW Dixie Hwy	TSM&O Improvements	1.16
SE Salerno Rd	SE Smith Ave	SE Willoughby Blvd	TSM&O Improvements	1.05
SW 36th St	SW Mapp Rd	Kanner Hwy	TSM&O Improvements	1.04
SW Martin Downs Blvd	SW Matheson Ave	SW Palm City Rd	TSM&O Improvements	1.15
SW Murphy Rd	Wisper Bay Terrace	North County Line	TSM&O Improvements	1.08

4.3.2 Bottlenecks in Martin County

Martin County's historical, annual, truck traffic growth was analyzed. The peak season analysis was done by the project team which determined February to April as the peak season for truck traffic and March as the peak month. The truck AADT was collected from Martin County's five Telemetered Traffic Monitoring Sites (TTMS) for the year 2018.

A bottleneck ranking was performed for the peak months (February 2019 – April 2019) using the RITIS application. Bottleneck rankings allow the research team to identify, rank, and explore bottleneck locations on the roadway network in Martin County.

HERE data was utilized and the analysis results identified 213 bottleneck segments out of 378 Traffic Message Channels (TMCs) between February 1, 2019 and April 30, 2019. The top 10 segments are described in Table 4.3. Note, TMCs are roadway segmentations by FDOT.

Figure 4.7 - Existing and Committed Projects (E+C Network) – V/C Ratio for Martin County

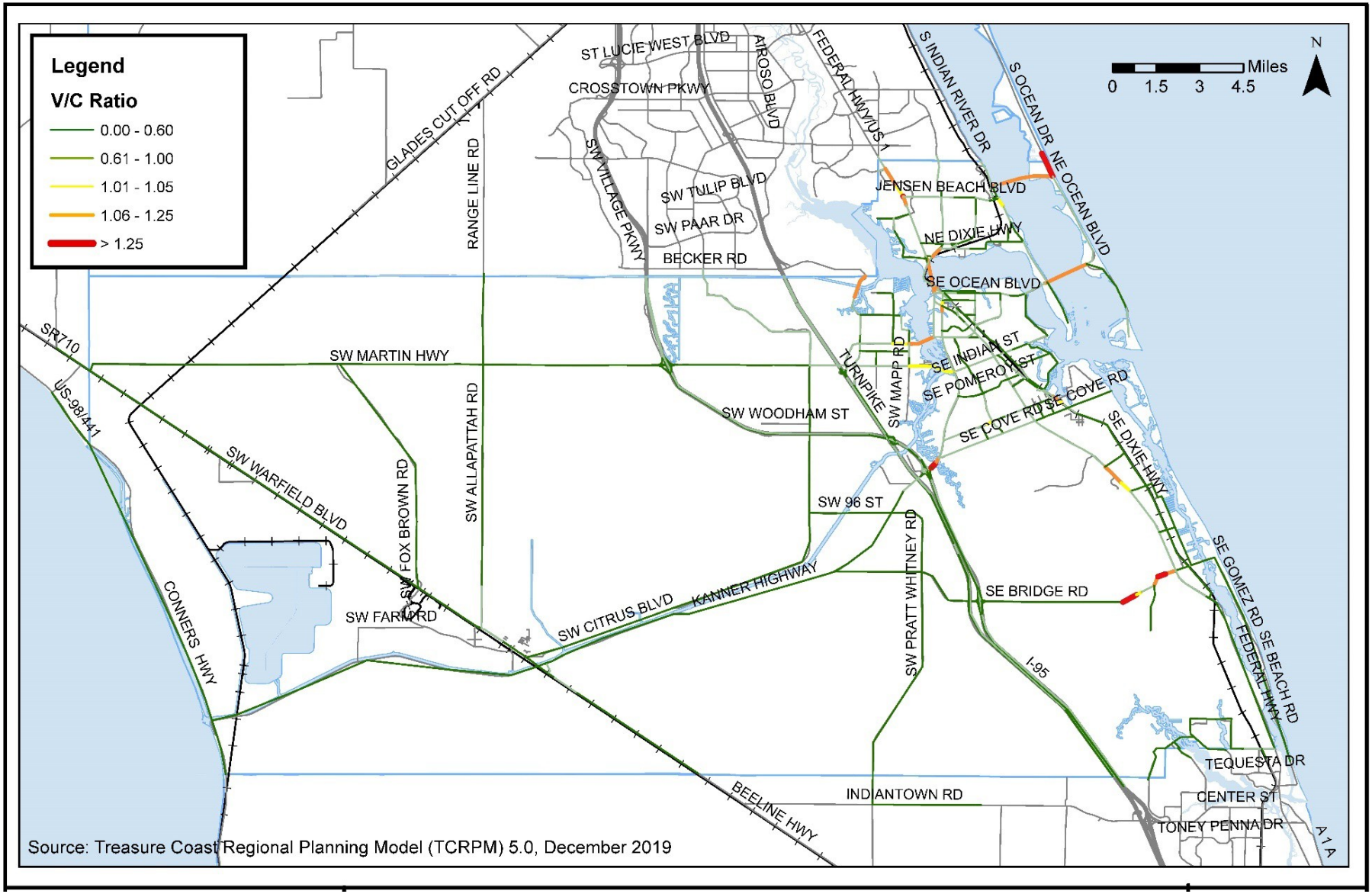


Table 4.3 - Top 10 Bottleneck Ranking in Martin County, FL

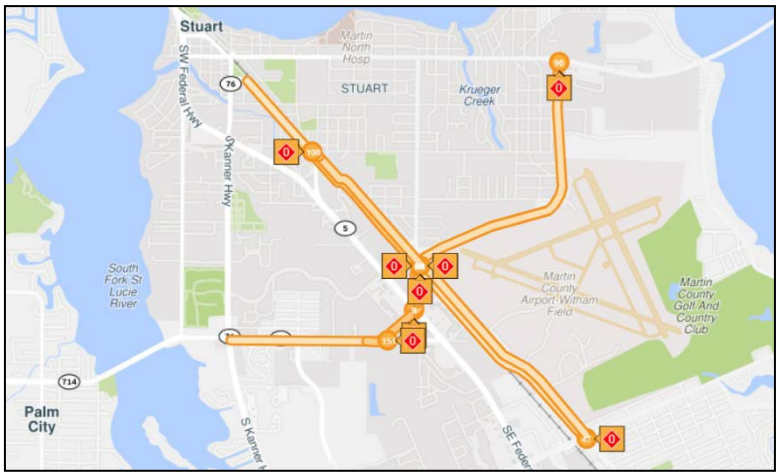
	Bottleneck Location	Starting TMC Code	Avg. max length	Avg. daily duration	Total duration	All events/ incidents	Vol Est.	Total Delay
1	I-95 N @ CR 708 / EXIT 96	102P05502	9.47	16 m	1 d 1 h 6 m	987	35,545	11,782,069
2	I-95 S @ CR 708/ EXIT 96	102N05502	5.33	6 m	9 h 42 m	527	33,692	8,595,700
3	SR 76 W @ SE COVE RD	102-07516	3.09	59 m	3 d 16 h 56 m	0	15,549	7,909,486
4	FLORIDA'S TPKE N @ CR 714/ EXIT 133	102P05542	4.12	4 m	6 h 54 m	361	18,028	3,726,126
5	SR 76 E @ SE INDIAN ST	102P07518	3.12	28 m	1 d 18 h 18 m	0	15,463	3,662,025
6	I-95 N @ CR 714/ EXIT 110	102P05505	8.58	4 m	6 h 56 m	555	26,116	3,407,244
7	SR 76 E @ SE COVE RD	102+07516	0.58	1 h 3 m	3 d 21 h 51 m	0	15,742	2,810,871
8	I-95 N @ SR 76 / EXIT 101	102P05503	6.41	2 m	3 h 42 m	1,028	36,475	2,724,482
9	SR 714 W @ US 1 / SE FEDERAL HWY	102N07493	0.27	3 h 10 m	11 d 18 h 7 m	0	11,426	2,662,882
10	CR 707A W @ NE PINEAPPLE DR / NE WEST END BLVD	102N17399	0.16	8 h 37 m	31 d 23 h 16 m	0	5,093	2,517,511

4.3.3 Bottlenecks at Railroad Crossings

Bottlenecks at Railroad Crossings were also identified utilizing the RITIS application. The top 3 crossing bottlenecks are along the FEC corridor at Monterey Road, Downtown Stuart, and at the Indian Street Crossing. These results are entirely consistent with the MPO's rail grade separation study. Below find the railroad crossing locations that have been identified where major bottlenecks occurred.

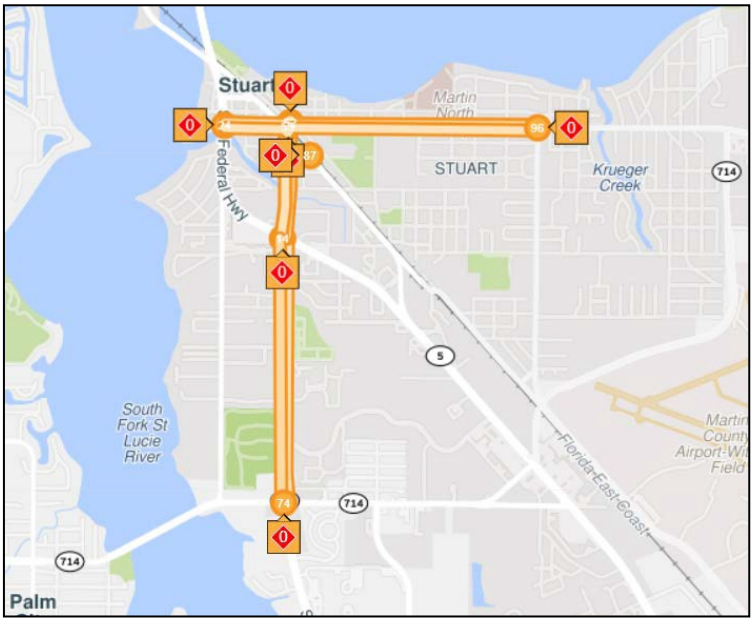
- **CR A1A and SE Monterey Rd (SR 714) railroad crossing** there have been eight (8) bottlenecks (out of the top 100 bottlenecks in Martin County from February 2019 to April 2019) which have occurred at this location.

Figure 4.8 - CR A1A and SE Monterey Rd (SR 714) Railroad Crossing



- **Downtown Stuart:** CR A1A, S Dixie Hwy, S Colorado Ave in downtown Stuart is another railroad crossing location where seven (7) bottlenecks (out of the top 100 bottlenecks in Martin County from February 2019 to April 2019) have occurred.

Figure 4.9 - Downtown Stuart Railroad Crossing



- **Indian Street:** S Dixie Hwy and Indian St rail crossing has also contributed to bottleneck traffic, there have been four (4) bottlenecks (out of the top 100 bottlenecks in Martin County from February 2019 to April 2019), at this location.

Figure 4.10 - Indian Street Railroad Crossing

4.3.4 Commercial Vehicle Crashes

Between 2013 and 2017, there were 823 reported commercial vehicle crashes in Martin County, as illustrated in Figure 4.11. The crash data was collected from the Florida Department of Transportation (FDOT) Geographic Information System (GIS) web application (https://fdotewp1.dot.state.fl.us/SSOGis/Home.aspx). Figure 4.11 illustrates a concentration of crashes throughout the more densely populated areas east of I-95, especially along I-95 and the Florida Turnpike as these two facilities have high truck volumes, there are several clusters near the intersections of these highways.

The severity of these crashes is also shown with a total of 13 fatal crashes recorded during the same timeframe. Many of the more severe crashes occur along I-95 and the Florida Turnpike. However, four (31%) of the commercial vehicle fatal crashes occurred on SR 710 which has significantly less traffic and trucks. Through the development of this plan we heard concerns from the SAC about crashes on the two-lane rural roadways. During the development of this study the project team discovered that there has been a lot of concern from rural area residents about the severity of crashes on these roadways. A fatal traffic crash occurred on April 30, 2019 on State Road 710/Warfield Blvd at the intersection of Southwest Tommy Clements Street. The crash involved a Dodge Dakota Truck and two semis and blocked the entire intersection for hours. A photo of the crash is shown in Figure 4.12. Subsequently, the main reason for the fatal crash was found to be the lack of a traffic signal at the intersection.

Figure 4.11 - Commercial Vehicle Crash Locations and Heat Map in Martin County

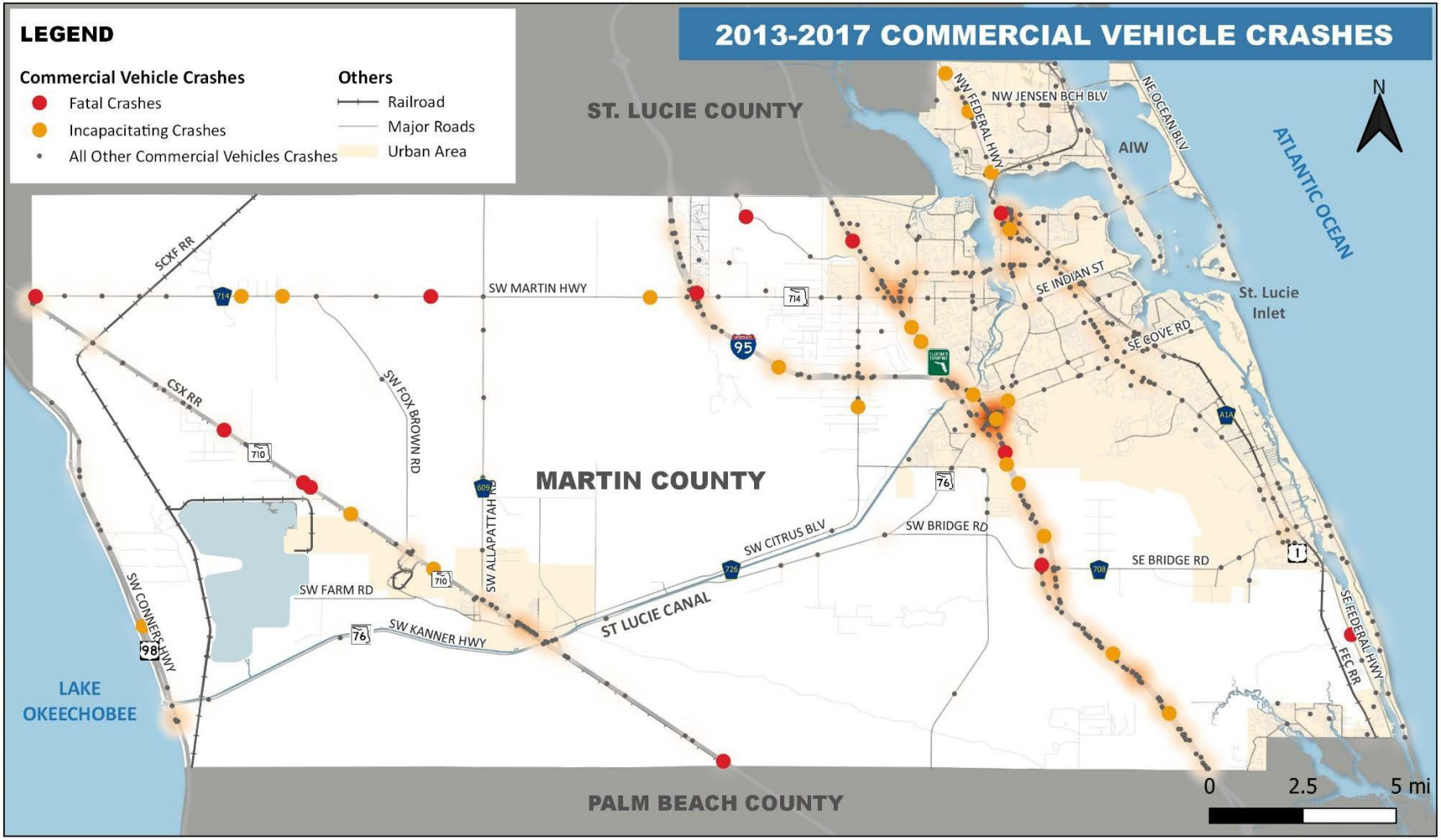


Figure 4.12 Fatal Crash at SR 710

Source: https://ufdc.ufl.edu/AA00064945/00098

4.4 Future Rail Activity

4.4.1 FEC Future Rail Activity

The FEC railroad has carried freight exclusively since passenger service was disbanded in 1968. Based on the FRA data provided earlier, the current system is operating 21 to 25 trains per day through Martin County. Information for future trains on the FEC Corridor was calculated based on information for both freight and passenger rail. The Southeast Florida Regional Freight Plan provided existing and 20-year projections for Port Miami and Port Everglades container activity, and the Palm Beach 2040 LRTP indicates the Port of Palm Beach would reach capacity in the interim with 30% growth. Information from the plans indicates the three Ports currently move 2.162 million Twenty Equivalent Units (TEUs) and, based on the medium growth scenarios at Port Miami, Port Everglades, and the Port of Palm Beach reaching their capacity, the three Ports are estimated to move 4.04 million TEUs in 2040. Assuming a consistent percent of containers would move by rail as reported in the plans, the same rate of growth, 87%, was applied to existing freight trains in order to project future train traffic. Passenger rail traffic was assumed at 32 trains per day per the Virgin USA Brightline project. Table 4.4 shows the railroad crossing, crashes at railroad and projected future rail traffic at Martin County. Appendix C includes the data and details on the crash reports.

Table 4.4 - Railroad Grade Crossing Activity and Safety in Martin County

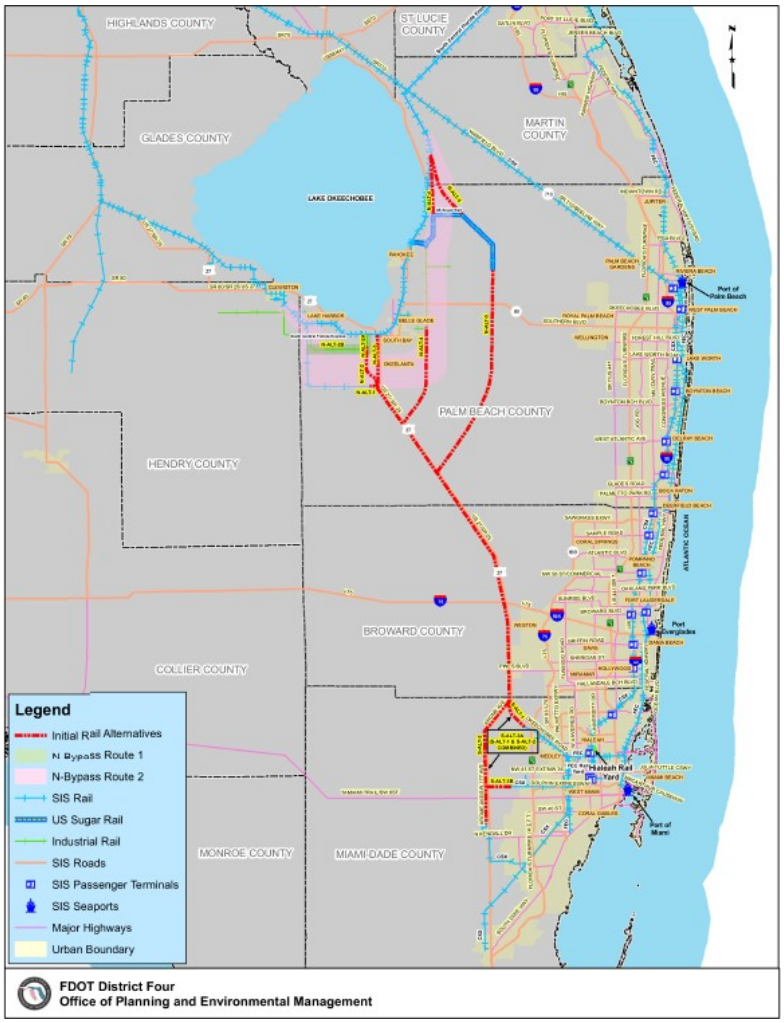
Rail Road Crossings				Safety		Rail Traffic		
Street Crossing at FEC	Crossing #	Mile Post	RR Entity	Crash History (5 Years)		Existing Max Speed (mph)	Proposed Rail Speed (mph) Freight/Passenger	Projected No. of Trains
				Rail Crash	Total Fatalities			
SE Monterey Road	272353M	263.15	FEC	0	0	60	70/110	54
NE Jensen Beach Blvd.	272340L	256.77	FEC	0	0	60	70/110	58
S Colorado Avenue	272347J	261.63	FEC	0	0	30	70/80	54
SE Indian Street	272354U	264.39	FEC	0	0	60	70/110	54
SW 2nd Street	272953P	261.43	FEC	0	0	45	70/80	66
A1A/Rio	272343G	259.33	FEC	0	0	60	60/60	54
SE Cove Road	272359D	267.09	FEC	0	0	60	70/110	54
SE Salerno Road	272357P	266.56	FEC	1	2	60	70/110	54
A1A/Preserve	272360X	268.64	FEC	0	0	60	70/100	54
SE MLK Blvd.	272348R	261.96	FEC	0	0	45	70/110	54
SE Bridge Road	272366N	274.06	FEC	0	0	60	70/100	54
A1A/Stuart	272350S	262.51	FEC	0	0	60	70/110	54
Fern Street	272345V	260.61	FEC	0	0	60	40/40	54
SE Osprey Road	272934K	270.89	FEC	0	0	60	70/110	54
SE Pettway Street	272365G	272.65	FEC	0	0	60	70/110	54
SE Florida Street	272349X	262.25	FEC	0	0	45	70/110	56
SE Crossrip Street	272362L	271.40	FEC	0	0	60	70/110	54
Skyline Drive	272337D	255.51	FEC	0	0	55	70/110	54
Alice Street	272344N	260.03	FEC	0	0	30	40/40	54
NE 1st Street	272338K	256.21	FEC	0	0	60	70/110	54
SE Gleason Street	272367V	274.57	FEC	0	0	60	70/100	54
New Crossing - Airport Access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54
Jonathan Dickinson Way	272370D	277.82	FEC	0	0	60	70/110	54
SE Seaward Street	272356H	266.46	FEC	0	0	60	70/110	54
SE Broward Street	272358W	266.76	FEC	0	0	60	70/110	54
NE Palmetto Drive S	272342A	257.34	FEC	0	0	60	70/110	54

Source: Federal Railroad Administration

4.4.2 US 27 Freight Rail Corridor

The feasibility of a rail corridor along US 27 from western Miami-Dade County to South Bay was evaluated, pursuant to the task authorized in Specific Appropriation 2077. FDOT has developed a two-phase approach to the study. The first phase provides a macroscopic, qualitative evaluation of the feasibility of a rail line generally following the current US 27 corridor. Existing plans and studies were reviewed; key stakeholders were interviewed; and a stakeholder workshop was conducted to review potential alternatives. The information gathered was used to develop 10 reasonable corridor alternatives that have been considered for general fatal flaws. Note that the Phase 1 analysis did not include development of cost estimates, identification of funding sources, site inspection of potential right-of-way, development of engineering level design, or evaluation of environmental impacts. The development of a new rail corridor along US 27, as illustrated in Figure 4.13, has the potential to significantly affect freight and passenger transportation in South Florida. Provided it is cost effective, safe, and reliable, this corridor could attract freight traffic from existing lines, creating new opportunities for passenger service along the eastern routes. It also has the potential to support industrial development in the Glades region, particularly the proposed South Florida Integrated Logistics Center.

Figure 4.13 - Map of Rail Alternative



5.0 FREIGHT SYSTEM PROJECTS

Recommendations for the Freight and Freight Supportive corridors were developed based on stakeholder input, safety, analysis of roadway design, programmed improvements, projected Year 2045 truck percentages and volume to capacity ratios. Investment strategies include widened shoulders, new and expanded roads to provide more capacity for freight and commuter travel; operational strategies to improve travel conditions within corridors while minimizing impacts to adjacent land uses; separated railroad grade crossings to relieve traffic bottlenecks on key freight and commuter corridors.

5.1 SR 710 Safety Improvements Project

FDOT District 4 conducted a qualitative safety review along a 10-mile segment of SR 710 (SW Warfield Boulevard) from Indianwood Drive to west of SW Tommy Clements Street. The study identified the general safety concerns on that segments that includes high crash locations, high heavy vehicle crashes, not enough turning lanes, inadequate sight distances, etc. Based on their qualitative analysis, the following safety recommendation were developed:

- Conduct no-passing zone that includes enhanced signage
- Install centerline rumble strips, with emphasis on no-passing zones
- Install advance intersection warning signs with beacons
- Evaluate installation of turning lanes or flashing yellow/flashing red signal at SW Tommy Clements Street
- Maintenance of shrubbery at SW Tommy Clements Street to improve sight visibility

Figure 5.1 - SR 710 at Tommy Clements Proposed Left Turn Concept

5.2 Shoulder Widening Projects

The trucking industry participants of the SAC expressed concern over the overall design of rural roadways in Martin County and across the state. The Florida Design Manual also requires the roadway design consider 12-foot outside shoulders (7-foot paved with full width at 12-feet) for roadways that have higher than 10% trucks. SR 710 from Martin FPL Power Plant Road to Allapattah Road is in the design phase and scheduled for construction in Fiscal Years FY 2024/2025 with 12-foot shoulders. Mid-Range and Long-Range shoulder widening projects are also recommended for SR 710, SR 714, US 98 and SR 76 which all have narrow shoulders and truck percentages over 10% in 2045. Note, Bridge Road has truck percentages close to 10% in 2045 but only has one-foot shoulders in some locations and is also recommended for shoulder widening. Table 5.1 illustrates the 2020 Florida Design Manual's recommended width of truck parking locations.

Table 5.1 - Standard Shoulder Widths

Lane Type	# of Lanes (One Direction)	Outside		Median or Left		Outside		Median or Left	
		Full Width (ft)	Paved Width (ft)	Full Width (ft)	Paved Width (ft)	Full Width (ft)	Paved Width (ft)	Full Width (ft)	Paved Width (ft)
Travel Lanes	4-Lanes or more	10	5	10	4	15.5	8	15.5	8
	3- Lanes	10	5	10	0	15.5	8	15.5	8
	1-Lane & 2-Lanes	10	5	8	0	15.5	8	13.5	6
Aux. Lanes	All	10	5	8	0	11.5	4	11.5	4
Without Shoulder Gutter: Consider 12-foot outside full width shoulder adjacent to travel lanes with high AADT or greater than 10% trucks.									

Source: Florida Design Manual 2020

5.3 Truck Parking Projects

The future development of truck parking locations will continue to be a challenge. FDOT District 4 performed an analysis of truck parking supply and demand in 2017 for each of the five counties in the District. The results are shown in Table 5.2 indicating that there are 172 spaces in Martin County and a need for 73 to 81 additional spaces. According to the FDOT's 4 Truck Parking Supply and Demand Study, Indian River and St. Lucie counties have a surplus of parking spaces which can serve some of Martin County's truck parking needs. Note that the FDOT 4 study did not take into account that most of the parking (104 spaces) is limited to 3 hours.

Table 5.2 - Truck Parking Demand in District 4

County	Min	Median	Mean	Max	Available Parking	Full Range of Need	Most Likely Need
Indian River	33	149	155	411	181	0 to 230	Surplus
St. Lucie	65	275	298	711	617	0 to 94	Surplus
Martin	57	245	253	679	172	0 to 507	73 to 81
Palm Beach	195	623	820	2248	90	105 to 2158	533 to 730
Broward	226	820	1049	2846	562	0 to 2284	258 to 487
Total*	617	2095	2576	6498	1619	0 to 4879	476 to 957

**Total does not equal sum of column; total reflects districtwide numbers; other numbers are County specific*

Some of the future need for truck parking will be accommodated through improving existing parking facilities and identifying possible land available for new or expanded facilities. The State has a project programmed to improve the existing I-95 Weigh Stations in Martin County, including signage, pavement markings, dynamic parking and lighting in the short term (Fiscal Year 21/22 -22/23). Through this process the project team has coordinated with the Florida's Turnpike to recommend a policy change to allow overnight truck parking at the staging area that exists at the Indiantown Road interchange with the Turnpike. The staging area has lighting, is in a secure area, and has been observed to be rarely used for staging. The drainage area on the north side of the existing truck parking facility at the Ft. Pierce Plaza could also be potentially expanded for additional parking spaces.

The Stakeholder Advisory Committee trucking industry partners spoke about conditions in the western rural areas along US 98, SR 714 and SR 710 where there is no public designated truck parking. These roads have narrow shoulders, issues with fog and lighting, and when there are incidents, they have no capability to turn around, therefore having to sit in traffic and wait for the incident to clear. It is recommended the State and regional partners address rural highway parking and incident management needs to identify truck parking spaces (Pull Offs) along rural highways of perhaps 20 spaces.

5.4 Planning Document Projects on Martin County Freight Network

Section 3.0 of this report identified the Freight and Freight Supportive Corridors proposed for Martin County. In order to develop a program of projects for these roadways existing planning documents were reviewed for projects planned and programmed on the freight network. The following documents were reviewed:

- FDOT Strategic Intermodal System
- FDOT Freight Mobility and Trade Plan Tier 3 Priority Project List
- Treasure Coast 2040 Regional LRTP Freight Element
- Martin MPO 2040 LRTP Cost Feasible Plan
- Martin MPO 2045 LRTP Needs Assessment
- TSM&O Strategic Network Plan Projects

5.4.1 Strategic Intermodal System Projects

Table 5.3 depicts the projects identified for construction in the SIS First Five-Year Plan, Second Five-Year plan, Cost Feasible Plan or the Unfunded Multi-Modal Cost Feasible Plan.

Table 5.3 - Martin County Recommended SIS Freight and Goods Movement Projects

Facility	From	To	Project Description	Source	Category or Type
SR 710 / Warfield Boulevard	Martin FPL Power Plant	CR 609 / SW Allapattah Road	Add 2 to Build 4 Lane Divided Roadway	SIS CFP 2025 - 2029	CON
I-95	Martin/Palm Beach County Line	Becker Road	Highway Capacity	SIS CFP 2029 - 2045	PE, ROW & CON

SR 710	Martin/Okeechobee County Line	Martin Powerplant Road	Add 2 to Build 4 Lanes	SIS CFP 2029 - 2045	PE, ROW & CON
SR 710	Martin/Okeechobee County Line	Martin Powerplant Road	Add 2 Lanes to Build 4 Lanes	SIS 2045 CFP	Highway Improvement (Long-Term)
Turnpike Mainline / SR 91	Jupiter/Indiantown Road	SR 714 / Stuart	Capacity Project	SIS 2045 Multimodal Unfunded Needs Plan, Turnpike	Highway Improvement (Short-Term)
SR 710	Martin Powerplant Road	SR 76 Connector Ramps	Bypass (New Facility)	SIS 2045 Multimodal Unfunded Needs Plan	Highway Improvements (Long-Term)
I-95	High Meadow Avenue	Becker Road	Modify Interchange	SIS 2045 CFP	Highway Improvements (Long-Term)
Florida East Coast Railway	at SR 714 / Monterey Road		Grade Separation	SIS 2045 CFP	Railway Improvements (Mid-Term)

5.4.2 FDOT Freight Mobility and Trade Plan

Table 5.4 shows the list of prioritized projects selected from the FDOT Freight Mobility and Trade Plan (FMTP) that will be included in the Martin County Plan.

Table 5.4 - Freight Mobility and Trade Plan Prioritized Projects for Martin County

Crossing ID	Project Name	Description/Type	Color
272353M	Florida East Coast Railway at Monterey Rd. / SR 714	Grade Separation	Yellow/ Second Priority
	I-95 from High Meadow Ave. to Becker Rd.	Modify Interchange	Orange/Third Priority

5.4.3 Treasure Coast 2040 Regional Long-Range Transportation Plan Freight Element

Table 5.5 indicates the list pf prioritized projects recommended in the Treasure Coast 2040 Long Range Transportation Plan that will be included in the Martin County Plan.

Table 5.5 - TCRP Council Recommended Projects for Martin County

Project	Description	Regional Ranking
I-95 from Bridge Road to High Meadow Ave	Widen 6 to 8 lanes	3
I-95 from High Meadow Ave to St. Lucie County	Widen 6 to 8 lanes	4
US 1 from Cove Rd to St. Lucie County	US 1 Corridor Retrofit	4
Florida's Turnpike from Indiantown Rd to SR 714	Widen 4 to 6 lanes	13

Florida's Turnpike from SR 714 to St. Lucie County	Widen 4 to 6 lanes	14
I-95 from Palm Beach County to Bridge Road	Widen 4 to 6 lanes	15
SR 714/Kanner/Martin Highway from Citrus Blvd to Martin Downs Blvd	Widen 2 to 4 lanes	25
Cove Road from SR 76/Kanner Highway to Willoughby Blvd	Widen 2 to 4 lanes	32
Indian Street from SR 76/Kanner Highway to Willoughby Blvd	Widen 2 to 4 lanes	32
Cove Road from US 1 to CR A1A	Widen 2 to 4 lanes	36
High Meadow Ave from I-95 to CR 714/Martin Highway	Widen from 2 lanes to 4 lanes	44

5.4.4 Martin MPO 2040 Long Range Transportation Plan

The list of the projects that have been considered from MPO's 2040 Long Range Transportation Plan are provided below in Figure 5.6:

Table 5.6 - Martin MPO 2040 Cost Feasible Plan Freight Projects

Project	Description	Estimated Implementation Timeframe
SR 714/Martin Hwy from Citrus Blvd to Martin Downs Boulevard	Widen 2 to 4 lanes	2021-2025
High Meadow Ave from I-95 to CR 714/Martin Hwy	Widen 2 to 4 lanes	2021-2025
Cove Rd from SR 76/Kanner Hwy to US 1	Widen 2 to 4 lanes	2031-2040
Cove Rd from US 1 to CR A1A	Widen 2 to 4 lanes	2031-2040
Florida East Coast Railway Corridor	Study Feasibility of Grade Separations	Completed in 2018

5.4.5 Martin MPO 2045 Long Range Transportation Plan Roadways Projects Needs Assessment

The list of the projects which have been considered from MPO's 2040 Long Range Transportation Plan identified are given below:

Table 5.7 - Martin MPO 2045 LRTP Needs Assessment

Project	Description	Estimated Implementation Timeframe
SR 714/Martin Hwy from Citrus Blvd to Martin Downs Boulevard	Widen 2 lanes to 4 lanes	2021-2025
Cove Rd from SR 76/Kanner Hwy to CR A1A	Widen 2 lanes to 4 lanes	2040 Plan
High Meadow Ave form I-95 to Indian Street	Widen 2 lanes to 4 lanes	2040 Plan
Bridge Road from Powerline Rd to US 1	Widen 2 lanes to 4 lanes	2045 Needs
Martin Downs Blvd from Matheson Ave to Palm City Road	Widen 4 to 6 Lanes	2045 Needs

5.4.6 FDOT Transportation Systems Management & Operations Study

The projects team also considered projects from the FDOT DISTRICT 4 TSM&O Strategic on State and Off State Highway Network project for this study:

Table 5.8 - Martin MPO 2045 Needs Assessment TSM&O Projects on Freight Corridors

Project	Description	Estimated Implementation Timeframe
US 1 from Cove Rd to St. Lucie County	TSM&O Corridor	2021–2040
Martin Downs Blvd from Mapp Rd to SR 76/Kanner Hwy	TSM&O Corridor	2021-2040
SR 76 Kanner Hwy from 96 St to Salerno Road	TSM&O Corridor	2021-2040
SR 714/Monterey Rd US 1 to Ocean Blvd	TSM&O Corridor	2021-2040
Non-SHS Corridors	TSM&O Corridor	2021–2040

5.4.7 2021 Transportation Improvement Program (TIP)

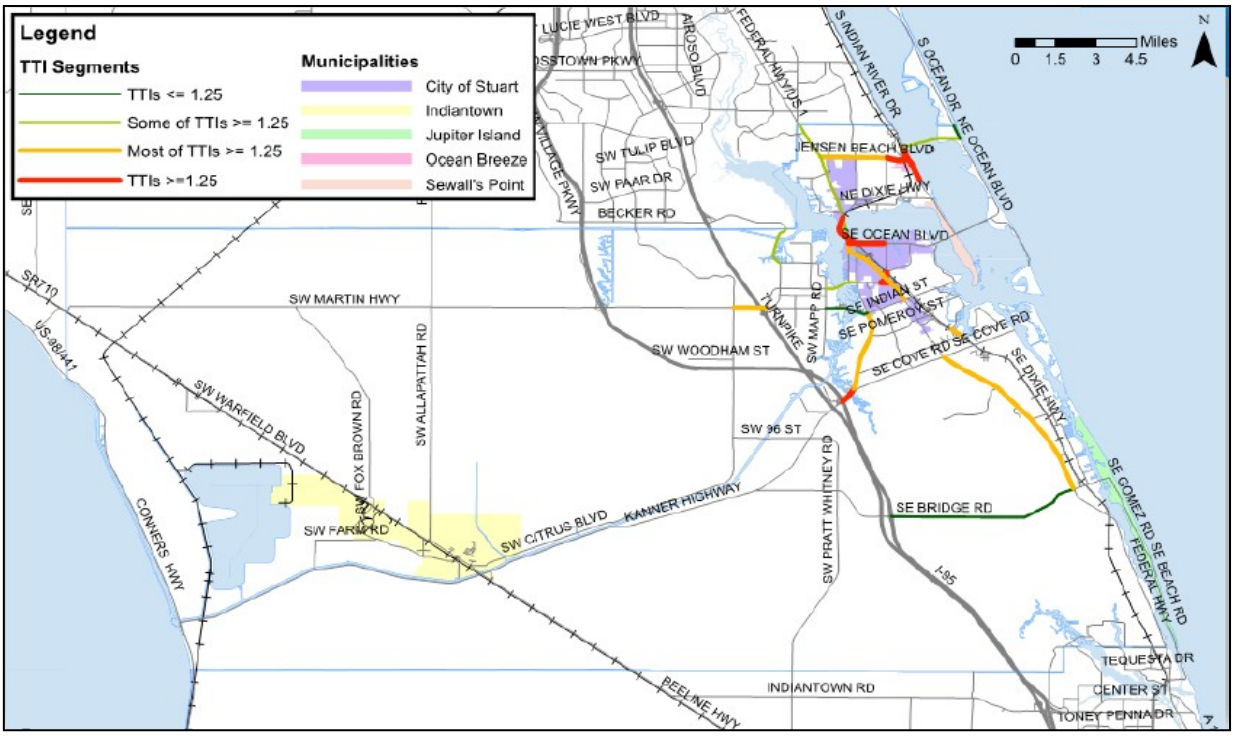
The project team also considered the MPO's 2021 Transportation Improvement Program (TIP) projects for freight and included those at freight system projects.

