# CONNECT2045

YOUR COMMUNITY TRANSPORTATION PLAN

Adopted September 23, 2020

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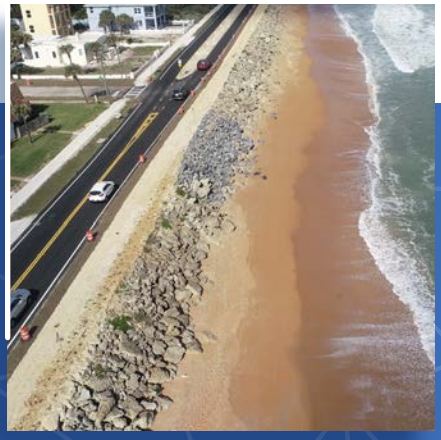






**River to Sea TPO** Long Range Transportation Plan | **Final Plan Document**

prepared for:


prepared by:

Kimley»Horn
Expect More. Experience Better.

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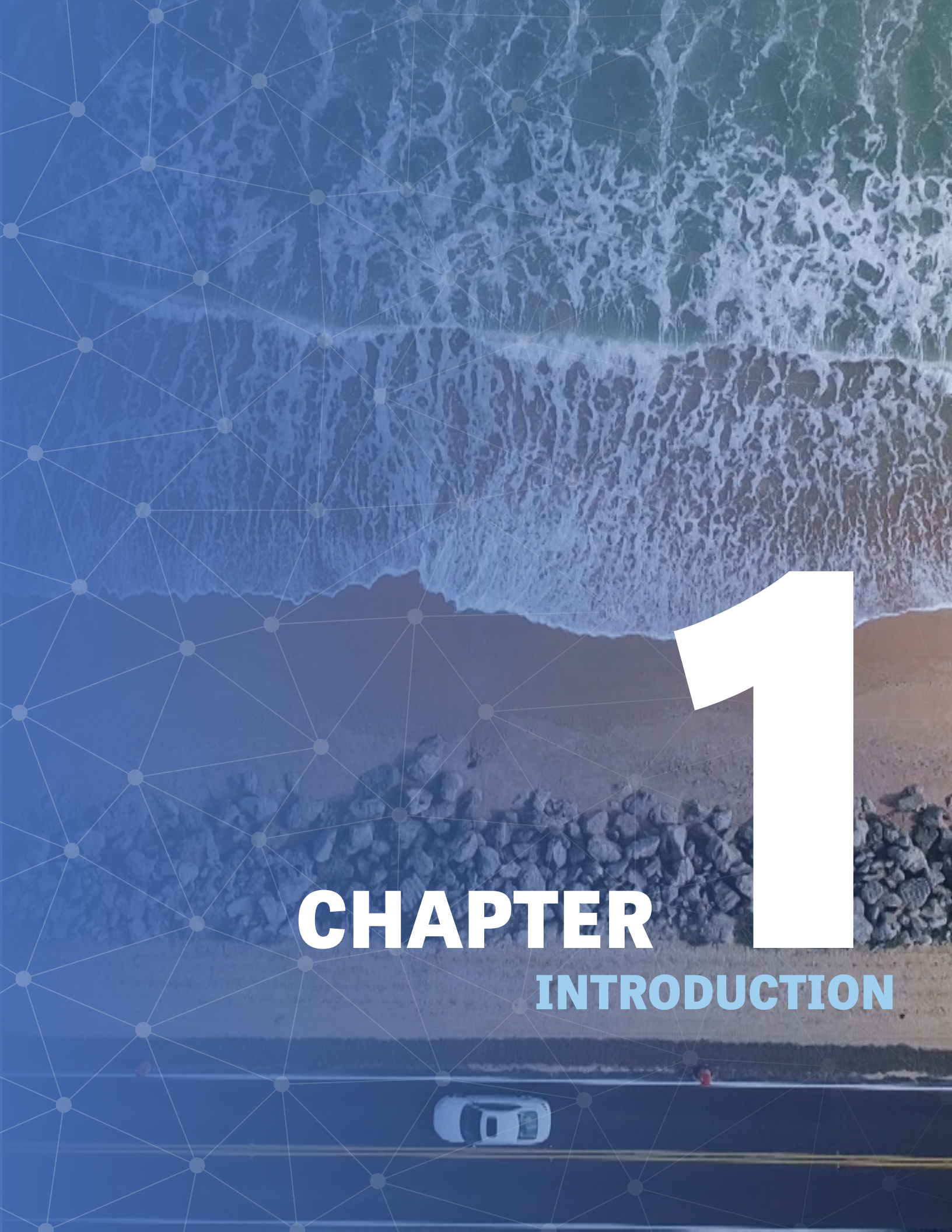


# CHAPTER 1

## INTRODUCTION

# CHAPTER 1 - INTRODUCTION

Connect 2045 is the long-range transportation plan (LRTP) developed by the River to Sea Transportation Planning Organization (TPO) to reflect and meet the future transportation needs of our changing community.

This plan lays the groundwork for a sustainable transportation system that preserves existing transportation infrastructure, enhances Florida's economic competitiveness, and improves travel choices to ensure mobility [Section 334.046(1), Florida Statutes (F.S.)].

This planning effort represents a core function of the TPO and is the result of a continuous, cooperative, and comprehensive (3-C) planning process [23 Code of Federal Regulations (C.F.R.) 450.300]. The plan was developed with input from people, agencies, and organizations representing all parts of our community to reflect collective values and a broad range of needs. The plan strives to provide residents, visitors, and businesses with the best transportation solutions to efficiently and safely move people and goods.

> ***"The plan's theme of 'Connectivity' was chosen because it represents an important aspect of the transportation system itself, from local roads to national highways, buses to planes, and homes to places of employment. It also conveys a priority of this TPO to support connections throughout the community, and between people and places."***
>
> ***-Colleen Nicoulin***
> ***River to Sea TPO Project Manager***

Throughout this report, you will note that Connect 2045 identifies future needs and improvements for pedestrian, bicycle, transit, highway, and freight mobility. The plan guides the expenditure of transportation funds through the establishment of long-range priorities. Local and state planning officials use the plan to select projects for inclusion in their work programs.

Connect 2045:

- Is consistent with applicable state and federal requirements
- Is coordinated locally, and within the region and state
- Integrates detailed and general community and stakeholder input
- Aligns community vision with project priorities
- Identifies a multimodal, fiscally-constrained Cost Feasible Plan to enhance the area's transportation network over the next 25 years
- Provides benefits to the entire population without disproportionate adverse impacts

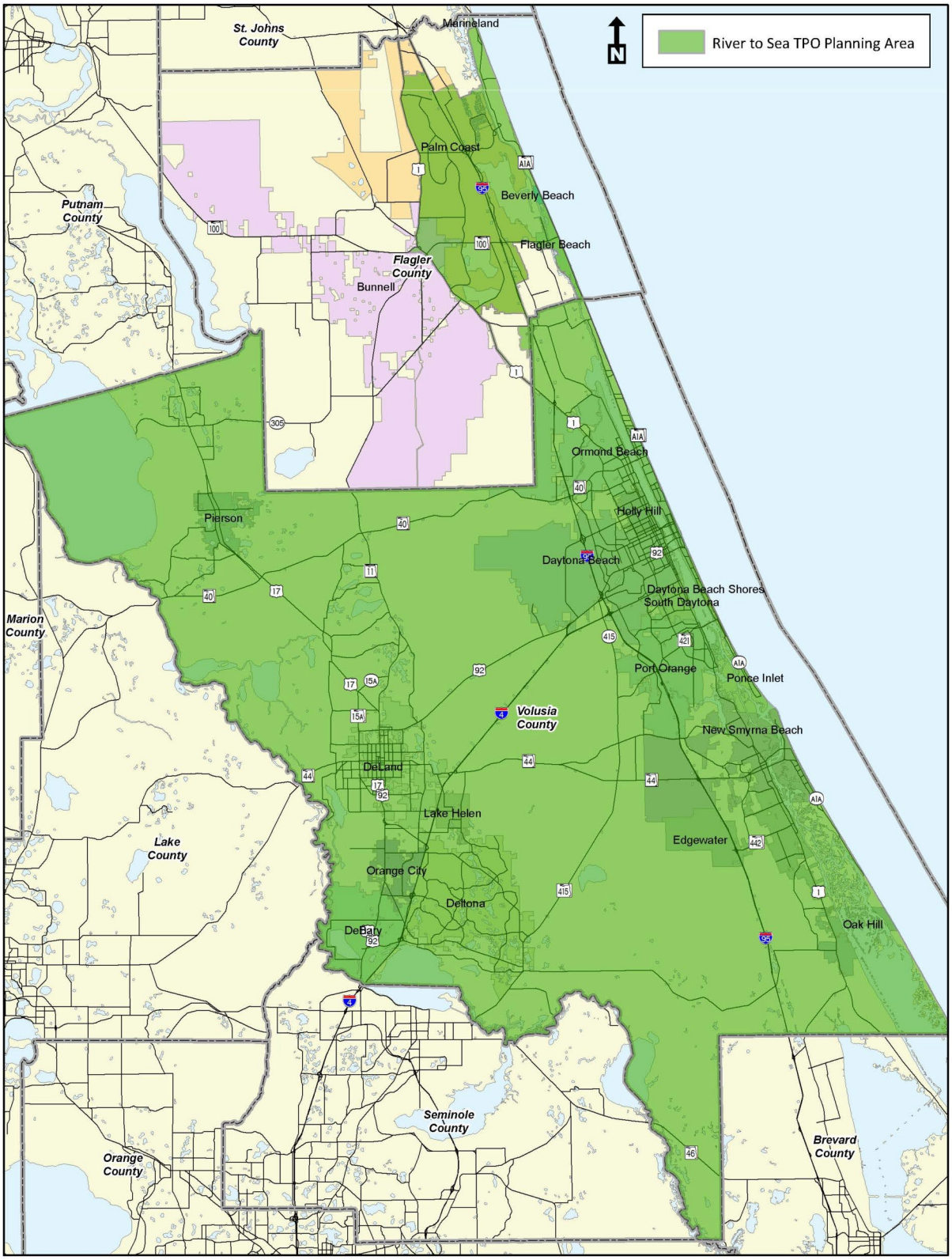
# THE TPO AND PLANNING AREA

The River to Sea TPO is a federally authorized agency responsible for planning and programming federal and state transportation funds for the TPO Metropolitan Planning Area. This area includes Volusia County and portions of Flagler County inclusive of Flagler Beach, Beverly Beach, and portions of Palm Coast and Bunnell. A map of the River to Sea TPO Planning Area is depicted in **Figure 1**.

The TPO's Board consists of elected officials representing member local governments. These individuals work together to improve the safety and efficiency of the transportation system in the planning area. The TPO serves as the primary forum within which member local governments and citizens voice concerns, identify priorities, and plan for transportation improvements for all modes of transportation – roadway, public transit, and bicycle and pedestrian facilities. Seaports and airports are also considered in the TPO activities, and detailed planning for these modes is typically handled by their respective authorities.

The planning area's transportation network has a wide-reaching impact as it is home to many important corridors and facilities including the crossroads of I-95 and I-4, the northern terminus of SunRail, county transit systems, Daytona Beach International Airport, designated scenic byways, and the convergence of two regional trail systems, the Coast to Coast Trail and River to Sea Loop Trail. The area is growing rapidly and experiencing significant new planned development. Owing to the area's status as a leading tourism destination, long range planning must not only consider a burgeoning resident population, but consistently growing visitation as well.

## Figure 1: River to Sea TPO Planning Area



# PURPOSE OF THE LRTP

The Long Range Transportation Plan (LRTP) is a federally-required short- and long-term plan addressing multimodal transportation needs within the TPO planning area. The plan is required to be updated every five years and must extend out at least 20 years into the future. Connect 2045 was prepared by the River to Sea TPO and serves as primary guidance for developing transportation system improvements and additions in the TPO's planning area over the next 25 years.

Connect 2045 is a financially constrained plan that includes projects to best meet the identified needs of the transportation system within the limits of projected revenues. This means the TPO cannot plan to spend more money than it can reasonably anticipate receiving for project implementation through the year 2045. It is important that Connect 2045 accurately reflects transportation needs because local and state planning officials use it to select projects for inclusion in their capital improvement and work programs. Notably, the eligibility of these transportation projects to receive federal funding is dependent on their inclusion in the Cost Feasible Plan.

Connect 2045 was also developed to be consistent with Federal, State, and local goals and objectives. For example, LRTPs developed in Florida must consider the goals and objectives of local government comprehensive plans and the Florida Transportation Plan. See **Chapter 2** for the goals and objectives that provide direction for the plan.

The intent and purpose of an LRTP is to encourage and promote the safe and efficient management, operation, and development of a cost-feasible intermodal transportation system that enhances mobility and freight movement. The long-range transportation plan considers how projects could affect the resiliency and reliability of the transportation system, as well as enhance travel and tourism in the area.

***Connect 2045 utilized a robust public involvement process to ensure that meaningful input guided the plan. In the midst of plan development, the onset of the COVID 19 pandemic led to social distancing directives that limited opportunities for face-to-face workshops, events, and presentations. The TPO responded by transitioning to virtual/ technology-based approaches.***

***A brief video was developed to inform the public of the changing approach. Chapter 4 provides details about the comprehensive Connect 2045 public involvement process including changes made in the wake of COVID 19.***

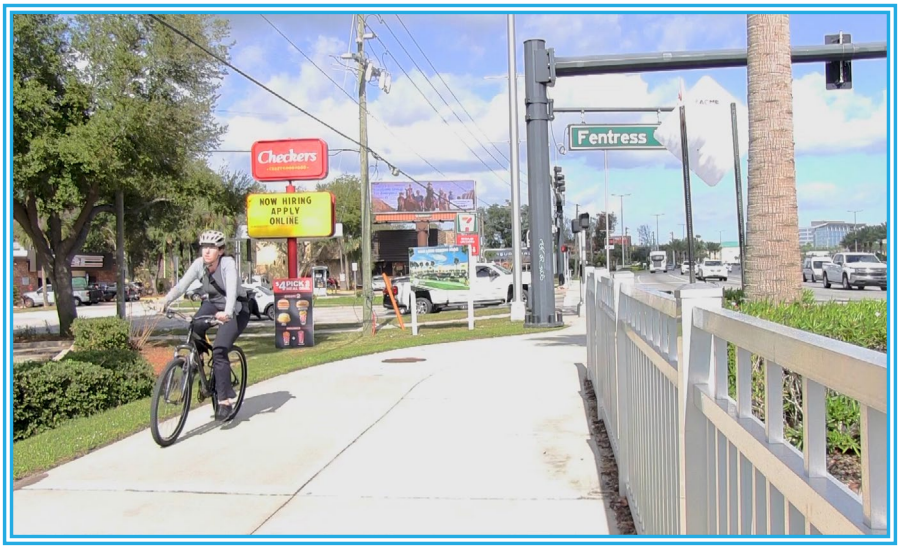
# LEGISLATION AND GUIDANCE

The River to Sea TPO 2040 Long Range Transportation Plan (adopted in 2015) was governed by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into federal law in 2012. The goals of MAP-21 include strengthening America's highways, establishing a performance-based program, creating jobs and supporting economic growth, supporting the United States Department of Transportation's aggressive safety agenda, streamlining Federal Highway Administration (FHWA) transportation programs, and accelerating project delivery and promoting innovation.

Connect 2045 is guided by the 2015 legislation, Fixing America's Surface Transportation Act (FAST Act). Through the FAST Act, new federal requirements were incorporated in the process as follows:

- **Two new Federal Planning Factors were established:**
  - Improve resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
  - Enhance travel and tourism.
- **Multimodality of the transportation system was emphasized:** The FAST Act includes additional facilities such as intercity buses and commuter van pools that support intermodal transportation to the MAP-21-required considerations [23 USC 134(c)(2) & (i)(2)].
- **Participation by Interested Parties in the Planning Process:** It is a requirement that stakeholders and the public are involved, and they must be given reasonable opportunity to provide their input. Under the FAST Act, public ports and additional private transportation service providers were added to the list of interested parties.
- **Consultation with other Planning Officials:** MAP-21 required the coordination of TPOs with other officials that are responsible for various planning activities throughout the region. The FAST Act requires that officials responsible for tourism activities, as well as those responsible for reducing potential risks of natural disasters be added to the coordinating agencies responsible for various planning activities throughout the region.

Chapter 2 provides additional background on federal and state requirements.



# KEY THEMES

While a broad range of factors and trends influenced the development of Connect 2045, three important themes were a focus of the planning process: Technology, Resiliency, and Funding Choices.

## Technology

Technology is transforming our transportation systems in new ways and the pace of change is accelerating.

- Technology can improve safety, enhance connections between transportation modes, and provide real-time transportation information to make trips more reliable
- Automated, connected, electric, and shared vehicles are also a growing consideration as we plan for transportation in the years ahead

## Resiliency

Resiliency reflects our ability to mitigate, prepare for, respond to, and recover rapidly after disruptive events such as flooding, hurricane impacts, wildfires, or major traffic incidents.

- It is important for our transportation system to be resilient to maximize its reliability to move people and goods

## Funding Choices

Funding Choices must consider forecasted revenue, anticipated population growth, and projected changes in travel demand.

- Transportation projects can be funded by federal, state, and local sources
- Per-gallon fuel sales taxes are a major source of revenue to fund transportation
- Florida's state highway fuel sales tax is indexed to adjust with inflation while the federal highway fuel sales tax has not changed since 1993
- Vehicle fuel efficiency continues to improve and electric vehicle sales are growing, both of which reduce the number of gallons consumed

All three of these themes were the focus of scenarios that evaluated the possible implications of alternative futures. To learn more, see Scenarios in **Chapter 5.**

# PLAN ORGANIZATION

Connect 2045 is organized as follows:

1

**CHAPTER 1 – INTRODUCTION**

Provides an overview of the TPO's planning area, the purpose of the LRTP, and the key themes and local context that influenced the development of the plan.

2

**CHAPTER 2 – GOALS, OBJECTIVES, AND PERFORMANCE TARGETS**

Outlines the goals and objectives of Connect 2045 and how they align with required federal planning factors, state plans and performance measures and targets. This chapter includes the System Performance Report.

3

**CHAPTER 3 – PLANNING ASSUMPTIONS**

Includes demographic and employment trends and forecasts.

4

**CHAPTER 4 – PUBLIC INVOLVEMENT**

Describes the various components of the public involvement plan and process for Connect 2045.

5

**CHAPTER 5 – NEEDS ASSESSMENT AND SCENARIO PLANNING**

Highlights the process used to develop the transportation plan, including the travel demand model, assessment of future scenarios (Technology, Resiliency, and Funding Choices), identification of needs, and prioritization process for potential projects.

6

**CHAPTER 6 – TRANSPORTATION PLAN**

Includes the Cost Feasible Plan which consists of the TPO's highest priority projects and serves as the central component of Connect 2045. This chapter also identifies the financial resources available to fund projects and other plan considerations.

7

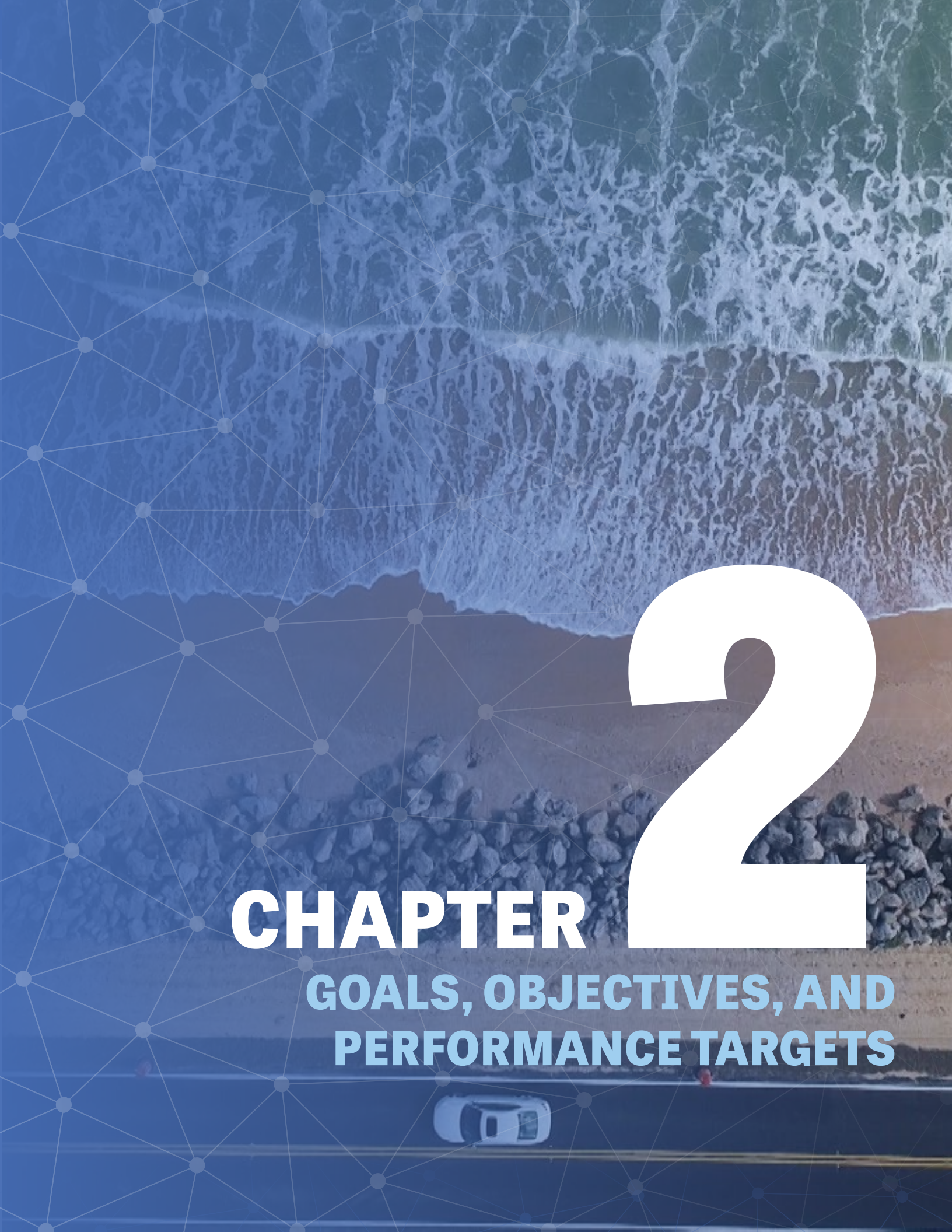
**CHAPTER 7 – PERFORMANCE EVALUATION**

Provides an evaluation of the effectiveness of Connect 2045 in addressing the plan's goals and objectives.

8

**CHAPTER 8 – PLAN IMPLEMENTATION**

Address next steps of the plan and summarizes the process for making amendments (changes) to the plan.



# CHAPTER 2

## GOALS, OBJECTIVES, AND PERFORMANCE TARGETS

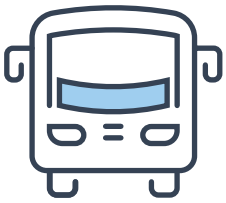
# CHAPTER 2 - GOALS, OBJECTIVES, AND PERFORMANCE TARGETS

This chapter provides and documents the policy direction and performance-based planning approach for the transportation network and systems within the River to Sea TPO planning area. In compliance with federal and state regulations, the TPO established a set of goals, objectives, performance measures, and targets to provide a basis for performance-based planning that will best serve the community and environment, today and into the future. These goals, objectives, measures, and targets are consistent with the guidance and requirements of the FAST Act, current federal transportation planning requirements, and the Florida Transportation Plan. ***The System Performance Report, which documents required measures and targets, is included in the Performance-Based Planning section that begins on page 2-10.***

## CONNECT 2045 GOALS AND OBJECTIVES

Goals and objectives reflecting the vision of the planning area were developed at the outset of the planning process. The goals are shown below in **Figure 2** with their related objectives listed on the following pages. Objectives that tie directly to FAST Act transportation performance measures are identified.

Figure 2: Connect 2045 Goals

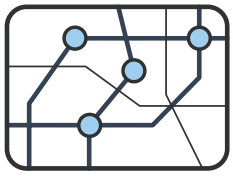


**Multimodal**

Develop and maintain a balanced and efficient multimodal transportation system

**Economic Development**

Support the economic development and growth of the TPO area and region

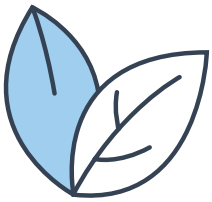


**Connectivity**

Enhance and expand transportation connectivity and choice for all users

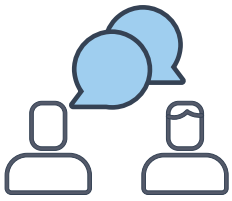
**Safety**

Eliminate or reduce crash related fatalities and serious injuries (safety) and improve security throughout the transportation network



**Livability**

Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places



**Involvement**

Promote equity, transparency, and opportunities for the public to be involved with their transportation system

# Connect 2045 Objectives

## *Goal 1 - Develop and maintain a balanced and efficient multimodal transportation system*

**Objective 1.1** Develop a multimodal transportation system that improves accessibility and mobility to economic centers for all users (including motor vehicle, bicycle, pedestrian, transit) as well as the movement of goods.

**Objective 1.2** Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand. [System Performance Measures (PM3) – See measures 1 and 2 on page 2-21]

**Objective 1.3** Provide public transit systems that serve diverse populations and deliver efficient and convenient transit service.

**Objective 1.4** Develop a plan that maximizes the use of all available existing and alternative revenue sources and is financially feasible.

**Objective 1.5** Incorporate measures that give priority to projects that provide high benefit-to-cost value.

**Objective 1.6** Adequately fund preservation of transportation assets (National Highway System Pavement Condition, Bridge Condition, and Transit Assets). [Pavement and Bridge Condition Performance Measures (PM2) – see measures 1 to 6 on page 2-17]

**Objective 1.7** Address incident management including improving response and mitigating impacts through development of alternative routes and other solutions.

## *Goal 2 - Support the economic development and growth of the TPO area and region*

**Objective 2.1** Develop a transportation system that supports diverse economic growth, advances tourism, and improves the economic competitiveness of the region.

**Objective 2.2** Identify and support safe and efficient truck routes and other facilities that improve the movement of freight and goods. [System Performance Measures (PM3) – See measure 3 on page 2-21]

**Objective 2.3** Improve connectivity and access to rail, port, bus, and airport facilities.

**Objective 2.4** Support funding of transit service that improves access to employment activity centers.

## *Goal 3 – Enhance and expand transportation connectivity and choice for all users*

**Objective 3.1** Provide a range of transportation alternatives to improve mobility for all residents and visitors which includes addressing the unique needs of the elderly, people with disabilities, and those unable to drive.

**Objective 3.2** Maximize the interconnectivity of roadways, sidewalks, bicycle facilities, trails, transit, and other transportation system components to provide safe and convenient pedestrian, bicycle, transit, and motor vehicle mobility.

**Objective 3.3** Enhance regional connectivity to employment, education, health, entertainment, and other major activity centers.

**Objective 3.4** Enhance transportation connectivity between local government jurisdictions within the region.

**Objective 3.5** Plan for transportation infrastructure resiliency to maintain and ensure system connectivity.

## *Goal 4 – Eliminate or reduce crash-related fatalities and serious injuries (safety) and improve security throughout the transportation network*

**Objective 4.1** Identify and prioritize improvements to reduce the frequency and severity of motorized vehicle crashes, and eliminate fatalities and serious injuries. [Safety Performance Measures (PM1) – see measures 1 to 5 on page 2-12]

**Objective 4.2** Identify and implement safety programs, enhancements, and innovations to improve the safety of pedestrian and bicycle facilities.

**Objective 4.3** Enhance the safety and security of transit systems and other modes such as airports through appropriate design, monitoring, and enforcement programs.

**Objective 4.4** Develop a transportation plan that supports emergency evacuation, response, and post-disaster recovery, and improves national, state, and local security and emergency management functions.

## *Goal 5 – Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places*

**Objective 5.1** Promote compact, walkable, mixed-use development and redevelopment opportunities that encourage a range of transportation options and maximize the effectiveness of the transportation system.

**Objective 5.2** Develop a transportation plan with components planned and designed to preserve and enhance existing urban areas and communities.

**Objective 5.3** Support local visioning and planning principles by developing a plan that is consistent with local government comprehensive plans to the maximum extent feasible.

**Objective 5.4** Locate and design transportation facilities to avoid or minimize the impact to natural resources including environmentally sensitive areas and critical lands, waters, and habitats.

**Objective 5.5** Develop and support a multimodal transportation system that maintains or reduces vehicle greenhouse gas emissions and reduces or mitigates stormwater impacts.

**Objective 5.6** Locate and design transportation facilities to avoid or minimize impacts to historic and cultural assets.

### *Goal 6 – Promote equity, transparency, and opportunities for the public to be involved with their transportation system*

**Objective 6.1** Provide opportunities for public participation that are open, inclusive, and accessible for all citizens; and develop outreach programs to engage citizens in all jurisdictions as well as the traditionally underserved and underrepresented.

**Objective 6.2** Include provisions to identify the needs of low income and minority populations and ensure that projects in the plan do not disproportionally burden these populations, and include measures to avoid, minimize, or mitigate adverse impacts.

**Objective 6.3** Support transportation investments that improve public transit services for low income and transit-dependent populations to gain access to jobs, schools, health services, and other needed services.

# DEVELOPMENT OF THE GOALS, OBJECTIVES, PERFORMANCE MEASURES AND TARGETS

Goals, objectives, performance measures and targets for Connect 2045 were developed based on federal, state, and local guidance including the requirements highlighted within the following sections.

## Fixing America's Surface Transportation (FAST) Act

Signed into law on December 4, 2015, the FAST Act provides support and enhancement to the Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act is the first federal law to provide long-term funding to infrastructure planning and investment for surface transportation since the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) became law in 2005.

The FAST Act expands upon the previous MAP-21 legislation by continuing to create a streamlined, performance-based surface transportation program that builds on many of the multimodal transportation policies first established under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Establishing a performance- and outcome-based program requires investment of financial resources in projects that will collectively make progress toward achieving national multimodal transportation goals. Connect 2045 has been developed to ensure compliance with the requirements of the FAST Act and includes a performance-based approach to the transportation decision-making process.

## FAST ACT PLANNING FACTORS

The FAST Act includes specific planning factors that call for the recognition of and address the relationship between transportation, land use, and economic development. The ten federal planning factors form the cornerstone for Connect 2045:

1. Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the **safety** of the transportation system for motorized and non-motorized users.
3. Increase the **security** of the transportation system for motorized and non-motorized users.
4. Increase **accessibility and mobility** of people and freight.
5. Protect and enhance the **environment**, promote **energy** conservation, improve **quality of life**, and promote consistency between transportation improvements and state and local growth and economic development patterns.
6. Enhance the **integration and connectivity** of the transportation system, across and between modes, for people and freight.
7. Promote efficient **system management and operation**.
8. Emphasize the **preservation** of the existing transportation **system**.
9. Improve the **resiliency and reliability** of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance **travel and tourism**.

The FAST Act prescribes policy requirements and the programmatic framework related to performance measures and targets for the national transportation system in the metropolitan planning process. The FAST Act directly impacts the TPO and its planning activities. As such, the TPO is required to coordinate with state and public transportation providers to establish targets to continue to develop and assess a focused, performance-based multimodal transportation system. Through this development and assessment, the TPO must:

- Describe the performance measures and targets used in assessing system performance and progress in achieving the performance targets within the Long Range Transportation Plan (LRTP).
- Develop the Transportation Improvement Program (TIP) to make progress toward established performance targets and include a description of the anticipated achievements.

A matrix showing consistency between the goals of Connect 2045 and the ten planning factors from the FAST Act is shown in **Table 2-1**.

Table 2-1: Connect 2045 LRTP Goals and FAST Act Planning Factors Comparison

| LRTP Goals | FAST Act Planning Factors | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Economic Vitality | Safety | Security | Accessibility and Mobility | Environment, Energy, and Quality of Life | Integration and Connectivity | System Management and Operation | System Preservation | Resiliency and Reliability | Travel and Tourism |
| **Multimodal** Provide a balanced and efficient multimodal transportation system. | ○ | ○ | ○ | ○ | ○ | ○ | ● | ● | ○ | ○ |
| **Economic Development** Support the economic development and growth of the area served by the TPO and of the region. | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| **Connectivity** Enhance and expand transportation connectivity and choice for all users. | ○ | | | ● | ● | ● | ○ | | ○ | ○ |
| **Safety** Eliminate or reduce crash related fatalities and serious injuries (safety) and improve security throughout the transportation network. | ○ | ● | ● | | ○ | | ○ | | ● | ○ |
| **Livability** Continue to provide, and where possible, enhance social, cultural, physical and natural environmental places. | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| **Involvement** Promote equity, transparency, and opportunities for the public to be involved with their transportation system. | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

● Primary Relationship ○ Secondary Relationship

## Florida Transportation Plan (FTP)


The Florida Transportation Plan (FTP) is the single, overarching statewide plan guiding Florida's transportation future. The plan was created by, and provides direction to, the Florida Department of Transportation (FDOT) and all organizations that are involved in planning and managing Florida's transportation system, including statewide, regional, and local partners. This includes the River to Sea TPO. The FTP Policy Element is Florida's long-range transportation plan as required by both state and federal law and this element points toward a future transportation system that embraces all modes of travel, innovation, and change.

MPOs are required to address the goals included in the FTP. These goals, as outlined in the May 2020 FTP Vision Element, are:

- **Safety and security** for residents, visitors, and businesses
- Agile, resilient, and quality transportation **infrastructure**
- Connected, efficient, and reliable **mobility** for people and freight
- **Transportation choices** that improve accessibility and equity
- Transportation solutions that strengthen Florida's **economy**
- Transportation solutions that enhance Florida's **communities**
- Transportation solutions that enhance Florida's **environment**

Regarding related state plans, MPOs must also incorporate any performance targets which may be included in the Statewide Freight Plan and Asset Management Plan. Current guidance from FDOT indicates that no additional performance targets will be included in these plans. A matrix showing consistency between the goals of Connect 2045 and the planning factors from the FTP is shown in **Table 2-2**.

## Local Government Comprehensive Plans

The adopted Comprehensive Plans of the local governments listed below were reviewed as part of the planning process and Connect 2045 was developed to be consistent with these plans. See **Technical Appendix A** for a summary of the other plans, studies, and data reviewed as part of the planning process.

- Volusia County
- Flagler County
- City of Bunnell
- City of Daytona Beach
- City of Daytona Beach Shores
- City of Debary
- City of Deland
- City of Deltona
- City of Edgewater
- City of Flagler Beach
- City of Holly Hill
- City of Lake Helen
- City of New Smyrna Beach
- City of Oak Hill
- City of Orange City
- City of Ormond Beach
- City of Palm Coast
- City of Port Orange
- City of South Daytona

Table 2-2: Connect 2045 LRTP Goals and Florida Transportation Plan Goals Comparison

| LRTP Goals | Florida Transportation Plan Goals | | | | | | |
|---|---|---|---|---|---|---|---|
| | Safety and Security | Infrastructure | Mobility | Transportation Choices | Economy | Communities | Environment |
| **Multimodal**<br>Provide a balanced and efficient multimodal transportation system. | ○ | ○ | ● | ● | ○ | ○ | ○ |
| **Economic Development**<br>Support the economic development and growth of the area served by the TPO and of the region. | ○ | ○ | ○ | ○ | ● | ○ | ○ |
| **Connectivity**<br>Enhance and expand transportation connectivity and choice for all users. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **Safety**<br>Eliminate or reduce crash related fatalities and serious injuries (safety) and improve security throughout the transportation network. | ● | ● | ○ | ○ | ○ | ○ | |
| **Livability**<br>Continue to provide, and where possible, enhance social, cultural, physical and natural environmental places. | ○ | ○ | ○ | ○ | ○ | ● | ● |
| **Involvement**<br>Promote equity, transparency, and opportunities for the public to be involved with their transportation system. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

● Primary Relationship ○ Secondary Relationship

# PERFORMANCE-BASED PLANNING

## Federal Guidance

The U.S. Secretary of Transportation established criteria for evaluation of the new performance-based planning processes. This included the identification of specific performance measures that all states and each Metropolitan Planning Organization (MPO), like River to Sea TPO, must evaluate. The process required FDOT to develop appropriate performance targets for these measures and to monitor the progress made toward achieving the targets. This also requires MPOs in the State of Florida to either accept and support FDOT's performance targets or establish, formally adopt, and monitor their own performance targets. FDOT is providing performance data for all targets and MPOs have the option for using the data or developing their own. FDOT is also establishing targets in each category and MPOs have the option to select the same target or choose their own.