- FM # 4192522 – SR 710/ Warfield Blvd from MP 9.771 to MP 14.967: A PD & E study from Martin Power Plat to Allapattah Road to add and construct traffic lanes. The total length of this project is 5.174 miles.
- FM # 4368701 – SR 714/SW Martin Hwy from Citrus Blvd to SW Martin Downs Blvd: A PD & E study for adding lanes and reconstruct. This 1.12-mile project will start at FY 2020/21 and will complete at 2022/23.
- FM # 4419951 – Martin Weigh Station (Northbound) – Signing and Pavement Marking (S & PM) SIS: The northbound Weight Station needs signings/pavement markings and project FY will be 2022/23.
- FM # 4453151 – Martin Weight Station – Signing & Pavement Markings: MCCO Weigh Station signings and pavement markings and project FY will be 2021/22.
- FM # 4453152 – Martin Weight Station – Lighting and Electrical: MCCO Weigh Station lighting and electrical works and the FY will be 2021/22.

5.4.8 2045 Needs Assessment - Congestion Management Plan (CMP)

The project team also analyzed the 2045 Needs plan for congestion assessment. The 2045 needs plan identified the 25 congested segments based on Travel Time Index (TTI) of 1.25 and Planning Time Index (PTI) of 1.30 for Martin County and the project team considered those projects for selection in the freight system projects.

Figure 5.2 - Congested Roadway Network



Source: Congestion Management Process (CMP) Update, Martin MPO

5.5 Other Projects

Other projects or initiatives are also recommended in this plan including:

- Virgin Rail USA Brightline – Double Tracking the FEC Railway Corridor through Martin County
- Virgin Rail USA Brightline - Reconstruction/Replacement of the Railroad Bridge over the St. Lucie River
- Pedestrian Railroad Crossings – In Downtown Stuart and between Railroad Avenue and Commerce Avenue
- US 27 Freight Corridor Feasibility Plan – Implement a railroad connection from Western Miami-Dade County to the SCFX corridor in the Belle Glade area mitigating freight traffic on the FEC Railway.

5.6 Proposed Programming of Projects on Martin County Freight Network

This Freight Plan is the first stand-alone freight plan for Martin County and this document has identified a freight network and a list of planned improvements that fall onto the identified Freight and Freight Supportive Corridors. This section of the report establishes a program of projects categorized into short, mid and long-range projects for proposed implementation. Table 5.9 lists the projects by project type time frame and Figures 5.2, 5.3 and 5.4 depict the projects by location. Short range projects are proposed for Fiscal Years (FY) 2020/2021 to 2024/2045 for consistency with the draft MPO Transportation Improvement Program (TIP), Mid-range projects are proposed to fall into the second five years from FY 2025/2026 to 2029/2030 and the Long Range projects fall into the last fifteen years which is consistent with the current MPO 2045 LRTP phasing from FY 2031 to 2045. Projects were phased based on two separate tracks – the first track being currently programmed projects that are have now been identified

on the Martin County Freight Network and the second track being new projects identified in the development of this plan. First track projects were assumed to continue through project development phasing onto, and through the construction phase. The second track projects are those projects that were programmed based on planning and engineering judgment based on the availability of funds and the complexity of project development. The degree of complexity ranges from proposals that require a policy change which can be implemented quickly in the short-range time frame such as allowing truck parking at the Florida's Turnpike staging area or capital-intensive projects that require right-of-way, environmental analysis and design phasing and need to be phased across the mid- and long- range time frames.

5.7 Project Prioritization

Finally, the project team prioritized the roadway projects based on the Goals identified for the plan (safety, reliability, quality places, economic impact, etc.). A detail scoring procedure is given in Appendix E. Table 5.10 shows that SR 710 projects have risen to the top of the roadway priorities, as they score high in all categories.

Table 5.9 – Proposed Recommendations

Recommended Projects Map#		Facility	From	To	Description	Jurisdiction	Fiscal Year
FREIGHT CORRIDORS							
Roadway	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State	FY19/20-20/21
	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	Connected Freight Priority System	State/SIS	FY 2024
	FR2	SR 710/Warfield Blvd	FP&L Access Road	CR609/SW Allapattah Rd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State/SIS	Mid-Range
	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	Additional Lanes and Interchange Improvements	State/SIS	Long-Range
	FR5 (A)	I-95	SE Bridge Road	St. Lucie County Line	Managed Lanes, Interchange and Bridge Widening	State/SIS	Mid-Range
	FR5 (B)	I-95	Palm Beach County Line	SE Bridge Road	Managed Lanes, Interchange and Bridge Widening	State/SIS	Long-Range
	FR6	SR 710/Warfield Blvd	Okeechobee County Line	FP&L Access Road	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State/SIS	Mid-Range
	FR7	SR 710/Warfield Blvd	FP&L Access Road	SR 76 On-Ramps	New Construction Bypass, New 4LD	State/SIS	Long-Range
Roadway Shoulder Widening	FSH1	SR 714/Martin Highway	I-95	Citrus Blvd	Widen paved shoulders from 4' to 7'	State	Mid-Range
	FSH2	US 98	Palm Beach County Line	Okeechobee County Line	Widen paved shoulders from 4' to 7'	State	Short-Range
	FSH3	SE Bridge Rd	0.5 Miles east of I95	Flora Avenue	Widen paved shoulders from 1' to 7'	County	Long-Range
	FSH4	SR76/ SW Kanner Highway	US 98	Pratt Whitney Rd	Widen paved shoulders from 4' to 7'	State	Long-Range
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional		TSM&O System (10 Digital Message Signs)	State/County	Long-Range
	FRH2	Rural Highways - West of I-95	Regional		Provide Rural Center U-Turns Every 10 Miles	State/County	Long-Range
	FRH3	Rural Highways - West of I-95	Regional		Visibility Warning System (8)	State/County	Long-Range
Recommended Projects Map#		**Facility**	**From**	**To**	**Description**	**Jurisdiction**	**Fiscal Year**
FREIGHT SUPPORTIVE CORRIDORS							
Roadway	FS1	SW Cargo Way	Citrus Boulevard	4500 Block Cargo Way	New 2 Lane Rural Road	County	FY 2021
	FS2	Stuart Area Projects	Areawide		FDOT TSM&O, MPO 2020 Congestion Management Projects	State/County	Short-Range & Mid-Range
	FS3	US-1	Cove Road	St. Lucie County Line	Corridor Retro Fit	State	Mid-Range
	FS7	High Meadow Avenue	I-95	SR 714 Martin Hwy	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	Mid-Range
	FS4	Cove Road	Kanner Highway	CR A1A	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	Mid-Range
	FS8	Bridge Road	Powerline Avenue	Federal Highway	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	Long-Range
	FS9	SR 714 Martin Downs Blvd	Matheson Avenue	Palm City Road	Add 2 Lanes & Reconstruct 4 Lanes (6LD)	State	Long-Range
Truck Route Plan	FTRP1	Highways, Local Roads	Countywide		Designated Truck Routes and No Thru Trucks (50)	County	Short-Range

Table 5.9 – Proposed Recommendations (continued)

Recommended Projects	Map#	Facility	From	To	Description	Jurisdiction	Fiscal Year
Railroad	FRR2	FEC Railroad Corridor	Palm Beach County Line	St. Lucie County Line	FEC/Brightline Double Tracking, Reduce Trespassing and Dynamic Envelope for State at Grade Crossings	State/SIS/ Private	Short-Range
	FRR3	Monterey Road	@FEC Railroad	Include Monterey Road Ext/Airport Access	Grade Separation (Roadway Underpass) including Analysis of Alternative Parallel Corridor to Airport Road	State/SIS	Mid-Range
	FRR4	FEC Railroad Pedestrian Grade Separation	Sailfish Circle Park and Ride Lot	Flagler Avenue	Grade Separation (Pedestrian Plaza Overpass)	County/SIS/ Private	Mid-Range
	FRR5	FEC Railroad Pedestrian Grade Separation	Railroad Avenue	Commerce Avenue	Grade Separation (Pedestrian Overpass)	County/SIS/ Private	Mid-Range
	FRR1	FEC Railroad Bridge	Over St. Lucie River		New Bridge	Private	Long-Range
	FRR6	US 27 Corridor Rail Bypass	Miami-Dade County	FEC Railroad at SR 710	New Railroad, Rehabilitation	State/SIS/ Private	Long-Range
Recommended Projects	**Map#**	**Facility**	**From**	**To**	**Description**	**Jurisdiction**	**Fiscal Year**
Truck Parking	FP1	Truck Parking	@SR 91/Turnpike Indiantown Road Interchange		Revised policy to allow general truck parking	State	Short-Range
	FP2	Martin County I-95 Weigh Station			Dynamic Parking, Signage, Pavement Markings & Lighting	State	FY21/22-22/23
	FP3	Martin County I-95 NB and SB Rest Areas			Dynamic Truck Parking, Touch-Screen Kiosk	State	Short-Range
	FP4	Truck Parking (Expand 900' northside of existing parking, average width =250')	@SR 91/Turnpike Ft. Pierce Plaza		Expanded Parking	State	Mid-Range
	FP5	Truck Parking (Pull Offs) (700'X100'; 20 truck parking)	Regional - US 98, SR 710		New Parking	State/SIS	Mid-Range

Table 5.9 – Proposed Recommendations (continued)

Recommended Projects	Map#	Facility	From	To	Description	Jurisdiction	Fiscal Year
Regional Waterways	RW1	Railroad Bridges	at Waterway Crossings		Work with FDOT to evaluate impacts on marine transportation due to railroad bridge impacts, including consideration of freight redistribution, waterborne cargo, and inland logistics centers	Private	Coordination with Brightline and FEC on the St. Lucie River Bridge
	N/A	St. Lucie Inlet	at Atlantic Ocean		Continue to seek funding and prioritize maintenance dredging of the St. Lucie Inlet	County, USACE, FIND, MIATC	Last dredged in 2014. Waterways Plan indicates it should be dredged every 5 years
	N/A	C-44/St. Lucie Canal	Village of Indiantown		Expand the development of a marine industries district in the Indiantown CRA.	Indiantown CRA, Martin County, Collaborating Entities: MIATC	Indiantown has been incorporated as the Village of Indiantown
	N/A	Marine Transportation Routes	Martin County		Advance protection of identified "marine transportation routes" in Martin County to further support marine industries and vessel transport to waterways, including adoption of appropriate regulatory language. Special consideration should be given to railroad crossing infrastructure.	MPO, FDOT, Collaborating Entities: Economic Councils, Local Governments, FIND, USCG, TCRPC	The plan includes the Atlantic Intracoastal Waterway, St. Lucie Inlet and Okeechobee Waterway as related to Marine Industries
	N/A	Marine Industries Dataset	Martin County		Develop a regional Marine Industries dataset to further develop knowledge of the industry, workforce and training needs, and geographic clusters.	Local Governments, Workforce Alliance, Collaborating Entities: MIATC, Economic Councils, BDBs	Ongoing
	N/A	Marine Industries Career Track	Martin County		Develop a "Marine Industries Career Track" at the high school level to enhance the local workforce and augment a potential maritime/logistics academy. Advanced career training should be explored with Indian River State College and CareerSource Research Coast.	School Districts, IRSC, Workforce Alliance, Collaborating Entity: MIATC	Ongoing

Table 5.9 – Proposed Recommendations (continued)

Recommended Policies		Facility	From	To	Description	Jurisdiction	Fiscal Year
Martin Freight Technical Advisory Committee	**N/A**	Public Private Stakeholder Coordination	Countywide		Coordinate with Stakeholders on a regular basis. Develop agendas and meeting material with substantive information and discussions	State/MPO/ County/City/ Stakeholders	Short-Range
Freight Roadway Design Considerations	**N/A**	Roadways	Countywide		FDOT has been evaluating the incorporation of freight design considerations in to the Florida Design Manual and that progress should be followed as well as local agency considerations of accommodating goods movement into community development as best practices for integrating freight into complete streets projects, mixed use developments and local roadways.	State/MPO/ County/City	Short-Range
Truck Parking	**N/A**	Truck Parking	Countywide		Coordinate with stakeholders to identify opportunities for expanded truck parking along western rural highways, expanded parking along the Turnpike and I-95 and explore programs for the private sector to support trucker breaks on-site in coordination with local policy.	State/MPO/ County/City/ Stakeholders	Short-Range
Educational Initiatives	**N/A**	Freight Supportive Education Events	Countywide		Coordination with Industry, Economic Development, Institutional and Government Partners to educate the public on the critical importance of freight and goods movement	State/MPO/SIS / Private	Short-Range

Table 5.10 - Roadway Priority Ranking for Consideration in the MPO 2045 Plan

Recommended Projects	Map#	Facility	From	To	Description	Safety	Efficient and Reliable Mobility	Economic Impact	Quality Places	Score
Roadway	FR2	SR 710/Warfield Blvd	FP&L Access Road	CR609/SW Allapattah Rd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	10	10	12	12	44
Roadway	FR6	SR 710/Warfield Blvd	Okeechobee County Lin	FP&L Access Road	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	10	10	12	12	44
Roadway	FR7	SR 710/Warfield Blvd	FP&L Access Road	SR 76 On-Ramps	New Construction Bypass, New 4LD	10	10	12	12	44
Roadway Shoulder Widening	FSH1	SR 710/Warfield Blvd.	Okeechobee County Lin	FP&L Access Road	Widen paved shoulders from 4' to 7'	10	10	12	12	44
Roadway	FR5 (A)	I-95	SE Bridge Road	St. Lucie County Line	Managed Lanes, Interchange and Bridge Widening	10	6	12	10	38
Roadway	FR5 (B)	I-95	Palm Beach County Line	SE Bridge Road	Managed Lanes, Interchange and Bridge Widening	10	6	12	10	38
Roadway	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	Additional Lanes and Interchange Improvements	6	8	12	10	36
Roadway	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	Connected Freight Priority System	10	10	6	8	34
Roadway Shoulder Widening	FSH1	SR 714/Martin Highway	I-95	Citrus Blvd	Widen paved shoulders from 4' to 7'	10	10	6	8	34
Roadway	FS1	SW Cargo Way	Citrus Boulevard	4500 Block Cargo Way	New 2 Lane Rural Road	2	15	8	8	33
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional		TSM&O System (10 Digital Message S	8	10	6	8	32
Roadway Rural Highway Improvements	FRH2	Rural Highways - West of I-95	Regional		Provide Rural Center U-Turns Every 10 Miles	8	10	6	8	32
Roadway Rural Highway Improvements	FRH3	Rural Highways - West of I-95	Regional		Visibility Warning System (8)	8	10	6	8	32
Roadway	FS2	Stuart Area Projects and Indiantown Fiber Optic	Areawide		FDOT TSM&O, MPO 2020 Congestion Management Projects	6	11	6	8	31
Roadway	FS3	US-1	Cove Road	St. Lucie County Line	Corridor Retro Fit	6	11	6	8	31
Roadway	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	6	10	8	30
Roadway Shoulder Widening	FSH3	SE Bridge Rd	.5 Miles east of I95	Flora Avenue	Widen paved shoulders from 1' to 7'	6	10	6	8	30
Roadway	FS7	High Meadow Avenue	I-95	SR 714 Martin Hwy	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	4	11	8	4	27
Roadway	FS4	Cove Road	Kanner Highway	CR A1A	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	9	8	4	27
Roadway	FS8	Bridge Road	Powerline Avenue	Federal Highway	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	9	8	4	27
Roadway	FS9	Martin Highway	Matheson Avenue	Palm City Road	Add 2 Lanes & Reconstruct 4 Lanes (6LD)	6	9	8	4	27
Roadway Shoulder Widening	FSH2	US 98	Palm Beach County Line	Okeechobee County Line	Widen paved shoulders from 4' to 7'	6	8	6	6	26
Roadway Shoulder Widening	FSH4	SR76 /SW Kanner Highway	US 98	Pratt Whitney Rd	Widen paved shoulders from 4' to 7'	4	6	6	4	20

Figure 5.3 - Short Range Projects in Martin County – Years 2021 to 2025

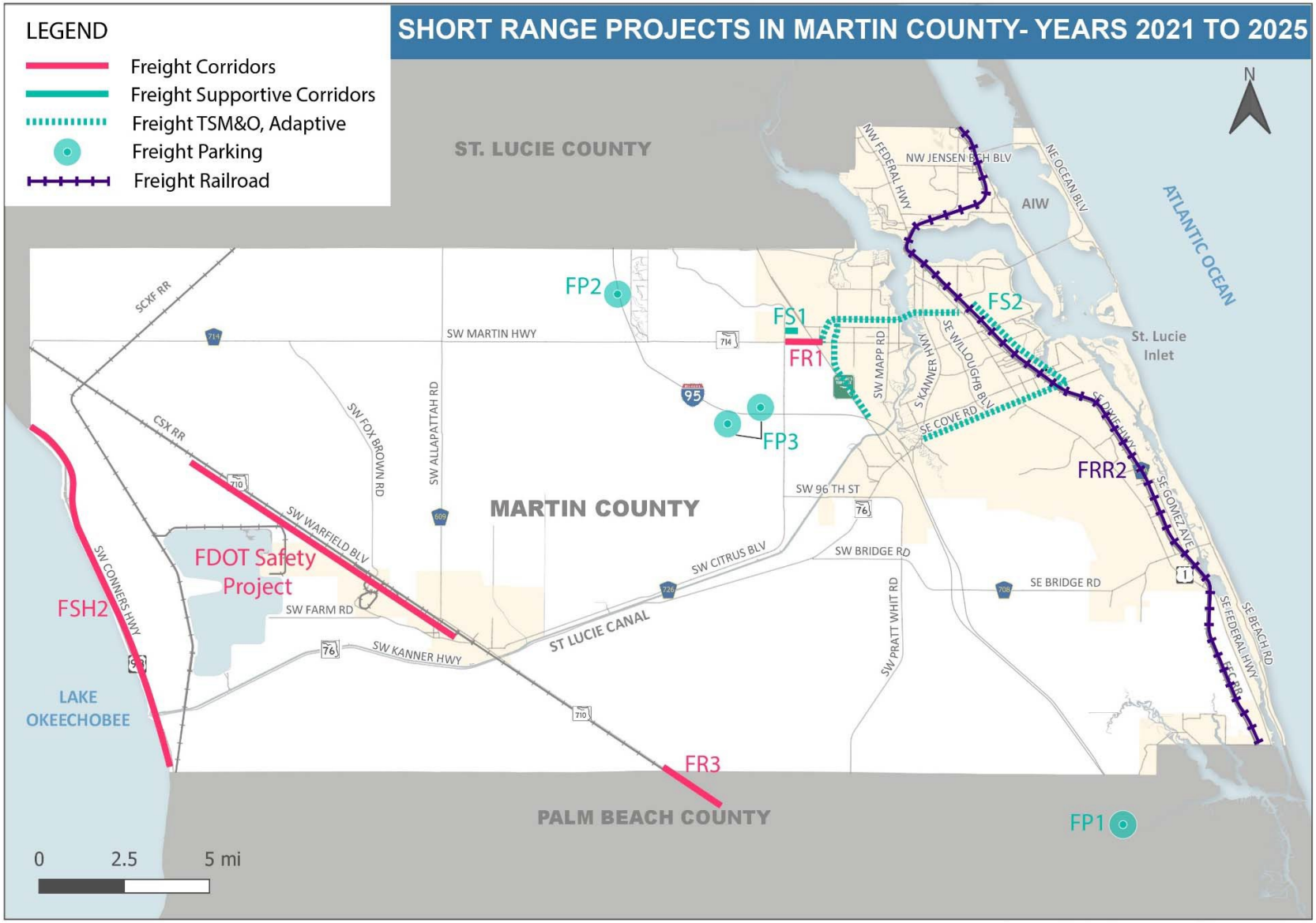


Figure 5.4 - Mid-Range Projects in Martin County – Years 2026 to 2030

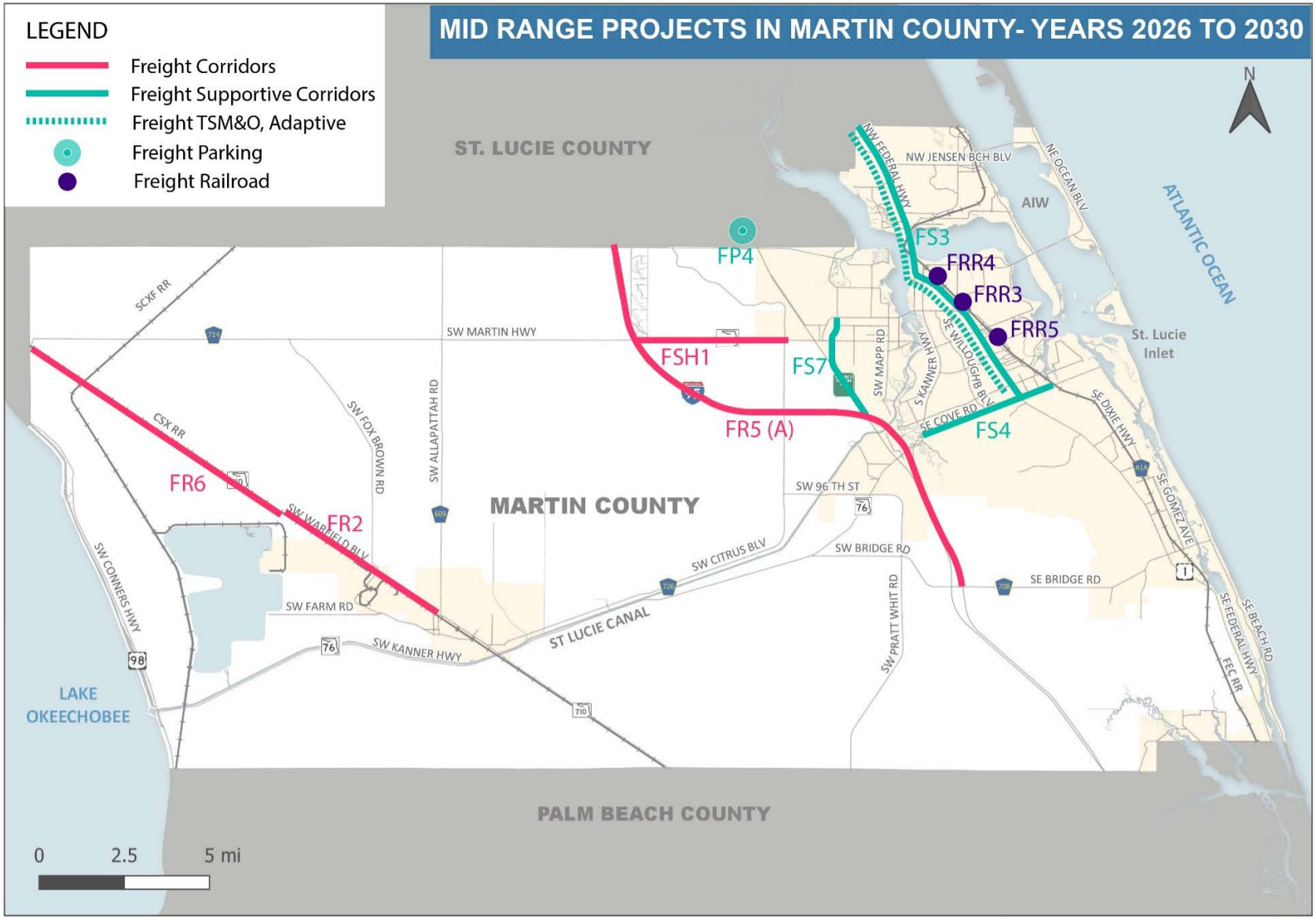
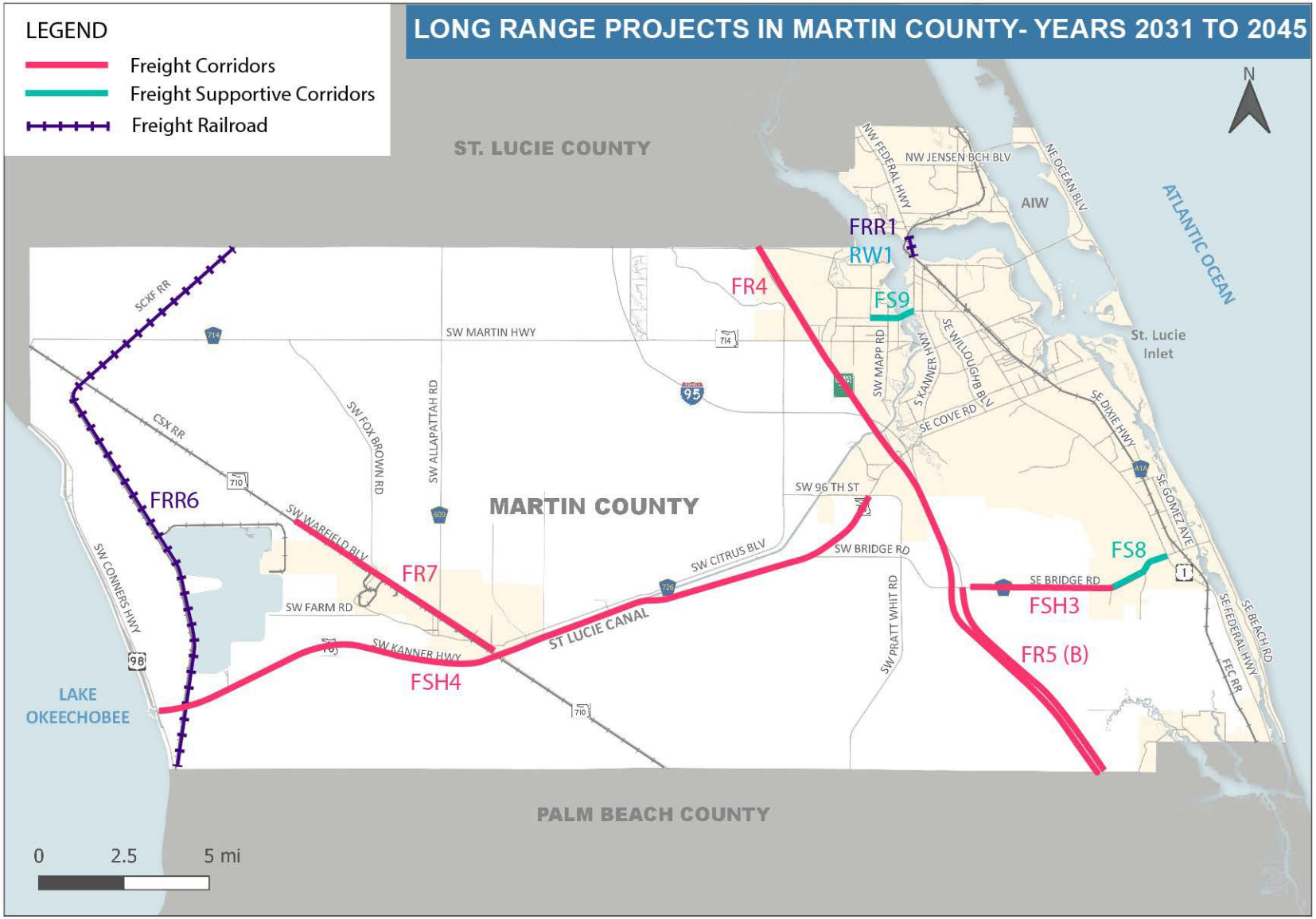


Figure 5.5 - Long Range Projects in Martin County – Years 2031 to 2045



6.0 POLICY RECOMMENDATIONS

Because this is the first stand-alone freight plan for the Martin MPO, much of this document has been dedicated to identifying the freight network and establishing the first comprehensive set of infrastructure improvements and related policy initiatives. The National Institute for Transportation and Communities (NITC) report on Integrating Freight into Livable Communities provides a set of guidelines that are directly transferrable to the context of Martin County. This is the beginning of a permanent process, and it is recommended that the guidelines set forth in the NITC report be utilized as a tool for establishing a work plan.

Transportation Freight mobility is critical to the economic success of any community. Efficient freight movement ensures that stores and restaurants are stocked appropriately, that small manufacturers get the raw materials they need, and that local businesses receive packages, office supplies, and other goods. Much of the visible freight activity in urbanized environments involves deliveries destined for local businesses and homes. …… A paradox is that factors that make a community livable can create conditions that increase freight demand, while reducing freight access. For example, conditions that increase freight demand are increased density and a diverse mix of uses in close proximity – the same factors that contribute to livability.

6.1 Freight Roadway Design Contexts

One of the first steps is understanding the freight contexts of your community. FDOT has prepared guidelines for freight-friendly roadway planning and design termed Freight Roadway Design Considerations. The compatibility analysis adapted for this study utilizes regional and local land-use planning data and regional truck traffic and percentage data to identify areas where potential conflicts exist between freight activity and community livability. The data used in the analysis include the following:

- Future Land Use
- Predominant Land Uses Adjacent to the Corridor
- Projected Future Truck Traffic

Using Geographic Information System (GIS) applications, the planning information was mapped on a Countywide map. The analysis resulted in the identification and designation of four area types (context areas) with different considerations for roadway design appropriate for freight-related transport and livability initiatives. Note, the FDOT concepts were initially developed for the large scale, complex urban area of Tampa/Hillsborough County. The concepts are valid and the descriptions of the areas have been adjusted to fit the context of Martin County.

- **Community-oriented areas** include roadways serving relatively mostly residential, areas and can include commercial, and/or mixed-use districts where the level of bicycling and pedestrian activity can be expected to be high. In the context of the downtown area this context includes a fairly narrow right-of-way, narrow parcels that require access from the state highway, and a closely spaced grid street network. Freight mobility strategies in these areas should be focused on

pedestrian and bicycle safety and a limited number of corridors that provide freight accessibility to the area that limit impacts to non-motorized modes and the community character.

- **Diverse activity areas** have elements of both community-oriented and freight-oriented areas. Diverse activity areas have both levels of localized activity generating a wide variety of personal trips as well as moderate truck traffic. Freight activity is based on providing accessibility for commercial deliveries and some through truck traffic. There will be industrial and commercial land uses in these areas but there are also fairly dense residential and/or office uses. In such areas, freight mobility improvements would warrant special consideration to accommodate trucks, emphasizing the need for freight accessibility and catering to the needs of other users of the facility, including transit users, motorists, bicyclists, and pedestrians.
- **Freight-oriented areas** have higher levels of truck traffic and land uses that are supported by goods movement, such as industrial and commercial designations. These are areas where roads should generally be designed to facilitate truck movements, including design elements like wider travel lanes and wide turn radii at intersections.
- **Low activity areas** are characterized by land uses that would generally be compatible with freight mobility, but actual freight activity (truck traffic) in these areas is low but the percentages are high. Per input from our Stakeholder Advisory Committee there is a need to provide for safe design with wide shoulders, intermittent passing lanes for 2 lane roadways, intermittent U-Turn opportunities, and truck parking or pull-off areas.

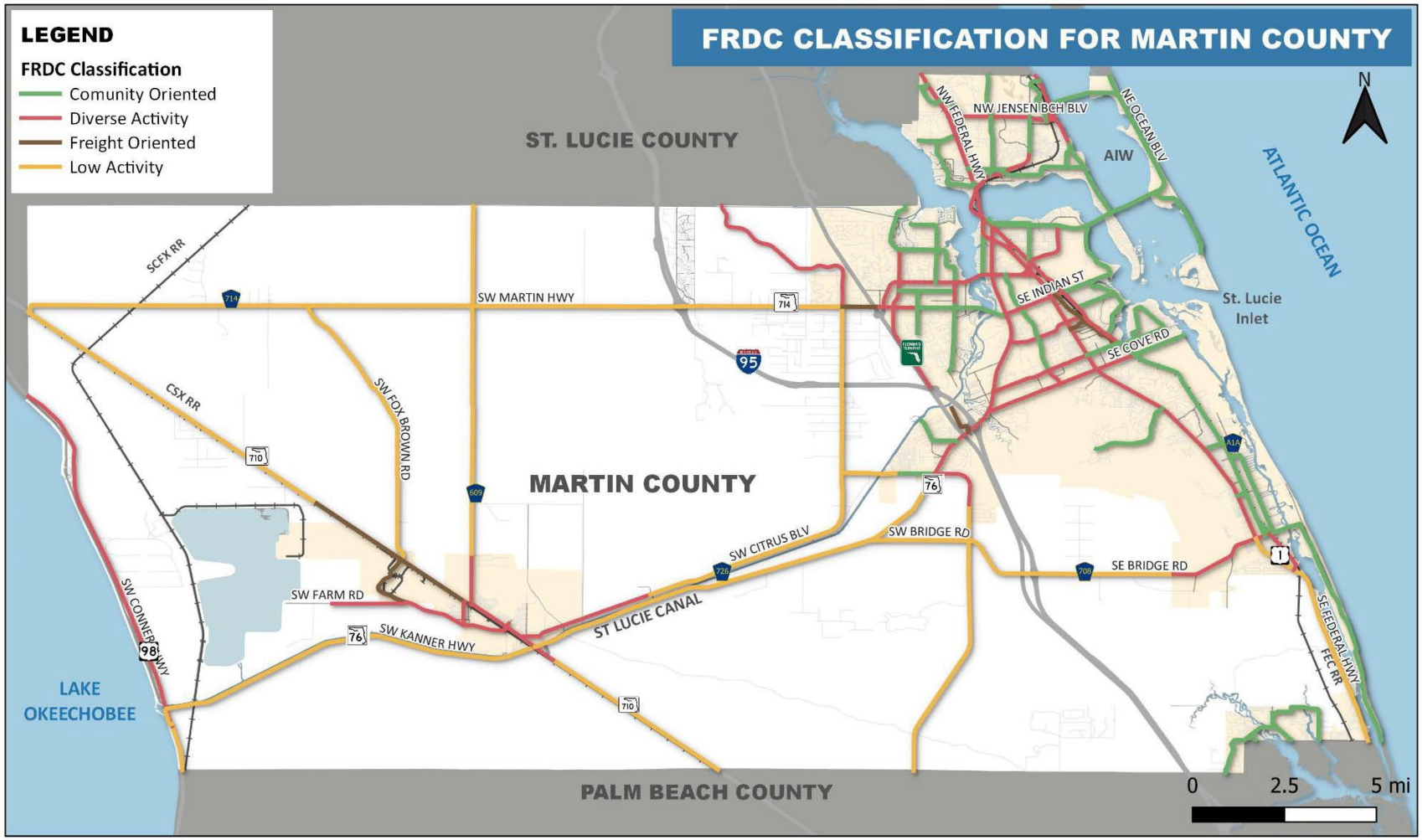
The project team blended the data collected from various sources to develop a context classification map specific to Martin County. The project context informs many elements of planning with intent of balancing goods movement and livability assessing adjacent roadway future land use, truck traffic percentage, Community Redevelopment Agency (CRA) boundaries, parcel size and feedback from stakeholders. Figure 6.1 shows the initial context classification map for Martin County and Appendix D provides contextual infrastructure design recommendations for consideration in future planning and design of roadways in Martin County.

6.2 Implement a Freight Stakeholders Advisory Committee

Establishing positive relationships with freight stakeholders creates a setting for ongoing dialogue which facilitates the identification of win-win solutions to transportation problems and more community-friendly accommodation of freight and goods movement needs. Effective planning for freight requires an understanding of these dynamics and planners need to identify and talk with key industry stakeholders, both public and private, including representatives of transportation firms, railroads, shippers, receivers and distribution Three stakeholder meetings were held in the development of this plan and the collaboration has resulted in a higher level of understanding between planning agencies and the industry partners. At the third SAC Meeting it was recommended that the committee should continue collaboration on projects and meet on a potential semi-annual basis. There are many areas to be explored and addressed by a Martin MPO Freight Stakeholder Advisory Committee. Some of the suggested topics from the NITC report and from SAC meetings and stakeholder outreach include:

- Safety
- Infrastructure Planning and Design
- Commercial Loading and Parking

Figure 6.1 - FRDC Context Classification for Martin County



- Land Use Management
- Sponsor Educational Events
- Traffic and Delivery Management
- Noise Reduction
- Truck Parking
- Education and Enforcement
- Support for Marine Industries and Waterways Initiatives
- MPO Project Priorities
- Emerging Technologies

6.3 Emerging Technological Trends & Martin County Freight

Technology is constantly evolving and impacting our daily lives including the way people interact with one another, work, travel, and even how they purchase goods. This section of the report elaborates on trends that are currently impacting the industry and Martin County. New and emerging technologies offer the potential for a safer, more efficient transportation system; more connectivity globally and locally; and streamlined business practices. In recent years, there has been tremendous growth in vehicle technologies. The existing body of literature suggests that technology is perhaps the category with the greatest potential to change the transportation system in terms of freight mobility and delivery. The advent of automated driving technology and new concepts in intelligent transportation systems is poised to transform the trucking industry in the years and decades to come by making commercial trucking more efficient, safer, and sustainable. A list of the emerging technology is mentioned below which might be helpful for Martin County's freight movement plan:

- Connected & Automated Vehicles
- Intelligent Transportation System (ITS)
- E-Commerce
- Drones

6.3.1 Connected and Automated Vehicles/Trucks

Connected and Automated Vehicles (CAVs) technology is an umbrella term used to describe connected vehicles and automated vehicles. A connected vehicle is a car or truck which uses different communication technologies to communicate with either other vehicles on the road (vehicle-to-vehicle [V2V] communication), or with roadway infrastructure such as traffic signals (vehicle-to-infrastructure [V2I] communication). An automated vehicle, also known as an autonomous, or self-driving vehicle is a car or truck whose operation occurs without direct driver input to control the steering, acceleration, and braking. It is designed and equipped with devices and technologies such as sensors, cameras, GPS, and advanced software to sense and perceive the surrounding environment.

6.3.1.1 Truck Platooning

Truck platoons are an aspect of connected and automated truck technology. Truck platooning refers to the linking of two or more trucks in a convoy, using connectivity technology and automated driving support systems. The technology automatically sets and maintains a close distance between each vehicle connected in a journey. The truck at the head of the platoon acts as the leader with the vehicles behind reacting and adapting to changes in its movement requiring little-to-no action from drivers. Truck

platooning holds great potential to make road transport safer, cleaner, and more efficient in the future and the Florida's Turnpike has already piloted projects through Martin County.

6.3.1.2 Driver Assistive Truck Platooning (DATP) Pilot

The Florida Department of Transportation (DOT) was mandated by House Bill 7027 (2016-81) to study, in consultation with the Department of Highway Safety and Motor Vehicles (DHSMV), the use and safe operation of driver-assistive truck platooning (DATP). This technology, as defined in section 316.003, Florida Statutes, established a pilot project to test DATP equipped vehicles and submit the study results to the Governor and Legislature. The DATP Pilot consisted of two Volvo VNL670 Class 8 trucks using V2V technology traveling at a separation distance of approximately 65 feet in a 143-mile segment of the Florida's Turnpike Mainline (SR 91) from Orlando to Palm Beach as shown on Figure 6.4.

Figure 6.2 - Truck Platooning Testing on Florida's Turnpike

6.3.2 Intelligent Transportation System (ITS)

Intelligent Transportation Systems (ITS) is a combination of electronics, information, and communication technologies for the traffic and transportation management systems. ITS systems are aimed at improving the safety, efficiency, and sustainability of transportation networks. The ITS infrastructure investments are also a precursor to connected vehicles by laying the groundwork for communications technology. In the freight/truck industry the following ITS subsystems are implemented:

- **Freight/Truck Signal Priority –** Receive priority for green lights at signalized intersections
- **Truck Parking Information Management System (TPIMS) –** Availability and parking reservation
- **Truck Alternate Routing Services (TARS) –** GPS navigation solutions
- **Truck Road Weather Information Systems (RWIS) –** Real-time data on road and weather.
- **Truck Activity Monitoring System (TAMS) –** Detailed truck classification data.
- **Freight Advanced Traveler Information System (FRATIS) –** Routing, traffic and weather data.

6.3.3 E-Commerce

The rise of e-commerce is believed to have led to the closure of many malls and brick-and-mortar stores. In 2019, e-commerce accounted for 10% of all retail, while online grocery sales rose by 15% in the same year, digital buyers are predicted to grow to 2.14 billion by 2021. CBRE estimates that 1.25 million square

feet of distribution space is required for every $1 billion in e-commerce sales. The potential impact of e-commerce on land use and the built environment has cities positioning themselves to capture the economic benefits while also addressing the disadvantages of converting existing land uses to micro-fulfillment centers and warehouses. The impacts of e-commerce on freight deliveries and the design of transportation facilities can be seen throughout the U.S. These impacts can be seen in:

- **Distribution Pattern**. Scale of last mile logistics with the increased role of parcel deliveries.
- **Real Estate Footprint.** Downward pressure on conventional retail footprint.
- **Logistical Facilities.** Centers designed to service large volumes of heterogeneous orders.
- **Vertical Integration.** Throughput level with capabilities as 3rd and 4th party service providers.

The rise of e-commerce has influenced trends in commercial and industrial real-estate development. The consumer demand for faster deliveries has the industrial real estate market experiencing a large surge in formerly obsolete industrial buildings. Traditional warehousing spaces are approximately 400,000 square feet, whereas, e-commerce has a demand for warehouses between 50,000 to 200,000 square feet.

6.3.4 Drones

FDOT's presentation on Emerging Trends: Technology in 2019 highlighted drone technology and how it continues to evolve, this evolution includes the influence of drone technology on delivery service. Amazon Prime's air service will use drones to deliver packages in 30 minutes or less to addresses within a 10-mile radius of an Amazon fulfillment center. Additionally, UPS is testing drone deployed from the tops of delivery vehicles to traverse the "first-mile/last-mile" delivery between their vehicles and customers.

6.3.5 Issues of Emerging Technology

While the use of automation in the trucking industry offers many benefits, its implementation poses several challenges and dilemmas. The most significant challenge impacting deployment is a liability. Since most accidents occur due to human error, with autonomous vehicles, liability assessment will become much more difficult to assign. The following automation issues in the trucking industry are:

- **Cyber Security –** systems must have a level of security that cannot be breached.
- **Maintenance –** automated trucking hardware and software systems need to be properly maintained to ensure safety.
- **Training/Human-machine Interface** – drivers need to be trained on how to operate connected and automated trucks.
- **Safety** – autonomous safety technologies need to be tested and demonstrated for all situations.
- **Operational Design Domain** – clear information on conditions in which autonomous trucks can operate need to be known.
- **Malfunction** – there is a need to have procedures in place to ensure that potentially catastrophic events do not occur.

6.4 Sponsoring Educational Events

The SAC trucking industry members shared that there is a lack of understanding amongst the general public on the important role that the freight and goods industry play in our communities. The Florida Trucking Association and other local and state agencies provide a list of public awareness programs and events for public education on truck industry and truck safety. The aim is to inform the general public of the importance of the industry, to educate the next generation and to engage high school age children on

career training and job opportunities. For instance, Town of Jupiter in Palm Beach County hosts a family-friendly "Touch a Truck" event every March or April to educate children on how a wide range of vehicles services the community. The Table 6.1 is a summary of some potential education and enforcement programs that could be sponsored by the MPO and the SAC members.

Table 6.1 - Summary of Education and Enforcement Programs

Association/ Organization / City	Program	Summary
Florida Trucking Association	Florida Teacher Tour	Florida Teacher Tour is sponsored by the Florida Trucking Association and designed to give professional educators an inside look at how this vital industry works, its unique challenges, and its integral contributions to our state/national economy and daily life. The aim for the program is to immerse a small group of Florida teachers and guidance counselors in an intensive tour of the trucking industry and then engage them to write lesson plans alighted to Florida Standards that incorporate trucking imagery, information, statistics into the classroom conversation.
	Florida Road Team	Professional truck drivers are selected for the Florida Road Team to take a few days away from their jobs every month and speak to different groups about highway safety and the trucking industry. The team interacts in the state with civic and traffic clubs, classrooms, media and local business. The aim for the program is to provide information on safety tips, sharing the road with trucks, hands-on experience with a tractor-trailer, career opportunities and facts on industry issues.
	Share the Road	The program is the cornerstone of Florida Trucking Association's public awareness program. FTA's ambassadors for the program is Florida's Road Team. The interactive, multi-media presentation serves to educate and motivate passenger car drivers to leave room on the roads for big trucks. The message has been expanded in recent years to include "No Text + Drive" messages and updates on "Move Over" in Florida. Usually, these presentations are delivered to Drivers Education ad P.E. classes at high schools in Florida, but also to trucking companies, professional groups, church groups, "Touch-a-Truck" events, statewide press conferences and association events.
Town of Jupiter and other local municipalities	Touch a Truck	Touch a Truck is an interactive family-friendly event for children and the young at heart. The program allows kids the opportunity to climb on, learn about a wide range of vehicles and how they service the community and discover their favorite big trucks and vehicles.
Florida Highway Patrol	Florida Highway Patrol Big Rig	Florida troopers have been using semi-trucks to hide in plain sight for years. The trooper inside the truck acts as a spotter who contacts other officers in cruisers once he spots a driver who is speeding or texting or engaged in some form of violation. The aim for the program is to reduce crashes, injuries and fatalities.

Trucker Buddy Organization	Trucker Buddy International	Trucker Buddy International is a pen pal program that runs from the 1st grade through high school that connect truck drivers and students. The mission is to enrich the educational lives of children through the positive experience and influence of professional truckers and to help to build understanding of the trucking industry within the community. In total, there are about 2,000 drivers who are currently Trucker Buddies to about 60,000 students in the United States and other countries. Drivers commit to communicating with the classroom while on the road by sending postcards, emails, letters, pictures and even Skyping or Facetiming from their smartphones. Teachers incorporate those communications into lesson plans, and students write letters back to the driver about what they have learned.

Source: Florida Trucking Association, Town of Jupiter, CDL LIFE & Trucker Buddy Organization

Appendix A

Public Outreach

MARTIN COUNTY

Freight & Goods Movement Plan

"Freight transportation planning helps align land use plans with the movement of goods through and within local municipalities and regions to support the economic vitality of industries/businesses and to reduce the potential for negative impacts including pollution, congestion, injuries to pedestrians and cyclists associated with the movement of freight." – Source: Connect Our Future

MARTIN MPO
Metropolitan Planning Organization

This project will deliver a stand-alone freight plan for Martin County with recommendations for county and municipal policy considerations and potential projects to be included in the 2045 Martin Long Range Transportation Plan.

BACKGROUND

With over 60 million tons of freight, worth $40 billion, moving daily through the United States transportation system, logistics and goods movement are essential parts of our economy and communities. Virtually any product that one purchases or uses was most likely transported in some form through a complex supply chain, often involving multiple modes and many stops across the region, state and perhaps the world. An efficient, reliable, and safe transportation system that accommodates and facilitates freight movement is essential for supporting economic growth and quality of life.

Martin MPO has documented freight in previous LRTPs and participated in the 2017 Treasure Coast Regional Freight Plan. This will be the first stand-alone freight plan focused on Martin County.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

The Martin Freight Plan will be developed based on three elements:

1

STAKEHOLDER ENGAGEMENT

The freight and goods movement industry is focused on daily operations dealing with dynamic and complex networks and agreements between suppliers, wholesalers and retailers. It has been a challenge across the region and nation to achieve participation from the private sector in planning studies, particularly, long range planning efforts, as they are rightly focused on day-to-day operational issues. In order to develop an effective plan, the Project Team will implement an outreach program throughout the study with targeted and proactive outreach.

STAKEHOLDER ADVISORY COMMITTEE

The role of the Stakeholder Advisory Committee (SAC) is to provide input to inform the plan. The SAC will be made up Freight Stakeholders in the local community. Through a series of three meetings the SAC will provide essential feedback on the plan and comment on the presentations and deliverables.

2

DEVELOPMENT OF A RELIABLE, MULTI-MODAL FREIGHT PLAN

Reliability is a measure of the variability of travel times and has been adopted by the FHWA, FDOT and the MPO as the key performance measure for freight. The project team will collect data, analyze alternatives and make recommendations for a reliable regional and local freight and goods movement transportation system.

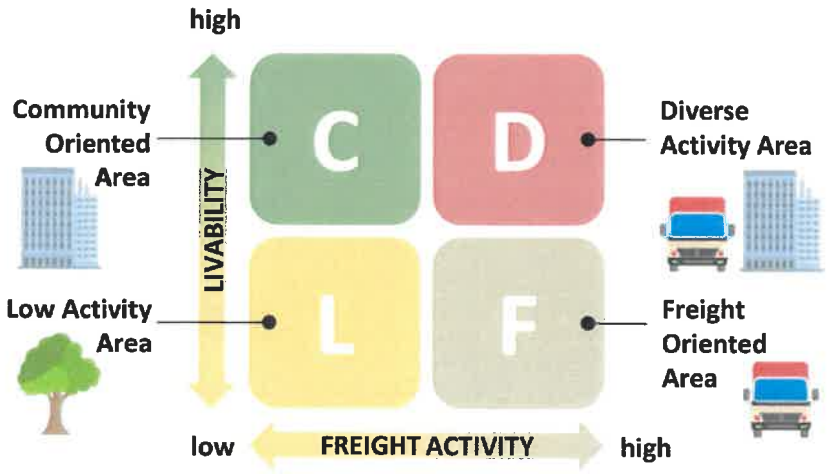
3

INTEGRATING GOODS MOVEMENT NEEDS INTO COMMUNITY DESIGN

Martin County experiences significant through freight traffic as part of the regional and statewide supply chain and it is important that this plan identifies a reliable and safe network on the major roadway, waterway and railroad systems. At the community level this plan will consider the needs for commercial and residential goods movement access and mobility in context with the community. The plan will identify contexts including Diverse Activity Areas, Community Oriented Areas, Freight Oriented Areas and Low Activity Areas and develop freight approaches that fit into the concerns/needs of sub areas through infrastructure, design and policy recommendations.

The Martin County Freight and Goods Movement Plan will encompass a holistic planning approach covering freight reliability, land-use integration and reduce conflicts between freight and residential and community areas.

COMMUNITY CONTEXTS



ACTIVITIES

- Literature & **Best Practices Review**
- Freight Stakeholder **Coordination**
- Data Collection **& Mapping**
- Freight Context Sensitivity **& Livability Assessment**
- Alternative Improvements **& Recommendations**
- **FINAL REPORT**

CONTACTS | **BOLIVAR GOMEZ:** bgomez@martin.fl.us | 772.288.5412
JEFFREY WEIDNER: jweidner@marlinengineering.com | 954.870.5058

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

February 12, 2020 | 11:00AM- Noon

Walmart General Merchandise
Distribution Center
4001 S Jenkins Rd, Fort Pierce, FL 34981

Attendees: **Mike Lucci**, Transportation Director
Bolivar Gomez, Martin MPO
Jeff Weidner, Project Manager – Marlin Engineering, Inc.
Walt Keller, Marlin Engineering, Inc.

St. Lucie County Distribution Center Transporter location has 1.2 Million Square feet and serves from Titusville to Florida City and from Port Charlotte- Atlantic Ocean.

They have 94 Drivers- 800 trailers. Drivers schedule is Monday through Friday starting on Monday. The drivers sleep at selected locations and need to schedule each day around the trucking driving time (Jason's Law) rules.

The have one loading dock for each store and the drivers run back and forth picking up trailers for deliveries and bringing back empties.

National dispatch Grove City, Ohio and Bentonville, Arkansas.

The don't really have any bottleneck issues – they use I-95 and get off at the 101 (mile post????).

This is the General Merchandise and Dry Goods store – clothes, toys, furniture. The Arcadia, Florida center is the produce facility.

SR 70 to the west coats is a bad road. Narrow lanes and no shoulders.

Drivers have on-board computers and are aware of crashes on I-95.

Unlike other companies, cargo theft is not an issue because they have their own trucks and deliver to their own stores where they can take breaks They can rest at their "break" stores

where they are allowed. FYI, local communities pass ordinances that don't allow them to take break. Mostly related to noise issues. They are not allowed to rest at the Martin County store.

This is especially an issue with refrigerated (reefer) trucks because of the noise. Some Walmart trucks have Auxiliary Power Units (APUs) so they can shut off the engine and have electricity for air conditioning and the trailer/reefer unit. The capital conversion for all trucks is very expensive as they need to do the cab and the trailer.

Walmart has a has a test Track (in Ohio) for all the new technologies.

They typically have 2 trucks a day to Martin store. One arrives at 2:00 PM the other at 4:00 PM. They need to have the trailer unload within 2 hours so the 4:00 Pm trailer can take the empty trailer back. The 2:00 truck takes back the empty trailer from 4:00 PM the day before.

The trucks are instructed to take I-95 and get off of at Kanner Highway. They travel north on Kanner Highway then east on Pomeroy Drive, then north on US 1 to Walmart back entrance where they unload, pick up empty, then exit site on the south to Pomeroy and straight back to Kanner Highway and US 1.

They team asked if it was okay, we recommended they take Cove Road. They said yes.

They don't like using SR 714 it is another narrow street with no lighting.

I-95 weigh stations have a new technology where they are detected and receive a message on an overhead DMS sign that their weight is okay and they don't have to pull over.

Do the tolls make a big difference? No, about $90 to 100 in tolls (a month?).

Miami Area Stores each day receive (trucks):
1- Dry Goals
1 Meat and Produce
2 General
1 Frozen
1 Remix
3 Grocery
Other vendors beer, coke, Pepsi

In total including the Walmart dry goods, frozen and produce trucks and other vendors e.g. Coca-Cola, they have about 10 trucks a day.

MARTIN COUNTY

Freight & Goods Movement Plan

Outreach Summary

February 12, 2020 | 11:00 AM - Noon

Port Salerno Fish House Art Center
4745 SE Desoto Ave
Port Salerno, Florida

Attendees: **Butch Olsen**, President, Port Salerno Commercial Fishing Dock Authority, Vice President Treasure Coast Marine Industries Association
Jeff Weidner, Project Manager – Marlin Engineering, Inc.
Walt Keller, Marlin Engineering, Inc.

Marlin staff met with Bruce Olsen, President of the Port Salerno Commercial Fishing Dock Authority on February 12, 2020 to discuss freight and goods movements. Martin County previously developed docks for the commercial fishing community as part of the CRA improvements. Mr. Olsen indicated the annual commercial fishing effort produces between 1.3 and 1.8 million pounds of fishing primarily during the winter season. Spanish Mackerel, Tile, Grouper and King Fish are the predominant fish caught although some snapper and grouper are also caught.

The commercial fishing docks are located along SE Park Drive just south of the Pirates Cove Hotel and Marina along the Manatee Pocket in Port Salerno. The State's net ban significantly impacted the local fisheries.

The Authority provides water side access to the fishing docks to 10 Charter Members. The locally caught fish are then unloaded and processed by 3 vendors located in Fort Pierce, Vero Beach and Sabastian. Three class 5 trucks were parked in the dock area to serve the incoming fish catches. Trucks come daily.

The Authority maintains the docks and recently has poured concrete aprons connecting to three vendor locations. The CRA is proposing an improvement project to move the sidewalk on the west side of the SE Park Drive in order to provide for truck and vehicle parking adjacent to the docks. Discussions with Joshua Mills (772-288-5461), Project Manager for the Port Salerno CRA, indicates the 30% plans will need to be revised to address drainage and water quality issues.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

February 12, 2020 |

Via Telephone

Attendees: **John Resnick**, Operations Mgr., American Custom Yachts
Walt Keller, Marlin Engineering, Inc.

Telephone interview with John Resnick (772-210-0589 direct line). American Custom Yachts (ACY) has a 36-acre facility located at 6800 SW Jack James Drive on the south side of the St. Lucie River between the Florida Turnpike and Interstate 95. ACY builds custom yachts, refurbishes and upgrades existing yachts, repairs yachts and stores yachts. The company also owns 29 acres of land on the north side of the St. Lucie River that is un-developed. At one time the company wanted to enlarge the existing operation and place a 500 ton lift to service larger vessels on the north parcel. Unfortunately, the depth of the inlet was not sufficient to bring the large lift to the site and the northern parcel is for-sale.

John Resnick has been on-site for 30 years and indicated the barge traffic on the St. Lucie River has decreased significantly in recent years. While boats which are serviced at ACY may use the river to get to the site, no freight or shipments of material arrive by water. Between 3 – 7 truck semi-trailers deliver material such as lumber, drums of resin, etc. to the site. The trucks un-load within the confines of the site. I inquired if they would allow a truck to stay overnight and he indicated that was not something they would do. They also receive supplies by other parcel- package delivery services.

John also noted the business park to the south does not have on-site parking areas for semi-trailers to unload off of Jack James Drive. Mr. Resnick was not interested in having an on-site interview but indicated we could contact him for additional information.

TREASURE COAST REGIONAL PLANNING COUNCIL

INDIAN RIVER – ST. LUCIE – MARTIN – PALM BEACH

March 24, 2020

Jeff Weidner
Marlin Engineering
1700 NW 66th Avenue
Plantation, FL 33313

Bolivar Gomez
Martin MPO
2401 SE Monterey Road
Stuart, FL 34996

Re: Martin County Freight and Goods Movement Plan

Dear Jeff and Bolivar:

The Stakeholder Committee meeting held on March 18th was informative and productive. There are a couple of points we'd like you to consider as things move to the next step:

1. To have a comprehensive discussion of freight movement to and through Martin County, good attention should be paid to the railroads as a mover of freight and not just a source of interference at intersections with roadways.
2. The concept of using a new freight rail line along US 27 from the west side of Miami up to the south side of Lake Okeechobee and then around the east side of the lake through western Martin County to Central Florida and beyond should be mentioned. This would allow some Florida East Coast Railway (FEC) freight to completely bypass the east coast of Florida between Miami-Dade and St. Lucie counties.
3. A component to include in the plan, even without the new US 27 rail line moving forward, would be an interchange between SCFE and CSX at "Marcy" where the 2 railroads now cross northwest of Indiantown. This would not be too expensive to construct and would allow FEC freight to use SFRC/CSX from "Iris" in Miami-Dade County and "Northwood" in Palm Beach County to get all the way to the south side of Ft. Pierce without impacting grade crossings on the FEC. It also would create opportunities for logistics centers and other economic activity in Indiantown.
4. The emphasis put on context is appreciated. When designing intersections, it is a careful balancing act between freight movement and the safety and comfort of users of other modes like walking. Inclusion in the report of clever new design examples that succeed at this would be most welcome.

5. It was interesting to hear about changes coming to SR 710 in Indiantown as well as a potential bypass around Indiantown. The road in its current configuration passing through Indiantown is not sensitive to the local context and makes pedestrian and bicycle movement from one side of the road to another difficult and dangerous. While a freight bypass would offer relief, it is critical that the new route not spark a wave of automobile oriented businesses to sprout up along the new road, which would devastate existing businesses in town and replicate the exact same scenario of vehicle conflicts and multiple driveway openings that we assume the bypass is intending to fix. Inclusion in the report of successful examples of how to accomplish this would be appreciated.

Thank you for taking our comments into consideration and we look forward to the next meeting.

Sincerely yours,

Thomas J. Lanahan
Executive Director

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

April 7, 2020

Via Phone

Attendees: **Walter Skinner**- Southeast Milk- Operations Supervisor.
Wskinner@Southeastmilk.org

Jeff Weidner, Project Manager – Marlin Engineering, Inc.

Walter is the Supervisor of Operations for Southeast Milk located at

First some background on the study. The Martin MPO is a federally funded agency that is responsible for developing transportation plans that guide the investment of Federal and State transportation funds in Martin County. We are contracted with the MPO to develop the first stand-alone freight plan for Martin County. The plan will identify transportation infrastructure and safety projects for investment in the short, mid and long term. We have been reaching out to stakeholders and have heard from the trucking industry how important it is to invest in improvements to SR 710, US 98, Kanner Highway and SR 714 and all rural highways in general. Suggested projects include wider shoulders, wider lanes, fog/weather alerts, truck parking/rest areas and opportunities to make U-Turns. Comments from Mr. Skinner

Southeast Milk is located on SW 126 Blvd just west of SR 710 in Martin County Florida. supervisor at the facility.

SR 710 is the best way we can get to Okeechobee and West Palm Beach. Our biggest issue is between here and Okeechobee where everyone is passing. Wider shoulders would help if you had to pull off the road but it would be best to expand the roadway to 4 lanes.

We also utilize US 98 to transport milk south. We use US 98 to get to Belle Glade and to US 27 to get to Miami and avoid using I-95. We have some farms up north and we use SR 710 to get to SR 441 and SR 60 to get to Orlando, Winter Haven and Lakeland.

SR 710 is also critically important for us to get to get back and forth from home to work and the traffic on the roadway is very fast and people, are passing too much, sometimes 4 and 5 vehicles at once.

SR710 is the only way we can get between Okeechobee and West Palm Beach

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

Via Go-To-Meeting

April 9, 2020 | 11:00AM – Noon

Attendees:
Guyton Stone, Mayor, Village of Indiantown
Howard Brown, Village Manager, Village of Indiantown
Bill Archebelle, Directory of Public Works, Village of Indiantown
Bonnie Landry, Director of Planning, Village of Indiantown
Bolivar Gomez, Martin MPO
Beth Beltran, Martin MPO
Jeff Weidner, Project Manager – Marlin Engineering, Inc.
Lisa Maack, Marlin Engineering, Inc.
Moshiur Rahman, Marlin Engineering, Inc.

Bonnie asked for the details of the law change that restricted truck driver hours and highlighted the need for communities to accommodate the drivers.

Indiantown bypass – Mayor stated the views in the community are mixed, some want, including business owners, residents are mixed, when considering the future of a truck stop and what comes with it.
Noted that 710 PD&E includes the bypass and may include CRA comments

Noted that railroad noise is an issue at night.

Confirmed that fog is an issue at certain times of the year

Truck parking on 710 was discussed to be included as an item for Commission discussion
Bonnie noted that Village is drafting New LDR, could be incentives or requirements

Airport is privately owned with a grass field, future plans would up to owner, same for marina

Bonnie suggested this meeting's topics as a potential item for future Indiantown Council discussion
Howard noted that Board is having virtual Zoom meetings and would welcome this topic for discussion
Meetings are 2nd and 4th Thursday each month at 6:30pm
Suggestion for April 23 or May 14
Possibility of May 14 for a presentation to the Board

Action items:

Marlin - Research 710 PD&E including the bypass
Marlin – Follow up with FDOT on status of 710 to Port of Palm Beach project
Bonnie/Howard/Jeff/Beth- Potential presentation on May 14 to the Indiantown Commission to be coordinated

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

May 6, 2020

Go-To-Meeting

Attendees: **Bolivar Gomez, MPO Project Manager**
Beth Beltran, MPO Adminstrator
Lauren Rand FDOT, 4
Dan Smith FDOT, 4
Alexandra Lopez, FDOT 4
Autumn Young, FDOT 4
Lisa Maack, Marlin Engineering Inc.
Jeff Weidner, Project Manager, Marlin Engineering, Inc.

Mr. Weidner provided a powerpoint presentation of recommended projects.

Mark Plass, referring, to rural highway ITS/TSM&O type projects that there be a strategic approach. Merge mobility, TSM&O and safety strategies and clearly identify what resources will be needed.

Mark Plass also indicated that MPO should identify a methodology to prioritize projects based on crashes and safety. Need to be very clear on what the goals are and how the projects play into that role.

Autumn Young indicated that the Project Team should also be documenting the role of agriculture in Martin County freight and goods movement.

Beth Beltran indicated that there is a safety concern on SR 710 where the public and elected officials would like to see improvements at Tommy Clements Street at SR 710.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

May 6, 2020 | 1:00PM – 2:00PM

Via Go-To-Meeting

Attendees:
Mark Plass, FDOT
Autumn Young, FDOT
Lauren Rand, FDOT
Dan Smith, FDOT
Alexandra Lopez, FDOT
Bolivar Gomez, Martin MPO
Beth Beltran, Martin MPO
Jeff Weidner, Project Manager – Marlin Engineering, Inc.
Lisa Maack, Marlin Engineering, Inc.

Smith: The fog alert picture in PowerPoint is a small standalone weather system with monthly maintenance and a visibility sensor inside to detect fog for area with pinpoint location

Plass: Longer term benefit to expanding ITS infrastructure into Glades region with devices integrated into traffic management with positive benefits to trucking industry

Young: Is the agriculture industry included in land use, it is important as it relates to freight.

Plass: SR 710 Connected Freight Priority Program Project has limits noted and ends in Palm Beach County (to be removed from table)

Young: FDM chapters will be created to assist new designers, current standards exceed national standards and most states, open to receiving information from Martin MPO

Beltran: Send map with Indiantown bypass routes, note it was created before recession with 2 DRIs

Smith: Does freight industry have a preference or interest in Waze, 511, etc?

Young: Ryan Walpole is on Kenworth Customer Council, has had extensive conversations regarding rural issues, alternate routes, turn arounds

Young: Will this list be adopted into the MPO's LRTP?

Discussion of Tommy Clemens Rd high crash rate

Beltran: Yes, Board is especially interested in the capacity project on 710 and Monterey Road grade separation

Plass: To elaborate, suggest a strategic look at infrastructure with TSM&O countywide, a holistic look at the system with a concept of operations, mobility and safety for the whole area, TSM&O for a vision as opposed to piecemeal projects

Young: Agreed, opportunity for a strategic vision with a TSM&O vision plan

MARTIN COUNTY

Freight & Goods Movement Plan

Outreach Summary

May 12, 2020 | 9:00AM – 10:00 AM

Via Go-To-Meeting

Attendees: **Yvette Alger Goodiel,** UF/IFAS Extension, Sustainability and Commercial Horticulture Extension Agent III
Bolivar Gomez, Martin MPO
Jeff Weidner, Project Manager – Marlin Engineering, Inc.
Lisa Maack, Marlin Engineering, Inc.

- She works with landscapers, farmers, ranchers, sod producers, nursery growers, sellers of materials for landscaping, to connect them to resources, ex. USDA, for better way to manage pests, crop fertility
- She works to find out what the community needs and connects UF resources to community needs
- She will provide a map and information on crops, sugarcane is increasing, ranchland, grazing land, agriculture is highest use, raising cows and calves to ship to market, a little citrus
- Property Appraiser has map of ag "land use": grazing land, cropland, nursery-quite a bit, ornamental plants, timberland, vegetables, watermelon, tomato, leafy greens, squash, peanuts, tropical fruit/trees
- Shipped by bigger growers in semitrucks, warehouse packing, east coast provides seasonal growing along it
- Peak season is Oct- April
- Food System Feasibility Study was done in Martin County (she will provide link to info)
    - Interest in local agriculture
    - Ideas for food hub, refrigerated storage, farmers market
    - More storage and more retail already in works
    - Products are being sent elsewhere, need to move food in local community
- Covid- 19 situation – issues of small growers, restaurant supplies, local distributors, need for better transportation infrastructure connections
- Crossroad pattern? Yes, Farm Road has that
- Future data on vacant/active land, believes is in Property Appraiser data
- She has a broad email list of 530, and this includes industry organizations leadership, although she cannot send attachments, but can incorporate into email body

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

Telephone Conversation

May 12, 2020 | 5:30 PM

Attendees: **Mike Cegelis,** Executive VP of Infrastructure Virgin Rail Brightline
Jeff Weidner, Project Manager – Marlin Engineering, Inc.

Discussion with Mike Cegelis, Executive VP of Rail Infrastructure Brightline

Subject: FEC St. Lucie River Bridge

At this point there is no rehabilitation or reconstruction planned

FEC is talking about some repairs

Brightline was moving forward with a PD&E study and was coordinating with Martin County and the City of Stuart earlier this year about a bridge reconstruction. They were trying to build a coalition of support. The agencies were supportive but they believe there is a sector of the public against the overall project.

FEC would not be the ones to do the project. They typically maintain what they have and don't build new infrastructure. Virgin USA Brightline and FEC share the cost of maintenance.

Right now, the St. Luce River Bridge is the only segment not in the Double Tracking effort that is going on.

Due to the Covid 19 Crisis Brightline has shut down operations and funding is hard to come by.

The project would be a 10 year project to complete NEPA, design and construction.

Bridge is about 100 years old.