## Overview of Statewide Performance Measures and Targets

Listed below are the performance measures and statewide targets that FDOT has established. FDOT worked in collaboration with the MPOs and providers of public transportation to establish these statewide targets.

**Safety.** Florida shares the national traffic safety vision "Toward Zero Deaths," and formally adopted its own version of the national vision, "Driving Down Fatalities," in 2012. FDOT and its traffic safety partners are committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable and based on that, zero is the target for all the safety performance measures.

**Pavement Condition.** The pavement condition performance measures assess pavement conditions based on the international roughness index (IRI), cracking, rutting (for asphalt pavements), and faulting (for jointed concrete pavements). For asphalt and jointed concrete pavements, a 0.1-mile segment is considered in good condition if all three metrics are rated Good; if two or more metrics are considered poor, the condition is Poor. The federal rule requires a new methodology be used to measure rut depth and cracking that has not been historically used by FDOT. In consideration of the differences in the data collection requirements used by FDOT and those mandated by the rule, as well as other unknowns associated with the new required processes, initial 2- and 4-year targets were established.

**Bridge Condition.** The bridge condition performance measures for the percent of deck area classified as Good and Poor is determined using National Bridge Inventory (NBI) condition ratings for deck, superstructure, substructure, and culvert. Condition is determined by the lowest rating of these items using a scale of 1 to 9. If the NBI rating is 1 to 4, the bridge is classified as Poor; NBI rating 7 to 9, the bridge is Good. Bridges rated below 7 but above 4 are classified Fair; however, there is no related Federal Highway Administration (FHWA) performance measure associated with that rating. Considering the differences in criteria, initial 2- and 4-year targets were established.

**System Performance.** The travel time reliability metric is calculated for each segment of the National Highway System (NHS), weighted by volume and occupancy. Data is collected in 15-minute segments during four total time periods and is reported as the "percent of reliable person-miles traveled." The segment is considered reliable if the reliability ratio is below 1.50 during all time periods. Freight movement is assessed by calculating truck travel time reliability ratio using data from five total time periods. The higher the ratio value, the less reliable the segment.

## System Performance Report

As required by the federal rules, once the targets have been established, FDOT includes a narrative in the Florida Transportation Plan (FTP) and State Transportation Improvement Program (STIP) describing the measures and targets as well as explaining how the program of projects in the STIP contribute to the achievement of those targets. Similarly, MPOs are required to address transportation performance management in their TIP and LRTP. The following is a list of the documents developed by the TPO that are consistent with Connect 2045:

- River to Sea TPO Public Participation Plan (PPP)
- River to Sea TPO Transportation Improvement Program (TIP)
- River to Sea TPO Congestion Management Process (CMP)

Local agencies involved in planning and managing Florida's transportation system follow guidelines set forth by the FTP. Local agencies establish goals and objectives as part of the long-range transportation planning process, representing the desired vision of how the statewide transportation system should evolve over the next 20 years with actionable guidelines on how to achieve them within each community. Performance measures and targets are established to provide measurable guidelines focusing the plans on outcomes rather than just on activities and policies. The TPO has adopted the Data Sharing Consensus Agreement that is required to outline data sharing between FDOT, the MPO, and public transit agencies.

**Spotlight on Performance at the TPO**

***The River to Sea TPO implements performance-based planning throughout all planning and programming activities. For example, the TPO includes specific investment priorities in the Transportation Improvement Program (TIP) that advance federal performance measures like safety, system performance, and system preservation. The Unified Planning Work Program (UPWP) incorporates a range of activities and programs to improve performance like school safety studies and pedestrian law enforcement training that have a goal of reducing fatalities and serious injuries.***

***Through funding policies, the TPO sets aside resources to meet specific needs such as replacement of transit capital assets to improve state of good repair. As the TPO's Long Range Transportation Plan, Connect 2045 defines performance-based goals and objectives, and incorporates a data-driven approach to prioritization and project selection to "move the needle" on transportation system performance.***

## River to Sea TPO Performance Measures

The River to Sea TPO recognizes the importance of linking goals, objectives, and investment priorities to stated performance objectives, and that establishing this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, the LRTP directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes.

## River to Sea TPO Performance Targets

The FDOT is required to establish statewide targets for the required performance measures and TPOs/MPOs have the option to support the statewide targets or adopt their own. Based on this information the TPO has adopted the following transportation performance measure targets. Local Transit Agencies must also adopt performance targets in their Transit Asset Management Plan (TAM) and the TPO must consider including the TAM targets in the LRTP and TIP updates.

## Safety Performance Targets (PM1)

***The River to Sea TPO acknowledges and supports FDOT's vision and their 2020 safety targets of zero. The TPO has also set its own safety peformance targets.***

Effective April 14, 2016, FHWA established five highway safety performance measures to carry out the Highway Safety Improvement Program (HSIP). These performance measures are:

1. Number of fatalities
2. Rate of fatalities per 100 million vehicle miles traveled (VMT)
3. Number of serious injuries
4. Rate of serious injuries per 100 million VMT
5. Number of non-motorized fatalities and non-motorized serious injuries

FDOT publishes statewide safety performance targets in the HSIP Annual Report that it transmits to FHWA each year. Current safety targets address calendar year 2020. For the 2020 HSIP annual report, FDOT continued the statewide target as "0" for each performance measure to reflect Florida's vision of zero deaths. The TPO acknowledges and supports FDOT's vision and their 2020 safety targets of zero.

The River to Sea TPO has also set its own safety performance targets based upon data collected for previous years within the TPO planning area. The TPO adopted/approved safety performance targets on February 26, 2020 (Resolution 2020-03) to reestablish the Safety Performance Measures adopted in Resolution 2019-04 which were a 2% reduction based on a five-year rolling average.

**Table 2-3** indicates the areas in which the TPO is expressly supporting the statewide target developed by FDOT, as well as those areas in which the TPO has adopted a target specific to the TPO planning area.

Table 2-3: Highway Safety (PM1) Targets

| Performance Target | River to Sea TPO agrees to plan and program projects so that they contribute toward the accomplishment of the FDOT safety target of zero | River to Sea TPO has adopted a target specific to the TPO Planning Area |
|---|---|---|
| Number of fatalities | ✓ | ✓ |
| Rate of fatalities per 100 million VMT | ✓ | ✓ |
| Number of serious injuries | ✓ | ✓ |
| Rate of serious injuries per 100 million VMT | ✓ | ✓ |
| Number of non-motorized fatalities and non-motorized serious injuries | ✓ | ✓ |

Statewide system conditions for each safety performance measure are included in **Table 2-4a**, along with system conditions in the River to Sea TPO planning area in **Table 2-4b**. System conditions reflect baseline performance. The latest safety conditions will be updated annually on a rolling five-year window and reflected within each subsequent system performance report, to track performance over time in relation to baseline conditions and established targets.

Table 2-4a: Statewide Highway Safety (PM1) Conditions and Performance

| Performance Measures | Florida Statewide Baseline Performance (Five Year Rolling Average) | | | Calendar Year 2020 Florida Performance Targets |
|---|---|---|---|---|
| | 2012-2016 | 2013-2017 | 2014 2018 | |
| Number of fatalities | 2,688.2 | 2,825.4 | 2,972 | 0 |
| Rate of fatalities per 100 million VMT | 1.33 | 1.36 | 1.39 | 0 |
| Number of serious injuries | 20,844.2 | 20,929.2 | 20,738.4 | 0 |
| Rate of serious injuries per 100 million VMT | 10.36 | 10.13 | 9.77 | 0 |
| Number of non-motorized fatalities and non-motorized serious injuries | 3,294.4 | 3,304.2 | 3,339.6 | 0 |

Table 2-4b: TPO Highway Safety (PM1) Conditions and Performance

| Performance Measures | TPO Baseline Performance (Five Year Rolling Average) | | | Calendar Year 2020 TPO Planning Area Performance Targets |
|---|---|---|---|---|
| | 2012-2016 | 2013-2017 | 2014 2018 | |
| Number of fatalities | 111.4 | 120.2 | 123.8 | 118 |
| Rate of fatalities per 100 million VMT | 1.680 | 1.758 | 1.757 | 1.549 |
| Number of serious injuries | 740.6 | 733.2 | 755.0 | 808 |
| Rate of serious injuries per 100 million VMT | 11.156 | 10.647 | 11.259 | 10.604 |
| Number of non-motorized fatalities and non-motorized serious injuries | 100 | 102.2 | 101.6 | 96 |

## BASELINE CONDITIONS

After FDOT set its Safety Performance Measures targets in 2018, both FDOT and the TPO established Baseline Safety Performance Measures. To evaluate baseline Safety Performance Measures, the TPO utilized the most recently available five-year rolling average at the time (2012-2016) of crash data and VMT. **Table 2-5** presents the Baseline Safety Performance Measures for Florida and the River to Sea TPO.

Table 2-5: Baseline Safety Performance Measures

| Performance Measures | Florida Baseline Performance | River to Sea TPO Baseline Performance |
|---|---|---|
| Number of fatalities | 2,825.4 | 111.4 |
| Rate of fatalities per 100 million VMT | 1.36 | 1.680 |
| Number of serious injuries | 20,929.2 | 740.6 |
| Rate of serious injuries per 100 million VMT | 10.13 | 11.156 |
| Number of non-motorized fatalities and non-motorized serious injuries | 3,304.2 | 100 |

## TRENDS ANALYSIS

The process used to develop Connect 2045 includes analysis of safety data trends, including the location and factors associated with crashes with emphasis on fatalities and serious injuries. These data are used to help identify regional safety issues and potential safety strategies for the LRTP and TIP.

## COORDINATION WITH STATEWIDE SAFETY PLANS AND PROCESSES

The TPO recognizes the importance of linking goals, objectives, and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets.

As such, Connect 2045 reflects the goals, objectives, performance measures, and targets as they are available and described in other state and public transportation plans and processes; specifically the Florida Strategic Highway Safety Plan (SHSP), the Florida Highway Safety Improvement Program (HSIP), and the Florida Transportation Plan (FTP).


- The 2016 Florida Strategic Highway Safety Plan (SHSP) is the statewide plan focusing on how to accomplish the vision of eliminating fatalities and reducing serious injuries on all public roads. The SHSP was developed in coordination with Florida's 27 MPOs through Florida's Metropolitan Planning Organization Advisory Council (MPOAC). The SHSP guides FDOT, MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out throughout the state.
- The FDOT HSIP process provides for a continuous and systematic process that identifies and reviews traffic safety issues around the state to identify locations with potential for improvement. The goal of the HSIP process is to reduce the number of crashes, injuries, and fatalities by eliminating certain predominant types of crashes through the implementation of engineering solutions.
- Transportation projects are identified and prioritized with the MPOs and non-metropolitan local governments. Data are analyzed for each potential project, including traffic safety data and traffic demand modeling, among other data. The FDOT Project Development and Environment Manual requires the consideration of safety when preparing a proposed project's purpose and need, and defines several factors related to safety, including crash modification factor and safety performance factor, as part of the analysis of alternatives. MPOs and local governments consider safety data analysis when determining project priorities.

## LRTP SAFETY PRIORITIES

Connect 2045 increases the safety of the transportation system for motorized and non-motorized users. The LRTP aligns with the Florida SHSP and the FDOT HSIP with specific strategies to improve safety performance focused on prioritized safety projects, pedestrian and/or bicycle safety enhancements, and traffic operation improvements to address our goal to reduce fatalities and serious injuries.

Connect 2045 identifies safety needs within the metropolitan planning area and provides funding for targeted safety improvements. A project prioritization process was developed that assigned higher scores to projects based on an analysis of the number of crashes by severity in an effort to prioritize projects within the plan that are likely to reduce fatalities and serious injuries.

Implementation of Connect 2045 will include monitoring the FDOT HSIP annual reports to track the progress made toward the statewide safety performance targets. The TPO will document the progress on all safety performance targets established by the TPO for its planning area.

The TPO recognizes the importance of linking goals, objectives, and investment priorities to stated performance objectives, and that establishing these links are critical to the achievement of national transportation goals and statewide and regional performance targets. As such, Connect 2045 directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including:

- Incorporation of Measures in Project Ranking Criteria (Ongoing) – The TPO has a long history of emphasizing safety in the prioritization of transportation projects as a weighted factor in the criteria used to rank projects during the annual call for projects.
- Interagency Partnering (Ongoing) – For many years, the River to Sea TPO has participated in various partnerships to promote safety awareness and to identify and address safety concerns throughout the community. This includes involvement in the Community Traffic Safety Teams and Safe Kids Coalition.
- Congestion Management Process and Plan (October 2018) - The congestion management process requires the establishment and use of a coordinated, performance-based approach to transportation decision-making to support national goals for the federal-aid highway and public transportation programs. In addition to congestion resulting from traffic volume, this report incorporated additional transportation measures used in performance management.
- Roadway Safety Evaluation & Improvement Study (September 2018) – Building upon a crash analysis performed in 2017, this study developed a process to identify and mitigate the causes of crashes at high crash locations throughout the planning area.
- SR/CR A1A Pedestrian Safety and Mobility Study (May 2017) – This study was conducted to analyze safety issues along the entire SR/CR A1A corridor within the TPO boundary. Coordinated with FDOT, local government agencies, and community stakeholders along the corridor, the study identified safety countermeasures and recommended implementable safety improvements to reduce overall bicycle and pedestrian crashes.
- Community Safety Action Plan (November 2019) – The Community Safety Action Plan (CSAP) assesses existing safety strategies utilized in the TPO's planning area and identifies community outreach activities that build upon those efforts to further promote safety. The CSAP focus areas will be used to develop a work plan for TPO staff.

# Pavement and Bridge Condition Measures (PM2)

***The River to Sea TPO supports and adopts FDOT's pavement and bridge condition performance targets.***

## PAVEMENT AND BRIDGE CONDITION PERFORMANCE MEASURES AND TARGETS OVERVIEW

In January 2017, the USDOT published the Pavement and Bridge Condition Performance Measures Final Rule, which is also referred to as the PM2 rule. This rule establishes the following six performance measures:

1. Percent of Interstate pavements in good condition
2. Percent of Interstate pavements in poor condition
3. Percent of non-Interstate National Highway System (NHS) pavements in good condition
4. Percent of non-Interstate NHS pavements in poor condition
5. Percent of NHS bridges (by deck area) classified as in good condition
6. Percent of NHS bridges (by deck area) classified as in poor condition

The four pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in good condition or poor condition. The PM2 rule defines NHS pavement types as asphalt, jointed concrete, or continuous concrete. Five metrics are used to assess pavement condition:

- International Roughness Index (IRI) - an indicator of roughness; applicable to asphalt, jointed concrete, and continuous concrete pavements
- Cracking percent - percentage of the pavement surface exhibiting cracking; applicable to asphalt, jointed concrete, and continuous concrete pavements
- Rutting - extent of surface depressions; applicable to asphalt pavements only
- Faulting - vertical misalignment of pavement joints; applicable to jointed concrete pavements only
- Present Serviceability Rating (PSR) – a quality rating applicable only to NHS roads with posted speed limits of less than 40 miles per hour (e.g., toll plazas, border crossings) which states may choose to collect and report for applicable segments as an alternative to the other four metrics

For each pavement metric, a threshold is used to establish good, fair, or poor condition. Using these metrics and thresholds, pavement condition is assessed for each 0.1 mile section of the through travel lanes of mainline highways on the Interstate or the non-Interstate NHS. Asphalt pavement is assessed using the IRI, cracking, and rutting metrics, while jointed concrete is assessed using IRI, cracking, and faulting metrics. For these two pavement types, a pavement section is rated good if the rating for all three metrics are good, and poor if the ratings for two or more metrics are poor.

Continuous concrete pavement is assessed using the IRI and cracking metrics. For this pavement type, a pavement section is rated good if both metrics are rated good, and poor if both metrics are rated poor.

If a state collects and reports PSR for any applicable segments, those segments are rated according to the PSR scale. For all three pavement types, sections that are not good or poor are rated fair.

The good/poor measures are expressed as a percentage and are determined by summing the total lane-miles of good or poor highway segments and dividing by the total lane-miles of all highway segments on the applicable system. Pavement in good condition suggests that no major investment is needed and should be considered for preservation treatment. Pavement in poor condition suggests major reconstruction investment is needed due to either ride quality or a structural deficiency.

The bridge condition measures refer to the percentage of bridges by deck area on the NHS that are in good condition or poor condition. The measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts. Each component has a metric rating threshold to establish good, fair, or poor condition. Each bridge on the NHS is evaluated using these ratings. If the lowest rating of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is five or six, it is classified as fair. If the lowest rating is less than or equal to four, the structure is classified as poor.

The bridge measures are expressed as the percent of NHS bridges in good or poor condition. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing by the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width.

A bridge in good condition suggests that no major investment is needed. A bridge in poor condition is safe to drive on; however, it is nearing a point where substantial reconstruction or replacement is needed.