Full NEPA is required to move the project forward and the project has some major challenges

- Don't have sufficient Right of Way for entire bridge
- Public Opposition

They were trying to eliminate the "S" curve caused by bridge alignment. The bridge was initially constructed for the shortest alignment not necessarily the best alignment.

The project needs a coalition.

The new service is able to operate without the reconstruction.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

Via Phone

Date: May 13, 2020

Attendees: **David Powers, Florida Commerce Park**
Jeff Weidner, Project Manager – Marlin Engineering, Inc.

Mr. Powers contacted Jeff Weidner, Marlin Engineering as he saw the Martin MPO Freight and Goods Movement Plan in the Village of Indiantown agenda for the May 14, Village Board Meeting.

Mr. Power represents Florida Commerce Park and other properties in the area.

Mr. Weidner explained to Mr. Powers the responsibilities of the Martin MPO and that we were developing a plan that provides for short, mid and long range transportation projects for consideration into the Martin MPO Long Range Transportation Plan.

Mr. Palmer was interested in the SR 710 project. Mr. Weidner explained that the Martin Power Plant Road to Alllapattah Street was in right of way and design process and is scheduled for construction in Fiscal teat 2023.

Mr. Palmer also represents the Venture Park property and he has been talking with Aycel Freda about the easement and how much property is needed.

Mr. Palmer wanted to introduce himself and was looking forward to supporting the project at the Village meeting.

He will be contacting the FDOT Project manager for the SR 710 widening project on where the easement will be located.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

May 15, 2020 |

Via Phone

Attendees: **Mark Plass,** FDOT
Nadir Rodrigues, FDOT 4
Jeff Weidner, Project Manager – Marlin Engineering, Inc.

Mr. Weidner contacted Mark Plass to inform him that the evening before, May 14, 2020, at a presentation to the Village of Indiantown Board on the Martin MPO Freight and Goods Movement Plan a discussion evolved concerning safety and needed improvements at SR 710 and Tommy Clements Boulevard.

Marl indicated that FDOT was well aware of the issue and after the last fatality in earl 2019 they immediately initiated two separate safety studies. The studies indicated that there is a significant speeding issue in the SR 710 Corridor and that aggressive passing activity is going on where vehicles will pass four or five cars at a time.

FDOT 4 has programmed pushbutton work orders for pavement marking and signage improvements and there is the potential for a left turn lane onto Tommy Clements Street from SR 710.

Mark referred the team to Nadir Rodrigues who is managing the SR 710 effort. Nadir confirmed that there are two pushbutton contracts that will bet let shortly to replace existing safety signage with high visibility markings and signage and that a left turn proposal onto Tommy Clements Street is in design. The left turn proposal may need to be implemented next year if right of way needs to be purchased.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Outreach Summary

May 15, 2020 | 11:07 a.m.

Go-To-Meeting

Attendees: **Alex Barr- FDOT District 4 Rail Office**
Gregor Sengor – FDOT 4 Rail Office
Jeff Weidner, Project Manager – Marlin Engineering, Inc.

Attachments

Mr. Weidner explained that he had contacted FDOT 4 to discuss the FEC Corridor Strategies to Reduce Railroad Trespassing projects identified in the FDOR SIS plan per the Martin MPO 2045 Needs Plan Project List.

Mr. Barr and Mr. Sengor indicted that they were doing some safety projects in Broward and Palm Beach County but that was on the South Florida Rail Corridor and not the FEC corridor.

These projects were in coordination with the South Florida Regional Transit Authority where they were putting up fencing and putting up delineators on the railroad crossings to prevent vehicles from driving on tracks.

FDOT Secretary Thibault announced an initiative to implement dynamic envelope high visibility pavement markings and safety projects at all State Highway Crossing at Railroads across the state. Alex and Gregor are now reviewing a pushbutton contract for 80 projects this week. To be completed in June, July and August 2020. There will be four different project packages.

FDOT is coordinating with Brightline and FEC in Martin County. Brightline is currently implementing the double tracking of the FEC corridor to Orlando. In Martin County they are simultaneously implementing the dynamic envelope treatments and are now splitting the costs at 50%/50% for the envelope.

Kanner Highway and Pomeroy Road are programmed for August 2020.

Gregor mentioned that they are currently identifying the top 10 grade separations in Broward County. Vetting the top 10 and it looks like the 3 priority locations will be Sample Road at the FEC, Sample Road and Trirail and Atlantic Boulevard at Atlantic Boulevard.

Mr. Weidner explained some of the trespassing issues in Martin County including the Golden Gate to Commerce Avenue issues.

They are doing something similar in Palm Beach, implementing more industrial strength chain link fencing. There was a discussion as to the social impacts as the fencing may keep people out but it does not solve the issue where the community needs mobility options to get to shopping opportunities. fencing chain link.

They also have infrared technologies and can detect people trespassing up to 15oo feet each way and the authorities are contacted automatically. They even now have a device that can emit high p[itched audio to try and disperse people from congregating on the tracks.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAULT, P.E.
SECRETARY

TRAFFIC ENGINEERING AND OPERATIONS BULLETIN 20-01
ROADWAY DESIGN BULLETIN 20-02
PROGRAM MANAGEMENT BULLETIN 20-01
CONSTRUCTION BULLETIN 20-02
FREIGHT AND MULTIMODAL OPERATIONS BULLETIN 20-01

DATE: February 11, 2020

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Traffic Operations Engineers, District Design Engineers, District Consultant Project Management Engineers, District Construction Engineers, District Maintenance Engineers, District Program Management Engineers/Administrators, District Traffic Design Engineers, District Roadway Design Engineers, District Rail Administrators and Coordinators

FROM: Trey Tillander, P.E., Director, Traffic Engineering and Operations
Michael Shepard, P.E., State Roadway Design Engineer
Stefanie D. Maxwell, P.E., Manager, Program Management Office
Dan Hurtado, P.E., Director, Office of Construction
Rickey Fitzgerald, Manager, Freight & Multimodal Operations

COPIES: Courtney Drummond, Tom Byron, Will Watts, Gerard O'Rourke, Lora Hollingsworth, Joe Santos, Tim Lattner, Rudy Powell, Tim Ruelke, Beth Frady, Khoa Nguyen (FHWA), Frank Corrado (FHWA)

SUBJECT: **Railroad Dynamic Envelope Safety Countermeasure**

This bulletin introduces new requirements for the Railroad Dynamic Envelope pavement markings. These requirements involve updates in the FDOT Design Manual (FDM), Standard Plans for Road and Bridge Construction (Standard Plans), Standard Specifications for Road and Bridge Construction (Standard Specifications), and the Basis of Estimates Manual (BOE).

REQUIREMENTS FOR FDOT DESIGN MANUAL

1. Renumber ***FDOT Design Manual (FDM) 220.2.1.1*** *(Preemption)* to ***FDM 220.2.1.2.***

2. Insert the following as new ***FDM 220.2.1.1***

220.2.1.1 Signing and Pavement Markings

Include signing and pavement markings in accordance with ***Standard Plans, Index 509-070***.

Include Railroad Dynamic Envelope (RDE) pavement markings at the following at-grade railroad crossings on:

- State Roads;
- State-owned rails; and
- State-owned property.

For side roads with at-grade crossings within 100 feet of the edge of traveled way, include W10-2, W10-3 or W10-4 signs on the mainline state road in accordance with the ***MUTCD***.

For pavement marking material selection, see ***FDM 230***.

3. Add the following as the last paragraph to ***FDM 230.3***.

   See ***FDM 220*** for signing and pavement marking requirements for at-grade railroad crossings.

4. Delete ***FDM Figure 230.3.1*** and replace it with the figure shown in Attachment 'A'.

5. Add item "(6)" to the first paragraph (i.e., Use Preformed Thermoplastic on all pavement types…) of ***FDM 230.3.1.3***:

   (6) Railroad dynamic envelopes. When installed on concrete riding surfaces, a 4-inch wide black contrast border is required on both sides of each 12-inch wide marking.

REQUIREMENTS FOR STANDARD PLANS

1. ***Standard Plans***, ***Index 509-070*** *(Railroad Grade Crossing Traffic Control Devices)* has been updated and is released as an ***Interim Revision*** (***IR509-070***) to the ***FY 2020-21 Standard Plans***. The Interim Revision will replace the original version of the Index published on October 30, 2019; therefore, a reference to the ***Interim Revision*** is not required on the Key Sheet under the Governing Standard Plans.

2. ***Standard Plans Instructions (SPI)*** are released for ***Index 509-070***. ***SPI 509-070*** contains important information about the usage requirements for the use of traffic control devices for at-grade railroad crossings.

3. See Attachment 'B' for ***IR509-070*** and ***SPI 509-070***.

REQUIREMENTS FOR SPECIFICATIONS

1. The specifications for railroad dynamic envelope are provided in ***Modified Special Provision*** (***MSP***) 711. This ***MSP*** shall be used on affected projects with letting dates prior to July 2020. See Attachment 'C' for a draft of this ***MSP***. This bulletin serves as approval to incorporate this ***MSP*** into project specification packages. No further approval is needed. Contact the District Specification Office to obtain a copy of this MSP.

2. ***Standard Specifications*** will be available for use on affected projects with letting dates on or after July 2020.

REQUIREMENTS FOR BOE

The following pay items have been added to the ***BOE*** for the railroad dynamic envelopes:

- For Asphalt Surfaces: 711-14-19x Preformed Thermoplastic for Railroad Dynamic Envelope, LF
- For Concrete Surfaces: 711-14-19x Preformed Thermoplastic with Contrast for Railroad Dynamic Envelope, LF

Per the specification, the linear foot measurement will be Plan Quantity, along the centerline length of each marking. The various widths, x for the pay item, will be available per the ***Standard Plans***.

COMMENTARY

Railroad Dynamic Envelope pavement markings are used to delineate the area around at-grade railroad crossings where vehicles should not stop.

In 2014 and 2019, FDOT conducted railroad dynamic envelope pilot programs in south and central Florida, respectively. Following the installation of the railroad dynamic envelope, traffic data indicated that the number of vehicles that stopped on or too close to the rail tracks was reduced by at least 15%.

Engineering and Operations Memorandum 19-02 was issued on December 5, 2019 and work to implement railroad dynamic envelopes on State Roads and State-owned land is anticipated to be completed by March 2022.

In addition, this bulletin addresses the need for consistency of railroad crossing advanced signing for passive railroad crossings parallel to and within 100 feet of a State Road.

IMPLEMENTATION

The requirements of this bulletin are effective on all design-bid-build projects with railroad crossings within the project limits for lettings May 1, 2020 and later.

The requirements of this bulletin are effective on all design-build projects with railroad crossings within the project limits for which the final Request for Proposal (RFP) has not been released. Implementation of this bulletin for design-build projects for which the final RFP has been released is at the discretion of the District.

At the District's discretion, District Construction Offices may issue a Supplemental Agreement to ongoing construction contracts to implement the requirements of this bulletin. District Construction Offices must notify the District Rail Coordinators and the District Traffic Operations Engineers to report project status upon starting and completing the projects.

EVALUATION

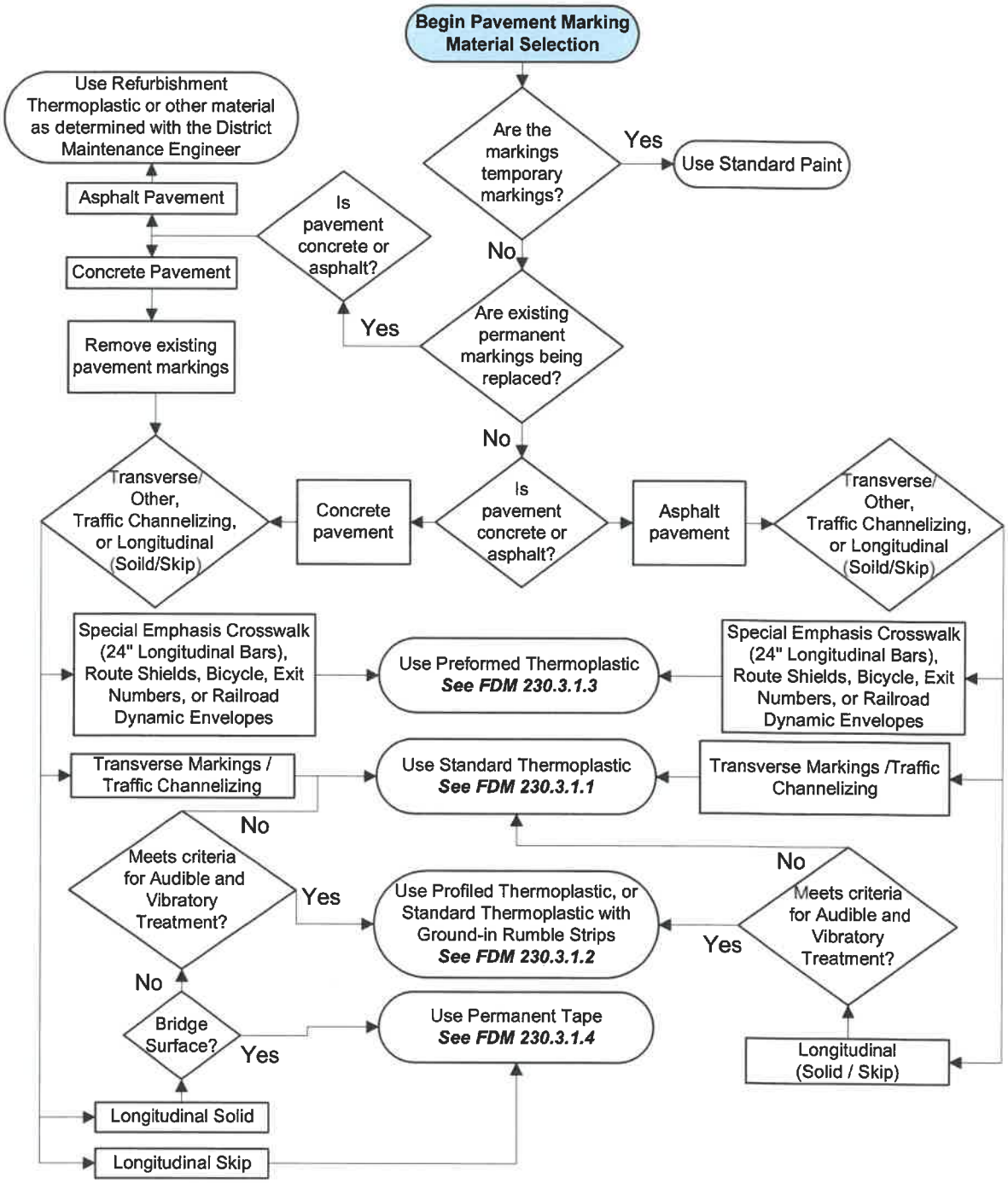
The Freight and Multimodal Operation Office and District Rail Offices, in consultation with the District Traffic Engineering and Operation Offices, will measure the effectiveness of the railroad dynamic envelope implementations using before-and-after evaluations.

CONTACT

Alan El-Urfali, P.E.
State Traffic Services Engineer
State Traffic Engineering & Operations Office
Alan.el-urfali@dot.state.fl.us
(850) 410-5416

ATTACHMENT 'A'

Figure 230.3.1 Pavement Marking Material Selection

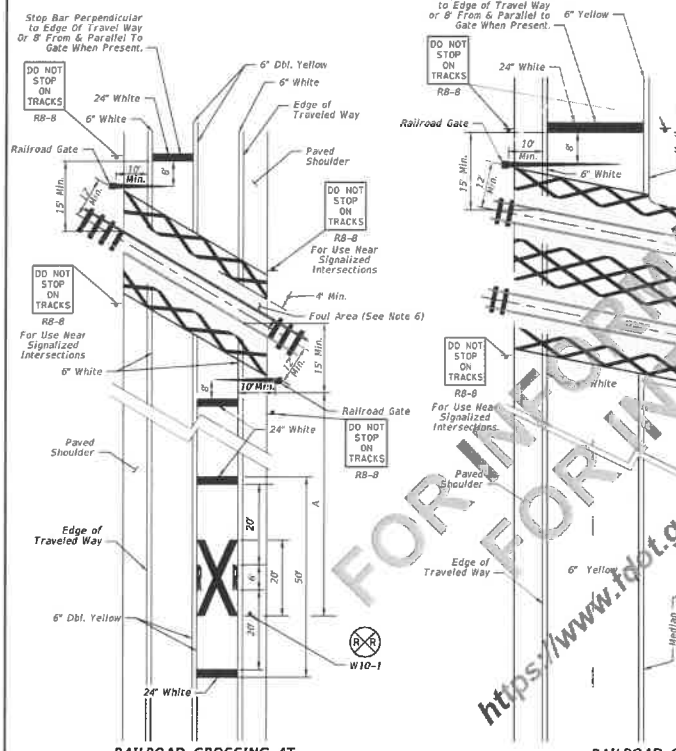


ATTACHMENT 'B'

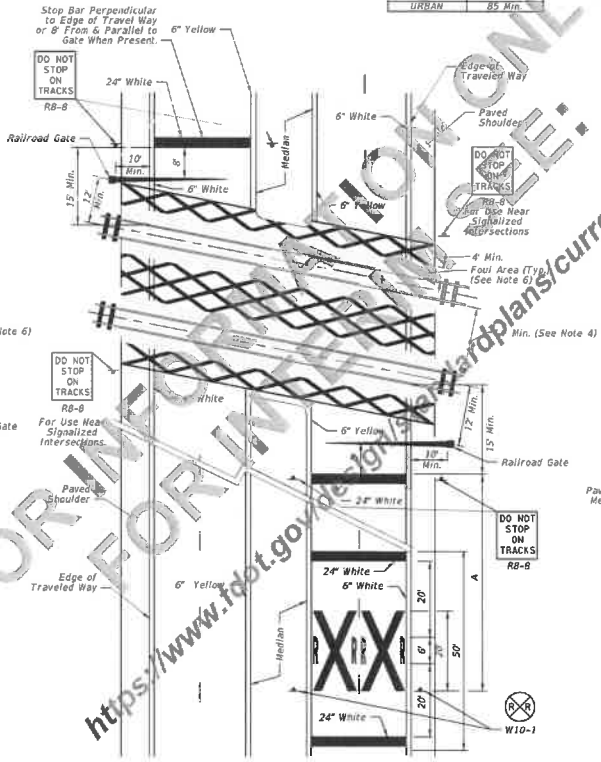
NOTES

1. Place an additional W10-1 sign where intersections occur between the R/R pavement message and the tracks.
2. Place FTP-61-06 or FTP-62-06 sign 100' in advance of crossing for urban conditions and 300' in advance of crossing for rural conditions. See Index 700-102 for sign details.
3. Install Railroad Dynamic Envelope Pavement Markings only when called for in the Plans.
4. Do not install pavement markings when the distance between tracks is less than 14'.
5. The transverse dimension for the RDE "X" may be reduced to the lane width for two-lane roadways without shoulders or when shown in the Plans.
6. Do not install pavement markings in the Foul areas.

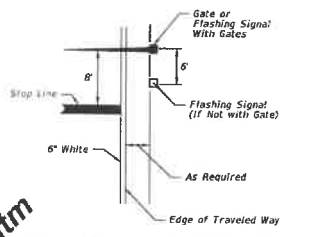
Design Speed (mph)	Distance "A" (ft)
60	400
55	325
50	250
45	175
40	125
35	100
URBAN	85 Min.



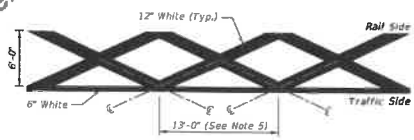
RAILROAD CROSSING AT TWO-LANE ROADWAY



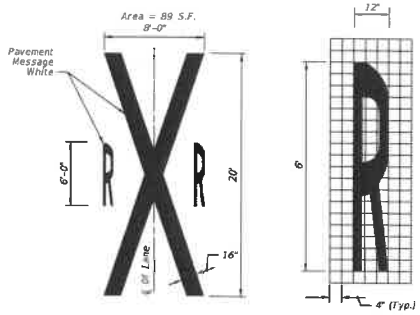
RAILROAD CROSSING AT MULTILANE ROADWAY



RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES



RAILROAD DYNAMIC ENVELOPE (RDE) PAVEMENT MARKING DETAIL



RAILROAD CROSSING PAVEMENT MESSAGE

LAST REVISION	REVISION DESCRIPTION	FDOT			INDEX	SHEET
02/11/20	Added Railroad Dynamic Envelope Pavement Marking Details.	FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES		509-070	3 of 4

F:4411 AM
2/11/2020

Index 509-070

Railroad Grade Crossing Traffic Control Devices

Design Criteria

FDOT Design Manual (FDM), Manual on Uniform Traffic Control Devices (MUTCD)

Design Assumptions and Limitations

Signing and Pavement Markings:

Index 509-070, provides standard signing and pavement marking for active at-grade railroad crossing (i.e., crossing with flashing-light signals, gates, or traffic control signals). Refer to the ***MUTCD*** for signing and pavement markings at passive at-grade crossings.

Refer to ***FDM 220*** for the requirements to include Railroad Dynamic Envelope (RDE) pavement markings. In situations where the configuration of the track(s) is not parallel, maintain the typical Railroad Dynamic Envelope pattern and fill the gap between the tracks as necessary.

Plan Content Requirements

Signing and Pavement Markings:

Summarize quantities in the Tabulation of Quantities of the Signing and Pavement Marking Plan.

Detail the pavement markings and sign locations in the Signing and Pavement Marking Plan view.

Payment

See the ***BOE*** and ***Specifications*** for information on payment, pay item use, and compensation.

FOR INFORMATION ONLY

FOR INTERIM SEE:

https://www.fdot.gov/design/standardplans/current/rev.shtm

ATTACHMENT 'C'

THERMOPLASTIC PAVEMENT MARKINGS
(REV 1-29-20)

SUBARTICLE 711-4.1.1 is deleted and the following substituted:

711-4.1.1 Preformed Thermoplastic: Apply markings to dry surfaces only and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating. For railroad dynamic envelopes, keep all equipment and personnel out of the foul area.

SUBARTICLE 711-4.2.3 is deleted and the following substituted:

711-4.2.3 Preformed Thermoplastic: Apply 0.125 inch or 125 mils of preformed thermoplastic material. Use preformed thermoplastic for bicycle markings, shared use path markings, 24 inch markings ~~of the~~on special emphasis crosswalks, route shields, ramp exit numbers, roundabout informational markings, railroad dynamic envelopes, white dotted lines (2'-4') with trailing black contrast, and black contrast arrows, messages, and symbols.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of the pavement markings in accordance with FM 5-541.

SUBARTICLE 711-4.3 is deleted and the following substituted:

711-4.3 Retroreflectivity: Apply white and yellow pavement markings that will attain an initial retroreflectivity of not less than 450 mcd/lx·m^2 and not less than 350 mcd/lx·m^2, respectively for all longitudinal lines. All chevrons, diagonal lines, stop lines, messages, symbols, and arrows will attain an initial retroreflectivity of not less than 300 mcd/lx·m^2 and 250 mcd/lx·m^2 for white and yellow respectively. All crosswalks, railroad dynamic envelopes, and bicycle markings shall attain an initial retroreflectivity of not less than 275 mcd/lx·m^2. Black pavement markings must have a retroreflectance of less than 5 mcd/lx m^2.

Measure, record and certify on Department approved form and submit to the Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541.

SUBARTICLE 711-9.2 is deleted and the following substituted:

711-9.2 Contractor's Certification of Quantities: For all items except railroad dynamic envelope, ~~R~~request payment by submitting a certification of quantities no later than Twelve O clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:

1. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.

2. The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

ARTICLE 711-10 is deleted and the following substituted:

711-10 Method of Measurement.

711-10.1 Certified Quantities: The certified quantities, authorized and acceptably applied, under this Section will be paid as follows:

1. The length, in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines.

2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, and parking spaces.

3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.

4. The area, in square feet, for removal of existing thermoplastic pavement markings acceptably removed. Payment for removal of thermoplastic pavement markings will only be made for locations where the existing pavement surface is to remain.

The gross mile measurement will be taken as the distance from the beginning of the thermoplastic line to the end of the thermoplastic line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc. Final measurement will be determined by plan dimensions or stations, subject to 9-1.3.1.

711-10.2 Plan Quantities: The plan quantity length, in linear feet of railroad dynamic envelope markings.

ARTICLE 711-11 is deleted and the following substituted:

711-11 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 711	Thermoplastic Pavement Markings
	Solid - per gross mile.
	Solid - per linear foot.
	Skip - per gross mile.
	Dotted - per gross mile.
	Message or Symbol - each.
	Arrows - each.
	Yield Line - per linear foot.
	Railroad Dynamic Envelope - per linear foot.
	Remove - per square foot.

Appendix B

Stakeholder Meeting
PowerPoints

MARTIN COUNTY

Freight & Goods Movement Plan

Meeting Agenda

Stakeholder Advisory Committee Meeting #1

January 24, 2020 | 10:30AM – 12:00PM

BOCC 4th Floor Workshop Room
2401 SE Monterey Road
Stuart, FL 34996

1. **Introductions**
2. **Scope and Schedule**
3. **FDOT Freight Mobility and Trade Plan Update**
4. **Martin County Community Context**
5. **Stakeholder Input**
6. **Open Discussion**

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Meeting Agenda

Stakeholder Advisory Committee Meeting #1
January 24, 2020 | 10:30AM – 12:00PM

BOCC 4th Floor Workshop Room
2401 SE Monterey Road
Stuart, FL 34996

SIGN-IN SHEET

AGENCY	CONTACTS	SIGNATURE	E-MAIL
Armellini Logistics Headquarters	David Armellini		
Business Development Board of Martin County	Joan Goodrich		
City of Stuart	Kevin Freeman		
DHL	Nabil Malouli		
Economic Council of Martin County	Ted Astolfi		
FDOT District 4 Freight Coordinator	Autumn Young	Autumn Young	Autumn.Young@dot.state.fl.us
FDOT District 4 Policy Planning	Shi-Chiang Li		
FDOT	Chon Wong		
Florida East Coast Railroad	Robert Ledoux		
Florida Inland Navigation District	Mark Crosley		
Florida Trucking Association	Dr. Ken Armstrong		
Hobe Sound Chamber of Commerce	Lainey Muenich		
Indiantown Airport	Clyde Dawson		
Indiantown Marina	Scott Watson		
Indiantown Marine	Joe Walsh		

AGENCY	CONTACTS	SIGNATURE	E-MAIL
Indiantown/ Western Martin County Chamber of Commerce	Kelly Catania	Kelly Catania	itownccc@itspeed.net
International Wholesale Tile, LLC	Paul Boucher		
Jensen Beach Chamber of Commerce	Ron Rose		
LandStar/ Sanpin Logistics	Rebecca Sandy		
Marine Industries of the Treasure Coast	Michele Miller		MMiller.MIATC@gmail.com
Martin County Aviation	Sam Carver		
Martin County Engineering	Terry Rauth		
Martin MPO	Beth Beltran		
Martin MPO	Bolivar Gomez		bgomez@martin.fl.us
Palm City Chamber of Commerce	Missi Campbell		
Port Salerno Commercial Fishing Dock Authority, Inc.	Butch Olsen		
Publix	John Harmond		
Real Estate Professional	Jeffrey Chamberlin, SIOR, CCIM		
Real Estate Professional	Boyd Bradfield, SIOR, CCIM, GRI		
Real Women in Trucking, Inc.	Desiree Wood		RealWomeninTrucking@gmail.com
Stuart/Martin County Chamber of Commerce	Joseph A. Catrambone		
Town of Jupiter Island	Stuart Trent		
Town of Ocean Breeze Park	Terry O'Neil		
Town of Sewall's Point	Michelle Lee Berger		
Treasure Coast Regional Planning Council (TCRPC)	Thomas Lanahan		
Treasure Coast Regional Planning Council (TCRPC)	Kim Delaney		KDELANEY@TCRPC.ORG
US Customs and Border Protection	Officer Dickson		

AGENCY	CONTACTS	SIGNATURE	E-MAIL
US Customs and Border Protection	Chief of Staff Leigh		
Village of Indiantown	Bonnie Landry	Bonnie C Landry	blandry@indiantownfl.gov
Walpole Inc.	Ryan Walpole		rwalpole@walpoleinc.com
RWIT / BRATCAT EXPRESS	BRITA NOWAK		~~brita~~
MARTIN COUNTY PUBLIC WORKS	JIM GORTON		jgorton@MARTIN.FL.US
Avmellini Express Lines	David Avmellini		Davmellini@Avmellini.com
Landstar / Sanpin Logistics	Rebecca Sandy		rebecca.sandy@landstarmail.com

SAC Meeting Comments:

Roadway Conditions/Design:

Lighting is an issue for trucks particularly on the main rural roads SR 7, SR 710, SR 714, very dark
Lighting is an issue outside of the study area including roadways accessing, and along, the Turnpike in Yeehaw Junction
There are fog issues also on the long stretches of rural roadways
Passing Lanes are too far in between [are there standards?]
In rural areas there are also tight turning radius with drainage ditches too close to the turn. Some trucks end up in the ditches.
Dirt parking lots are no good for trucks. They get rutted and muddy.
There are opportunities around the lake and in rural areas for truck pull-offs. In California they allow truck parking in rural/isolated areas just off the side of the road.
Not enough shoulder for emergency truck parking on SR 710 and SR 714

Truck Parking:

There is a staging area just south of Martin County in Jupiter, it is rarely used, why can't that be used for overnight truck parking. Police stated they could not use.
Opportunity for tandem staging and hurricane supply staging coordination.
There is a Park and Ride at the Turnpike access to Martin Highway, could be refurbished to allow for truck parking. [potential project but expect pushback from public]
I want a safe and secure place to park [Martin County supposedly has a surplus of truck parking, perhaps that is only along turnpike and I-95 and not along the Turnpike].
American Trucking Association (ATA) has now listed truck parking as their number 3 issue in the country. It is to the point that they need to plan and time their day exactly so that they are at a rest location that fits into their schedule and parking rules. [Non-recurring congestion from incidents impacts efficient scheduling, 234 crashes]
Federal hours of service laws are very strict and the drivers are monitored electronically all day. The time they are delayed by crashes impacts their day significantly.
If trucker knows how many parking spaces available ahead of time, can plan accordingly.
Perceived competition with staging area, community bullpen, although still need food and gas from truck stops.

Incident Management:

There are crashes on SR 7 and once they occur there is no opportunity for trucks to turn around. They have to sit and wait for incident to be cleared. [Freeway incident management TSM&O]. Can we have alternative paths, too long of stretches with another road.

Local Policy:

Development codes should require that businesses should allow for trucks (any truck delivering to them, not just their fleet be able to park and take a break). Third party providers can't park there but their own fleet can.
Palm Beach just built a warehouse that is all robotic. The entire business park blocks off truck parking with bollards.
Just like ADA they need to include in development codes accommodations for driver breaks.
The private sector pushes back on public truck parking. Need a tax incentive.
Communication is key, with businesses and community.
Need to work regionally, intercounty
Land use constraints, planning ahead is important

Public Outreach/Education:

Indiantown: Need to provide for public education on truck safety, driving with trucks in stream (how hard to stop, may be carrying eggs), cross section of people that are truckers, connection to/importance of goods delivery. Reshape the image.
Using Twitter to share experiences.
Law enforcement education also.
One of the biggest needs today is public education. Florida Trucking Associations has successful program. A 4-day summer course on distribution for guidance counselors and teachers to add to curriculum.
There are programs like "Touch A Truck" that can be part of larger events
FDOT took Palm Beach TPA officials to the robotic plant in Palm Beach and it was a very good experience.

Autonomous vehicles:
Need to design for them. They are not adaptable to very last mile and inside of parking lots. Parking lot design for green space and landscape islands are not maneuverable.
Believe that autonomous vehicles are a long way away. [Connected vehicles are happening now].

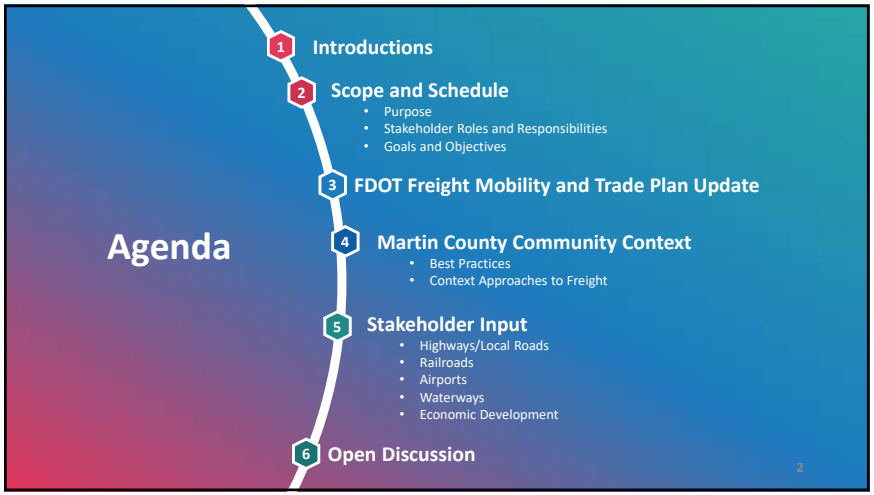
Cargo Theft
July 4, 2019 driver experienced theft of her load.

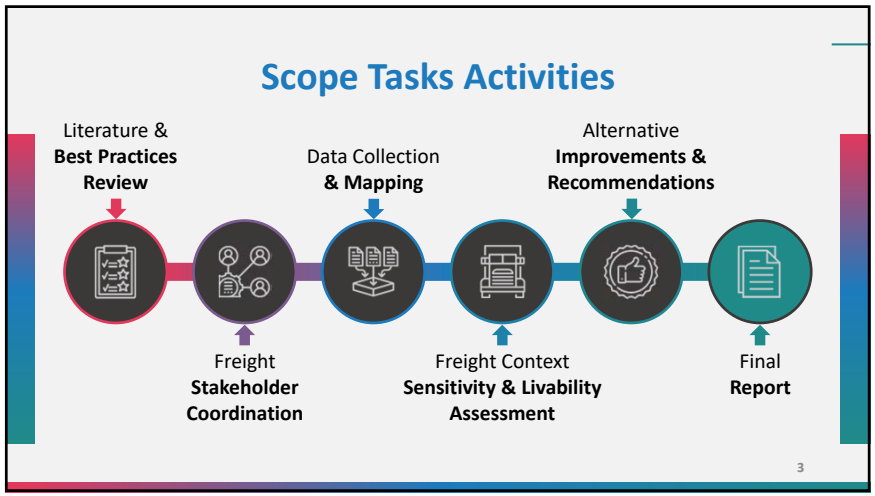
Railroad Crossings:
Bridge maintenance is critical, focus on Railroad bridges.
In Jacksonville there was an incident where a bridge broke down and the bridge was so old there were no replacement parts. Bridge blocked maritime traffic for 30 days while new part was manufactured
Th FEC bridge over St Lucie River is a critical issue in Martin County. Supposed to be 16 to 18' feet and then move up as high as the Roosevelt Bridge. Progress needs to be monitored to make sure they build it like they said they would.

Waterways:
There are barges in the waterways. Barges hit bridge on regular basis.

Items for research and recommendations:
Current truck parking rules
Regulations on passing lane spacing
TMZ
What is a community truck bullpen, something to do with truck parking.
Update Cargo theft data
HB 511 and Teledriving – connected trucks are already happening
Updates from FDOT on priorities
Train projections: Port Miami and Port Everglades and Port of Palm Beach Master Plans.
Investigate the internet for news on the FEC bridge over St Lucie River
Economic Impact – need to get data on value of square footage
Get update on the FDM
Review Waterways Plan
Weigh Station data
Crash Analysis
FDOT Data


MARTIN COUNTY
Freight & Goods Movement Plan
MARTIN MPO
Metropolitan Planning Organization
MARLIN
JANUARY 2020
1


Agenda
1 Introductions
2 Scope and Schedule
• Purpose
• Stakeholder Roles and Responsibilities
• Goals and Objectives
3 FDOT Freight Mobility and Trade Plan Update
4 Martin County Community Context
• Best Practices
• Context Approaches to Freight
5 Stakeholder Input
• Highways/Local Roads
• Railroads
• Airports
• Waterways
• Economic Development
6 Open Discussion
2


Scope Tasks Activities
Literature & Best Practices Review
Freight Stakeholder Coordination
Data Collection & Mapping
Freight Context Sensitivity & Livability Assessment
Alternative Improvements & Recommendations
Final Report
3


Purpose
01
Stakeholder Engagement
02
Development of a Reliable Freight and Goods Movement System
03
Integrating Goods Movement Needs Into Community Design
4

01 Stakeholder Engagement

ISSUE

Achieving participation from the private sector in planning studies, particularly, long range planning efforts, is difficult, as they are rightly focused on day-to-day operational issues.

SOLUTION

In order to develop an effective plan, the Project Team will **implement an outreach program throughout the study with targeted and proactive outreach**.

5

02 Development of a Reliable Freight and Goods Plan

This project team will:

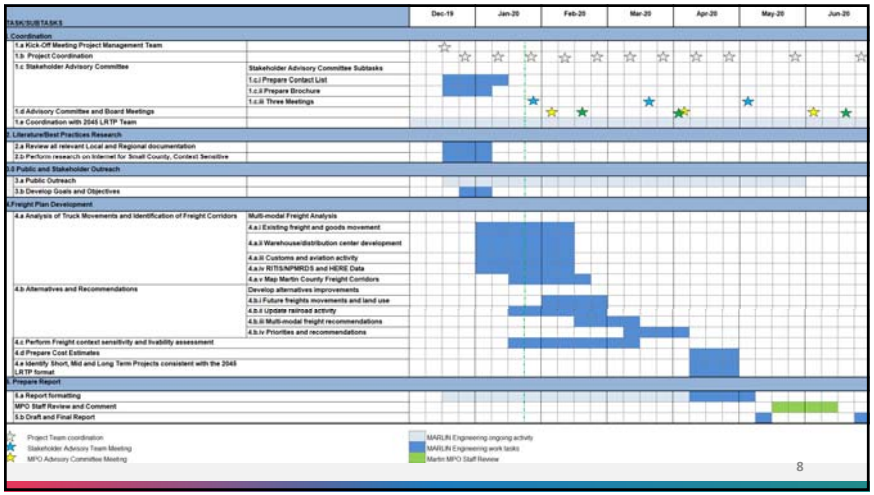
- Collect data
- Reach out and listen!!
- Develop project and efficiency proposals
- Make recommendations for MPO Board consideration

6

03 Integrating Goods Movement Needs Into Community Design

- Consider the **needs for commercial/residential goods movement access and mobility** in context with the community
- **The plan will identify contexts including:**
  - Diverse Activity Areas
  - Community Oriented Areas
  - Freight Oriented Areas
  - Low Activity Areas
- **Develop freight approaches** that fit into the concerns/needs of sub areas through **infrastructure, design and policy recommendations**

7



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Freight Stakeholder Advisory Committee Roles

- **Made up of governing Agencies and Freight Stakeholders in the local community**
- **Provide input to inform the plan**
- **Attend 3 meetings to:**
  - Provide essential input/feedback on recommendations
  - Comment on the presentations & deliverables
- **Potential for Longer Term Advisory Role**

9

Goals and Objectives

SAFETY & SECURITY	Leverage multisource data and technology to improve freight system safety and security
EFFICIENT & RELIABLE MOBILITY	Drive innovation to reduce congestion, bottlenecks and improve travel time reliability
ECONOMIC COMPETITIVENESS	Continue to forge partnerships between the public and private sectors to improve trade and logistics Capitalize on emerging freight trends to promote economic development
QUALITY PLACES	Increase freight-related regional and local transportation planning and land use coordination

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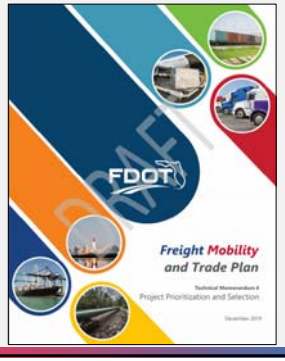
Best Practices

- Integrating Freight into Livability Communities (2015)
- Indian River County MPO Truck Traffic Routing Plan (2015)
- Tampa Bay Regional Strategic Freight Plan (2018)
- St. Augustine Truck Parking Management Plan (2015)
- Tampa Bay Regional Strategic Freight Plan & Freight Roadway Design Considerations (2015)

11

FDOT Freight Mobility Trade Plan Update



FMTP FREIGHT MOBILITY & TRADE PLAN

December 2019 Draft Documents include potential projects in Martin County on:

- SR 710
- I-95
- Florida's Turnpike
- Florida East Coast Railroad Separation at Monterey Road

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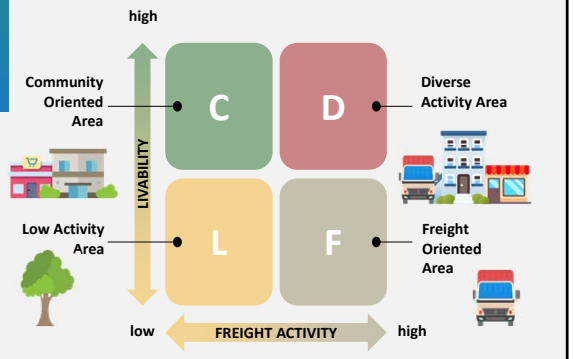
Community Contexts

Freight Roadway Design Considerations

- Pedestrian/Bicycle Safety
- Intersection Design
- Right Turn Radius
- Through Trucks
- Pavement Design
- Access Management
- First Mile/Last Mile
- Connected Vehicle Systems



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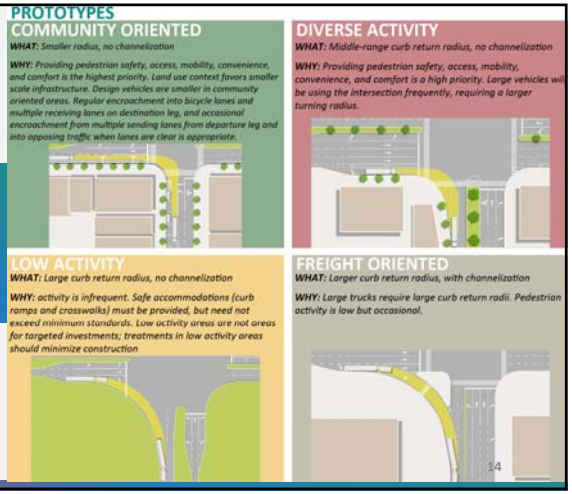
Community Contexts



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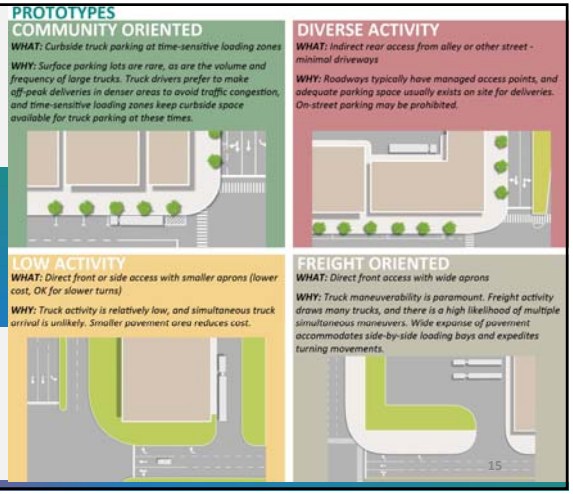
Community Contexts



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Community Contexts

16

Community Contexts

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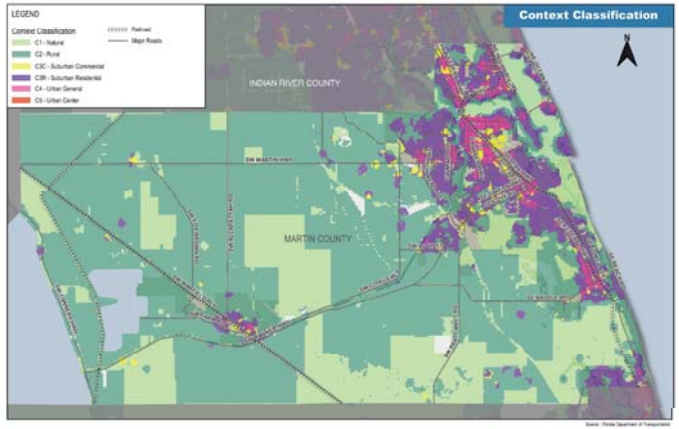
FDOT 4 Martin County Context Class



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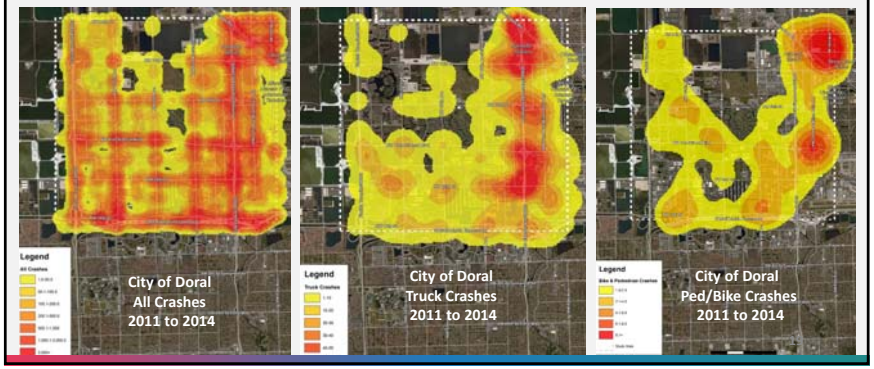
Stakeholder Input: Roadways



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Stakeholder Input: Roadways

ISSUES:

Example:
Increased traffic congestion and efficient delivery operations

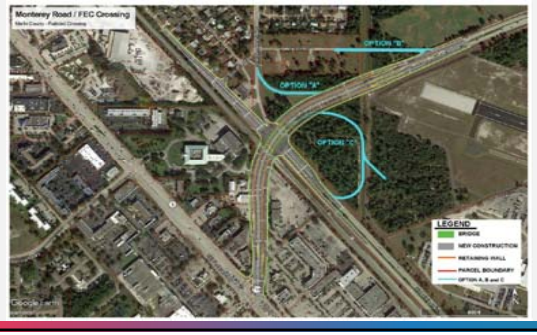
OPPORTUNITIES:

Example:
Identify bottleneck locations and program projects

21

Stakeholder Input: Railroads

Martin MPO Railroad Grade Separation Feasibility Study Priority #1



Sample of a RR Crossing Depression

22

Stakeholder Input: Railroads

ISSUES:

Example:
At-grade intersections and train traffic is increasing

OPPORTUNITIES:

Example:
Program grade separations

23

Stakeholder Input: Economic Development

ISSUES:

Example:
Jobs, economic development

OPPORTUNITIES:

Example:
Development of a standalone Freight Plan

24

THANK YOU

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772.288.5412

Jeffrey Weidner
jweidner@marlinengineering.com
954.870.5058

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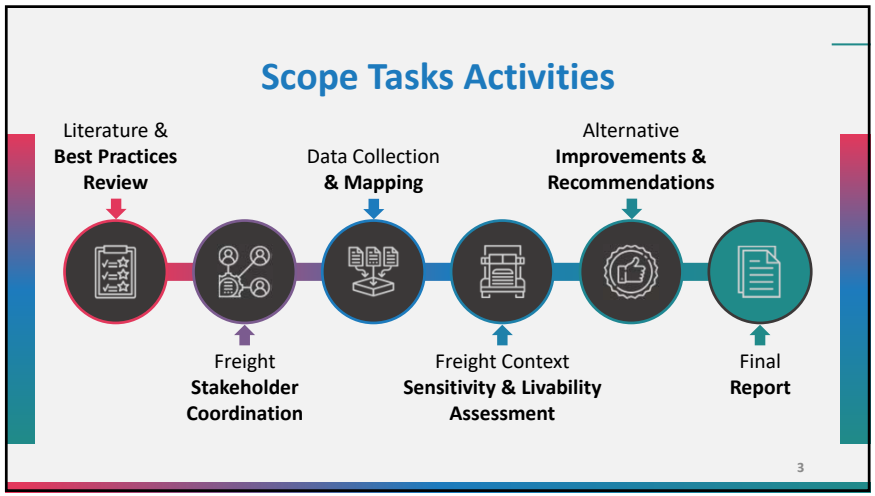
MARTIN COUNTY
Freight & Goods Movement Plan
MARTIN MPO
Metropolitan Planning Organization
MARLIN
FEBRUARY 2020
1


Agenda
1 Scope and Schedule
• Purpose
• Stakeholder Roles and Responsibilities
• Goals and Objectives
2 FDOT Freight Mobility and Trade Plan Update
3 Martin County Community Context
• Best Practices
• Context Approaches to Freight
4 Stakeholder Input
2


Scope Tasks Activities
Literature & Best Practices Review
Freight Stakeholder Coordination
Data Collection & Mapping
Freight Context Sensitivity & Livability Assessment
Alternative Improvements & Recommendations
Final Report
3


se
01
Stakeholder Engagement
02
Development of a Reliable Freight and Goods Movement System
03
Integrating Goods Movement Needs Into Community Design
4

01 Stakeholder Engagement

ISSUE

Achieving participation from the private sector in planning studies, particularly, long range planning efforts, is difficult, as they are rightly focused on day-to-day operational issues.

SOLUTION

In order to develop an effective plan, the Project Team will **implement an outreach program throughout the study with targeted and proactive outreach**.

5

02 Development of a Reliable Freight and Goods Plan

This project team will:

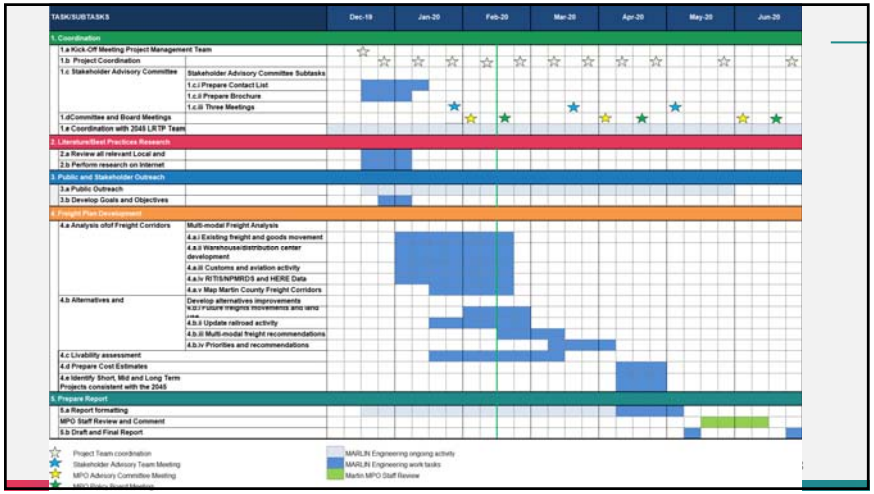
- Collect data
- Reach out and listen!!
- Develop project and efficiency proposals
- Make recommendations for MPO Board consideration

6

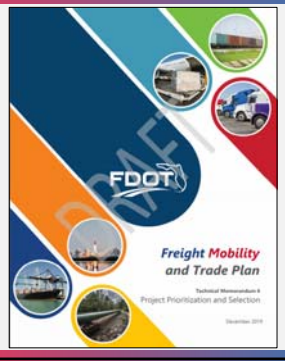
03 Integrating Goods Movement Needs Into Community Design

- Consider the **needs for commercial/residential goods movement access and mobility** in context with the community
- **The plan will identify contexts including:**
  - Diverse Activity Areas
  - Community Oriented Areas
  - Freight Oriented Areas
  - Low Activity Areas
- **Develop freight approaches** that fit into the concerns/needs of sub areas through **infrastructure, design and policy recommendations**

7



FDOT Freight Mobility Trade Plan Update



FMTP FREIGHT MOBILITY & TRADE PLAN

December 2019 Draft Documents include potential projects in Martin County on:

- SR 710
- I-95
- Florida's Turnpike
- Florida East Coast Railroad Separation at Monterey Road

9

Goals and Objectives

SAFETY & SECURITY	Leverage multisource data and technology to improve freight system safety and security
EFFICIENT & RELIABLE MOBILITY	Drive innovation to reduce congestion, bottlenecks and improve travel time reliability
ECONOMIC COMPETITIVENESS	Continue to forge partnerships between the public and private sectors to improve trade and logistics Capitalize on emerging freight trends to promote economic development
QUALITY PLACES	Increase freight-related regional and local transportation planning and land use coordination

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Best Practices

- Integrating Freight into Livable Communities (2015)
- Indian River County MPO Truck Traffic Routing Plan (2015)
- Tampa Bay Regional Strategic Freight Plan (2018)
- St. Augustine Truck Parking Management Plan (2015)
- Tampa Bay Regional Strategic Freight Plan & Freight Roadway Design Considerations (2015)

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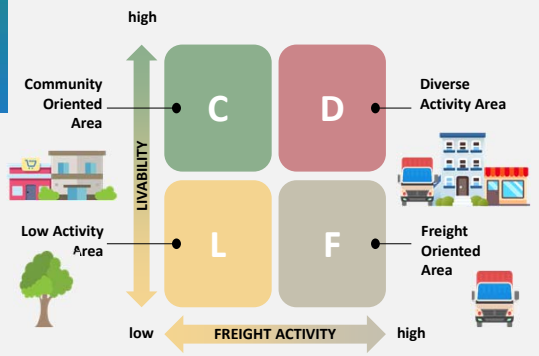
Community Contexts

Freight Roadway Design Considerations

- Pedestrian/Bicycle Safety
- Intersection Design
- Right Turn Radius
- Through Trucks
- Pavement Design
- Access Management
- First Mile/Last Mile
- Connected Vehicle Systems



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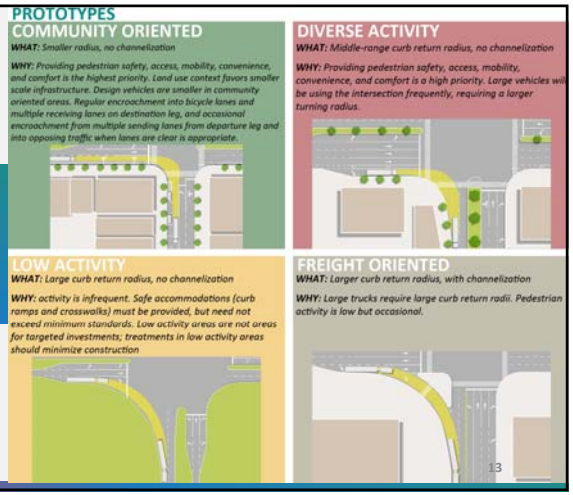
Community Contexts

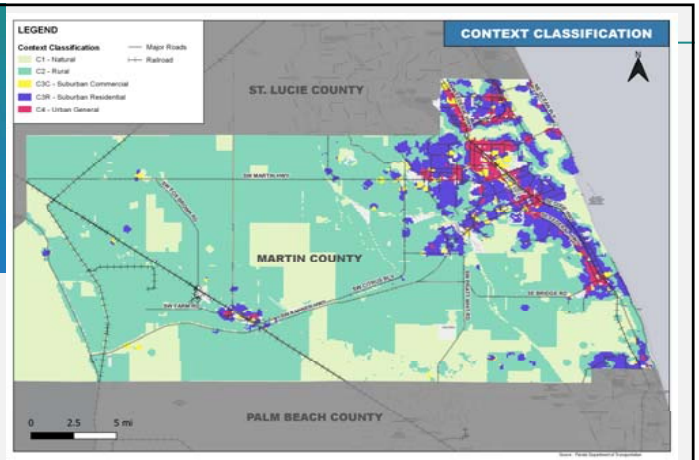


Community Contexts

Community Contexts

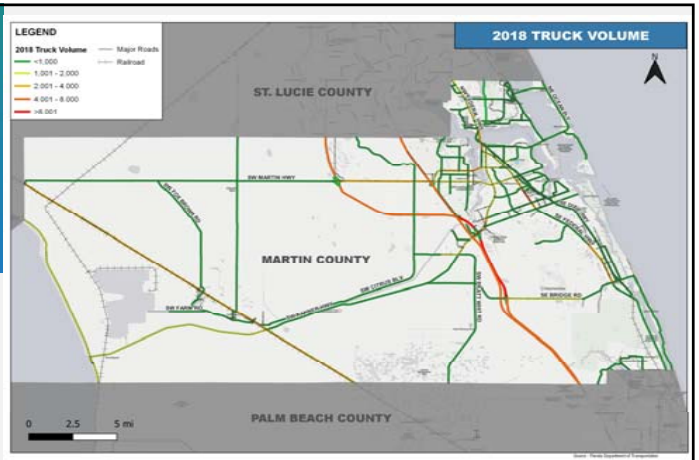
Community Contexts

FDOT 4 Martin County Context Class



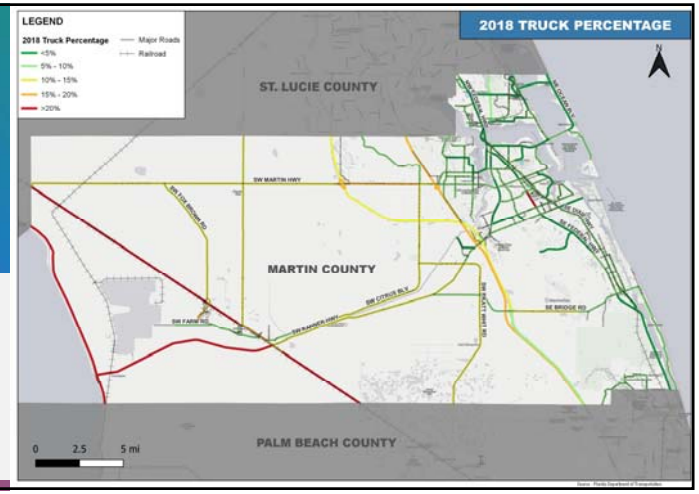
17

2018 Daily Truck Volumes

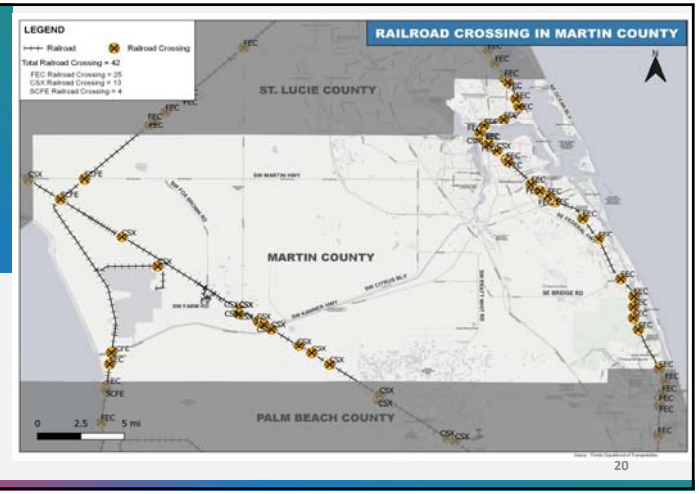


18

2018 Daily Truck Percent

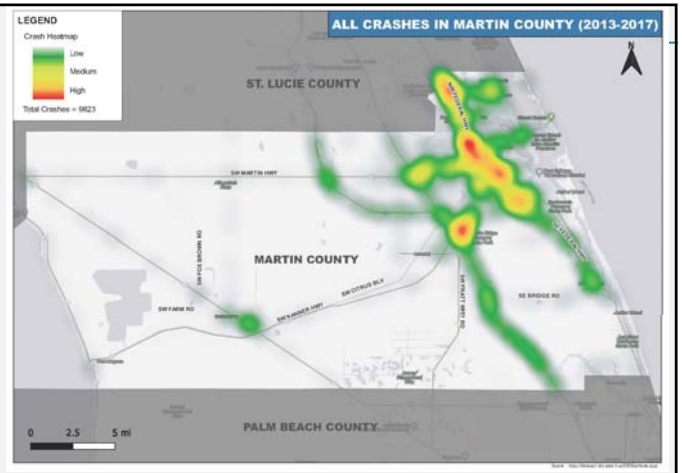


Railroad Network

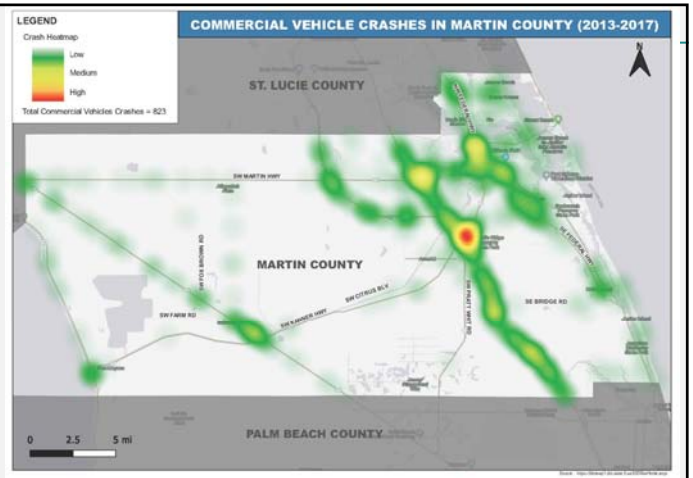


20

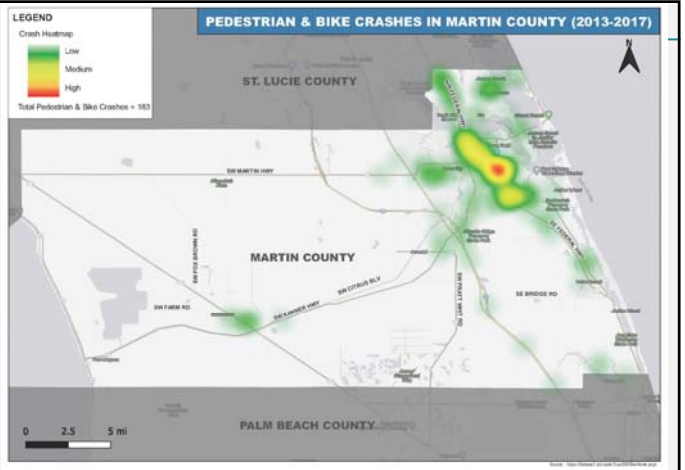
All Crashes 2013-2017



Commercial Vehicle Crashes 2013-2017



Pedestrian/ Bicycle Crashes



Trucking Issues

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Stakeholders

MARTIN MPO Metropolitan Planning Organization
FDOT
Indiantown Chamber of Commerce
Marine Industries Association of the Treasure Coast, Inc.
TCRPC Treasure Coast Regional Planning Council
FLORIDA TRUCKING ASSOCIATION
LANDSTAR
ARMELLINI Express Lines, Inc.
BratCat Express Corp. Jupiter, FL
REAL Women in Trucking
WALPOLE

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Stakeholder Input

- ROADWAY CONDITIONS/ DESIGN
- INCIDENT MANAGEMENT
- POLICY
- PUBLIC OUTREACH/ EDUCATION
- AUTONOMOUS VEHICLES
- CARGO THEFT
- TRUCK PARKING
- RAILROAD CROSSINGS
- WATERWAYS

Outreach

Walmart
Triumph Group
Publix
FLORIDA EAST COAST INDUSTRIES
FedEx
PORT SALERNO COMMERCIAL FISHING DOCK AUTHORITY, INC.
AMERICAN CUSTOM YACHTS, INC.
UPS

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THANK YOU

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Thank you for your input at SAC #1, we listened and will present our updates at SAC #2.

MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

Meeting Agenda

Stakeholder Advisory Committee Meeting #2

March 18, 2020 | 2:00 PM – 3:30 PM

Location
Go-To Meeting and
BOCC 4th Floor Workshop Room
2401 SE Monterey Road
Stuart, FL 34996

1. **Introductions**
2. **Purpose**
3. **Schedule**
4. **Existing Conditions**
5. **Recommendations**
6. **Open Discussion**

MARTIN COUNTY

Freight & Goods Movement Plan

Outreach Summary

Via Go-To-Meeting

Stakeholder Advisory Committee Meeting
#2
March 18, 2020 | 2:00pm – 3:30pm

Attendees:

Staff: Beth Beltran, Bolivar Gomez, Ricardo Vazquez
Marlin: Jeff Weidner, Lisa Maack, Walter Keller, Moshiur Rahman
On phone:
Bonnie Landry, Village of Indiantown
Jerry Deutsh (?), Armellini Logistics Headquarters
Butch Olsen, Port Salerno Commercial Fishing Dock Authority
On Go-to Meeting:
Michelle Miller, Marine Industries of the Treasure Coast
Autumn Young, FDOT D4
Larry Hymowitz, FDOT D4
Rebecca Sandy, Landstar
Ryan Walpole, Florida Trucking Association
Tom Lanahan, Treasure Coast Regional Planning Council
Kevin Freeman, City of Stuart
Joan Goodrich, Business Development Board of Martin County
Lisa Wichser, Martin County
Victoria Williams, FDOT Turnpike
Alejandro Canela, FDOT
Jeffrey Chamberlin, Real Estate Professional
Ted Astolfi, Economic Council of Martin County

Meeting notes:

Slide 15: Autumn Young stated she is working on this project and can provide details, still looking at limits, Port of Palm Beach to Martin County/710 or I-95 if better, Phase 1 to lay fiber and update controller cabinets, Phase 2 to use technology for Freight Signal Priority, safety messages and messages from Port, this is demonstration project

Slide 24: Victoria Williams is seeking input, opportunity to provide recommendations for truck parking at Indiantown Rd and Turnpike, currently there are studies further north

Slide 27: Kevin Freeman, City has yellow striping for truck loading in places, open to ideas

Slide 28: Joan Goodrich provided details on Foreign Trade Zone: #4 at Witham Field, active to 2023 then can renew

Comments:
Discussion of widening of Citrus/42nd (?)
Discussion of 82nd and Citrix (?)
Comment to provide details on waterways

Action items:
Follow up with future meeting with City of Stuart
Lisa W. to provide details on Port Salerno from CRA
Marlin to provide 100 bottleneck list to Lisa W and Kevin F
Joan G to send industrial property information

Notes from Go-to meeting chat:

Me

HI Everyone! Add additional comments here. -Lisa Maack

2:22 PM

Autumn Young

Jeff, were the averages of the historgram of truck traffic taken from TTMS (24-7 locations) or PTMS sites (sample locations)?

2:25 PM

Kev Freeman

Is there corrolation between vehicle speeds and crashes?

2:31 PM

Michele Miller

when i *6 to mute i can no longer hear the call i will be very quiet :)

2:34 PM

Moshiur Rahman

Autumn, Data was taken from 5 TTMS locations at Martin County

2:36 PM

Kev Freeman

Will design recommendations take into account context sensitivity?

2:46 PM

Lisa Wichser

CR-A1A is not a US or State facility

2:47 PM

Lisa Wichser

Please provide the County a list of the top 100 bottlenecks in Martin County.

2:48 PM

Kev Freeman

I was just going to ask that as well...

3:27 PM

Kev Freeman

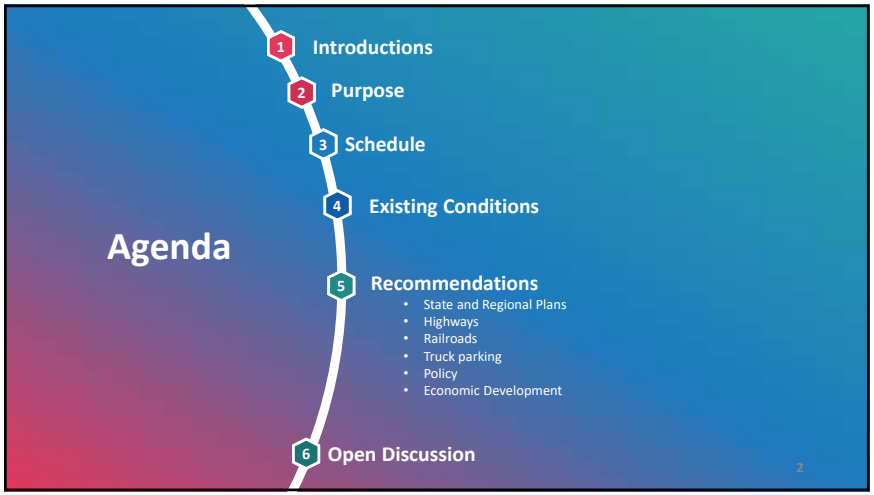
Note: Truck parking is covered in some respect within the City of Stuart Ordinances and deals with truck parking visible to residential areas: Sec. 40-47. - Storing, parking trucks in residential areas.