Federal rules require state DOTs and MPOs to coordinate when setting pavement and bridge condition performance targets and monitor progress towards achieving the targets. States must establish:

- Four-year statewide targets for the percent of Interstate pavements in good and poor condition
- Two-year and four-year targets for the percent of non-Interstate NHS pavements in good and poor condition
- Two-year and four-year targets for the percent of NHS bridges (by deck area) in good and poor condition

MPOs must establish four-year targets for all six measures. MPOs can either agree to program projects that will support the statewide targets or establish their own quantifiable targets for the MPO's planning area.

The two-year and four-year targets represent pavement and bridge condition at the end of calendar years 2019 and 2021, respectively.

## PAVEMENT AND BRIDGE CONDITION BASELINE PERFORMANCE AND ESTABLISHED TARGETS

This System Performance Report discusses the condition and performance of the transportation system for each applicable target as well as the progress achieved by the TPO in meeting targets in comparison with system performance recorded in previous reports. Because the federal performance measures are new, performance of the system for each measure has only recently been collected and targets have only recently been established. Accordingly, this first River to Sea TPO LRTP System Performance Report highlights performance for the baseline period, which is 2017. FDOT will continue to monitor and report performance on a biennial basis. Future System Performance Reports will discuss progress towards meeting the targets since this initial baseline report.

**Table 2-6** presents baseline performance for each PM2 measure for the State and for the TPO planning area as well as the two-year and four-year targets established by FDOT for the State.

Table 2-6: Pavement and Bridge Condition (PM2) Performance and Targets

| Performance Measures | Statewide (2017 Baseline) | Statewide (2019 Actual) | Statewide 2 year Target (2019) | Statewide 4 year Target (2021) | River to Sea TPO (2017 Baseline) | River to Sea TPO (2019 Actual) | River to Sea TPO 4 year Target (2021) |
|---|---|---|---|---|---|---|---|
| Percent of Interstate pavements in good condition | 66.0% | 68.5% | n/a | ≥60% | 35.0% | 61.0% | ≥60% |
| Percent of Interstate pavements in poor condition | 0.1% | 0.2% | n/a | <5% | 0.0% | 0.8% | <5% |
| Percent of non-Interstate NHS pavements in good condition | 76.4% | 41% | ≥40% | ≥40% | 33.9% | 27.5% | ≥40% |
| Percent of non-Interstate NHS pavements in poor condition | 3.6% | 0.2% | <5% | <5% | 0.0% | 0.2% | <5% |
| Percent of NHS bridges (by deck area) in good condition | 67.7% | 72% | ≥50% | ≥50% | 58.59% | 63.39% | ≥50% |
| Percent of NHS bridges (by deck area) in poor condition | 1.2% | 1% | <10% | <10% | 1.01% | 0.89% | <10% |

FDOT established the statewide PM2 targets on May 18, 2018. In determining its approach to establishing performance targets for the federal pavement and bridge condition performance measures, FDOT considered many factors. FDOT is mandated by Section 334.046, F.S., to preserve the state's pavement and bridges to specific standards. To adhere to the statutory guidelines, FDOT prioritizes funding allocations to ensure the current transportation system is adequately preserved and maintained before funding is allocated for capacity improvements. These statutory guidelines envelope the statewide federal targets that have been established for pavements and bridges.

In addition, Federal regulations require FDOT to develop a Transportation Asset Management Plan (TAMP) for all NHS pavements and bridges within the state. The TAMP must include investment strategies leading to a program of projects that would make progress toward the achievement of the state DOT targets for asset condition and performance of the NHS. FDOT's TAMP was updated to reflect these requirements in 2018 and the final TAMP was approved on June 28, 2019.

Further, the federal pavement condition measures require a new methodology that is a departure from the methods currently used by FDOT and uses different ratings and pavement segment lengths. For bridge condition, the performance is measured in deck area under the federal measure, while the FDOT programs its bridge repair or replacement work on a bridge-by-bridge basis. As such, the federal measures are not directly comparable to the methods that are most familiar to FDOT.

In consideration of these differences, as well as the unfamiliarity associated with the new required processes, FDOT took a conservative approach when setting its initial pavement and bridge condition targets.

The TPO agreed to support FDOT's pavement and bridge condition performance targets on October 24, 2018. By adopting FDOT's targets, the River to Sea TPO agrees to plan and program projects that help FDOT achieve these targets.

The TPO recognizes the importance of linking goals, objectives, and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, Connect 2045 reflects the goals, objectives, performance measures, and targets as they are described in other state and public transportation plans and processes, including the FTP and the TAMP.

- The FTP is the single, overarching statewide plan guiding Florida's transportation future. It defines the state's long-range transportation vision, goals, and objectives and establishes the policy framework for the expenditure of state and federal funds flowing through FDOT's work program. One of the seven goals defined in the FTP is Agile, Resilient, and Quality Infrastructure.
- The TAMP explains the processes and policies affecting pavement and bridge condition and performance in the state. It presents a strategic and systematic process of operating, maintaining, and improving these assets effectively throughout their life cycle.

Connect 2045 seeks to address system preservation, identifies infrastructure needs within the metropolitan planning area, and provides funding for targeted improvements. Objective 1.6 of this plan is to "Adequately fund preservation of transportation assets (National Highway System Pavement Condition, Bridge Condition, and Transit Assets)."

On or before October 1, 2020, FDOT will provide FHWA and the River to Sea TPO a detailed report of pavement and bridge condition performance covering the period of January 1, 2018 to December 31, 2019. FDOT and the TPO will have the opportunity at that time to revisit the four-year PM2 targets.

# System Performance, Freight, and Congestion Mitigation & Air Quality (CMAQ) Improvement Program Measures (PM3)

***The River to Sea TPO supports and adopts FDOT's system performance and freight performance targets.***

## SYSTEM PERFORMANCE/FREIGHT/CMAQ PERFORMANCE MEASURES AND TARGETS OVERVIEW

In January 2017, the USDOT published the System Performance/Freight/CMAQ Performance Measures Final Rule to establish measures to assess passenger and freight performance on the Interstate and non-Interstate NHS, and traffic congestion and on-road mobile source emissions in areas that do not meet federal National Ambient Air Quality Standards (NAAQS). The rule, which is referred to as the PM3 rule, requires MPOs to set targets for the following six performance measures:

### *National Highway Performance Program (NHPP)*

1. Percent of person-miles on the Interstate system that are reliable, also referred to as Level of Travel Time Reliability (LOTTR)
2. Percent of person-miles on the non-Interstate NHS that are reliable (LOTTR)

### *National Highway Freight Program (NHFP)*

3. Truck Travel Time Reliability index (TTTR)

### *Congestion Mitigation and Air Quality Improvement Program (CMAQ)*

4. Annual hours of peak hour excessive delay per capita (PHED)
5. Percent of non-single occupant vehicle travel (Non-SOV)
6. Cumulative 2-year and 4-year reduction of on-road mobile source emissions (NOx, VOC, CO, PM10, and PM2.5) for CMAQ funded projects

In Florida, only the two LOTTR performance measures and the TTTR performance measure apply. Because all areas in Florida meet current NAAQS, the last three measures listed above pertaining to the CMAQ Program do not currently apply. The River to Sea TPO Planning Area is not within a nonattainment area since the threshold standard for air quality is met. Accordingly, the TPO is not required to monitor or report measures related to air quality.

LOTTR is defined as the ratio that compares the worst travel times on a road against the travel time that is typically experienced during four time periods (AM peak, mid-day, PM peak, and weekends) that cover the hours between 6 a.m. to 8 p.m. each day. The LOTTR ratio is calculated for each roadway segment, essentially comparing the segment with itself. Segments with LOTTR ≥ 1.50 during any of the above time periods are considered unreliable. The two LOTTR measures are expressed as the percent of person-miles traveled on the Interstate or non-Interstate NHS system that are reliable. Person-miles consider the number of people traveling in buses, cars, and trucks over these roadway segments. To obtain person miles traveled, the vehicle miles traveled (VMT) for each segment are multiplied by the average vehicle occupancy for each type of vehicle on the roadway. To calculate the percent of person miles traveled that are reliable, the sum of the number of reliable person miles traveled is divided by the sum of total person miles traveled.

TTTR is defined as the ratio of longer truck travel times (95th percentile) to a normal travel time (50th percentile) over the Interstate during five time periods (AM peak, mid-day, PM peak, weekend, and overnight) that cover all hours of the day. TTTR is quantified by taking a weighted average of the maximum TTTR from the five time periods for each Interstate segment. The maximum TTTR is weighted by segment length, then the sum of the weighted values is divided by the total Interstate length to calculate the Travel Time Reliability Index.

The data used to calculate these PM3 measures are provided by FHWA via the National Performance Management Research Data Set (NPMRDS). This dataset contains travel times, segment lengths, and Annual Average Daily Travel (AADT) for Interstate and non-Interstate NHS roads.

The PM3 rule requires state DOTs and MPOs to coordinate when establishing performance targets for these measures and to monitor progress towards achieving the targets. FDOT must establish:

- Two-year and four-year statewide targets for percent of person-miles on the Interstate system that are reliable
- Four-year targets for the percent of person-miles on the non-Interstate NHS that are reliable
- Two-year and four-year targets for truck travel time reliability

MPOs must establish four-year performance targets for all three measures within 180 days of FDOT establishing statewide targets. MPOs establish targets by either agreeing to program projects that will support the statewide targets or setting quantifiable targets for the MPO's planning area.

The two-year and four-year targets represent system performance at the end of calendar years 2019 and 2021, respectively.

## PM3 BASELINE PERFORMANCE AND ESTABLISHED TARGETS

The System Performance Report discusses the condition and performance of the transportation system for each applicable PM3 target as well as the progress achieved by the MPO in meeting targets in comparison with system performance recorded in previous reports. Because the federal performance measures are new and have only recently been established, performance of the system for each measure has only recently been collected. Accordingly, this Connect 2045 System Performance Report highlights performance for the baseline period, which is 2017. FDOT will continue to monitor and report performance on a biennial basis. Future System Performance Reports will discuss progress towards meeting the targets since this initial baseline report.

**Table 2-7** presents baseline performance for each PM3 measure for the state and for the TPO planning area as well as the two-year and four-year targets established by FDOT for the state.

Table 2-7: System Performance and Freight (PM3) - Performance and Targets

| Performance Measures | Statewide (2017 Baseline) | Statewide 2019 Actual | Statewide 2 year Target (2019) | Statewide 4 year Target (2021) | River to Sea TPO (2017 Baseline) | River to Sea TPO (2019 Actual) | River to Sea TPO 4 year Target (2021) |
|---|---|---|---|---|---|---|---|
| Percent of person-miles on the Interstate system that are reliable | 82.2% | 83% | ≥75.0% | ≥70.0% | 100% | 100% | ≥70.0% |
| Percent of person-miles on the non-Interstate NHS that are reliable | 84.0% | 87% | n/a | ≥50.0% | 51% | 90% | ≥50.0% |
| Truck travel time reliability index (TTTR) | 1.43 | 1.45 | ≤1.75 | ≤2.00 | 1.12 | 1.17 | ≤1.75 |

FDOT established the statewide PM3 targets on May 18, 2018. In setting the statewide targets, FDOT reviewed external and internal factors that may affect reliability, conducted a trend analysis for the performance measures, and developed a sensitivity analysis indicating the level of risk for road segments to become unreliable within the time period for setting targets. One key conclusion from this effort is that there is a lack of availability of extended historical data with which to analyze past trends and a degree of uncertainty about future reliability performance. Accordingly, FDOT took a conservative approach when setting its initial PM3 targets.

The TPO agreed to support FDOT's PM3 targets on October 24, 2018. By adopting FDOT's targets, the TPO agrees to plan and program projects that help FDOT achieve these targets.

The TPO recognizes the importance of linking goals, objectives, and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, Connect 2045 reflects the goals, objectives, performance measures, and targets as they are described in other state and public transportation plans and processes, including the FTP and the Florida Freight Mobility and Trade Plan (FMTP).

- The FTP is the single overarching statewide plan guiding Florida's transportation future. It defines the state's long-range transportation vision, goals, and objectives and establishes the policy framework for the expenditure of state and federal funds flowing through FDOT's work program. One of the seven goals of the FTP is Efficient and Reliable Mobility for People and Freight.
- The FMTP presents a comprehensive overview of the conditions of the freight system in the state, identifies key challenges and goals, provides project needs, and identifies funding sources. Truck reliability is specifically called forth in this plan, both as a need and as a goal. More information is provided in the next section.

Connect 2045 seeks to address system reliability and congestion mitigation through various means, including capacity expansion and operational improvements. Objective 1.2 of this plan is to "Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand." Objective 2.2 is to "Identify and support safe and efficient truck routes and other facilities that improve the movment of freight and goods." The TPO adopted its Transportation Systems Management and Operations (TSM&O) Master Plan Phase 2 on June 27, 2018 and the Transportation Congestion Management/Performance Measures Report on October 24, 2018. Information from these reports is also included in Chapter 6 – Transportation Plan.

On or before October 1, 2020, FDOT will provide FHWA and the River to Sea TPO a detailed report of performance for the PM3 measures covering the period of January 1, 2018 to December 31, 2019. FDOT and the TPO will have the opportunity at that time to revisit the four-year PM3 targets.

# OTHER PERFORMANCE-BASED PLANNING CONSIDERATIONS

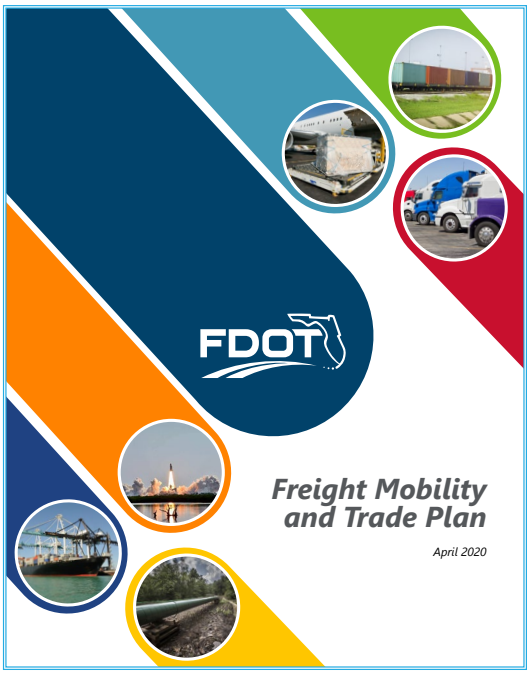
## Florida Department of Transportation: Transportation Asset Management Plan (TAMP)

FDOT published the most recent TAMP on June 28, 2019. This plan summarizes the current state of the asset management planning process, goals and objectives, performance measures, and FDOT performance targets. The TPO supports the FDOT asset management process and adopts by reference the 2019 TAMP into the 2045 Long Range Transportation Plan. The TPO will continue to monitor the development of the update of the Transportation Asset Management Plan and will work with the FDOT to set performance targets for the following asset management performance measures only:

- % of Interstate pavements in Good condition
- % of Interstate pavements in Poor condition
- % of non-Interstate NHS pavements in Good condition
- % of non-Interstate NHS pavements in Poor condition
- % of NHS bridges classified as in Good condition by deck area
- % of NHS bridges classified as in Poor condition by deck area

The TPO will not be responsible for setting performance targets for other asset management performance measures contained within the TAMP.

## Florida Freight Mobility and Trade Plan




There is growing recognition of the importance of freight movement at the national, state and regional level. Most notably, the need to place an increased focus on the nation's freight system is evident in the inclusion of freight provisions and requirements in the last two federal transportation bills. In 2012, MAP-21 established a policy to improve the condition and performance of the national freight network. This included the designation of a national freight network and the development of a national freight strategic plan.

These goals and objectives were further reinforced with the implementation of the FAST Act, implemented in 2015. A key provision contained in the FAST Act is the requirement that State Departments of Transportation such as FDOT develop a state freight plan to comprehensively address the State's short- and long-term freight issues and needs. Development of a state freight plan is a requirement to be eligible to receive funding under the National Highway Freight Program (23 U.S.C. 167).

In 2013 and 2014, FDOT developed the first Florida Freight Mobility and Trade Plan (FMTP) designed to set the stage for freight planning in Florida, raise awareness, and galvanize the freight community. FDOT released an updated FMTP in April 2020. This new document built upon the foundation set by the previous FMTP by using tactical and strategic approaches to implement immediate opportunities while also positioning Florida for future possibilities. One key recommendation from both FMTP efforts was that freight issues and needs shall be given emphasis in all appropriate transportation plans including MPO LRTPs.

The TPO supports the state freight planning process and will work with FDOT to set appropriate performance targets for the measurement of Truck Travel Time Reliability (Truck travel time reliability ratio (TTTR) on the Interstate system).

**Table 2-8** illustrates the relationship between Connect 2045 goals and the new FMTP objectives which were developed in context of the FTP goal areas (also shown for reference). See **Technical Appendix G** for the Connect 2045 Freight Summary.

Table 2-8: Connect 2045 LRTP Goals and Freight Mobility and Trade Plan Objectives

| | | Connect 2045 LRTP Goals | | | | | |
|---|---|---|---|---|---|---|---|
| **FTP Goal** | **FMTP Objective** | **Multimodal** | **Economic Development** | **Connectivity** | **Safety** | **Livability** | **Involvement** |
| **Safety & Security** | Leverage multisource data and technology to improve freight system safety and security | | | | ✓ | | |
| **Infrastructure** | Create a more resilient multimodal freight system | ✓ | ✓ | ✓ | | ✓ | |
| **Infrastructure** | Ensure the Florida freight system is in a State of Good Repair | ✓ | | ✓ | ✓ | | |
| **Mobility** | Drive innovation to reduce congestion, bottlenecks and improve travel time reliability | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Transportation Choices** | Remove institutional, policy and funding bottlenecks to improve operational efficiencies and reduce costs in supply chains | ✓ | ✓ | ✓ | | | ✓ |
| **Transportation Choices** | Improve last-mile connectivity for all freight modes | ✓ | ✓ | ✓ | | | |
| **Economy** | Continue to forge partnerships between the public and private sectors to improve trade and logistics | ✓ | ✓ | ✓ | | | ✓ |
| **Economy** | Capitalize on emerging freight trends to promote economic development | | ✓ | | | ✓ | |
| **Communities** | Increase freight-related regional and local transportation planning and land use coordination | ✓ | ✓ | ✓ | | ✓ | ✓ |
| **Environment** | Promote and support the shift to alternatively fueled freight vehicles | ✓ | | | ✓ | ✓ | ✓ |

# Transit Asset Management Measures

## TRANSIT ASSET PERFORMANCE

On July 26, 2016, the Federal Transit Administration (FTA) published the final Transit Asset Management rule. This rule applies to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The rule defines the term "state of good repair," requires that public transportation providers develop and implement transit asset management (TAM) plans, and establishes state of good repair standards and performance measures for four asset categories: equipment, rolling stock, infrastructure, and facilities. The rule became effective on October 1, 2018.