3:29 PM

Autumn Young

Thank you Kevin


MARTIN COUNTY
Freight & Goods Movement Plan
MARTIN MPO
Metropolitan Planning Organization
MARLIN
MARCH 2020
1


Agenda
1 Introductions
2 Purpose
3 Schedule
4 Existing Conditions
5 Recommendations
• State and Regional Plans
• Highways
• Railroads
• Truck parking
• Policy
• Economic Development
6 Open Discussion
2


Purpose
01
Stakeholder Engagement
02
Development of a Reliable Freight and Goods Movement System
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Integrating Goods Movement Needs Into Community Design
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Development of a Reliable Freight and Goods Plan

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Integrating Goods Movement Needs Into Community Design

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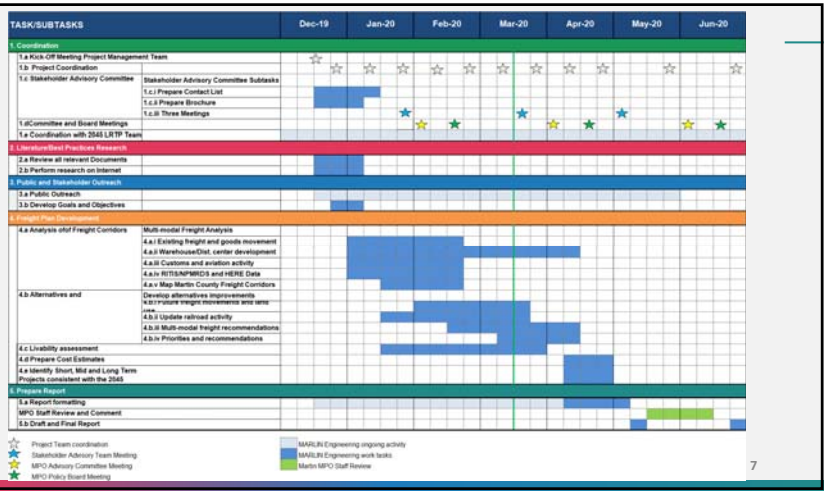


7

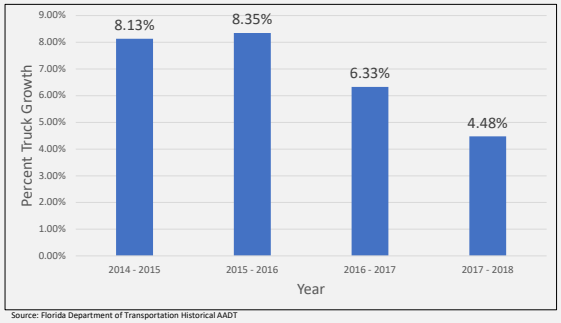
Freight Stakeholder Advisory Committee Roles

- **Made up of governing Agencies and Freight Stakeholders in the local community**
- **Provide input to inform the plan**
- **Attend 3 meetings to:**
  - Provide essential input/feedback on recommendations
  - Comment on the presentations & deliverables
- **Potential for Longer Term Advisory Role**

8

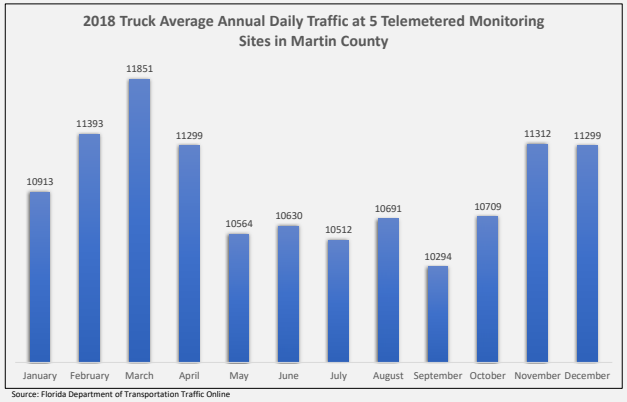
Historic Truck Growth

Martin County Average Annual Growth Rate 2014 – 2018 – 6.82%/Year



Source: Florida Department of Transportation Historical AADT

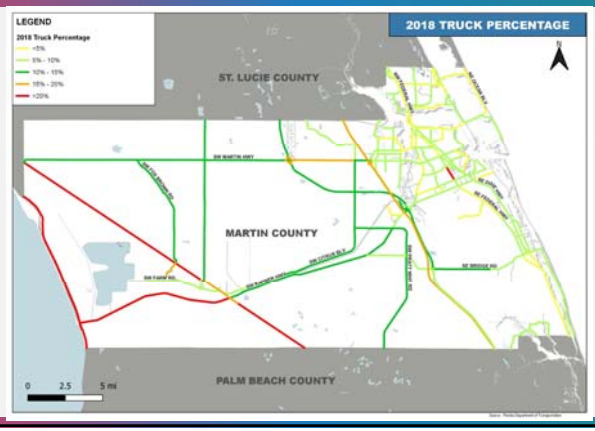
Average Truck Traffic and Peak Season



Source: Florida Department of Transportation Traffic Online

10

Truck Percentage in Martin County



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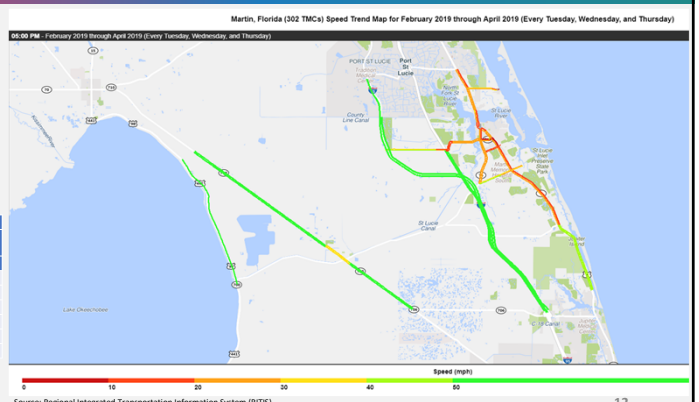
Truck Travel Speeds

Truck Travel Speed (INRIX)

- February 2019 to April 2019
- Average Tuesday, Wednesday, and Thursday (5:00 to 6:00 PM)

Arterial Class	I	II
Speed (mph)	45 to 35 mph	35 to 30 mph
Level of Service		
A	≥ 35	≥ 30
B	≥ 28	≥ 24
C	≥ 22	≥ 18
D	≥ 17	≥ 14
E	≥ 13	≥ 10
F	<13	<10



Source: Regional Integrated Transportation Information System (RITIS)

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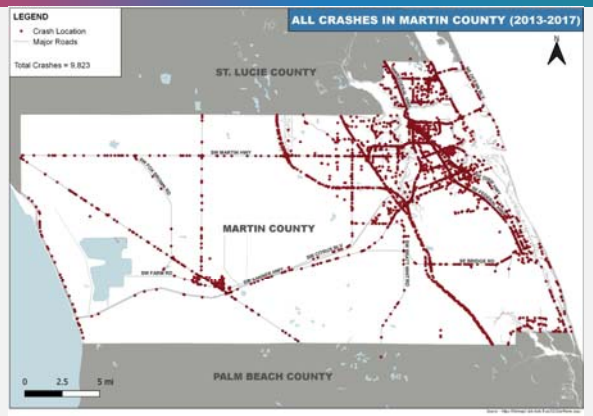
All Traffic Crash Locations in Martin County



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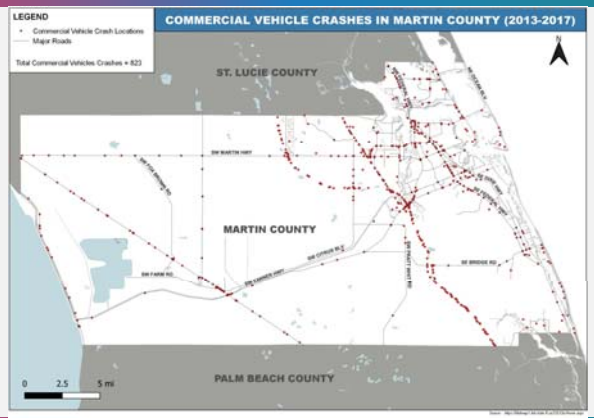
Commercial Vehicles Crash Locations in Martin County



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Statewide and Regional Planning

FMTP FREIGHT MOBILITY & TRADE PLAN

December 2019 Draft include projects in Martin County on:

- SR 710 including Bypass Road - FPL to SR 76
- SR 710 Connected Freight Priority System
- I-95 From High Meadow to St. Lucie County
- Florida's Turnpike
- Monterey Road/FEC Grade Separation

MARTIN IN MOTION 2045

March 2020 Draft List of Freight Projects:

- SR 710 including Bypass Road - FPL to SR 76
- SR 710 Connected Freight Priority System
- I-95 Managed Lanes (including Bridge Road to High Meadow)
- Florida's Turnpike Managed Lanes
- Monterey Road/FEC Grade Separation
- US 1 Retro Fit from Cove Road to St. Lucie County
- Strategies to Reduce Railroad Trespassing FEC Corridor

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Roadway Design: Recommendations

Source: Google Street view

Source: Google Street view

Lane Type	# Lanes (One Direction)	Outside		Median Or Left		Outside		Median Or Left	
		Full Width (feet)	Paved Width (feet)	Full Width (feet)	Paved Width (feet)	Full Width (feet)	Paved Width (feet)	Full Width (feet)	Paved Width (feet)
Travel Lanes	4-Lanes or more	10	5	10	4	15.5	8	15.5	8
	3-Lanes	10	5	10	0	15.5	8	15.5	8
	1-Lane & 2-Lanes	10	5	8	0	15.5	8	13.5	6
Aux. Lanes	ALL	10	5	8	0	11.5	4	11.5	4

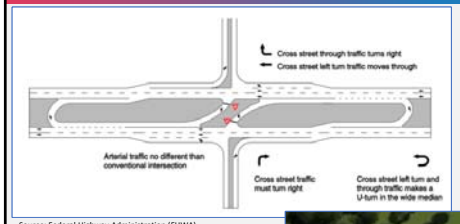
Notes:
Without shoulder gutter:
(1) Consider 12-foot outside full width shoulder adjacent to travel lanes with high AADT or greater than 10% trucks.

Source: Florida Design Manual 2020

Source: Google

16

Roadway Design: Recommendations



Source: Federal Highway Administration (FHWA)

Source: Google Map

Source: Virginia Department of Transportation

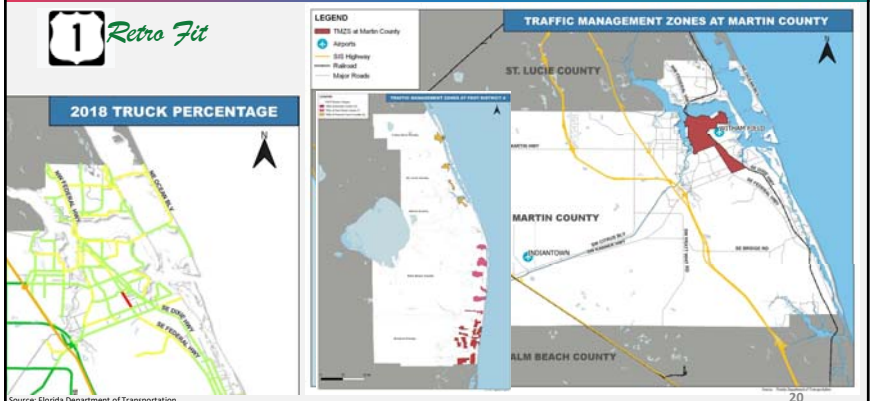
Truck Turn-around Example – Broward/Miami-Dade County Line Road near Hard Rock Stadium

Source: Google Street View

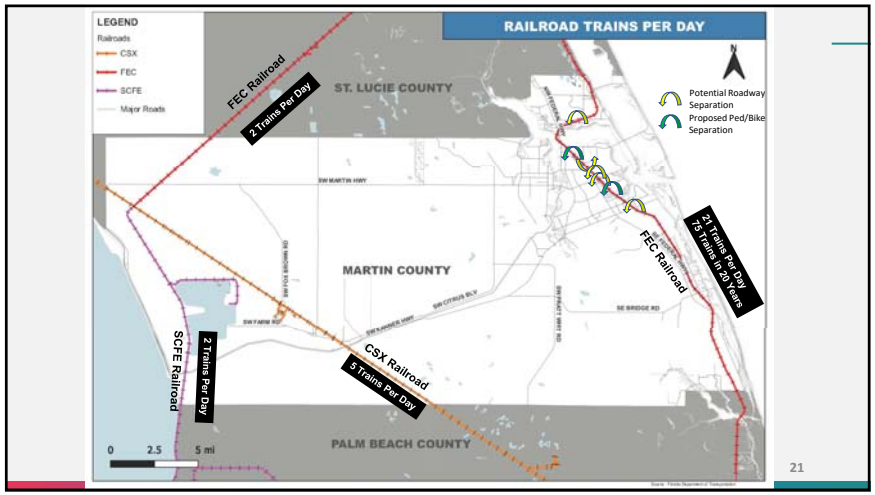
Turning Radius and Proximity of Drainage

Source: Google Street View

US 1 Corridor from Salerno Road to St. Lucie County



Source: Florida Department of Transportation



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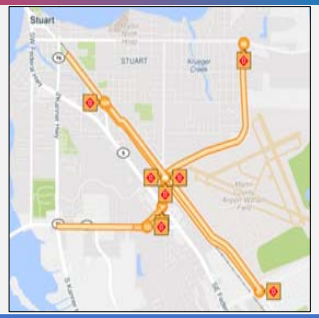
Railroad Recommendations



US A1A and SE Monterey Rd (SR 714) – 8 bottlenecks (out of top 100 bottlenecks in Martin County from February 2019 to April 2019) – Recommendation Grade Separation and/or Alternative Alignment Connecting Monterey Ext to the Airport

Downtown Stuart: US A1A, S Dixie Hwy, S Colorado Ave – 7 bottlenecks (out of top 100 bottlenecks in Martin County from February 2019 to April 2019) – Recommendation Pedestrian Crossing

Source: Regional Integrated Transportation Information System (RITIS)

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Truck Parking

County	Min	Median	Mean	Max	Available Parking	Full Range of Need	Most Likely Need
Indian River	33	149	155	411	181	0 - 230	Surplus
St. Lucie	65	275	298	711	617	0 - 94	Surplus
Martin	57	245	253	679	172	0 - 507	**73 - 81**
Palm Beach	195	623	820	2248	90	105 - 2,158	533 - 730
Broward	226	820	1049	2846	562	0 - 2,284	258 - 487
Total	617	2,095	2,576	6,498	1,619	0 - 4,879	476 - 957

Source: FDOT District 4 Truck Parking Supply and Demand Study, 2017

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Truck Parking

~~Martin Hwy/Florida's Turnpike~~

Indiantown Rd/Florida's Turnpike

PSL/Ft. Pierce Turnpike Plaza Expansion

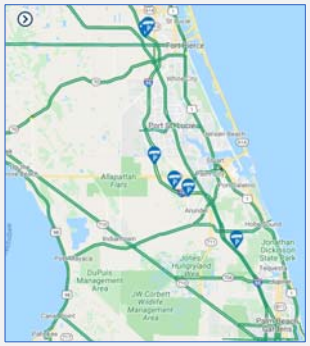
I-75 (Alligator Alley Pull-Off)

Private Sector Participation (Free Space for Truckers to Rest)

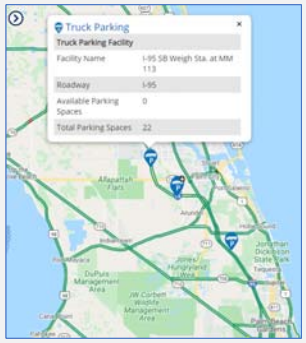
Source: Google Map

24

Truck Parking Real Time Information



https://fl511.com/map



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Policy: Complete Streets

Port Salerno: Park Drive Complete Street Project – Sidewalk and Fishing Dock Parking Improvements

Source: Google Street View

Policy: Commercial Loading Zones

- Identify Freight Loading Zones

Source: Marlin Engineering Inc

Semi-annual/annual FLZ E-permit; Smart Payment for Parking

Source: Park Mobile

Limiting Loading Days/Hours

Source: Radharc Images / Alamy Stock Photo

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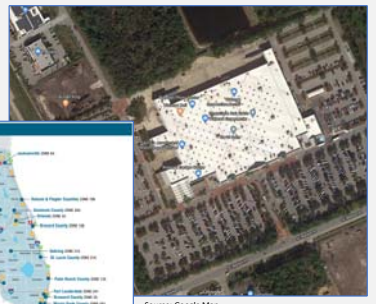
Policy: Land Use

Micro-Warehouses

Source: https://www.newsadvance.com/

Delivery Breaks



Source: Google Map

Preferential Zoning or Tariff Relief

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Education and Enforcement Programs

Association	Florida Trucking Association			Town of Jupiter and many other municipalities	Florida Highway Patrol	Trucker Buddy Organization	MPO/FDOT
Program	Florida Teach Tour	Florida Road Team	Share the Road	Touch a Truck	Florida Highway Patrol	Trucker Buddy International	Palm Beach TPA Elected Officials Tour
							Tours of New Logistics Facilities
							

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THANK YOU

CONTACT US:
Bolivar Gomez
bgomez@martin.fl.us
772.288.5412

Jeffrey Weidner
jweidner@marlinengineering.com
954.870.5058

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Thank you for your input at SACs #1 and #2, we listened and will present our updates at SAC #3.

MARTIN COUNTY

Freight & Goods Movement Plan

Meeting Agenda

Stakeholder Advisory Committee Meeting #3

May 20, 2020 | 10:00 AM – 11:30 AM

Location
Virtual Go-To-Meeting

1. **Introductions**
2. **Scope and Schedule Update**
3. **Adopted Plans**
4. **Freight Network and Potential Projects**
5. **Stakeholder Input**
6. **Open Discussion**

MARTIN COUNTY

Freight & Goods Movement Plan

Outreach Summary

Via Go-To-Meeting

Stakeholder Advisory Committee Meeting
#3
May 20, 2020 | 10:00am – 11:30am

Attendees:

Martin MPO: Beth Beltran, Bolivar Gomez
Marlin: Jeff Weidner, Lisa Maack
Jared Dusharm, Armellini Logistics Headquarters
Butch Olsen, Port Salerno Commercial Fishing Dock Authority
Michelle Miller, Marine Industries of the Treasure Coast
Ryan Walpole, Florida Trucking Association
Tom Lanahan, Treasure Coast Regional Planning Council
Kevin Freeman, City of Stuart
Lisa Wichser, Martin County
Victoria Williams, FDOT Turnpike
Jeffrey Chamberlin, Real Estate Professional
Jim Gorton, Martin County Public Works
Desiree Wood, Real Women in Trucking
Yvette Goodiel, UF IFAS

Meeting notes:

Truck parking: Ms. Williams was asked if she supported assisting the Team about a policy change for the staging area at the Indiantown Rd./Turnpike Interchange. She indicated she could and would also include her District 4 partners in the conversation. Ms. Williams added that after all electronic tolling is complete, Turnpike Park-and-Rides will be managed by Districts, Turnpike will be interested in hearing proposals for improvements to Indiantown Rd.

511: Ms. Wood was asked if she has utilized the FDOT TPAS/511 system. She stated that she was not familiar with 511, stated it looks very useful, especially to drivers new to the area

Ms. Wichser asked if the resurfacing of US 98 FM #446171-2 was in the report. She is currently preparing her comments for the scoping report and could add a request that the FDOT consider the 12 foot shoulder. The

Team agreed with her question. Immediately after the meeting Ms. Wichser indicated she had forwarded the request to FDOT.

Ms. Wichser stated the Board has supported the extension of Cargo Way to Citrus Blvd.

Mr. Lanahan stated that he supported the idea of a freight advisory group, stated other MPOs have it and it will provide good input from freight operators and a balancing of voices.

Ms. Beltran agreed, stated it would be a discussion item for the Board and helpful in development of priority projects

Ms. Wood stated that her organization would be interested in participating in Touch a Truck events.

Ms. Wood stated that she would be interested in participating in a freight advisory group, and liked the idea of meeting 2 times per year

Ms. Wood asked the group for assistance in her efforts to hold a distribution event for PPE in South Florida. She shared her phone number with the group.

Details of the FDOT Safety Study on SR 710 were shared, noting ROW is an issue and the study recommended high visibility signage and a left turn lane.


MARTIN COUNTY
Freight & Goods Movement Plan
MARTIN MPO
Metropolitan Planning Organization
MARLIN
MAY 2020
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Agenda
1 Scope and Schedule
• Purpose
• Goals and Objectives
2 Outreach Efforts
3 Transportation Planning Efforts
• National
• State
4 Martin County Freight Plan
• Network
• Key Projects
• Short, Mid, Long Range Projects
• Context Sensitive Approach
• Freight Technical Committee
5 Open Discussion
2


01
Stakeholder Engagement
02
Development of a Reliable Freight and Goods Movement System
03
Integrating Goods Movement Needs Into Community Design
3


01
Stakeholder Engagement
ISSUE
Achieving participation from the private sector in planning studies, particularly, long range planning efforts, is difficult, as they are rightly focused on day-to-day operational issues.
SOLUTION
In order to develop an effective plan, the Project Team will implement an outreach program throughout the study with targeted and proactive outreach.
4

02

Development of a Reliable Freight and Goods Plan

This project team will:

- Collect data
- Reach out and listen!!
- Develop project and efficiency proposals
- Make recommendations for MPO Board consideration

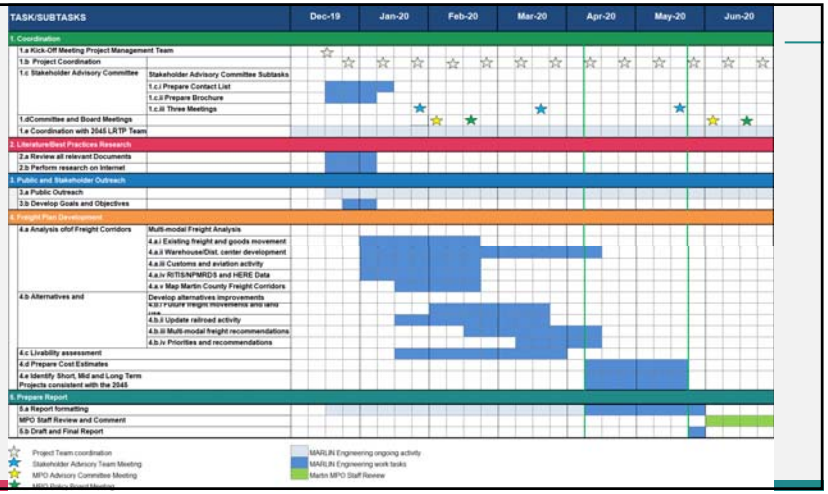
5

03

Integrating Goods Movement Needs Into Community Design

- Consider the **needs for commercial/residential goods movement access and mobility** in context with the community
- **The plan will identify contexts including:**
  - Diverse Activity Areas
  - Community Oriented Areas
  - Freight Oriented Areas
  - Low Activity Areas
- **Develop freight approaches** that fit into the concerns/needs of sub areas through **infrastructure, design and policy recommendations**

6



Freight Stakeholder Advisory Committee Roles

- **Made up of governing Agencies and Freight Stakeholders in the local community**
- **Provide input to inform the plan**
- **Meeting Number 3:**
  - Provide essential input/feedback on proposals
  - Comment on the presentations & deliverables
- **Potential for Longer Term Advisory Role**

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Outreach Efforts

Government and Related Agencies

Stakeholders

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Stakeholder Input

- ROADWAY CONDITIONS/ DESIGN
- INCIDENT MANAGEMENT
- POLICY
- PUBLIC OUTREACH/ EDUCATION
- AUTONOMOUS VEHICLES
- CARGO THEFT
- TRUCK PARKING
- RAILROAD CROSSINGS
- WATERWAYS

National Highway Freight Network

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FDOT Strategic Intermodal System Plan

IDENTIFICATION OF A LOCAL NETWORK

- Strategic Intermodal System and National Highway Network Designation
- Previous Freight Corridor Designations
- Percent Trucks
- Volume of Trucks
- Functional Classification
- Freight Related Land Use
- Connectivity
- Context Sensitivity

IDENTIFICATION OF PROJECTS

- Stakeholder Input
- Strategic Intermodal System Projects
- Freight Mobility and Trade Plan Projects
- MPO FEC Railroad Grade Crossing Feasibility Study
- Programmed Improvements
- Capacity Improvements Year 2045 > 1.05
- Operational Improvements
  - Adaptive Signal Control
  - Congestion Management
- Safety
  - Railroad Crossings
  - Roadway Improvements
  - Shoulder Widening
  - Truck Parking
- Continued Coordination and Education

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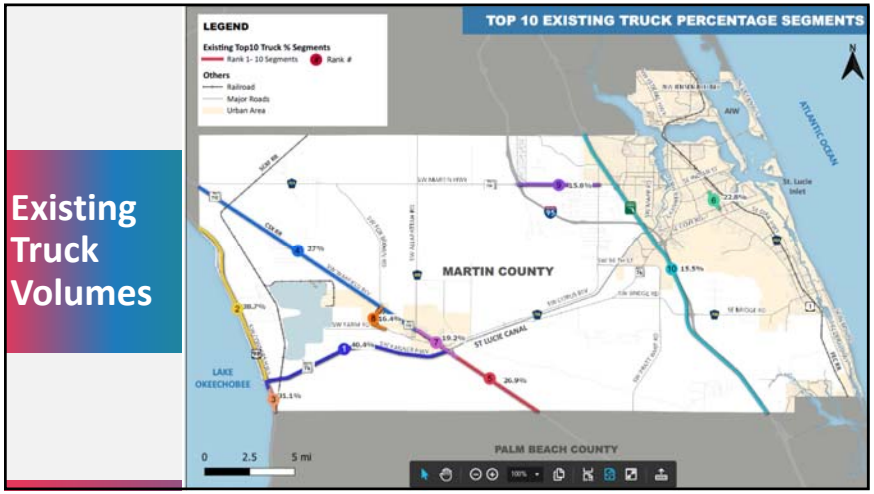
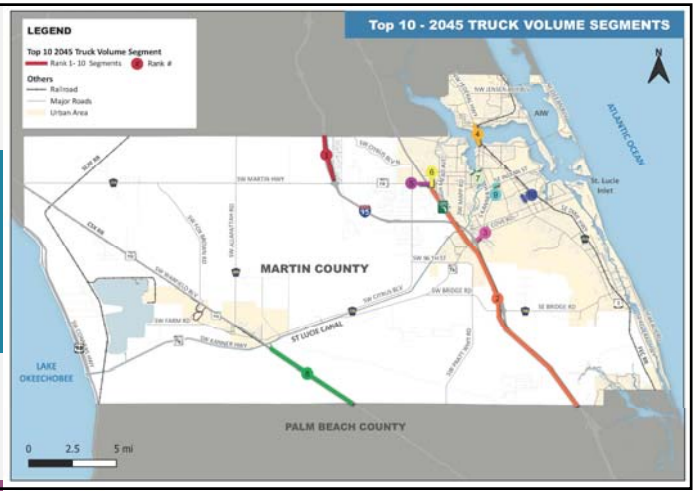
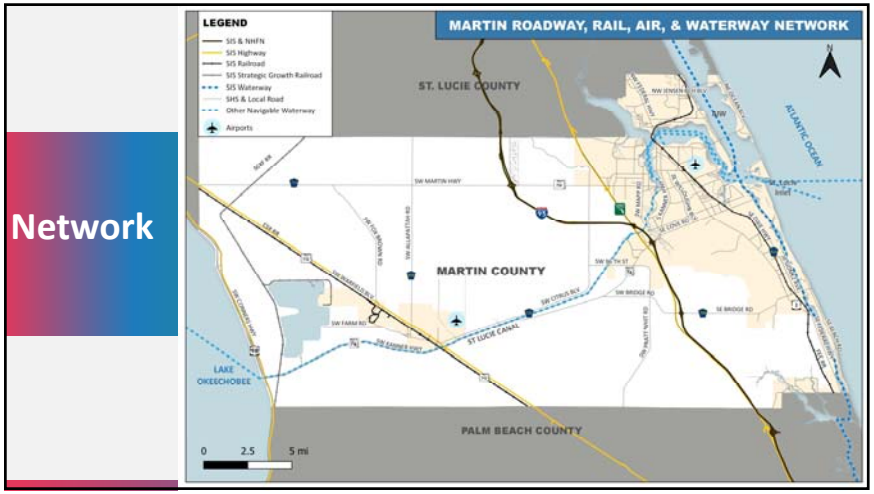
Existing Truck Volumes



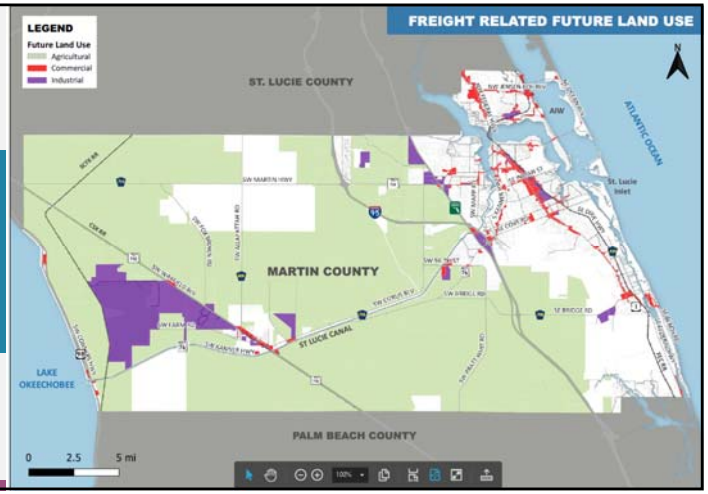
Future Truck Volumes



Network

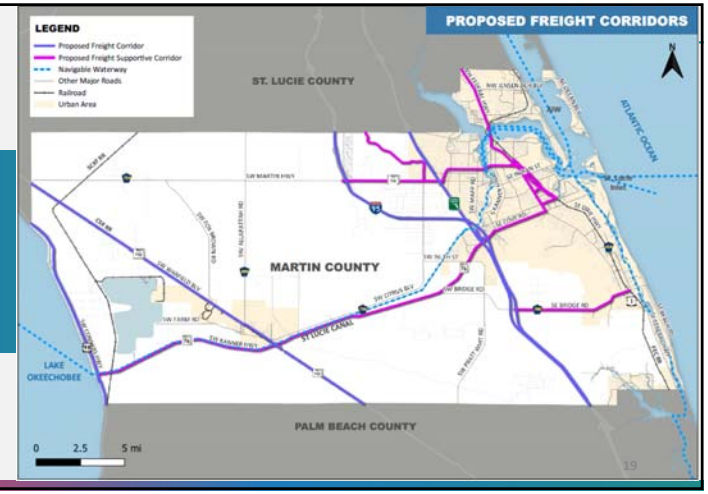


Freight Related Land Use

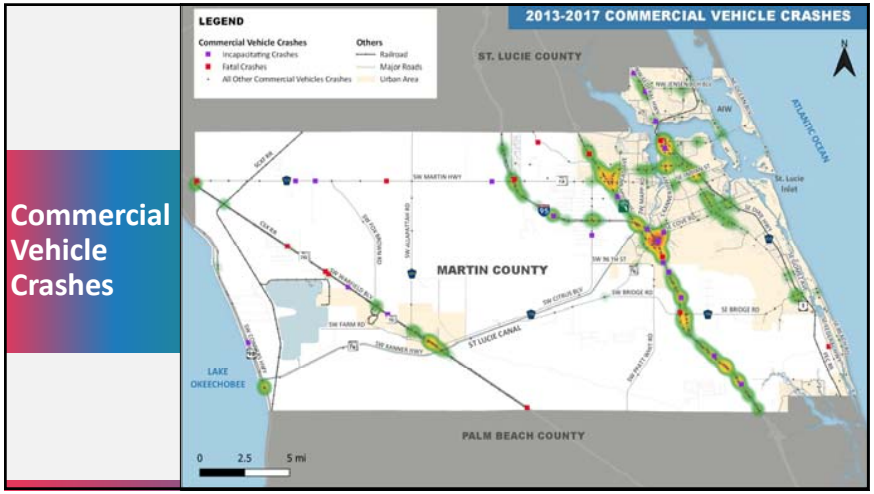


Functional Classificati

Freight Supportive Corridors

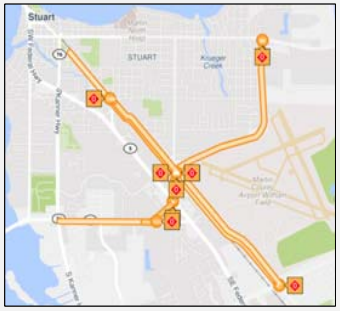


Commercial Vehicle Crashes



SR 710 Safety Projects

Railroad Grade Separation



Source: Regional Integrated Transportation Information System (RITIS)

Source: The Sun, Fresno California

CR A1A at Monterey Road – RITIS System 8 bottlenecks out of top 100. Martin MPO FEC Railroad Grade Separation Feasibility Study Top Priority

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Highway Widening and By-Pass Projects

Lane Type	# of Lanes (One Direction)	Outside Full Width (ft)	Outside Paved Width (ft)	Median or Left Full Width (ft)	Median or Left Paved Width (ft)	Outside Full Width (ft)	Outside Paved Width (ft)	Median or Left Full Width (ft)	Median or Left Paved Width (ft)
Travel Lanes	4-Lanes or more	10	5	10	4	15.5	8	15.5	8
	3- Lanes	10	5	10	0	15.5	8	15.5	8
	1-Lane & 2-Lanes	10	5	8	0	15.5	8	13.5	6
Aux. Lanes	All	10	5	8	0	11.5	4	11.5	4

Without Should Gutter: Consider 12-foot outside full width shoulder adjacent to travel lanes with high AADT or greater than 10% trucks.