**Table 2-9** below identifies performance measures outlined in the final rule for transit asset management.

Table 2-9: FTA TAM Performance Measures

| Asset Category | Performance Measure and Asset Class |
|---|---|
| 1. Equipment | Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their useful life benchmark |
| 2. Rolling Stock | Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark |
| 3. Infrastructure | Percentage of track segments with performance restrictions |
| 4. Facilities | Percentage of facilities within an asset class rated below condition 3 on the TERM scale |

For equipment and rolling stock classes, useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment. ULB considers a provider's unique operating environment such as geography and service frequency.

Public transportation agencies are required to establish and report transit asset management targets annually for the following fiscal year. Each public transit provider or its sponsors must share its targets, TAM, and asset condition information with each MPO in which the transit provider's projects and services are programmed in the MPO's TIP.

MPOs are required to establish initial transit asset management targets within 180 days of the date that public transportation providers establish initial targets. However, MPOs are not required to establish transit asset management targets annually each time the transit provider establishes targets. Instead, subsequent MPO targets must be established when the MPO updates the LRTP.

When establishing transit asset management targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional transit asset management targets for the MPO planning area.

In cases where two or more providers operate in an MPO planning area and establish different targets for a given measure, the MPO has the option of coordinating with the providers to establish a single target for the MPO planning area, or establishing a set of targets for the MPO planning area that reflects the differing transit provider targets.

To the maximum extent practicable, transit providers, states, and MPOs must coordinate with each other in the selection of performance targets.

The TAM rule defines two tiers of public transportation providers based on size parameters. Tier I providers are those that operate rail service or more than 100 vehicles in all fixed route modes, or more than 100 vehicles in one non-fixed route mode. Tier II providers are those that are subrecipients of FTA 5311 funds, or an American Indian Tribe, or have 100 or less vehicles across all fixed route modes, or have 100 vehicles or less in one non-fixed route mode. A Tier I provider must establish its own transit asset management targets, as well as report performance and other data to FTA. A Tier II provider has the option to establish its own targets or to participate in a group plan with other Tier II providers whereby targets are established by a plan sponsor, typically a state DOT, for the entire group.

A total of 20 transit providers participated in the FDOT Group TAM Plan and continue to coordinate with FDOT on establishing and reporting group targets to FTA through the National Transit Database (NTD) (**Table 2-10**). The participants in the FDOT Group TAM Plan are comprised of the Section 5311 Rural Program and open-door Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities FDOT subrecipients. The Group TAM Plan was adopted in October 2018 and covers fiscal years 2018-2019 through 2021-2022. Updated targets were submitted to NTD in 2019.

Table 2-10: Florida Group TAM Plan Participants

| District | Participating Transit Providers | |
|---|---|---|
| **1** | • Good Wheels, Inc<br>• Central Florida Regional Planning Council | • DeSoto County Transportation |
| **2** | • Suwannee Valley Transit<br>• Big Bend Transit<br>• Baker County Transit<br>• Nassau County Transit | • Ride Solutions<br>• Levy County Transit<br>• Suwannee River Economic Council |
| **3** | • Tri-County Community Council<br>• Big Bend Transit<br>• Gulf County ARC<br>• Calhoun Transit | • Liberty County Transit<br>• JTRANS<br>• Wakulla Transit |
| **4** | *No participating providers* | |
| **5** | • Sumter Transit<br>• Marion Transit | • Flagler County Public Transportation |
| **6** | • Key West Transit | |
| **7** | *No participating providers* | |

The TPO planning area is served by three (3) transit service providers: Flagler County Public Transportation (FCPT), Votran, and SunRail. SunRail is considered a Tier I provider and, as such, must develop a TAM Plan. Votran and FCPT are considered Tier II providers. Votran has elected to develop their own TAM Plan, while FCPT is included in a group TAM plan developed by the FDOT Public Transit Office in Tallahassee.

On October 24, 2018, the TPO agreed to support the transit asset management targets for FCPT, Votran, and Sunrail, thus agreeing to plan and program projects in the TIP that, once implemented, are anticipated to make progress toward achieving the transit provider targets.

## VOTRAN

Votran established the transit asset targets identified in **Table 2-11** in September 2018. The transit asset management targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities. The targets reflect the most recent data available on the number, age, and condition of transit assets, and expectations and capital investment plans for improving these assets. The table summarizes both existing conditions for the most recent year available, and the targets.

Table 2-11: FTA TAM Targets for Votran

| Asset Category Performance Measure | Asset Class | FY 2018 Asset Condition | FY 2020 Target |
|---|---|---|---|
| **Rolling Stock** | | | |
| Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) | Bus | 28% | 20% |
| | Cutaway Bus | 32% | 20% |
| | Mini-Van | 0% | 1% |
| **Equipment** | | | |
| Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their ULB | Non Revenue/Service Automobile | 100% | 10% |
| | Trucks and other Rubber Tire Vehicles | 100% | 1% |
| | Route & Scheduling Software | 86% | 15% |
| | Maintenance Equipment | 92% | 20% |
| | Security | 100% | 20% |
| **Facilities** | | | |
| Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale* | Administration | 4.0 | 10% |
| | Maintenance | 2.1 | 10% |
| | Parking Structures | 3.3 | 10% |
| | Passenger Facilities | 3.6 | 10% |
| | Administration/Maintenance | 3.0 | 5% |
| | Storage | 3.5 | 2% |

**The Votran TAM plan lists the TERM rating, but not the % at or above the target*

## SUNRAIL

Sunrail established the transit asset management targets identified in **Table 2-12** on October 1, 2018.

The transit asset management targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities. The targets reflect the most recent data available on the number, age, and condition of transit assets, and expectations and capital investment plans for improving these assets. The table summarizes both existing conditions for the most recent year available, and the targets.

Table 2-12: FTA TAM Targets for SunRail

| Asset Category Performance Measure | Asset Class | FY 2018 Asset Condition | FY 2020 Target |
|---|---|---|---|
| **Rolling Stock** | | | |
| Age - % of revenue vehicles within a particular asset class that have met or exceeded their ULB | Locomotives | 23 years | 0% |
| | Coach Cars | 3 years | 0% |
| | Cab Cars | 3 years | 0% |
| **Equipment** | | | |
| Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their ULB | Non Revenue/Service Automobile | n/a | n/a |
| | Trucks and other Rubber Tire Vehicles | n/a | n/a |
| **Infrastructure** | | | |
| % of track segments with performance restrictions | Rail fixed guideway track | 2% DRM** w/ speed restriction | < 3% DRM w/ speed restriction |
| **Facilities** | | | |
| Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale | Administration | n/a | n/a |
| | Maintenance & Operating Center | New | 100% ≥ 3 |
| | Maintenance (VSLMF)*** | New | 100% ≥ 3 |
| | Stations | New | 100% ≥ 3 |
| | Park & Ride Lots | New | 100% ≥ 3 |

**Equipment is provided through the operations contract and is not reported as a federally-funded asset.*

***DRM is Directional Route Miles*

****VSLMF is the Vehicle Storage & Light Maintenance Facility*

## FLAGLER COUNTY PUBLIC TRANSPORTATION

Flagler County Public Transportation (FCPT) is part of the Group TAM Plan for Fiscal Years 2018/2019-2022/2023 developed by FDOT for Tier II providers in Florida, and coordinates with FDOT on reporting group targets to NTD. The FY 2019 asset conditions and 2020 targets for the Tier II providers are shown in **Table 2-13**. The statewide group TAM targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities over the next year. The targets reflect the most recent data available on the number, age, and condition of transit assets, and expectations and capital investment plans for improving these assets during the next fiscal year.

As required by FTA, FDOT will update this TAM Plan at least once every four years. FDOT will update the statewide performance targets for the participating agencies on an annual basis and will notify the participating transit agencies and the TPOs in which they operate when the targets are updated.

Table 2-13: Group Transit Asset Management Targets for Tier II Providers

| Asset Category Performance Measure | Asset Class | FY 2019 Asset Condition | FY 2020 Target |
|---|---|---|---|
| **Revenue Vehicles** | | | |
| Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) | Automobile | 27.3% | 45% |
| | Bus | 9.1% | 13% |
| | Cutaway Bus | 15.6% | 28% |
| | Mini-Bus | 25% | 28% |
| | Mini-Van | 13.8% | 11% |
| | SUV | 10.0% | 0% |
| | Van | 30.1% | 34% |
| **Equipment** | | | |
| Age - % of equipment or non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) | Non Revenue Automobile | 67% | 67% |
| | Trucks and other Rubber Tire Vehicles | 50% | 40% |
| **Facilities** | | | |
| Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale | Administration | 0% | 9% |
| | Maintenance | 6% | 12% |

These targets for the TPO planning area reflect the targets established by Votran and SunRail through their Transit Asset Management Plans, as well as the statewide targets established by FDOT for those providers participating in the Group Transit Asset Management Plan, which includes FCPT.

## TAM PERFORMANCE

The River to Sea TPO recognizes the importance of linking goals, objectives, and investment priorities to stated performance objectives, and that establishing this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, Connect 2045 directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including the plans of Votran, the Flagler County Public Transportation, and the River to Sea TPO 2040 LRTP. To support progress towards TAM performance targets, transit investment and maintenance funding in Connect 2045 totals $914 million, approximately 18% percent of total LRTP funding. Improving the State of Good Repair (SGR) of capital assets is an overarching goal of this process.

# Transit Safety Performance

FTA published a final Public Transportation Agency Safety Plan (PTASP) rule and related performance measures as authorized by Section 20021 of the Moving Ahead for Progress in the 21st Century Act (MAP–21). The PTASP rule requires operators of public transportation systems that receive federal financial assistance under 49 U.S.C. Chapter 53 to develop and implement a PTASP based on a safety management systems approach. Development and implementation of PTSAPs is anticipated to help ensure that public transportation systems are safe nationwide.

The rule applies to all operators of public transportation that are recipients or sub-recipients of FTA Urbanized Area Formula Grant Program funds under 49 U.S.C. Section 5307, or that operate a rail transit system that is subject to FTA's State Safety Oversight Program. The rule does not apply to certain modes of transit service that are subject to the safety jurisdiction of another Federal agency, including passenger ferry operations that are regulated by the United States Coast Guard, and commuter rail operations that are regulated by the Federal Railroad Administration.

## TRANSIT SAFETY PERFORMANCE MEASURES

The transit agency sets targets in the PTASP based on the safety performance measures established in the National Public Transportation Safety Plan (NPTSP). The required transit safety performance measures are:

1. Total number of reportable fatalities
2. Rate of reportable fatalities per total vehicle revenue miles by mode
3. Total number of reportable injuries
4. Rate of reportable injuries per total vehicle revenue miles by mode
5. Total number of reportable safety events
6. Rate of reportable events per total vehicle revenue miles by mode
7. System reliability - Mean distance between major mechanical failures by mode

Each provider of public transportation that is subject to the rule must certify it has a PTASP, including transit safety targets for the above measures, in place no later than July 20, 2020. However, on April 22, 2020, FTA issued a Notice of Enforcement Discretion that extends the PTASP deadline to December 31, 2020 due to the extraordinary operational challenges presented by the COVID-19 public health emergency.

Once the public transportation provider establishes targets, it must make the targets available to MPOs to aid in the planning process. MPOs have 180 days after receipt of the PTASP targets to establish transit safety targets for the MPO planning area. Votran recently completed its PTASP which was approved by the Volusia County Council on May 19, 2020. In addition, the River to Sea TPO must reflect those targets in any LRTP and TIP updated on or after July 20, 2021. In Florida, each Section 5307 and 5311 transit provider must develop a System Safety Program Plan (SSPP) under Chapter 14-90, Florida Administrative Code. FDOT technical guidance recommends that Florida's transit agencies revise their existing SSPPs to be compliant with the new FTA PTASP requirements.

Votran's FY 2020 Safety Performance Targets can be found in **Table 2-14**.

Table 2-14: Votran FY 2020 Safety Performance Targets

| Mode of Transit Service | Vehicle Revenue Mile (VRM) | Fatalities Total | Fatalities (Per 100k VRM) | Injuries (Total) | Injuries (Per 100k VRM) | Safety Events (Total) | Safety Events (Per 100k VRM) | System Reliability (Total Mech. Failures) | System Reliability (per 100k VRM) |
|---|---|---|---|---|---|---|---|---|---|
| FY20 FR | 3,149,536 | 0 | 0 | >or=31 | >or=.98 | >or=18 | .57 | 438 | 13.9 |
| FY20 DR | 1,998,660 | 0 | 0 | >or=3 | >or=.15 | >or=3 | .15 | 152 | 7.6 |
| Total | 5,148,196 | 0 | 0 | >or=34 | >or=.66 | >or=21 | .40 | 590 | 11.46 |

Votran's FY 2020 Performance Targets Summary is as follows:

- FY 20 Fatalities - Keep fatalities at zero (0) in all modes
- FY 20 Injuries - Reduce number of reportable injuries by 10% from FY19 in all modes
- FY 20 Safety Events - Reduce number of reportable safety events from FY19 by 10% in all modes
- FY 20 System Reliability - Reduce number of road calls per 100,000 by 10% from FY19 in all modes

## TRANSIT PROVIDER COORDINATION WITH STATES AND MPOS

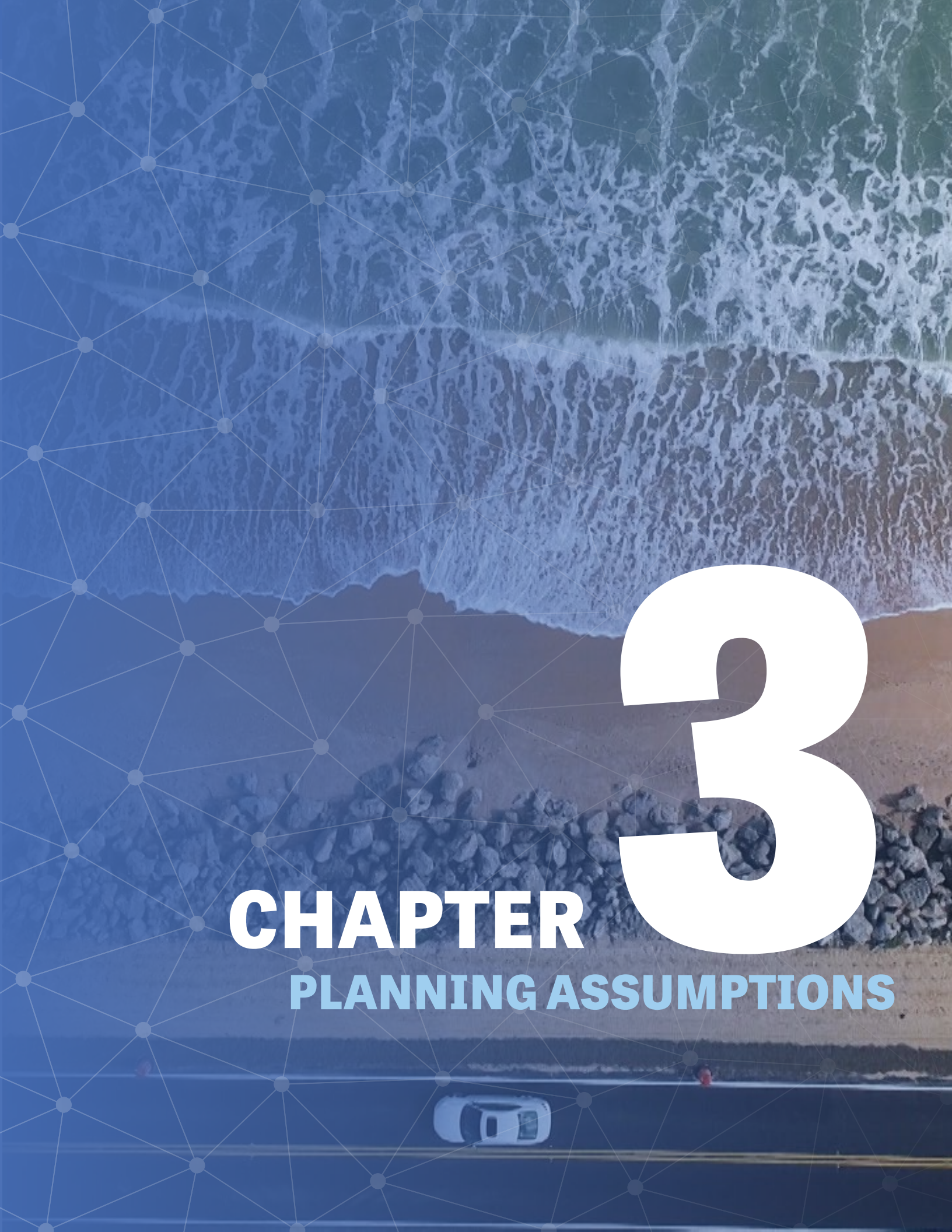
Key considerations for MPOs and transit agencies:

- Transit operators are required to review, update, and certify their PTASP annually.
- A transit agency must make its safety performance targets available to states and MPOs to aid in the planning process, along with its safety plans.
- To the maximum extent practicable, a transit agency must coordinate with states and MPOs in the selection of state and MPO safety performance targets.
- MPOs are required to establish initial transit safety targets within 180 days of the date that public transportation providers establish initial targets. MPOs are not required to establish transit safety targets annually each time the transit provider establishes targets. Instead, subsequent MPO targets must be established when the MPO updates the TIP or LRTP. When establishing transit safety targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own regional transit targets for the MPO planning area. In cases where two or more providers operate in an MPO planning area and establish different targets for a given measure, the MPO has the option of coordinating with the providers to establish a single target for the MPO planning area, or establishing a set of targets for the MPO planning area that reflects the differing transit provider targets.
- MPOs and states must reference those targets in their long-range transportation plans. States and MPOs must each describe the anticipated effect of their respective transportation improvement programs toward achieving their targets.

# CONCLUSION

The River to Sea TPO has worked diligently to incorporate new planning requirements and transportation system performance into the institutional decision-making and documents of the organization. This includes expanded stakeholder involvement, advancement of new planning factors of resiliency and tourism, and incorporation of transportation performance management as part of all the TPO does.

The TPO will continue to coordinate with FHWA, FTA, FDOT, and area transit providers to further incorporate performance measures as they are established and are more fully understood. As further guidance is provided and transportation data reports are developed, the TPO expects to continue expanding its planning and public outreach activities and strengthening the connection between project programming and improved performance of the transportation system as required.



# CHAPTER 3

## PLANNING ASSUMPTIONS

# CHAPTER 3 - PLANNING ASSUMPTIONS

The process used to develop Connect 2045 requires that we identify future transportation needs and then balance those needs against the funding that will be available to establish a Cost Feasible Plan that funds the highest priority transportation improvements. One of the first steps in this process is to develop a forecast of the geographic distribution of the planning area's population and employment over the LRTP's planning horizon. The forecasted population and employment data is used to develop a forecast of the travel demand for the year 2045. This is accomplished by using a travel demand forecast model that converts the population and employment data into trips which are subsequently assigned to a roadway and/or transit network. Documentation related to the model development is included in **Technical Appendix B** and **Technical Appendix C**.

It is important to note that Connect 2045 was developed during the COVID-19 pandemic which has resulted in economic disruptions that impact travel behavior, loss of employment, and changes in commuting patterns. Although the impacts of the COVID-19 pandemic were unprecedented in modern times, the 2045 forecast assumes that economic "boom" periods will balance out with "bust" periods. The forecast used for long range planning is updated every five years. The TPO will closely monitor the ongoing effects and potential long-term influence of the pandemic on projected demand for travel.

Recognizing the close link between land use and transportation, Connect 2045 has been developed in a manner consistent with comprehensive plans developed and adopted by local governments within the TPO's planning area. At the onset of the planning process, a review of these plans and other relevant documentation/data was performed to provide an understanding of their potential impact on, and relevance to Connect 2045. The Future Land Use (FLU) Element of each local government's comprehensive plan provides the principal policy direction for land use. A significant part of the LRTP process is dependent on future land use policy and the related development standards of the area's counties and cities. These plans guide where growth will occur and set standards for allowable densities and intensities within their boundaries. A summary of the other plans, studies, and data that were reviewed and evaluated can be found in **Technical Appendix A**.

## POPULATION AND EMPLOYMENT GROWTH

Significant growth is expected within the TPO's planning area through 2045. This is based on the analysis of national and local trends, population data, and employment data. Future transportation needs of an area are largely based on the type and amount of growth that is anticipated. Volusia and Flagler counties have areas with similar socioeconomic makeups, including areas with significant seasonal populations and visiting tourists.

**Table 3-1** summarizes the forecasted permanent population (not inclusive of group quarter population data) and employment growth by county included in the Central Florida Regional Planning Model (CFRPM) v7 2045 Socioeconomic (SE) data. The assignment of these growth figures was completed using Future Land Use maps, current development activity and input from local government planning staff. Population and employment projections were based on those developed by the University of Florida Bureau of Economic and Business Research (BEBR) and the Woods & Poole Economics state profile.

For Volusia and Flagler counties, annual population growth rates were based on the BEBR medium to high projections. More information on the development of the population and employment projections included in CFRPM v7 can be found in **Technical Appendix C**.

**Figures 3** and **4** illustrate where these areas of growth are expected. These maps show where the permanent population and employment growth are occurring by Transportation Analysis Zone (TAZ), which are commonly used geographic units utilized for transportation planning processes. This "socioeconomic" data documents anticipated population and employment concentrations at the TAZ level and is used to forecast future travel patterns.

The projected increases in permanent population and employment will result in increased demand on the area's transportation network and the need for additional mobility options. The TPO is committed to recognizing these needs and providing a sustainable transportation system for residents, visitors, and supporting the economic growth of Volusia and Flagler Counties.

Table 3-1: Permanent Population and Employment Forecast Summary

| Year | Volusia County | | Flagler County | |
|---|---|---|---|---|
| | Population | Employment | Population | Employment |
| **2015** | 503,615 | 204,694 | 101,289 | 25,805 |
| **2045** | 698,777 | 305,529 | 182,148 | 50,167 |
| **Total Growth** | **195,162** | **100,835** | **80,859** | **24,362** |
| **Percent Growth** | **38.75%** | **49.26%** | **79.83%** | **94.41%** |

*Source: CFRPM v7; University of Florida Bureau of Economic and Business Research (BEBR) Bulletin 180, January 2018; Woods & Poole Economics 2018 State Profile*

**Tables 3-2**, **3-3**, and **3-4** depict the project employment growth by sector in Volusia and Flagler counties.

Table 3-2: Industrial Employment by County

| County | Industrial Employment 2015 | % of Total County Employment 2015 | Industrial Employment 2045 | % of Total County Employment 2045 | Industrial Employment Change 2015 - 2045 | % Change Industrial Employment 2015 - 2045 |
|---|---|---|---|---|---|---|
| **Volusia** | 23,093 | 11.28% | 35,085 | 11.48% | **11,992** | **51.93%** |
| **Flagler** | 2,174 | 8.42% | 4,219 | 8.41% | **2,045** | **94.07%** |

*Source: CFRPM v7; Woods & Poole Economics 2018 State Profile*

Table 3-3: Commercial Employment by County

| County | Commercial Employment 2015 | % of Total County Employment 2015 | Commercial Employment 2045 | % of Total County Employment 2045 | Commercial Employment Change 2015 - 2045 | % Change Commercial Employment 2015 - 2045 |
|---|---|---|---|---|---|---|
| **Volusia** | 38,934 | 19.02% | 59,386 | 19.44% | **20,452** | **52.53%** |
| **Flagler** | 5,584 | 21.64% | 10,825 | 21.58% | **5,241** | **93.86%** |

*Source: CFRPM v7; Woods & Poole Economics 2018 State Profile*

Table 3-4: Service Employment by County

| County | Service Employment 2015 | % of Total County Employment 2015 | Service Employment 2045 | % of Total County Employment 2045 | Service Employment Change 2015 - 2045 | % Change Service Employment 2015 - 2045 |
|---|---|---|---|---|---|---|
| **Volusia** | **142,667** | **69.70%** | **211,058** | **69.08%** | **68,391** | **47.94%** |
| **Flagler** | **18,047** | **69.94%** | **35,123** | **70.01%** | **17,076** | **94.62%** |

*Source: CFRPM v7; Woods & Poole Economics 2018 State Profile*

Figure 3: Total Population Growth in Volusia and Flagler Counties

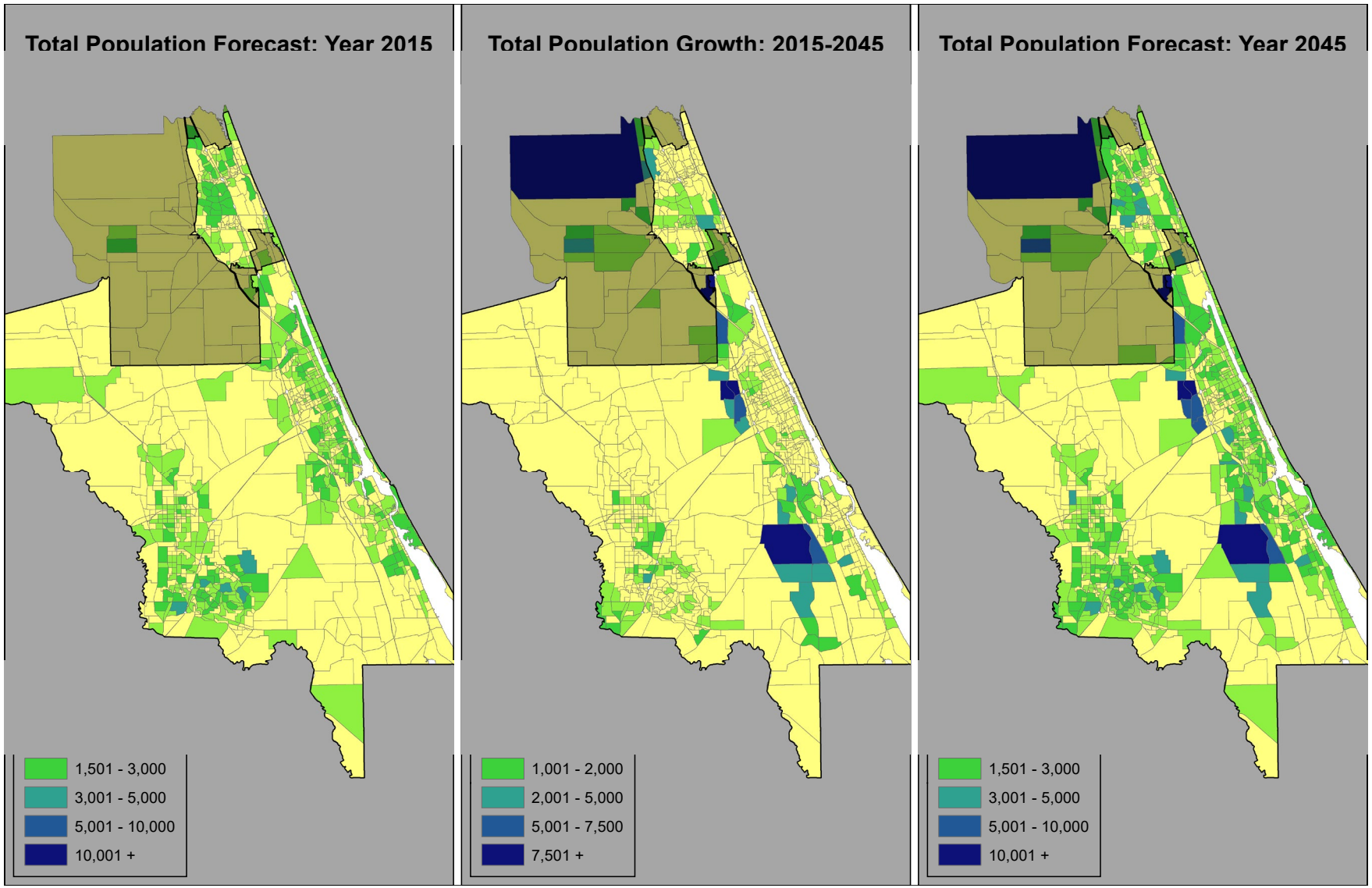
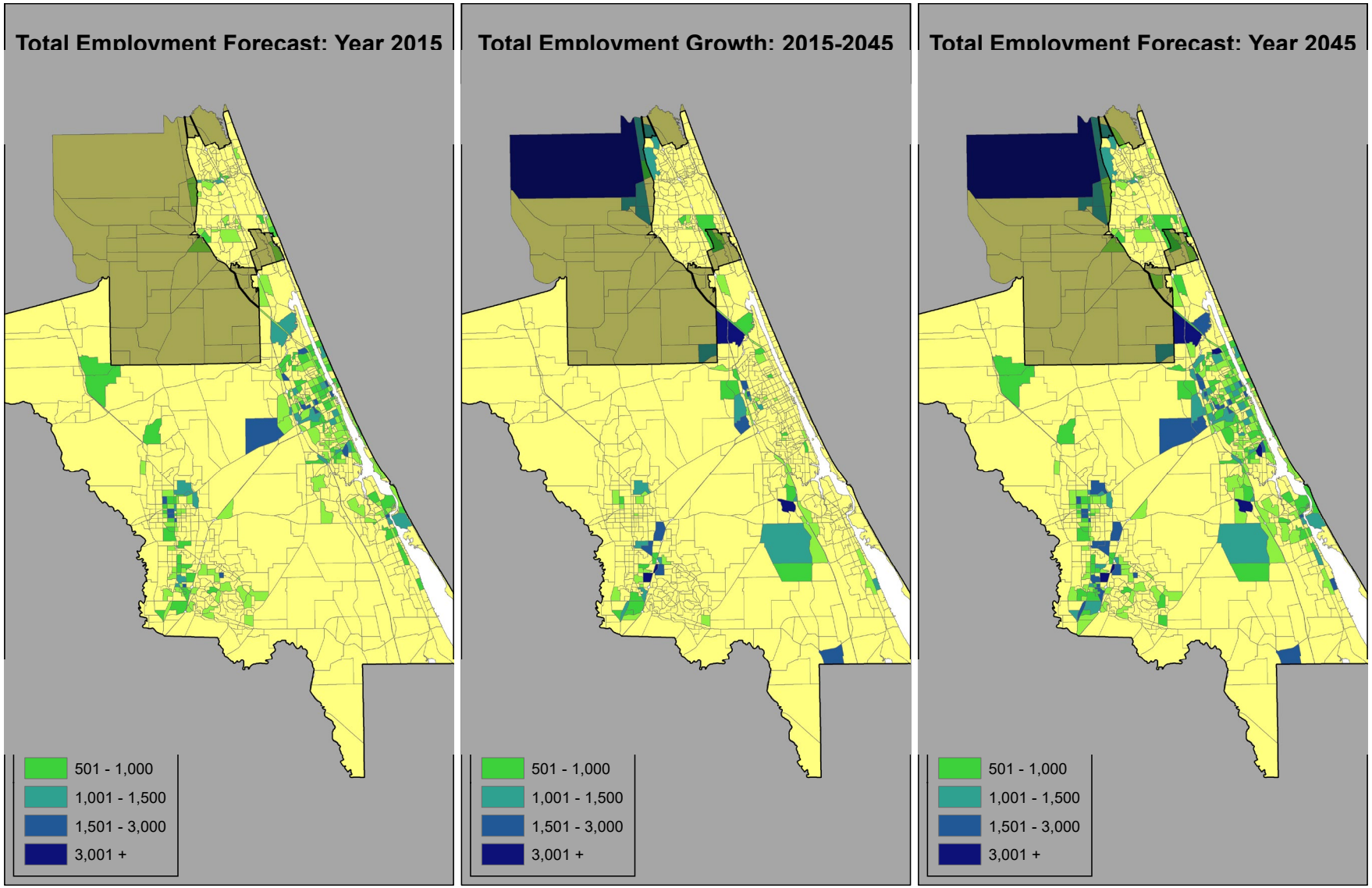
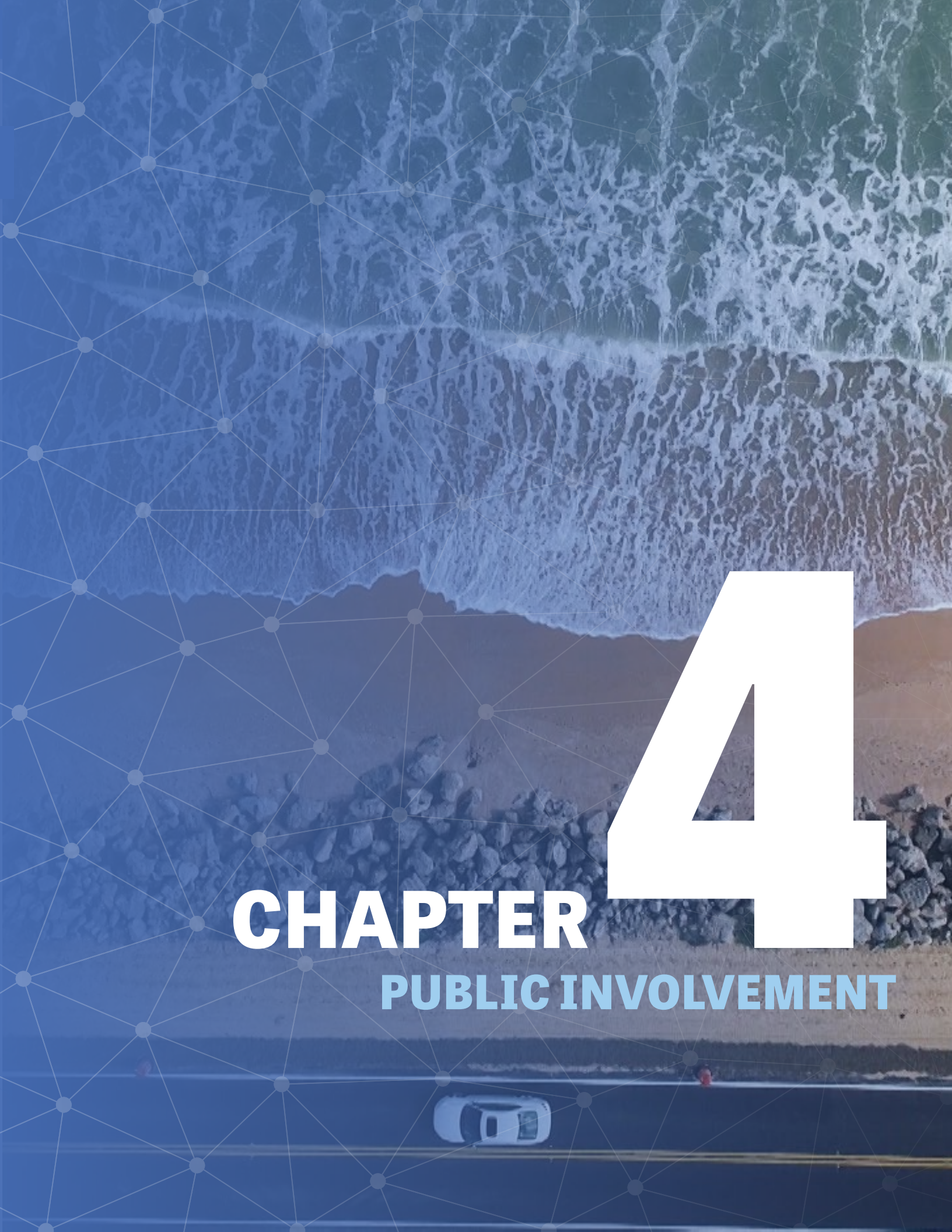


Figure 4: Total Employment Growth in Volusia and Flagler Counties





# CHAPTER 4

## PUBLIC INVOLVEMENT

# CHAPTER 4 - PUBLIC INVOLVEMENT

The River to Sea TPO serves a diverse population with wide-ranging transportation needs. To understand and give thorough consideration to these needs, the development of Connect 2045 utilized a unique and nimble approach to public involvement that included a wide range of strategies and outreach methods. This approach was initially outlined in the Connect 2045 Public Involvement Plan (PIP) approved by the TPO Board on September 25, 2019 and later revised on May 27, 2020 (**Technical Appendix D**). The PIP was developed to be consistent with the objectives and measurements of the River to Sea TPO Public Participation Plan. The measures were developed specifically to track the effectiveness of public outreach efforts associated with Connect 2045. The result of these measures is included in **Technical Appendix E.** This chapter provides an overview of Connect 2045 public outreach.