Source: Florida Design Manual 2020

23

FEC Railroad Bridge over the St. Lucie River

Buy Photo

The Florida East Coast railroad bridge is seen spanning the St. Lucie River, parallel to the Roosevelt Bridge, on Wednesday, Oct 30, 2019, in Stuart. Virgin Trains USA has announced their intentions to replace the aging bridge, a single track span, with a double-track span costing around $100 million and taking around two years to build. *(Photo: ERIC HASERT/TCPALM)*

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Truck Parking

FDOT Truck Parking Availability System

Indiantown Rd/Florida's Turnpike

PSL/Ft. Pierce Turnpike Plaza Expansion

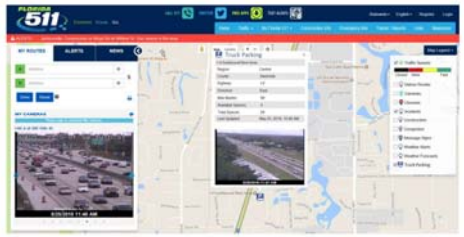
I-75 (Alligator Alley Pull-Off)

Source: Google Map

Private Sector Participation (Free Space for Truckers to Rest)

FDOT Truck Parking Availability System

Data Dissemination using FL511

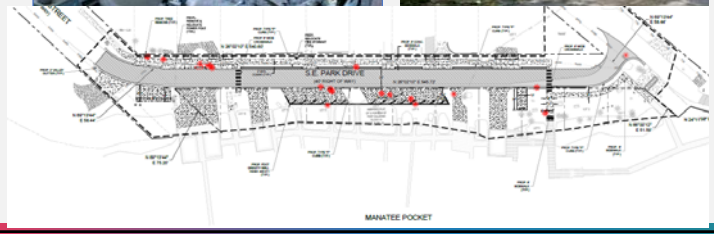


FL511 Website Truck Parking Facility Map View

FL511 Mobile App Truck Parking Facilities List View

https://fl511.com/map

Complete Streets: Park Avenue Port Salerno



Short, Mid and Long Range Proposed Projects

Recommended Projects	Index	Facility	From	To	Description	Jurisdiction	Phase	Fiscal Year
FREIGHT CORRIDORS								
Roadway (Infrastructure, Operations, Connectivity)	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State	Construction	FY19/20-20/2
	FR2	SR 710/Warfield Blvd	Martin Power Plant (MP 9.771)	CR609/SW Allapattah Rd (MP 14.967)	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State/SIS	Construction	FY23/24-27/2
	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	Connected Freight Priority System	State/SIS	Operations	Short Rang
	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	Managed Lanes and Interchange Improvements	State/SIS	PD&E Underway	Long Rang
	FR5	I-95	Palm Beach County Line	St. Lucie County Line	Managed Lanes, Interchange and Bridge Widening	State/SIS	Master Plan Underway	Long Rang
	FR6	SR 710/Warfield Blvd	Okeechobee County Line	Martin FPL Powerplant	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	State/SIS	Construction	Long Rang
	FR7	SR 710/Warfield Blvd	Martin FPL Powerplant	SR 76 On-Ramps	New Construction Bypass, New 4LD	State/SIS	Construction	Long Rang
Roadway Shoulder Widening	FSH1	SR 710/Warfield Blvd.	Okeechobee County Line	Martin FPL Powerplant	Widen paved shoulders from 4' to 7'	State/SIS	Construction	Mid Rang
	FSH2	SR 714/Martin Highway	I-95	Citrus Blvd	Widen paved shoulders from 4' to 7'	State	Construction	Mid Rang
	FSH3	US 98	Palm Beach County Line	Okeechobee County Line	Widen paved shoulders from 4' to 7'	State	Construction	Long Rang
	FSH4	SE Bridge Rd	.5 Miles east of I95	Flora Avenue	Widen paved shoulders from 1' to 7'	County	Construction	Long Rang
	FSH5	SR/76 SW Kanner Highway	US 98	Pratt Whitney Rd	Widen paved shoulders from 4' to 7'	State	Construction	Long Rang
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional		TSM&O System (10 Digital Message Signs)	State/County	Construction	Long Rang
	FRH2	Rural Highways - West of I-95	Regional		Provide Rural Center U-Turns Every 10 Miles	State/County	Construction	Long Rang
	FRH3	Rural Highways - West of I-95	Regional		Visibility Warning System (8)	State/County	Construction	Long Rang

Recommended Projects	Facility	From	To	Description	Jurisdiction	Phase	Fiscal Year
FREIGHT SUPPORTIVE CORRIDORS							
Roadway	SW Cargo Way	Citrus Boulevard	4300 Block Cargo Way	New 2 Lane Rural Road	County	Construction	Short Rang
	Stuart Area Projects and Indiantown Fiber Optic	Areawide		FDOT TSM&O, MPO 2020 Congestion Management Projects	State/County	Study	Short Range and Mi Rang
	US-1	Cove Road	St. Lucie County Line	Corridor Retro Fit	State	Study	Mid Rang
	High Meadow Avenue	I-95	SR 714 Martin Hwy	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	PD&E FY 22/23, Construction	Mid Rang
	Cove Road	Kanner Highway	CR A1A	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	PD&E FY 21/22 to 24/25, Construction	Mid Rang
	Bridge Road	Powerline Avenue	Federal Highway	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	County	Construction	Long Rang
	Martin Highway	Matheson Avenue	Palm City Road	Add 2 Lanes & Reconstruct 4 Lanes (6LD)	State	Construction	Long Rang
Truck Route Plan	Highways, Local Roads	Countywide		Designated Truck Routes and No Thru Trucks	County	Study and	Short Rang

Short, Mid and Long Range Proposed Projects

Recommended Projects		Facility	From	Description	Jurisdiction	Phase	Fiscal Year
Truck Parking	FP1	Truck Parking	@SR 91/Turnpike Indiantown Road Interchange	Revised policy to allow general truck parking	State	Policy	Short Range
	FP2	Martin County I-95 Weigh		Dynamic Parking, Signage, Pavement Markings	State	Construction	FY21/22-22/23
	FP3	Martin County I-95 NB and SB Rest Areas		Dynamic Truck Parking, Touch-Screen Kiosk	State	Construction	Short Range
	FP4	Truck Parking (Expand 900' northside of existing parking, average width +250')	@SR 91 Ft. Pierce Plaza	Expanded Parking	State	Construction	Mid Range
	FP5	Truck Parking (Pull Offs) (700'X100'; 20 truck parking)	Regional - US 98, SR 710	New Parking	State/SIS	Construction	Mid Range

Recommended Projects		Facility	From	Description	Jurisdiction	Phase	Fiscal Year
Regional Waterways	RW1	Railroad Bridges	at Waterway Crossings	Work with FDOT to evaluate impacts on marine transportation due to railroad bridge impacts, including consideration of freight redistribution, waterborne cargo, and inland logistics centers	Private		Coordination with Brightline and FEC on the St. Lucie River Bridge
	RW2	St. Lucie Inlet	at Atlantic Ocean	Continue to seek funding and prioritize maintenance dredging of the St. Lucie Inlet	County, USACE, FIND, MIATC		Last dredged in 2014. Waterways Plan indicates it should be dredged every 5 years
	N/A	Marine Transportation Routes	Martin County	Advance protection of identified "marine transportation routes" in Martin County to further support marine industries and vessel transport to waterways, including adoption of appropriate regulatory language. Special consideration should be given to railroad crossing infrastructure.	MPO, FDOT, Collaborating Entities: Economic Councils, Local Governments, Port of Fort Pierce, FIND, USCG, TCRPC		The plan includes the Atlantic Intracoastal Waterway, St. Lucie Inlet and Okeechobee Waterway as related to Marine Industries,
	N/A	Marine Industries Dataset	Martin County	Develop a regional Marine Industries dataset to further develop knowledge of the industry, workforce and training needs, and geographic clusters.	Local Governments, Workforce Alliance, Collaborating Entities: MIATC, Economic Councils, BDBs		Ongoing
	N/A	Marine Industries Career Track	Martin County	Develop a "Marine Industries Career Track" at the high school level to enhance the local workforce and augment a potential maritime/logistics academy, including identification of appropriate certifications, business partners, and opportunities for field training. Advanced career training should be explored with Indian River State College and	School Districts, IRSC, Workforce Alliance, Collaborating Entity: MIATC		Ongoing

Short, Mid and Long Range Proposed Projects

Recommended Projects		Facility	From	To	Description	Jurisdiction	Phase	Fiscal Year
Railroad	FRR2	FEC Railroad Corridor	Palm Beach County Line	St. Lucie County Line	FEC/Brightline Double Tracking, Reduce Trespassing and Dynamic Envelope for State at Grade Crossings	State/SIS/Private	Construction	Short Term
	FRR3	Monterey Road	@FEC Railroad	Include Monterey Road Ext/Area	Grade Separation (Roadway Underpass) including Analysis of Alternative Parallel Corridor to Airport Road	State/SIS	PD&E FY 21/22, Construction	Mid Range
	FRR4	FEC Railroad Pedestrian Grade Separation	Sailfish Circle Park and Ride Lot	Flagler Avenue	Grade Separation (Pedestrian Plaza Overpass)	County/SIS/Private	Construction	Mid Range
	FRR5	FEC Railroad Pedestrian Grade Separation	Railroad Avenue	Commerce Avenue	Grade Separation (Pedestrian Overpass)	County/SIS/Private	Construction	Mid Range
	FRR1	FEC Railroad Bridge	Over St. Lucie River		New Bridge	Private	Construction	Long Range
	FRR6	US 27 Corridor Rail Bypass	Miami-Dade County	FEC Railroad at SR 710	New Railroad, Rehabilitation	State/SIS/Private	Construction	Long Range

Recommended Policies		Facility	From	To	Description	Jurisdiction	Phase	Fiscal Year
Martin Freight Technical Advisory Committee	N/A	Public Private Stakeholder Coordination	Countywide		Coordinate with Stakeholders on a regular basis. Develop agendas and meeting material with substantive information and discussions	State/MPO/County/City /Stakeholders	Policy	Short Range
Freight Roadway Design Considerations	N/A	Roadways	Countywide		FDOT has been evaluating the incorporation of freight design considerations in to the Florida Design Manual and that progress should be followed as well as local agency considerations of accommodating goods movement into community development as best practices for integrating freight into complete streets projects, mixed use developments and local roadways.	State/MPO/County/City	Policy	Short Range
On-Site Truck Parking	N/A	Truck Parking	Countywide		Undertake a study/initiative for private sector to support trucker breaks on-site in coordination with local policy.	State/MPO/County/City /Stakeholders	Policy	Short Range
Educational Initiatives	N/A	Freight Supportive Education Events	Countywide		Coordination with Industry, Economic Development, Institutional and Government Partners to educate the public on the critical importance of freight and goods movement	State/MPO/SIS/Private	Policy	Short Range

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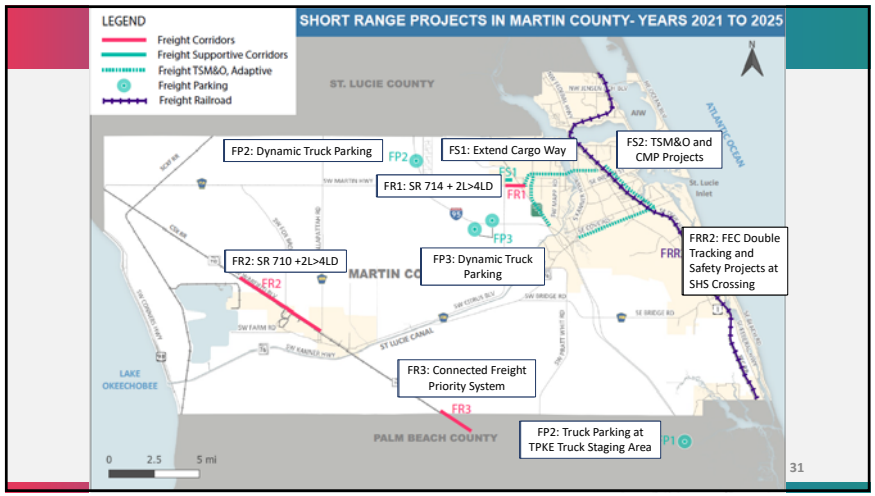

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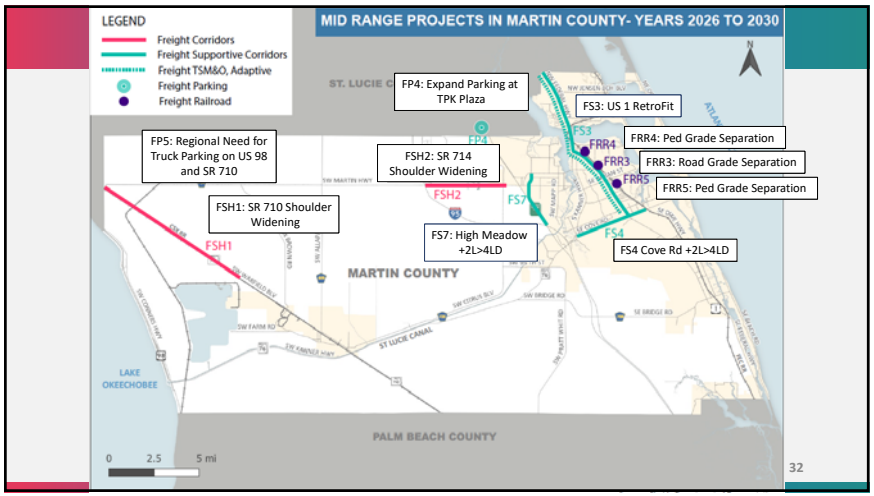

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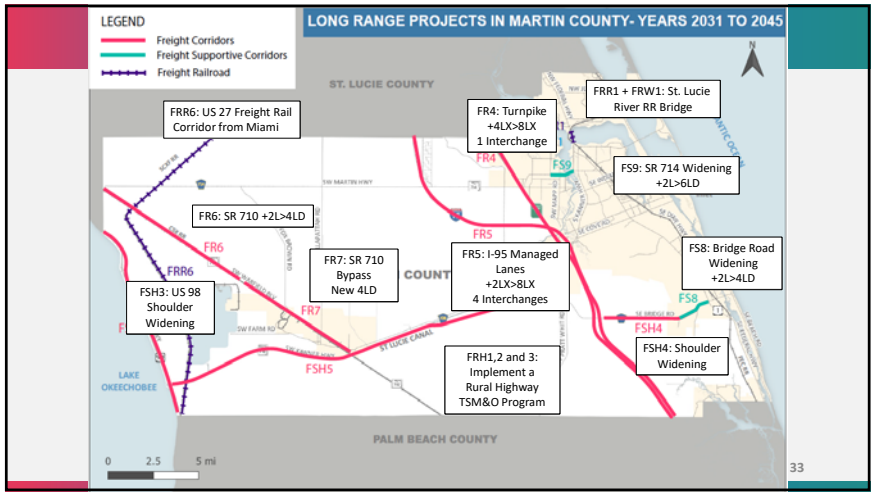
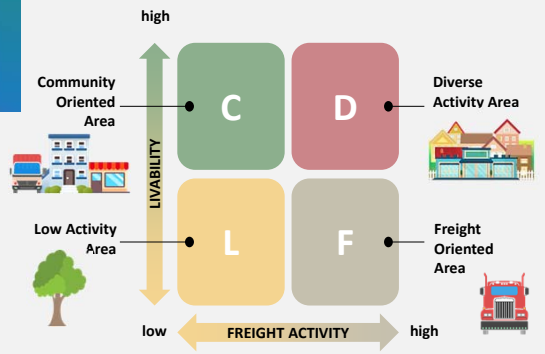


Community Contexts

Freight Roadway Design Considerations

- Pedestrian/Bicycle Safety
- Intersection Design
- Right Turn Radius
- Through Trucks
- Pavement Design
- Access Management
- First Mile/Last Mile
- Connected Vehicle Systems



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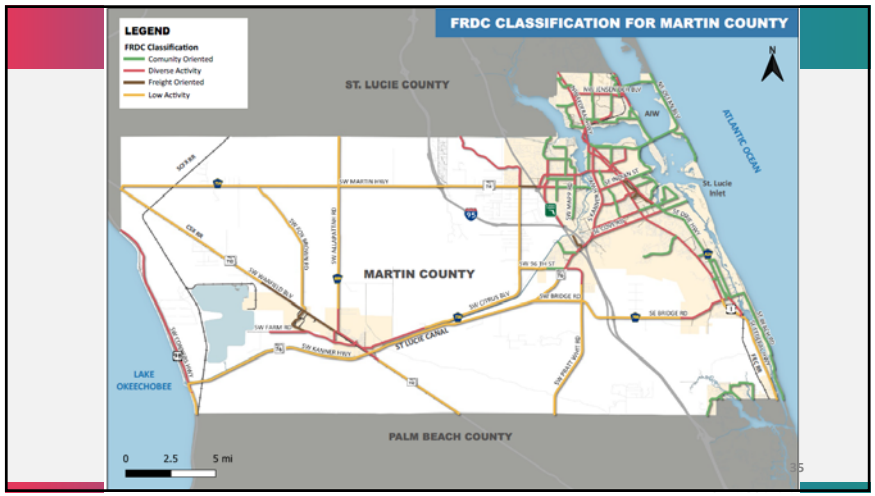

Policy Recommendations: Martin MPO Freight Stakeholder Advisory Committee

- Build upon the projects and issues identified in this plan
- Updates on project progress
- Unify support for economic development
- Support work force training in the community
- Educate the public
- Share best practices
- Inform ourselves on the latest technologies

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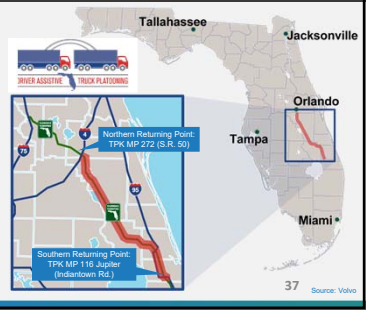
Driver Assistive Truck Platooning | Road Safety and Fuel Savings

PROJECT LOCATION



Source: Volvo

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Education and Enforcement Programs

Association	Florida Trucking Association			Town of Jupiter and many other municipalities	Florida Highway Patrol	Trucker Buddy Organization	MPO/FDOT
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					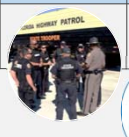		Tours of New Logistics Facilities

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THANK YOU

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MARTIN COUNTY

Freight & Goods Movement Plan

MARTIN MPO Metropolitan Planning Organization

MARLIN

June 2020

1

Agenda

1. **Scope and Schedule**
   - Purpose
   - Goals and Objectives
2. **Outreach Efforts**
3. **Martin County Freight Plan**
   - Network
   - Key Projects
   - Short, Mid, Long Range Projects
   - Context Sensitive Approach
   - Freight Technical Committee
4. **Open Discussion**

2

01 Stakeholder Engagement

ISSUE

Achieving participation from the private sector in planning studies, particularly, long range planning efforts, is difficult, as they are rightly focused on day-to-day operational issues.

SOLUTION

In order to develop an effective plan, the Project Team will **implement an outreach program throughout the study with targeted and proactive outreach**.

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02 Development of a Reliable Freight and Goods Plan

This project team will:

- Collect data
- Reach out and listen!!
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- Make recommendations for MPO Board consideration

03 Integrating Goods Movement Needs Into Community Design

The plan will identify contexts including:

- Diverse Activity Areas
- Community Oriented Areas
- Freight Oriented Areas
- Low Activity Areas

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Outreach Efforts

Government and Related Agencies

Stakeholders

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- INCIDENT MANAGEMENT
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- PUBLIC OUTREACH/ EDUCATION
- AUTONOMOUS VEHICLES
- CARGO THEFT
- TRUCK PARKING
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- WATERWAYS

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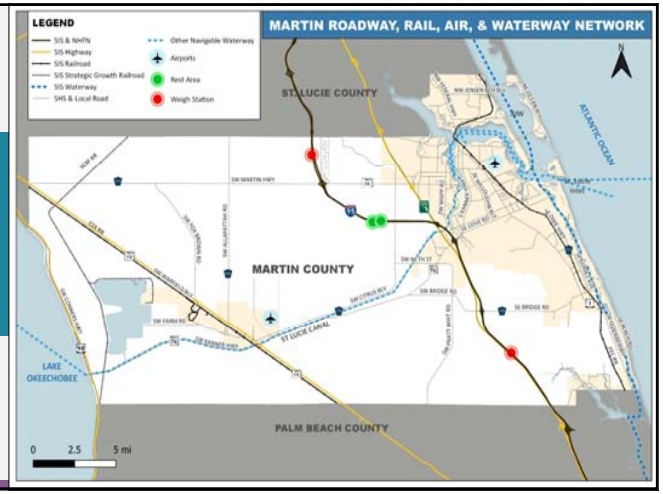
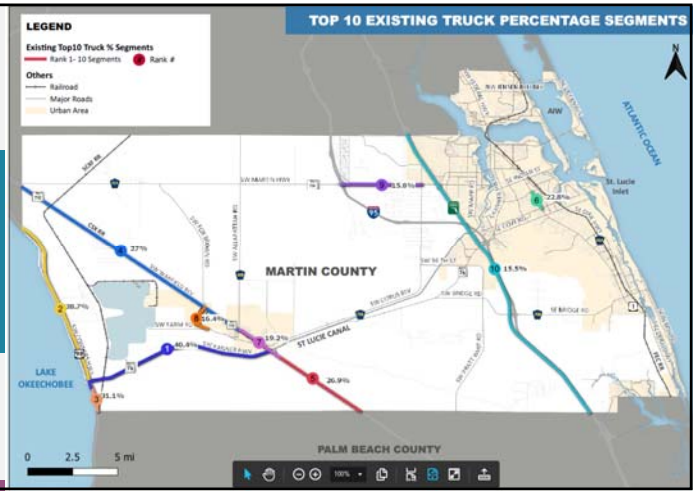
  - Roadway Improvements
  - Shoulder Widening
  - Truck Parking
- Continued Coordination and Education

7

Network

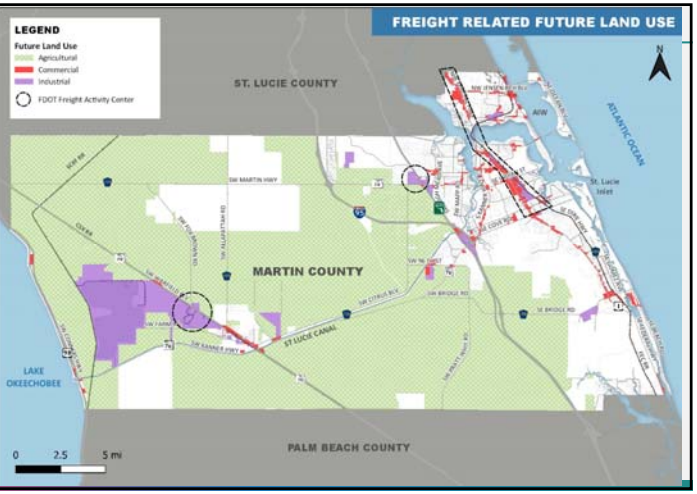


Existing Truck Volumes

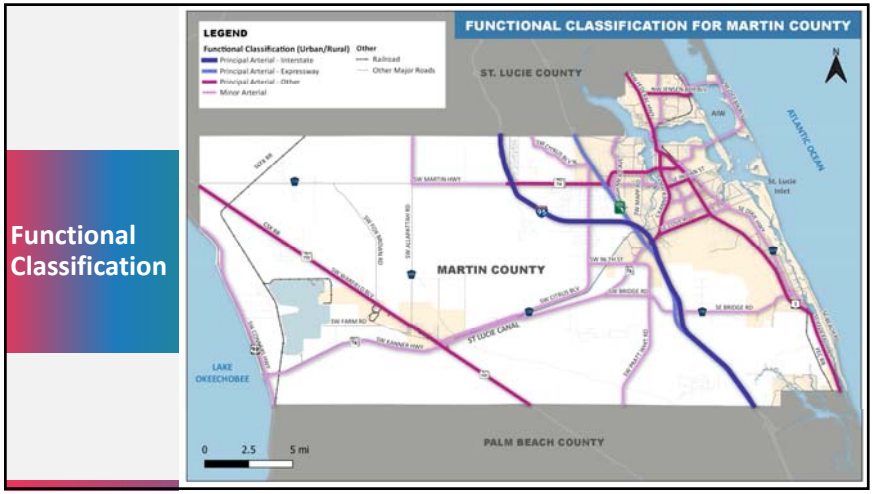


Future Truck Volumes

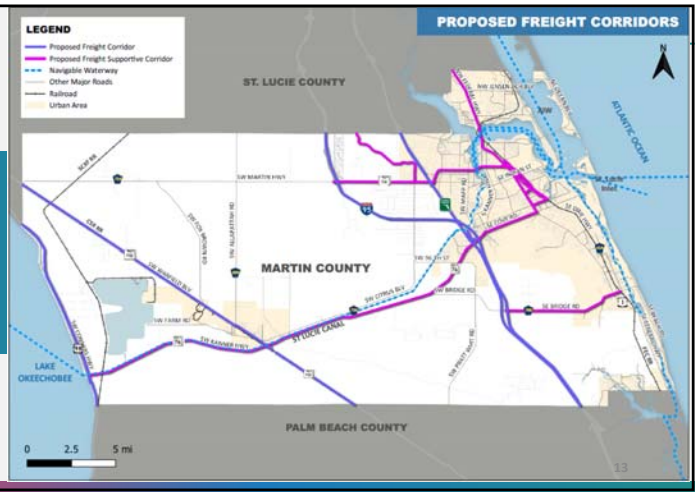
Freight Related Land Use



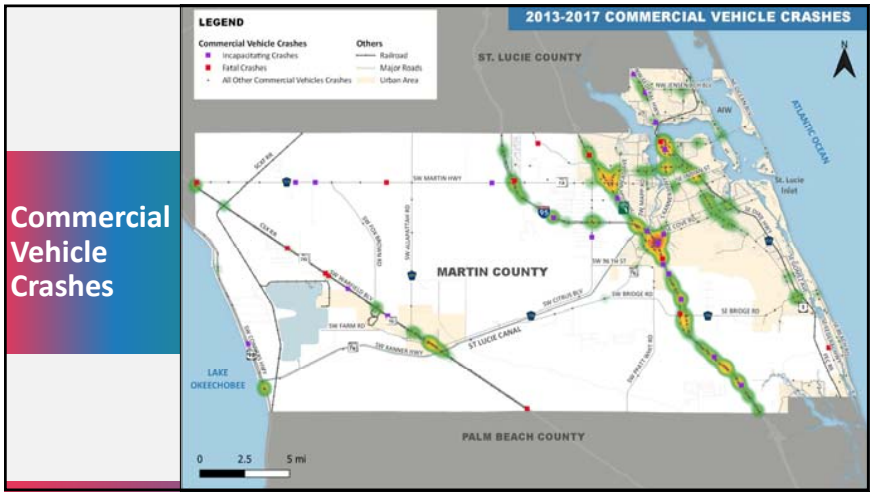
Functional Classification



Freight Supportive Corridors



Commercial Vehicle Crashes



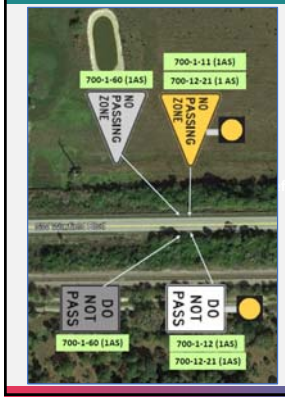
Rural Highway Widening and Shoulder Projects

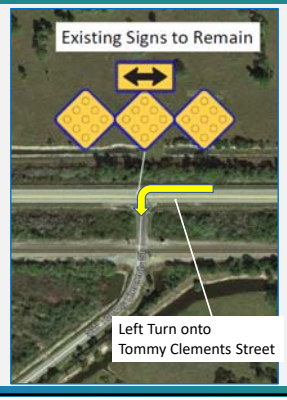
Lane Type	# of Lanes (One Direction)	Outside Full Width (ft)	Outside Paved Width (ft)	Median or Left Full Width (ft)	Median or Left Paved Width (ft)	Outside Full Width (ft)	Outside Paved Width (ft)	Median or Left Full Width (ft)	Median or Left Paved Width (ft)
Travel Lanes	4-Lanes or more	10	5	10	4	15.5	8	15.5	8
	3- Lanes	10	5	10	0	15.5	8	15.5	8
	1-Lane & 2-Lanes	10	5	8	0	15.5	8	13.5	6
Aux. Lanes	All	10	5	8	0	11.5	4	11.5	4

Without Should Gutter: Consider 12-foot outside full width shoulder adjacent to travel lanes with high AADT or greater than 10% trucks

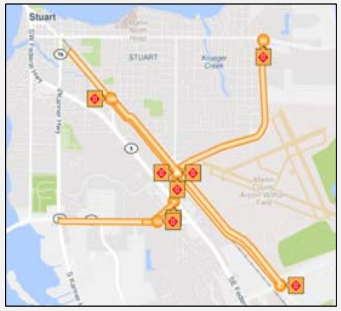
Source: Florida Design Manual 2020

SR 710 Safety Projects – Farm Dairy Road to Indianwood Drive





Railroad Grade Separation



Source: Regional Integrated Transportation Information System (RITIS)

Source: The Sun, Fresno California

CR A1A at Monterey Road – RITIS System 8 bottlenecks out of top 100. Martin MPO FEC Railroad Grade Separation Feasibility Study Top Priority

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FEC Railroad Bridge over the St. Lucie River

Buy Photo

The Florida East Coast railroad bridge is seen spanning the St. Lucie River, parallel to the Roosevelt Bridge, on Wednesday, Oct 30, 2019, in Stuart. Virgin Trains USA has announced their intentions to replace the aging bridge, a single track span, with a double-track span costing around $100 million and taking around two years to build. (Photo: ERIC HASERT/TCPALM)

Truck Parking

FDOT Truck Parking Availability System

Indiantown Rd/Florida's Turnpike

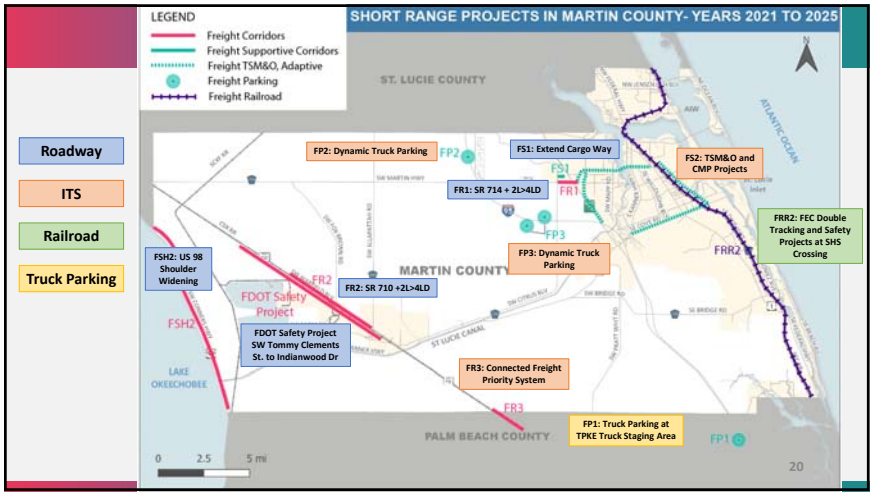
PSL/Ft. Pierce Turnpike Plaza Expansion

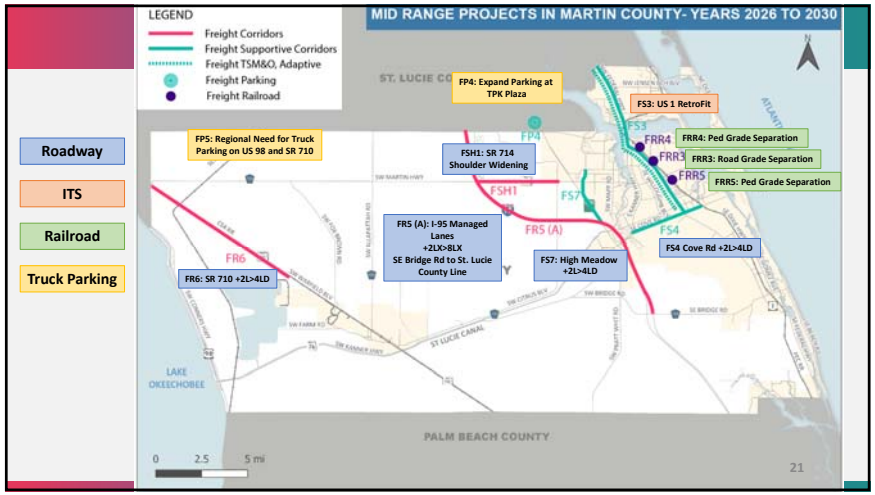
I-75 (Alligator Alley Pull-Off)

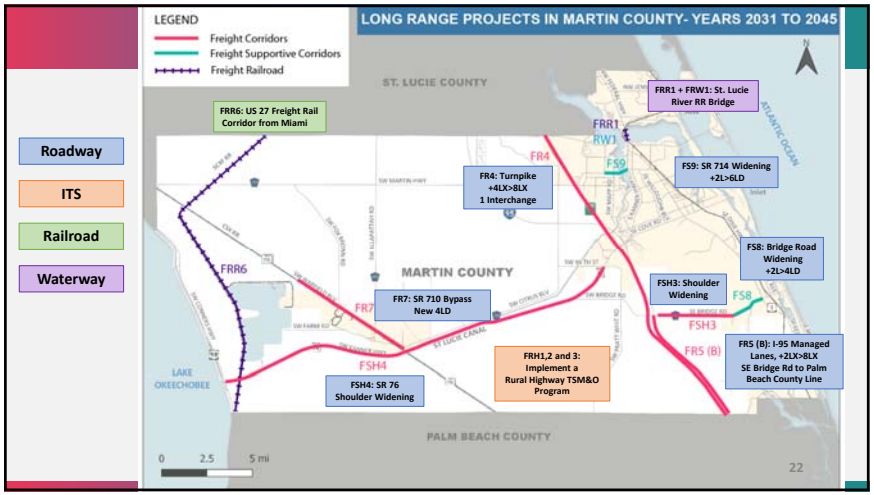
Source: Google Map

Private Sector Participation (Free Space for Truckers to Rest)

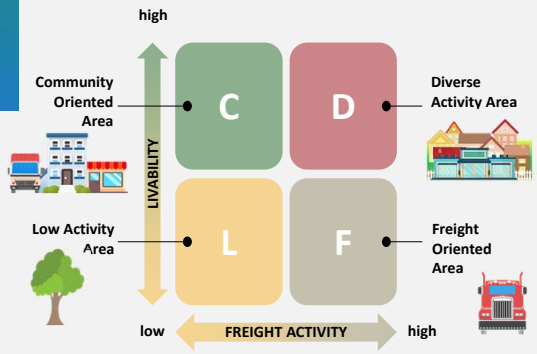
19







Community Contexts



Freight Roadway Design Considerations

- Pedestrian/Bicycle Safety
- Intersection Design
- Right Turn Radius
- Through Trucks
- Pavement Design
- Access Management
- First Mile/Last Mile
- Connected Vehicle Systems

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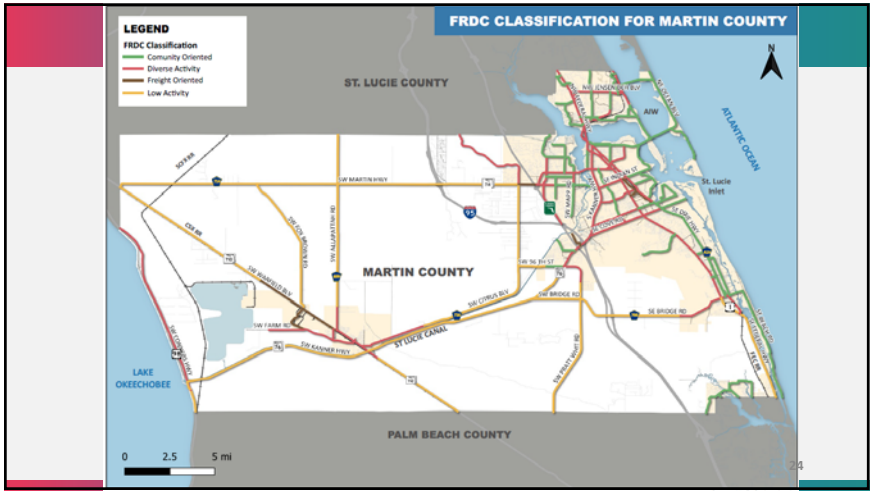

Policy Recommendations: Establish Martin MPO Freight Stakeholder Advisory Committee

- Build upon the projects and issues identified in this plan
- Updates on project progress
- Unify support for economic development
- Support work force training in the community
- Share best practices
- Inform ourselves on the latest technologies
- Educate the public

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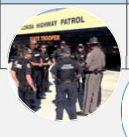
Education and Enforcement Programs

Association	Florida Trucking Association			Town of Jupiter and many other municipalities	Florida Highway Patrol	Trucker Buddy Organization	MPO/FDOT
Program	Florida Teach Tour	Florida Road Team	Share the Road	Touch a Truck	Florida Highway Patrol	Trucker Buddy International	Palm Beach TPA Elected Officials Tour
							Tours of New Logistics Facilities

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THANK YOU

CONTACT US:
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bgomez@martin.fl.us
772.288.5412

Jeffrey Weidner
jweidner@marlinengineering.com
954.870.5058

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Appendix C

Federal Railroad
Administration Crash Reports

3.18 - Accident By State/Railroad

Back to Query Page Print Version

3.18 - ACCIDENTS BY STATE/RAILROAD
ALL REPORTS FOR ALL RAILROADS ARE SHOWN. PRIMARY CAUSE OF ACCIDENT DEFINED BY FIRST POSITION OF CAUSE, T = TRACK, H = HUMAN FACTOR, E = EQUIPMENT, S = SIGNAL, M = MISCELANEOUS
Click here for Kld/Inj (Form 6180.55a) definitions

Selections: Railroad - All
State - FLORIDA County - MARTIN
All Regions
All Causes / All Accident Types
All Track Classes / All Track Types
All Accidents
Hazmat Options - None
Passenger Trains Only - No
Damage Amounts - All
Report Sort Sequence - State, county, date
Date Selected - Jan through Dec, 2016

Acc Nbr	Rpt RR	Report Number	Kld/Inj	Mo	Day	ST	County	Type Track	Trk Maint	Type Acc	Pri Cause	Cont Cause	Equip Damage	Track Damage	Kld	Inj	RR Equip	Spd Mph	Locos Der	Cars Der
1	FEC	X04031516	55A	03	15	FL	MARTIN	Main	FEC	Oth	M308		5,083	6,877	2	0	FREIGHT TRAIN	054	0	0
2	FEC	D69112116	55A	11	21	FL	MARTIN	Main	FEC	Der	H997		1,500	9,265	0	0	MAINTENANCE CAR	007	0	1
3	FEC	D72121716	55A	12	17	FL	MARTIN	Main	FEC	Oth	E53C		10,745	228,892	0	0	FREIGHT TRAIN	049	0	0

FOOTNOTE 1. For more information on available Reporting Levels refer to the 'Definition of Individual, System and Consolidated Railroads' link on the FRA Office of Safety Analysis Homepage.