The TPO offered a variety of public involvement opportunities throughout the development of the plan for members of the community, local and agency representatives, and other stakeholders to provide perspective, input, and feedback. A significant part of outreach to the community included a number of presentations to local organizations, including Chambers of Commerce and Rotary Clubs, which reached more than 400 people. See **Table 4-1** for a timeline of public involvement activities.

Notable themes reflected in the public input received included uncertainty about the impacts of emerging technologies, the need for additional funding, the importance of resiliency, bicycle/pedestrian safety, the relationship between transportation and land use, and the need to provide the community with a variety of transportation options. The input received through the TPO's public outreach efforts helped guide the development of Connect 2045 and validate the list of projects that were ultimately adopted in the Cost Feasible Plan.

## COVID-19 AND IMPACTS TO PUBLIC INVOLVEMENT

In March 2020, the spread of COVID-19 (Coronavirus) in the United States preceded directives from federal, state, and local agencies to limit non-essential social gatherings and interaction. In light of the social distancing guidance and executive orders noted below, the TPO evaluated the impact to public input processes for the development of Connect 2045.

- On March 16, 2020, President Trump issued "15 Days to Slow the Spread" guidance advising individuals to socially distance and avoid groups larger than 10 people until March 31.
- On March 29, the timeframe for this guidance was extended to April 30 and formally updated on March 31, in coordination with the White House Coronavirus Task Force, as "30 Days to Slow the Spread".
- Florida Governor DeSantis issued a "Safer At Home" order (Executive Order 20-91) effective from April 3 through April 30.

Similar executive orders and directives continued beyond these dates through adoption of the plan. Recognizing the need to change course in the approach to public involvement, the TPO proactively shifted to virtual/technology-based approaches as alternatives to the in-person activities identified in the approved Connect 2045 PIP. Specifically, alternative approaches were applied to the Cost Feasible Plan Public Workshops, Environmental Justice Workshop, and other stakeholder outreach activities which otherwise would include face-to-face presentations given to, and interactions with, the public and many partner organizations.

Planned activities such as the River to Sea TPO Annual Planning Retreat had to be cancelled. The TPO defined the appropriate virtual approaches for public input activities while social distancing directives were in place, and revised the PIP accordingly which was formally approved by the TPO Board at its meeting on May 27, 2020.

## OPPORTUNITIES FOR IN-PERSON PUBLIC INPUT AND PLAN REFINEMENT AFTER ADOPTION

The alternative public involvement activities provided robust input prior to plan adoption, but additional outreach efforts will be pursued in the future to ensure that the public has an opportunity to be fully engaged and informed about Connect 2045. The TPO will prioritize making accommodations at the soonest appropriate time for face-to-face engagement with the public, as originally intended, in order to provide for additional meaningful input. As part of this process, the TPO will ensure that underserved and underrepresented populations are afforded supplemental and substantive opportunities to comment beyond what was provided during plan development. These public comments will be considered for potential amendments to the adopted plan as appropriate.

Table 4-1: Public Involvement Activities

| Date | Activity | Location |
|---|---|---|
| January 7, 2020 | Focus Group Workshop | Deltona |
| January 9, 2020 | Focus Group Workshop | Daytona Beach |
| January 13, 2020 | Focus Group Workshop | New Smyrna Beach |
| January 15, 2020 | Focus Group Workshop | Palm Coast |
| January 16, 2020 | Focus Group Workshop | DeLand |
| March 2, 2020 | Needs Assessment Workshop | Palm Coast |
| March 4, 2020 | Needs Assessment Workshop | Daytona Beach |
| March 10, 2020 | Needs Assessment Workshop | DeLand |
| | | |
| May 26, 2020 | 2 Cost Feasible Plan Workshops | Hosted virtually via GoToWebinar |
| July 21, 2020 | Public Workshop | Hosted virtually via GoToWebinar |
| August 4, 2020 | Environmental Justice Workshop | Hosted virtually via GoToWebinar |
| June 2019 – September 2020 | 13 Governing Board Meetings | Daytona Beach/Virtual |
| June 2019 – September 2020 | 36 TPO Advisory Committee Meetings | Daytona Beach/Virtual |
| September 2019 – August 2020 | 11 LRTP Subcommittee Meetings | Daytona Beach/Virtual |
| February 2020 – May 2020 | 10 Community Presentations | Multiple Venues/Virtual |

# CONNECT 2045 WEBSITE AND SOCIAL MEDIA

The website for Connect 2045 was launched at the beginning of the planning process to provide a consistent and frequently-updated resource for information about the development of the LRTP.

The main sections of the website are:

- **Home** – Includes dates and locations for upcoming events/meetings, important links, and videos.
- **About** – Provides background information about the TPO and answers to frequently asked questions.
- **Resources** – Includes Connect 2045 documents, LRTP Subcommittee agendas, and links to previous TPO plans and studies.
- **Contact** – Includes a contact form to provide comments and TPO phone/email contact information.


The TPO also utilized Facebook (https://www.facebook.com/RivertoSeaTPO), Twitter (https://twitter.com/tellthetpo), YouTube (https://www.youtube.com/user/volusiatpoFL), and Nextdoor (https://nextdoor.com/pages/river-to-sea-tpo/) to share timely and relevant content related to the development of Connect 2045. In addition, many of the TPO's partner local governments posted information to their respective websites.

# VIDEOS

Another innovative method utilized to engage the public was the development of three videos that were released during specific phases of the planning process. The first video was released at the onset of the process to provide an overview of Connect 2045 and a call to action for the public to provide their input. The second video focused on the potential impacts and opportunities created by emerging transportation technologies. The third video was released to inform the public of adjustments being made to outreach activities because of the limitations in place due to COVID-19. The content and focus of the third video was shifted in response to the unfolding pandemic and was the result of the proactive efforts to deal with changing circumstances during development of the plan.


These three videos were posted to the Connect 2045 website, the TPO's website and the TPO's YouTube channel.

# CONNECT 2045 SURVEY

An LRTP-specific survey was released in January 2020 to gain insight into the public's thoughts related to emerging technologies, resiliency, and funding for transportation projects. This survey was offered in English and Spanish and was available online and promoted via the TPO's social media channels. Hardcopy versions were also made available for distribution at appropriate venues. The survey had more than 500 responses. Highlights included:

- Over 70% of respondents believe that electric vehicles and assisted/smart/automated vehicles will be used *more or much more* over the next 10 to 20 years.
- Respondents felt that the two most valuable approaches to increasing the long-term resiliency of our transportation system is to *upgrade existing facilities in the most vulnerable areas and expand emergency response efforts so facilities are restored as quickly as possible after events.*
- When given a range of options of transportation project types to prioritize for funding, the highest ranked response was technology projects *(e.g. improving traffic signals for greater efficiency, electronic messaging signs that provide real time information to motorists, and improved electronic monitoring systems that help to better manage traffic)*.

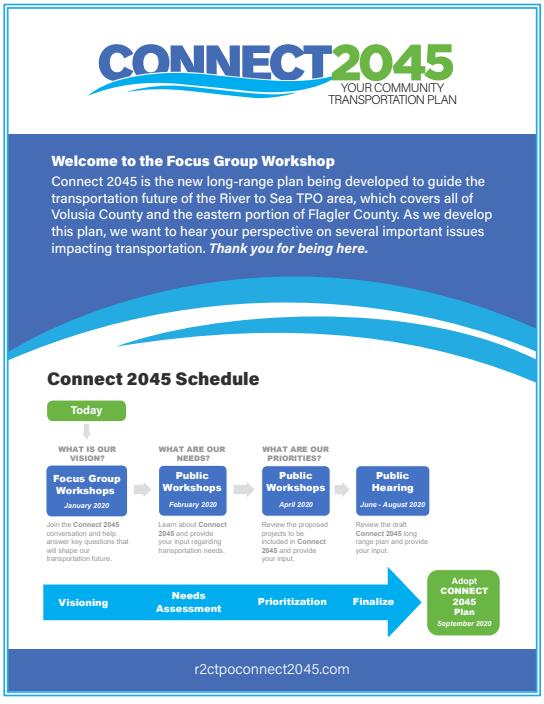
The survey results were a helpful tool in gauging the public's opinions about key themes being addressed throughout the planning process. The complete Connect 2045 survey results are included in **Technical Appendix E**. In addition to the Connect 2045 survey, the TPO also obtained public feedback on a variety of transportation topics through the more broad-based "Tell the TPO" Survey.

# FOCUS GROUP WORKSHOPS

Five (5) Focus Group Workshops were held between January 7 and January 16, 2020 throughout the TPO's planning area. Community stakeholders were invited by the TPO to participate in these workshops to provide meaningful input and local perspectives related to the transportation challenges and opportunities facing the region, and to provide guidance in the development of the LRTP.

The format for these workshops was based around the three major themes of the plan – Technology, Resiliency, and Funding Choices. Workshop participants were given a booklet which provided baseline information on each of the three topics, including current trends, and a number of questions intended to act as a catalyst for discussion.

Each segment of the workshop began with the facilitator briefly reviewing a number of the current trends and statistics related to each respective topic, followed by presenting the questions provided within the booklet to begin the dialogue.



Over the course of the five workshops, recurring themes and key points included:

- The impacts and benefits of technology on transportation remain uncertain.
- Monitor the trends to be prepared for the many changes that are coming.
- More funding is needed, but balance investments across project types for funding we do have.
- Keep working to expand transportation options.
- Focus on safety, health, and equity.
- Recognize the relationship between transportation and land use decisions.
- Resiliency is important and we need to make wise investment choices.
- Know the context – there are distinct economic and demographic differences within the region and needs may differ depending upon the location.

See **Technical Appendix E** for a more detailed summary of Focus Group Workshop input.

# PUBLIC WORKSHOPS

A series of public workshops were scheduled to inform citizens of the plan and to solicit comments on the transportation projects identified for the future.

## Needs Assessment Workshops

Three (3) Needs Assessment Workshops were held between March 2 and March 10, 2020 in Daytona Beach, Palm Coast, and DeLand. Stations throughout the meeting space included maps depicting projects identified as needs in order to receive input from the public. TPO and consultant staff provided information to the attendees on the planning process and solicited their comments and feedback. The comments provided by workshop attendees included both concerns and support regarding particular roadway projects, and expressions of support for connected bike lane networks, trails, scenic byways, and expanded bus routes.

## Cost Feasible Plan Workshops

The Cost Feasible Plan workshops were originally scheduled to take place in April 2020. Due to the impacts of the COVID-19 pandemic, these workshops were conducted virtually utilizing the GoToWebinar platform in the morning and evening of May 26, 2020. Participants in these workshops were given the opportunity to comment on projects that might be included in the draft Cost Feasible Plan prior to its presentation to the TPO Board and Advisory Committees. Recordings of the Cost Feasible Plan Workshops were posted to both the TPO website and the Connect 2045 website. Comments and questions submitted by the public encompassed many topics, including a number who were concerned with operational and safety improvements, and interested in expanded bicycle facilities/trails and transit service.

## On-Demand Public Workshop

On Tuesday, July 21, 2020 a virtual public workshop was held to solicit public input on the final phase of the development of the Connect 2045 transportation plan. This workshop provided the public an overview of the planning process and also provided an opportunity to comment on projects that might be included in the draft Cost Feasible Plan. A recording of the webinar was made available for on-demand viewing between July 22 – July 31, 2020. Comments and questions from the public addressed the connection between identified projects and future land uses, environmental/sustainability concerns, access to transit, and processes involved in developing the LRTP.

See **Technical Appendix E** for a more detailed summary of public input from the Needs Assessment, Cost Feasible, and On-Demand Public Workshops.

# ENVIRONMENTAL JUSTICE WORKSHOP

Environmental Justice (EJ) is the fair treatment of all groups within the community. Per Presidential Executive Order 12898, efforts must be made throughout the development of plans and projects to avoid disproportionate adverse effects on minority and low-income populations. This attention to protecting all communities is critical, and Connect 2045 development included efforts to evaluate sociocultural effects and EJ.

An Environmental Justice Workshop was conducted virtually on August 4, 2020. The workshop shared information about the establishment and importance of environmental justice and provided opportunity for the discussion of potential impacts of transportation improvements on elderly, minority, disabled, and low-income populations throughout the River to Sea TPO planning area. This type of input is important to help guide and prioritize needs and future projects in the LRTP, with the goal of minimizing negative impacts to those areas identified as having a higher proportion of populations included in environmental justice considerations. A recording of the Environmental Justice Workshop was posted on the TPO website.

# ENVIRONMENTAL MITIGATION CONSULTATION

Environmental mitigation includes activities that have the potential to restore and maintain environmental functions impacted by projects. In order to understand the environmental mitigation opportunities and issues within the metropolitan planning area, the TPO conducted direct outreach to appropriate federal, state and local land management, resource, environmental, and historic preservation agencies including:

- US Fish and Wildlife Service (US Department of the Interior) including the Lake Woodruff National Wildlife Refuge and Merritt Island National Wildlife Refuge
- National Park Service (US Department of the Interior) including Canaveral National Seashore
- Florida Department of Environmental Protection
- St. Johns River Water Management District
- Florida Fish and Wildlife Conservation Commission
- Florida Forest Service (Florida Department of Agriculture and Consumer Services)
- Florida Division of Historical Resources (Florida Department of State)
- Volusia County
- Flagler County

While consultation with Tribal governments is also prescribed, there are no designated Tribal lands within the boundaries of the TPO planning area. In addition to the above outreach, analysis of applicable agency-provided data sources and conservation plans was conducted to broaden the scope of consultation. More detail regarding this process is provided under the Environmental Mitigation section in Chapter 5 and in **Technical Appendix F**.

## FREIGHT COORDINATION

The River to Sea TPO is focused on supporting an effective freight network for the advancement of trade and economic vitality in the area. This includes supporting existing activities and future freight-dependent commercial interests. As part of the planning process and to identify the potential freight transportation needs, the TPO engaged the freight community including extended coordination with FDOT as a key agency planning for regional and statewide freight transportation. Additional outreach also included economic development and chamber organizations that represent private freight industry interests. For additional information regarding freight coordination, please see the Freight Mobility and Trade Plan section in Chapter 2 (pages 2-23 to 2-24, 2-26 to 2-27), Chapter 6 (page 6-36), and the comprehensive Connect 2045 Freight Summary in **Technical Appendix G**.

## MEDIA AND STAKEHOLDER OUTREACH

During the course of the planning process, local media was contacted to promote public participation opportunities. TPO staff also engaged various stakeholder groups with targeted presentations related to the development of Connect 2045. While the approach to these targeted presentations was altered due to the impacts of the COVID-19 pandemic and related restrictions, the TPO continued engagement where practical, including virtual presentations by the TPO Executive Director to civic organizations.

The TPO shared and promoted Connect 2045 updates and events through posts to its Facebook and Twitter accounts. Posts were shared and 'retweeted' by members of the public, partner jurisdictions, and community organizations. A number of these agencies and organizations shared Connect 2045 information on their respective websites. Connect 2045 was also covered in the *Daytona Beach News-Journal* and *Volusia Hometown News.*

See **Technical Appendix E** for a more detailed summary of media coverage, social media interactions, and promotion of Connect 2045 events.

# TPO BOARD AND COMMITTEE COORDINATION

The development of Connect 2045 included significant review as part of the regular meetings of the River to Sea TPO Board, standing committees, and the LRTP Subcommittee. These groups include citizen representatives, elected officials, local government staff and special interest advocates representing all portions of the TPO's planning area. Advance public notice was provided for each board/committee meeting in accordance with Florida Statutes and the adopted bylaws of the TPO.

In addition to the River to Sea TPO Board, input and guidance on the development of the plan was provided by the following:

- Technical Coordinating Committee (TCC)
- Citizens Advisory Committee (CAC)
- Bicycle and Pedestrian Advisory Committee (BPAC)
- Transportation Disadvantaged Local Coordinating Board (TDLCB)
- LRTP Subcommittee

It is important to note that advisory input on the public involvement approach was provided throughout the process by citizen representatives on the BPAC, CAC, and LRTP Subcommittee. This input helped to provide the perspectives of non-transportation professionals regarding when and how long the public comment periods would occur for the various planning products and to ensure the information was being interpreted as intended.