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT

OMB Approval No: 2130-0500

1. Name of Reporting Railroad: Florida East Coast Railway Company [FEC]	1a. Alphabetic Code: FEC	1b. Railroad Accident/Incident No.: D69112116
2. Name of Other Railroad or Other Entity with Consist Involved	2a. Alphabetic Code	2b. Railroad Accident/Incident No.
3. Name of Railroad or Other Entity Responsible for Track Maintenance *(single entry)*: Florida East Coast Railway Company [FEC]	3a. Alphabetic Code: FEC	3b. Railroad Accident/Incident No.: D69112116
4. U. S. DOT Grade Crossing Identification Number	5. Date of Accident/Incident: month 1 1 / day 2 1 / year 2016	6. Time of Accident/Incident: 4:23 AM ☐ PM ☒

7. Type of Accident/ Incident *(single entry in code box)*	1. Derailment	4. Side collision	7. Hwy-rail crossing	10. Explosion-detonation	13. Other *(describe in narrative)*	Code
	2. Head on collision	5. Raking collision	8. RR grade crossing	11. Fire/violent rupture		01
	3. Rear end collision	6. Broken train collision	9. Obstruction	12. Other impacts		

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/ Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Subdivision
N/A	N/A	N/A	N/A	SYSTEM

13. Nearest City/ Town	14. Milepost *(to nearest tenth)*	15. State Abbr.	Code	16. County
STUART	257	FL	12	MARTIN

17. Temperature (F) *(specify if minus)*	18. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark	Code	19. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
75 °F		2		1		1

21. Track Name/ Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density *(gross tons in millions)*	24. Time Table Direction 1. North 2. South 3. East 4. West	Code
DOUBLE MAIN TRACK		4	25.00		2

25. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train-Pulling 3. Commuter train-Pulling 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect. car A. Spec. MoW Equip. B. Passenger Train-Pushing C. Commuter Train-Pushing D. EMU E. DMU	Code	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
	9		Y	DANE

28. Speed *(recorded speed if available)* R - Recorded E - Estimated	Code
007 MPH	E

29. Trailing Tons (gross tonnage, excluding power units): 0

30. Type of Territory *(enter codes that apply)*
Signalization *(Mandatory)* 1. Signaled 2. Not Signaled: 1
Method of Operation/Authority for Movement *(Mandatory)*: 1
1. Signal Indication 2. Direct Train Control 3. Yard/Restricted Limits 4. Block Register Territory 5. Other Than Main Track Z-Other - Narrative Required
Supplemental/Adjunct Codes *(Mandatory*)*
* Mandatory to the extent that all applicable codes are entered

30a. Remotely Controlled Locomotive?
0 = Not a remotely controlled operation
1 = Remote control portable transmitter
2 = Remote control tower operation
3 = Remote control portable transmitter - more than one remote control transmitter
Code: 0

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	BAR000177	001	N
(2) Causing *(if mechanical, cause reported)*		000	

32. If any railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs

33. Was this consist transporting passengers ? *(y/n)*: No

34. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End e. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	1	0	0
(2) Total Derailed	0	0	1	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
$ 1,500	$ 9,265	H997	

Number of Crew Members 40. Engineers/ Operators	41. Firemen	42. Conductors	43. Brakemen
1		0	

Length of Time on Duty 44. Engineer/Operator	45. Conductor
Hrs: 09 Mins: 23	Hrs: Mins:

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Others	49a. Special Study Block A	49b. Special Study Block B
Fatal	0	0	0	CWR	000-000-000
Nonfatal	0	0	0		

50. Latitude	51. Longitude
26.9722	-80.095009

52. Narrative Description *(Be specific, and continue on separate sheet if necessary)*

CONTRACTOR FOR FEC WAS OPERATING REGULATOR BAR 177 WHILE WORKING ON THE MAIN TRACK IN A SOUTH BOUNDDIRECTION AND STRUCK THE CONCRETE TIE ON THE PASSING TRACK WITH THE RIGHT SIDE WING TEMPLATE PLATE CAUSING THE BACK END OF THE MACHINE TO DERAIL FROM THE TRACK. NO INJURIES WERE SUSTAINED.

53. Typed/Printed Name & Title of Preparer	54. Signature	55. Date

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report...." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT

OMB Approval No: 2130-0500

1. Name of Reporting Railroad: Florida East Coast Railway Company [FEC]	1a. Alphabetic Code: FEC	1b. Railroad Accident/Incident No.: D72121716
2. Name of Other Railroad or Other Entity with Consist Involved	2a. Alphabetic Code	2b. Railroad Accident/Incident No.
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry): Florida East Coast Railway Company [FEC]	3a. Alphabetic Code: FEC	3b. Railroad Accident/Incident No.: D72121716
4. U. S. DOT Grade Crossing Identification Number	5. Date of Accident/Incident: month 1 2 / day 1 7 / year 2016	6. Time of Accident/Incident: 5:27 AM ☐ PM ☒

7. Type of Accident/ Incident (single entry in code box): 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other (describe in) narrative) — Code: 13

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/ Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Subdivision
38	N/A	N/A	N/A	SYSTEM

13. Nearest City/ Town	14. Milepost (to nearest tenth)	15. State Abbr.	Code	16. County
STUART	268	FL	12	MARTIN

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark — Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
75 °F	4	1	1

21. Track Name/ Number	22. FRA Track Class (1-9, X) — Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 2. South 3.East 4. West — Code
SINGLE MAIN TRACK	4	25.00	1

25. Type of Equipment Consist (single entry)	26. Was Equipment Attended? 1. Yes 2. No — Code	27. Train Number/Symbol
1. Freight train; 2. Passenger train-Pulling; 3. Commuter train-Pulling; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s); 9. Maint./inspect. car; A. Spec. MoW Equip.; B. Passenger Train-Pushing; C. Commuter Train-Pushing; D. EMU; E. DMU — Code: 1	Y	202/

28. Speed (recorded speed if available) R - Recorded E - Estimated	Code	29. Trailing Tons (gross tonnage, excluding power units)
049 MPH	E	8,321

30. Type of Territory (enter codes that apply)
Signalization (Mandatory) 1. Signaled 2. Not Signaled: 1
Method of Operation/Authority for Movement (Mandatory): 1
1. Signal Indication 2. Direct Train Control 3. Yard/Restricted Limits 4. Block Register Territory 5. Other Than Main Track
Supplemental/Adjunct Codes (Mandatory*): A-Auto Cab Signals
* Mandatory to the extent that all applicable codes are entered

30a. Remotely Controlled Locomotive?
0 = Not a remotely controlled operation
1 = Remote control portable transmitter
2 = Remote control tower operation
3 = Remote control portable transmitter - more than one remote control transmitter
Code: 0

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	FEC015583	065	Y
(2) Causing (if mechanical, cause reported)	FEC015583	065	Y

32. If any railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs

33. Was this consist transporting passengers ? (y/n): No

34. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End e. Remote
(1) Total in Train	3	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	86	0	40	0	0
(2) Total Derailed	0	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
$ 10,745	$ 228,892	E53C	

Number of Crew Members

40. Engineers/ Operators	41. Firemen	42. Conductors	43. Brakemen
1		1	

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs: 03 Mins: 27	Hrs: 03 Mins: 27

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Others
Fatal	0	0	0
Nonfatal	0	0	0

49a. Special Study Block A	49b. Special Study Block B
CWR	000-000-000

50. Latitude	51. Longitude
27.130177	-80.16984

52. Narrative Description (Be specific, and continue on separate sheet if necessary)

JOURNAL BEARING WRUNG OFF CAUSING THE SIDE FRAME TO DROP DOWN WHERE IT WAS DRAGGED FOR APPROXIMATELYTWO MILES. CARS STAYED UPRIGHT AND THERE WAS NO DERAILMENT.

53. Typed/Printed Name & Title of Preparer	54. Signature	55. Date

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report...." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT

OMB Approval No: 2130-0500

1. Name of Reporting Railroad: Florida East Coast Railway Company [FEC]	1a. Alphabetic Code: FEC	1b. Railroad Accident/Incident No.: X04031516
2. Name of Other Railroad or Other Entity with Consist Involved:	2a. Alphabetic Code:	2b. Railroad Accident/Incident No.:
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry): Florida East Coast Railway Company [FEC]	3a. Alphabetic Code: FEC	3b. Railroad Accident/Incident No.: X04031516
4. U. S. DOT Grade Crossing Identification Number: 272357P	5. Date of Accident/Incident: month 0 3 / day 1 5 / year 2016	6. Time of Accident/Incident: 3:15 AM [X] PM [ ]

7. Type of Accident/Incident (single entry in code box): 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other (describe in) narrative) — Code: 07

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Subdivision
3	N/A	N/A	N/A	SYSTEM

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr.	Code	16. County
STUART	266+29	FL	12	MARTIN

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark — Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
73 °F	4	1	1

21. Track Name/Number	22. FRA Track Class (1-9, X) — Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 2. South 3. East 4. West — Code
SINGLE MAIN TRACK	4	25.00	1

25. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train-Pulling 3. Commuter train-Pulling 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect. car A. Spec. MoW Equip. B. Passenger Train-Pushing C. Commuter Train-Pushing D. EMU E. DMU — Code	26. Was Equipment Attended? 1. Yes 2. No — Code	27. Train Number/Symbol
1	Y	226

28. Speed (recorded speed if available) R - Recorded E - Estimated — Code	30. Type of Territory (enter codes that apply)	30a. Remotely Controlled Locomotive?
054 MPH — E	Signalization (Mandatory) 1. Signaled 2. Not Signaled: 1 Method of Operation/Authority for Movement (Mandatory): 1 1. Signal Indication 2. Direct Train Control 3. Yard/Restricted Limits 4. Block Register Territory 5. Other Than Main Track Supplemental/Adjunct Codes (Mandatory*): A-Auto Cab Signals B-Auto Train Control * Mandatory to the extent that all applicable codes are entered	0 = Not a remotely controlled operation 1 = Remote control portable transmitter 2 = Remote control tower operation 3 = Remote control portable transmitter - more than one remote control transmitter — Code: 0
29. Trailing Tons (gross tonnage, excluding power units): 5,794		

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	32. If any railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	FEC000823	001	N			
(2) Causing (if mechanical, cause reported)		000		33.Was this consist transporting passengers ? (y/n)	No	

34. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End e. Remote	35. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	3	0	0	0	0	(1) Total in Equipment Consist	61	0	0	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
$ 5,083	$ 6,877	M308	

Number of Crew Members 40. Engineers/Operators	41. Firemen	42. Conductors	43. Brakemen	Length of Time on Duty 44. Engineer/Operator	45. Conductor
1		1		Hrs: 04 Mins: 45	Hrs: 04 Mins: 45

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Others	49a. Special Study Block A	49b. Special Study Block B
Fatal	0	0	2	CWR	000-000-000
Nonfatal	0	0	0		

50. Latitude	51. Longitude
27.145696	-80.197752

52. Narrative Description (Be specific, and continue on separate sheet if necessary)

DRIVER, WITH ONE PASSENGER, WAS TRAVELING EAST ON SALERNO ROAD WHEN IT APPROACHED THE CROSSING. AFTER A MOMENTARY STOP, THE VEHICLE CONTINUED EAST AND ATTEMPTED TO DRIVE AROUND THE LOWERED GATE ARMSAT THE SALERNO ROAD CROSSING AND WAS STRUCK BY TRAIN. DRIVER AND PASSENGER SUSTAINED FATAL INJURIES.

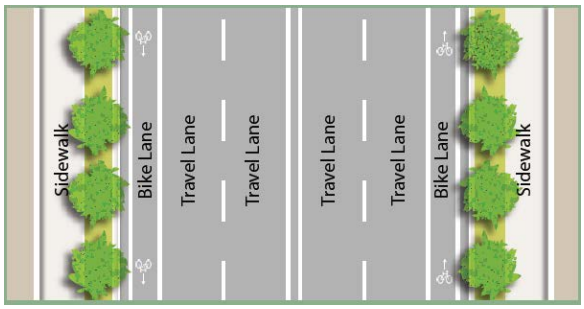
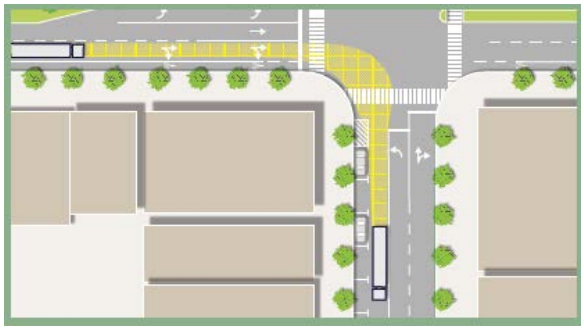
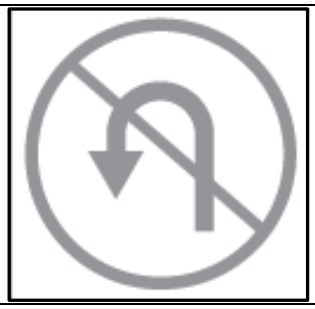
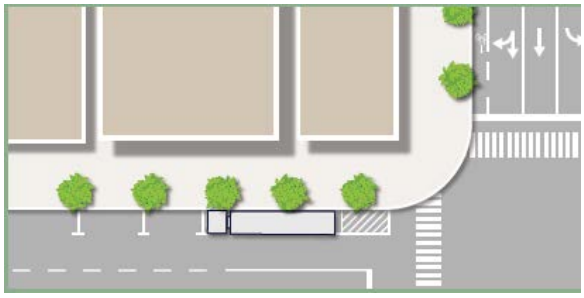
53. Typed/Printed Name & Title of Preparer	54. Signature	55. Date

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report...." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

Appendix D

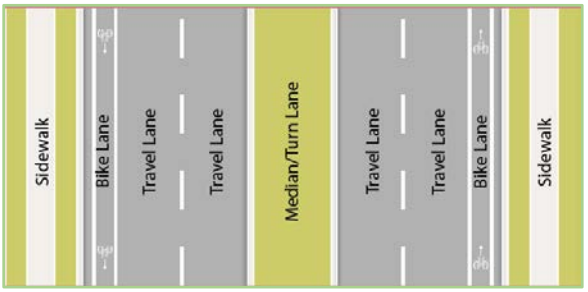
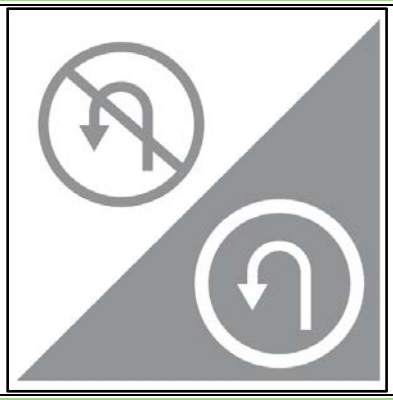
Context Design Considerations

Community

WHAT: Narrow travel lanes without a median, with wider bicycle lanes and wide sidewalks with wide landscaped buffer with shade trees ***WHY:*** Pedestrian and bicycle mobility and safety are paramount. Slow design speeds and high levels of roadside access typically require four lanes of travel without a median, a feature that also minimizes pedestrian crossing distances. Bicycle lanes provide added asphalt width as an extra measure of safety for larger vehicles.	
WHAT: Smaller radius, no channelization ***WHY:*** Providing pedestrian safety, access, mobility, convenience, and comfort is the highest priority. Land use context favors smaller scale infrastructure. Design vehicles are smaller in community-oriented areas. Regular encroachment into bicycle lanes and multiple receiving lanes on destination leg, and occasional encroachment from multiple sending lanes from departure leg and into opposing traffic when lanes are clear is appropriate.	
WHAT: Truck U-Turns Prohibited ***WHY:*** In a pedestrian-oriented environment, buildings are closer to the street, and available right-of-way is limited. Street networks are typically connected grids, and trucks can make a series of right and left turns to access destinations on the other side of the street.	
WHAT: Curbside truck parking at time-sensitive loading zones ***WHY:*** Surface parking lots are rare, as are the volume and frequency of large trucks. Truck drivers prefer to make off-peak deliveries in denser areas to avoid traffic congestion, and time-sensitive loading zones keep curbside space available for truck parking at these times.	

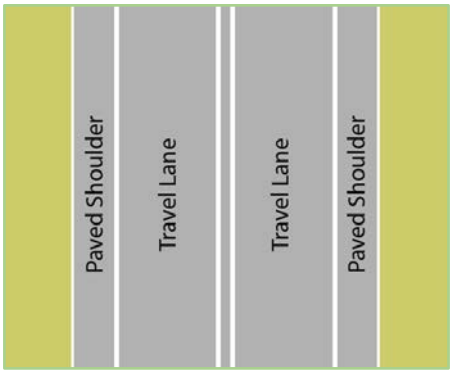
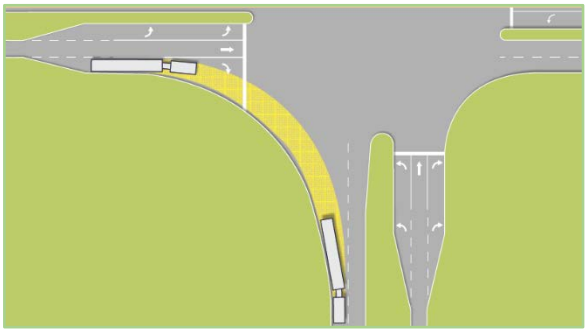
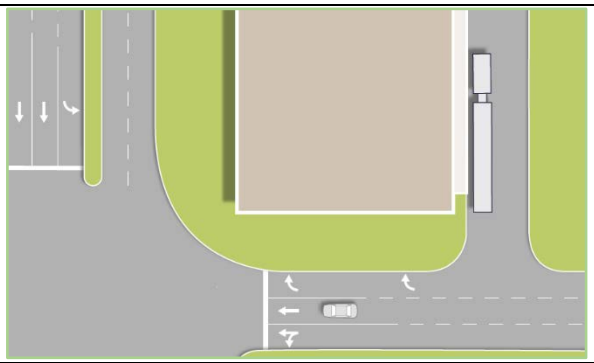
Source: FDOT Freight Roadway Design Considerations

Diverse

WHAT: Moderately wide travel lanes with a grassy median, narrower bicycle lanes, and narrower sidewalks with narrower grassy buffers *WHY:* Frequent presence of trucks requires wider lanes to accommodate truck passing. Pedestrian and bicyclist mobility and safety are emphasized with designated pathways. Medians provide left turn lanes at intersections, decreasing delays for through vehicles.	
WHAT: Middle-range curb return radius, no channelization *WHY:* Providing pedestrian safety, access, mobility, convenience, and comfort is a high priority. Large vehicles will be using the intersection frequently, requiring a larger turning radius.	
WHAT: Intersections with Pavement Bulb-Outs Alternate with U-Turn Prohibitions *WHY:* Goods delivery is a critical element in a diverse area. Large trucks need to be able to make U-turns without going far out of their way. Ideally, U-turns should be provided for at major intersections, considering building setbacks and available right-of-way.	
WHAT: Indirect rear access from alley or other street – minimal driveways *WHY:* Roadways typically have managed access points, and adequate parking space usually exists on site for deliveries. On-street parking may be prohibited.	

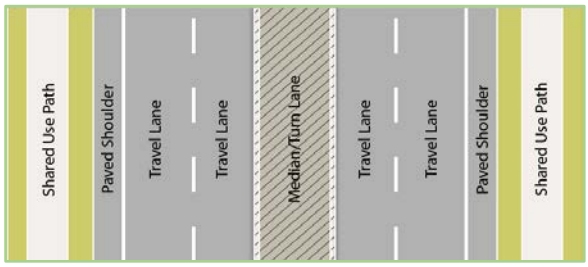
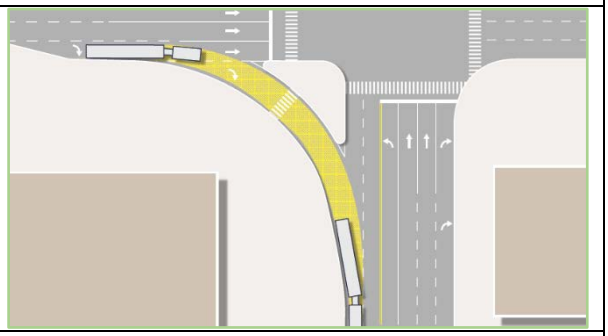
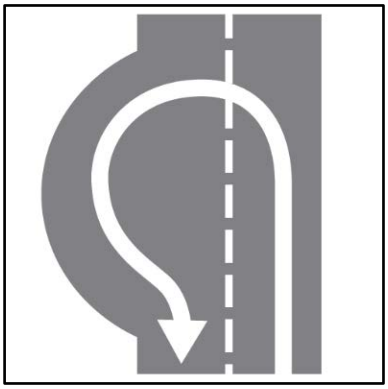
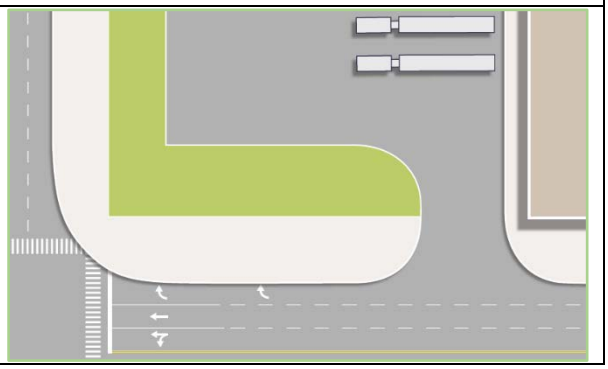
Source: Freight Roadway Design Considerations

Low

WHAT: Wide two-lane road without a median, with a paved shoulder *WHY:* Minimal pavement width minimizes construction and maintenance costs. Paved shoulder serves as an adequate facility for infrequent pedestrian use. Wide lane and paved shoulder provide adequate width for infrequent bicycle use.	
WHAT: Large curb return radius, no channelization *WHY:* Pedestrian activity is infrequent. Safe accommodations (curb ramps and crosswalks) must be provided, but need not exceed minimum standards. Low activity areas are not areas for targeted investments; treatments in low activity areas should minimize construction and maintenance costs.	
WHAT: Gravel Bulb-Outs for U-Turns *WHY:* Safe, low cost solutions are best in low activity areas. Gravel installation is quick, inexpensive, and adequate for low frequency use.	
WHAT: Direct front or side access with smaller aprons (lower cost, OK for slower turns) *WHY:* Truck activity is relatively low, and simultaneous truck arrival is unlikely. Smaller pavement area reduces cost.	

Source: Freight Roadway Design Considerations

Freight

WHAT: Moderately wide inside travel lanes and wide outside travel lanes with flush painted median, paved shoulders, and shared use paths. *WHY:* Moderate inside lane width discourages high vehicle speeds. Wider outside lane with paved shoulder accommodates infrequent conflicts between on-street bicyclists and trucks, and provides added room for truck maneuvers. Painted median allows space for frequent left turns. Shared use path accommodates pedestrians if outside of the one-mile urban buffer boundary.	
WHAT: Larger curb return radius, with channelization *WHY:* Large trucks require large curb return radii. Pedestrian activity is low but occasional.	
WHAT: Paved Bulb-Outs for U-Turns *WHY:* Truck maneuverability is paramount. Buildings are typically set far back from the edge of right-of-way, and roads typically have shoulder and ditch drainage giving adequate space for pavement bulb-outs.	
WHAT: Direct front access with wide aprons *WHY:* Truck maneuverability is paramount. Freight activity draws many trucks, and there is a high likelihood of multiple simultaneous maneuvers. Wide expanse of pavement accommodates side-by-side loading bays and expedites turning movements.	

Source: Freight Roadway Design Considerations

Appendix E

Roadway Project Priortization

Roadway Project Priorities

Recommended Projects	Map#	Facility	From	To	Description	Safety	Efficient and Reliable Mobility	Economic Impact	Quality Places	Score
Roadway	FR2	SR 710/Warfield Blvd	FP&L Access Road	CR609/SW Allapattah Rd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	10	10	12	12	44
Roadway	FR6	SR 710/Warfield Blvd	Okeechobee County Line	FP&L Access Road	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	10	10	12	12	44
Roadway	FR7	SR 710/Warfield Blvd	FP&L Access Road	SR 76 On-Ramps	New Construction Bypass, New 4LD	10	10	12	12	44
Roadway Shoulder Widening	FSH1	SR 710/Warfield Blvd.	Okeechobee County Line	FP&L Access Road	Widen paved shoulders from 4' to 7'	10	10	12	12	44
Roadway	FR5 (A)	I-95	SE Bridge Road	St. Lucie County Line	Managed Lanes, Interchange and Bridge Widening	10	6	12	10	38
Roadway	FR5 (B)	I-95	Palm Beach County LIne	SE Bridge Road	Managed Lanes, Interchange and Bridge Widening	10	6	12	10	38
Roadway	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	Additional Lanes and Interchange Improvements	6	8	12	10	36
Roadway	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	Connected Freight Priority System	10	10	6	8	34
Roadway Shoulder Widening	FSH1	SR 714/Martin Highway	I-95	Citrus Blvd	Widen paved shoulders from 4' to 7'	10	10	6	8	34
Roadway	FS1	SW Cargo Way	Citrus Boulevard	4500 Block Cargo Way	New 2 Lane Rural Road	2	15	8	8	33
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional		TSM&O System (10 Digital Message Signs)	8	10	6	8	32
Roadway Rural Highway Improvements	FRH2	Rural Highways - West of I-95	Regional		Provide Rural Center U-Turns Every 10 Miles	8	10	6	8	32
Roadway Rural Highway Improvements	FRH3	Rural Highways - West of I-95	Regional		Visibility Warning System (8)	8	10	6	8	32
Roadway	FS2	Stuart Area Projects and Indiantown Fiber Optic	Areawide		FDOT TSM&O, MPO 2020 Congestion Management Projects	6	11	6	8	31
Roadway	FS3	US-1	Cove Road	St. Lucie County Line	Corridor Retro Fit	6	11	6	8	31
Roadway	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	6	10	8	30
Roadway Shoulder Widening	FSH3	SE Bridge Rd	.5 Miles east of I95	Flora Avenue	Widen paved shoulders from 1' to 7'	6	10	6	8	30
Roadway	FS7	High Meadow Avenue	I-95	SR 714 Martin Hwy	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	4	11	8	4	27
Roadway	FS4	Cove Road	Kanner Highway	CR A1A	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	9	8	4	27
Roadway	FS8	Bridge Road	Powerline Avenue	Federal Highway	Add 2 Lanes & Reconstruct 2 Lanes (4LD)	6	9	8	4	27
Roadway	FS9	Martin Highway	Matheson Avenue	Palm City Road	Add 2 Lanes & Reconstruct 4 Lanes (6LD)	6	9	8	4	27
Roadway Shoulder Widening	FSH2	US 98	Palm Beach County Line	Okeechobee County Line	Widen paved shoulders from 4' to 7'	6	8	6	6	26
Roadway Shoulder Widening	FSH4	SR76 /SW Kanner Highway	US 98	Pratt Whitney Rd	Widen paved shoulders from 4' to 7'	4	6	6	4	20

PROJECT Scoring

- Freight Context
    - SIS Roadway – 7
    - Freight Oriented Corridor – 5
    - Low Activity Corridor – 3
    - Diverse Activity Corridor – 3
    - Community oriented area - 1
- Direct Access to Industrial Area or Freight Oriented Area
    - Direction Connection - 5
    - Regional Connection - 3
    - Indirect Connection – 1
- Average Commercial Vehicle Crashes per mile
    - Average Commercial vehicle crashes is > 1.11 – 5
    - Average Commercial vehicle crashes is 0.55 to 1.11 - 3
    - Average Commercial vehicle crashes is <0.54 – 1
- Commercial Vehicle Fatality and Incapacitating Injuries per mile
    - Average Commercial vehicle Fatality and Incapacitating Injuries per mile is > 0.22 – 5
    - Average Commercial vehicle Fatality and Incapacitating Injuries per mile is 0.11 to 0.22 - 3
    - Average Commercial vehicle Fatality and Incapacitating Injuries per mile is <0.11 - 1
- Type of the Projects – The projects were categorized into the following groups: Infrastructure, Operational, and Regulatory. Infrastructure includes projects that increase the current capacity of the roadway, i.e. adding lanes/New roadways, Improving the interchanges or intersections, etc. Operational include projects that streamline traffic flow without increasing capacity. Regulatory include projects which falls under policies and regulations, educations, or not included in other two category.
    - Infrastructure – 5
    - Operational – 3
    - Regulatory – 1

Based on the above criteria, all the projects were scored for each individual category. The final score matrix is based on the overall Safety, Reliability, Quality Places, and Economic Impact of that project in the county. These four categories are described below:

- **Safety** factors is the sum of the Commercial Vehicle Crashes Per Mile and Commercial Vehicle Fatalities and Incapacitating Injuries per mile.
- **Reliability** mostly depends on the connectivity to the freight-oriented area or direct access to industrial area and truck percentage of that corridor.
- **Quality Places** is the sum of the freight context zones and the connectivity to the freight-oriented area or direct access to industrial area.
- **Economic Impact** is the sum of the freight context zones and the type of the projects.

Level 1 Scoring

					Future Truck Percent 5 = 15% + 3 = 7.0 to 14.99 1 = < 7.0	Freight Context SIS =7 F=5 L = 3 D = 3 C = 1	Industrial Area or Freight Oriented 5 = Direct Connection 3 = Regional Connection 1 - Indirect Connection 1 - Indirect Connection	Average Commercial Vehicle Crashes Per Mile 5 = 1.11+ 3 = .55 to 1.11 1 = <.54	Commercial Vehicle Fatality and Incapacitating Injury per mile 5 = .22+ 3 = .11 to .22 1 = <.11	Type of Project 5 = Infrastructure 3 = Operational 1 = Regulatory
FREIGHT CORRIDORS										
Roadway	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	3	5	3	5	1	5
	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	5	3	5	5	5	3
	FR2	SR 710/Warfield Blvd	FP&L Access Road	CR609/SW Allapattah Rd	5	7	5	5	5	5
	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	5	7	3	1	5	5
	FR5 (A)	I-95	SE Bridge Road	St. Lucie County Line	3	7	3	5	5	5
	FR5 (B)	I-95	Palm Beach County LIne	SE Bridge Road	3	7	3	5	5	5
	FR6	SR 710/Warfield Blvd	Okeechobee County Line	FP&L Access Road	5	7	5	5	5	5
	FR7	SR 710/Warfield Blvd	FP&L Access Road	SR 76 On-Ramps	5	7	5	5	5	5
Roadway Shoulder Widening	FSH1	SR 714/Martin Highway	I-95	Citrus Blvd	5	3	5	5	5	3
	FSH2	US 98	Palm Beach County Line	Okeechobee County Line	5	3	3	5	1	3
	FSH3	SE Bridge Rd	.5 Miles east of I95	Flora Avenue	5	3	5	5	1	3
	FSH4	SR76/ SW Kanner Highway	US 98	Pratt Whitney Rd	5	3	1	3	1	3
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional		5	3	5	5	3	3
	FRH2	Rural Highways - West of I-95	Regional		5	3	5	5	3	3
	FRH3	Rural Highways - West of I-95	Regional		5	3	5	5	3	3
FREIGHT SUPPORTIVE CORRIDORS										
Roadway	FS1	SW Cargo Way	Citrus Boulevard	4500 Block Cargo Way	5	3	5	1	1	5
	FS2	Stuart Area Projects	Areawide		3	3	5	3	3	3
	FS3	US-1	Cove Road	St. Lucie County Line	3	3	5	1	5	3
	FS7	High Meadow Avenue	I-95	SR 714 Martin Hwy	5	3	1	3	1	5
	FS4	Cove Road	Kanner Highway	CR A1A	3	3	1	5	1	5
	FS8	Bridge Road	Powerline Avenue	Federal Highway	3	3	1	5	1	5
	FS9	Martin Highway	Matheson Avenue	Palm City Road	3	3	1	5	1	5
Truck Route Plan	FTRP1	Highways, Local Roads	Countywide		N/A	N/A	N/A	N/A	N/A	N/A

Data For Prioritization

FREIGHT CORRIDORS					Average Crashes	Average Commercia	Average Commercial Fatalities or Injuries Per Mile	Existing Trucks	Existing percent	Future Trucks	Future % Trucks	Miles	All		Commercial		2045 V/C
													Crashes	Fatal or Incapacitat	Crashes	Fatal or Incapacitat	
Roadway	FR1	SR 714/Martin Highway	Citrus Blvd	Martin Downs Blvd	130.63	10.81	0.00	2,835	10.50	2,694	14	1.11	145	3	12	0	<1.0
	FR3	SR 710/Warfield Blvd	Palm Beach County Line	Port of Palm Beach	0.00	0.00	0.00	2,179	26.90	1,558	23	23.23					N/A
	FR2	SR 710/Warfield Blvd	FP&L Access Road	CR609/SW Allapattah Rd	11.18	2.31	0.58	2,025	27.00	733	21	5.19	58	4	12	3	<1.0
	FR4	SR 91/Turnpike Mainline	SR 706/Indiantown Road	SR 70/Okeechobee Rd	26.46	5.90	0.25	7,704	15.50	3,700	12	20.18	534	27	119	5	<1.0
	FR5 (A)	I-95	SE Bridge Road	St. Lucie County Line	52.63	6.67	0.29	8,838	10.10	4,400	9	17.10	900	61	114	5	<1.0
	FR5 (B)	I-95	Palm Beach County LIne	SE Bridge Road	52.80	6.53	0.27	6,920	13.50	3,962	8	7.50	396	26	49	2	<1.0
	FR6	SR 710/Warfield Blvd	Okeechobee County Line	FP&L Access Road	7.52	2.68	0.31	2,025	27.00	*499*	*20*	9.71	73	5	26	3	<1.0
	FR7	SR 710/Warfield Blvd	FP&L Access Road	SR 76 On-Ramps	29.81	6.54	0.38	2,611	19.20	733	21	5.20	155	10	34	2	<1.0
Roadway Shoulder Widening	FSH1	SR 714/Martin Highway	I-95	Citrus Blvd	19.83	1.93	0.00	2,354	15.80	1,561	17	3.63	72	5	7	0	<1.0
	FSH2	US 98	Palm Beach County Line	Okeechobee County Line	4.25	1.17	0.08	1,316	38.70	703	26	12	51	4	14	1	<1.0
	FSH3	SE Bridge Rd	.5 Miles east of I95	Flora Avenue	13.43	0.86	0.00	1,511	9.10	681	8	4	47	2	3	0	<1.0 & >1.25
	FSH4	SR76/ SW Kanner Highway	US 98	Pratt Whitney Rd	5.45	1.18	0.00	1,010	40.40	797	27	22	120	11	26	0	<1.0
Roadway Rural Highway Improvements	FRH1	Rural Highways - West of I-95	Regional														
	FRH2	Rural Highways - West of I-95	Regional														
	FRH3	Rural Highways - West of I-95	Regional														
FREIGHT SUPPORTIVE CORRIDORS																	
Roadway	FS1	SW Cargo Way	Citrus Boulevard	4500 Block Cargo Way	0.00	0.00	#VALUE!	N/A	N/A	N/A	N/A	0.12	N/A	N/A	N/A	N/A	N/A
	FS2	Stuart Area Projects	Areawide		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	FS3	US-1	Cove Road	St. Lucie County Line	77.32	6.00	0.50	7524.00	22.80	**2858**	**9**	10	1763	65	60	5	>1.0
	FS7	High Meadow Avenue	I-95	SR 714 Martin Hwy	4.57	1.08	0.00	945.00	7.00	**909**	**12**	2.78	32	2	3	0	<1.0
	FS4	Cove Road	Kanner Highway	CR A1A	20.78	1.39	0.00	811.00	5.10	**700**	**8**	4.31	106	8	6	0	<1.0
	FS8	Bridge Road	Powerline Avenue	Federal Highway	2.64	1.00	0.00	846.00	9.10	**645**	**8**	2.01	24	2	2	0	>1.25
	FS9	Martin Highway	Matheson Avenue	Palm City Road	10.63	3.79	0.00	2112.00	4.80	**1763**	**8**	1.32	51	1	5	0	1.00-1.25
Truck Route Plan	FTRP1	Highways, Local Roads	Countywide		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A