# AMERICANS WITH DISABILITIES ACT

Under the Americans with Disabilities Act of 1990, TPO programs and services may not exclude from participation in, deny the benefits of, or subject to discrimination anyone on the basis of a disability. Moreover, the TPO has the responsibility of providing reasonable accommodation to those with disabilities who require special services to access information or participate in TPO activities. The River to Sea TPO continues to take affirmative steps to ensure that the needs of the disabled community are equitably represented in the transportation planning process. The ADA requirements for all government agencies are identified below along with the actions that River to Sea TPO takes to ensure compliance:

- Assurances: MPOs must complete a nondiscrimination assurance agreement stating that programs and activities will be conducted in compliance with ADA requirements. The River to Sea TPO has executed the FDOT Nondiscrimination Agreement, which specifically includes disabilities, documenting the TPO's commitment to nondiscrimination and equitable service to the community. This Assurance is included in the FY 2020/21 to FY 2021/22 Unified Planning Work Program (UPWP) Appendices (https://www.r2ctpo.org/planning-studies/unified-planning-work-program/). Additionally, the TPO and FDOT participate in an annual Joint Certification that consists of a review and evaluation of the TPO planning process and collectively certify that this planning process is conducted within the requirements of the American with Disabilities Act and other nondiscrimination directives.

- Nondiscrimination Policies and Complaint Procedures: MPOs must develop a nondiscrimination policy and complaint procedure for persons with disabilities. The River to Sea TPO has a comprehensive procedure and complaint policy that includes those with disabilities, and has named a Title VI/Nondiscrimination Coordinator who has direct access to the TPO Executive Director. This policy and procedure is outlined in the TPO's Title VI Plan, updated May 27, 2020 (https://www.r2ctpo.org/public-involvement/public-participation-documents/).

- Notice: MPO documents for public distribution must contain a notification that the MPO does not discriminate in its programs and services. The River to Sea TPO has developed and includes a nondiscrimination statement on all public notices. Additionally, upon request, the River to Sea TPO provides reasonable accommodation for access to programs and services for those with disabilities.

- Evaluation of Services: MPOs should develop program access plans to ensure that facilities and services are accessible to those with disabilities. The River to Sea TPO makes every effort to ensure that its facilities, programs, services and activities are accessible to those with disabilities, as well as ensuring that its advisory committees and public involvement activities include representation of the disabled community and disability service groups.

In addition to meeting the requirements outline above, the River to Sea TPO also coordinates with local stakeholders on projects and programs to improve accessibility, participates in community events that raise awareness for the disabled community, and conducts studies to improve safety and accessibility for all users of the transportation system. These activities are summarized below:

Accessible Pedestrian Signal (APS) Action Plan (January 2017) – The River to Sea TPO developed this plan to identify key locations that would benefit from the installation of APS and opportunities and obstacles for future implementation by local jurisdictions. It aims to improve safety and accessibility for pedestrians and transportation-disadvantaged transit system users, especially those with visual impairments (https://www.r2ctpo.org/wp-content/uploads/APS-Action-Plan-Approved-03-22-17.pdf).

Volusia County Bus Stop Improvement Plan – Conducted in 2018, the focus of this report was to assess the functionality of a bus stop to identify improvements that better serve the general public with safe, connected bus stops that facilitate convenient access for persons of all abilities. The information collected for this effort included a field assessment of existing conditions that was summarized and provided to Votran to update their databases.

Transit Development Design Guidelines – Developed in 2016, these guidelines are intended to be used by developers and site design planners and engineers to integrate and support transit in the design of any new development or redevelopment projects, including providing accessibility to transit and the infrastructure that supports transit. (https://www.r2ctpo.org/wp-content/uploads/Revised-TDDG_06.14.161.pdf).

Coordination with FDOT - The River to Sea TPO coordinates with FDOT when they are undertaking a project on a state roadway to make any ADA improvements possible within the right-of-way to include closing sidewalk or trail gaps, upgrading curb ramps, installing high visibility crosswalks, and upgrading bus stops.

Allocation of funding – Through set-aside allocations, the TPO supports and programs funding for local government projects that are vital in creating a fully accessible sidewalk system, such as closing sidewalk gaps, installing accessible pedestrian signals and safety enhancements.

Participation in Community Events – The River to Sea TPO regularly participates in community events that raise awareness for populations that are transportation disadvantaged, such as White Cane Awareness and Pedestrian Safety Day, the Lions Club Health Fair, and the Transportation Disadvantaged Legislation Awareness Day in Tallahassee.

Designated Official Planning Agency (DOPA) – The River to Sea TPO serves as the DOPA in Volusia County and manages the Local Coordinating Board by providing staff support and resources.

# SUMMARY

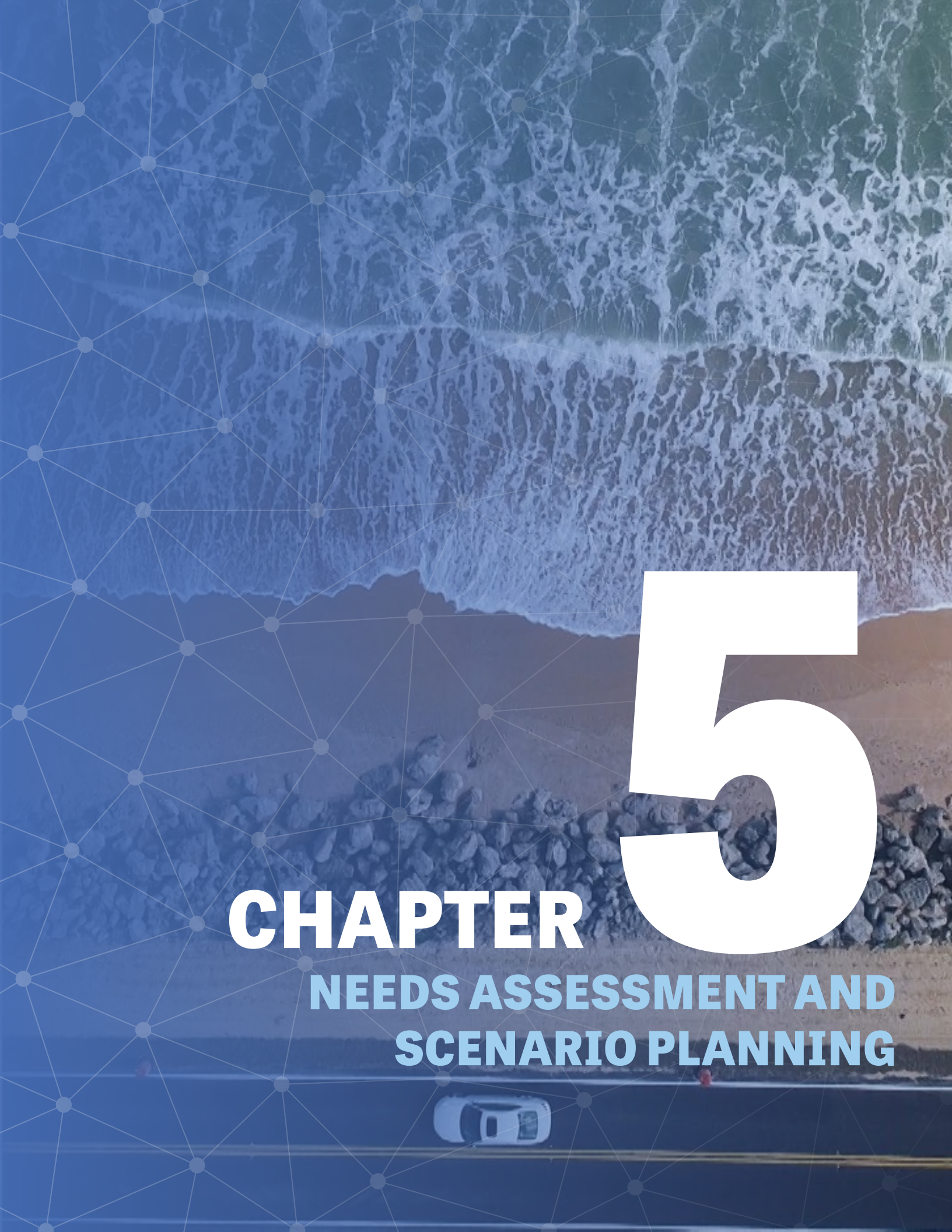
Connect 2045's public involvement approach underpinned the entire process of plan development. While the challenges from COVID-19 led to mid-course changes that had the potential to negatively impact the public input process, the TPO proactively implemented effective alternative approaches. While the interpersonal dynamic of face-to-face communication was not feasible through virtual methods, online workshops appeared to provide greater ease of access. Online meetings had higher overall attendance than previous in-person meetings. The TPO is using this valuable experience to help tailor and apply the most effective approaches in future planning efforts.

**Public, stakeholder, committee and Board input throughout the process was instrumental in guiding the development of Connect 2045 and shaping the final plan of projects and programs.**

Some of the themes heard leading up to and during plan development included:

- ***Support for exploring the potential impacts and benefits of technology to better inform how projects are chosen.*** Connect 2045's Technology Scenario addressed this important topic and resulted in a prioritized list of technology projects. The TPO's funding set-aside for Local Initiatives that includes technology projects was also validated and continued.
- ***The need to understand how transportation can be planned and programmed to be more resilient in the wake of challenges like hurricanes, periodic flooding, and long-term environmental change.*** Advance input on this topic led to the Resiliency Scenario, and feedback during plan development affirmed the future implementation step to establish a clear policy approach to integrate resiliency data into long range planning.
- ***The desire to grow multimodal transportation choices and build upon the efforts already conducted by the TPO to expand bicycle and pedestrian facilities, complete streets and transit access.*** This input also supported continuation of the Local Initiatives set-aside that provides funding for these types of projects.
- ***The need to more fully examine certain corridors that have acknowledged operational and/or safety challenges and needs.*** This led to an implementation action that defines a set of corridors to be evaluated through future planning studies.

A wide range of input was also crucial to define and validate the adopted Cost Feasible Plan. The comprehensive Public Involvement Summary in **Technical Appendix E** provides more background on the range of activities that were conducted to collectively receive input and to ensure that Connect 2045 public involvement was consistent with federal and state requirements.



# CHAPTER 5

## NEEDS ASSESSMENT AND SCENARIO PLANNING

# CHAPTER 5 - NEEDS ASSESSMENT AND SCENARIO PLANNING

After goals and objectives are established for a long range transportation plan, the process turns to identifying the inventory of potential needs, exploring future scenarios, and translating policy into an approach to inform prioritization. This chapter highlights the processes and strategies used to inform and support the development of the transportation plan, including the travel demand model, identification of needs, assessment of future scenarios (technology, resiliency, and funding), and prioritization process for potential projects.

## TRAVEL DEMAND MODELING

To estimate transportation needs in the year 2045, a travel demand forecasting model that considers a variety of factors such as future population and employment data is used. The travel demand model converts population and employment data into trips which are subsequently assigned to a roadway and/or transit network. The model reveals areas that may become congested as a result of increased travel demand. This information is then used when identifying a variety of options (e.g. adding transit, expanding the roadway, implementing technology improvements, widening a parallel roadway) to address forecasted congestion. Connect 2045 utilized the FDOT District Five Central Florida Regional Planning Model (CFRPM v7). This travel demand model was also used to develop alternative scenarios for automated, connected, electric, and shared mobility (ACES) which were utilized in developing the Technology Scenario discussed later in this chapter. Additional information on CFRPM v7 can be found in **Technical Appendix B** and **Techncial Appendix C.**

The roadway and transit network used for the development of the plan begins with the 2015 validation year. Both the model network and model software are adjusted to closely replicate the observed traffic volumes in the 2015 validation year. The next step of the process involves adding transportation projects that are fully funded for completion in the next five years resulting in a 2020 model network referred to as the Existing Plus Committed (E+C) network. The development of the needs assessment for the 2045 model begins with an evaluation of the E+C Network and alternatives that include a mix of projects from the SIS Cost Feasible Plan and/or improvements included in the previously adopted 2040 LRTP. Multiple alternatives were identified to develop the 2045 needs assessment and to select projects for inclusion in the 2045 Cost Feasible Plan.

## NEEDS ASSESSMENT

Informed by several model runs that help to predict congestion, a list of transportation needs and potential solutions was developed. This Needs Assessment considered a variety of multimodal transportation options that could help meet the travel needs forecasted. The resulting list of needed transportation improvements were reviewed by the TPO committees and Board, and presented to the public for review and comment at the Needs Assessment workshops held throughout the planning area. The needs consisted of transit, bicycle-pedestrian, and roadway projects, each of which will be reviewed in the following sections.

## Transit Needs

The primary development of transit needs occurs through a Transit Development Plan (TDP). Similar to a long-range transportation plan, a TDP identifies and prioritizes the transit plans and needs of transit agencies throughout their respective service areas. TDPs also include revenue estimates that are anticipated to support the transit operations and capital expenses over a ten-year time frame. In Florida, a TDP is required for all transit providers that receive State Public Transit Block Grant funds and a major update of the system's TDP is required every five years. The TPO works collaboratively with transit providers serving the River to Sea TPO planning area in the development of their respective TDPs and, where opportunities exist, it builds further upon those plans in the LRTP. The TPO also supports planning efforts of the transit providers by coordinating the use of federal transit planning funds and dedicating planning staff to support transit agency goals and work efforts.

The River to Sea TPO planning area is currently served by three transit providers: 1) Volusia Transit Management or Votran; 2) Flagler County Public Transportation (FCPT); and 3) SunRail. An evaluation of transit needs for Connect 2045 consists of service improvement and expansion opportunities identified through the TDPs of Votran and FCPT. The future plans of SunRail, a commuter rail system that connects Volusia County to the Central Florida region via the DeBary SunRail station, were also considered when assessing transit needs for the area. An overview of each transit provider along with a listing of their most immediate service needs is outlined below.

### VOTRAN

Votran is a service of Volusia County Government established in 1975. The service includes fixed route bus service operating 88 buses on 27 routes throughout the urban and rural areas of Volusia County. Votran also operates a fleet of 76 paratransit demand response service that supports the needs of people with a variety of transportation disadvantages.

In recent years, the River to Sea TPO has supported Votran planning efforts by engaging in an update of the Bus Stop Inventory maintained by Votran as well as an Accessible Pedestrian Signal (APS) review identifying intersections that need improvements in order to better serve persons with disabilities. Planning funds available to the TPO are also used to help fund updates to the TDP. At the adoption of Connect 2045, Votran was initiating a major update to the TDP. The River to Sea TPO will participate in and support this update. The following list shows the top project needs identified in the existing TDP:

- Saxon Park-and-Ride to Elkcam Route
- SunRail Limited Stop Express
- Lake Helen Connector
- Ormond Beach Trolley
- International Speedway Boulevard Trolley
- New Smyrna Beach Trolley
- DeLand Downtown Circulator

## FLAGLER COUNTY PUBLIC TRANSPORTATION

Flagler County Government operates the Flagler County Public Transportation (FCPT) service. This service began in 2004 under contract with the Florida Commission for Transportation Disadvantaged and today operates as a pre-scheduled, demand-response transportation system. Demand for services centers on transportation for employment, education, non-emergency medical transportation, and quality of life trips. Specialized services include general passenger assistance and wheelchair assistance.

The River to Sea TPO continues to support FCPT in its plans to provide improved service. Most recently the TPO conducted a Fixed Route Service Transit Operations Plan in an effort to build upon the needs identified in the existing TDP. As of the adoption of Connect 2045, Flagler County is in the process of updating their TDP and is expected to complete the plan by September 2021. The current TDP identifies the following fixed route service:

- Route 1 - Blue Route: Cypress Point Walmart - Bunnell via Belle Terre Parkway/SR 100
- Route 2 - Red Route: Advent Health Hospital - Flagler Beach via SR 100
- Route 3 - Green Route: Cypress Point Walmart - Matanzas High School via Old Kings Road
- Route 4 - Black Route: Cypress Point Walmart - Matanzas High School via Belle Terre Parkway
- Route 5 - Yellow Route: Cypress Point Walmart - Matanzas High School via Palm Harbor Drive
- Route 6 - Orange Route: Cypress Point Walmart - Matanzas High School via Florida Park Drive

## SUNRAIL

SunRail was established as a 61-mile commuter rail system serving Central Florida, of which 49 miles are currently in operation. The 32-mile first phase of SunRail, which opened in 2014, serves 12 stations and links DeBary to Sand Lake Road, south of Orlando. Phase II South, which opened in 2018, serves four additional stations, south to Poinciana. The original Interlocal Agreement between the partners included a Phase II North expansion which will extend service from the City of DeBary to the City of DeLand. This Phase II North expansion is programmed for funding in Fiscal Year 2020/21.

The DeBary SunRail station has approximately 300 parking spaces and a bus and passenger drop-off area. Votran provides feeder bus service to the DeBary SunRail station. Three feeder bus routes, funded by the Florida Department of Transportation (FDOT), serve the SunRail station in DeBary: Routes 31, 32, and 33. These routes operate Monday-Friday during SunRail's peak hours only.

At the time of the adoption of Connect 2045, operations and management of SunRail is under the responsibility of FDOT. Transition to an independent agency for governance is currently being evaluated and a plan is anticipated to be presented in Summer 2022. Once the transition is complete, the TPO expects a more comprehensive planning effort to occur that will address the role of SunRail as part of its long-range planning.

This plan's acknowledgement of transit as an integrated part of the long range planning process is evident in Connect 2045's project prioritization process and technical scoring criteria. Roadway needs projects were scored higher where there are existing transit routes on the corridor and if the project provides connections to multimodal hubs/stations (e.g. SunRail station, Votran Transfer Plaza, Intermodal Transit Facility). Further discussion regarding the prioritization process and the technical scoring criteria can be found later in this chapter. Additionally, input received during the public involvement process also included support for increased connectivity to transit.

A detailed table including existing, committed, and aspirational transit projects with associated costs can be found in **Appendix D**. These projects include ehnancements to existing routes, new fixed-routes, trolley/circulator services, and expanded on-demand service.

Existing transit routes and proposed service expansion opportunities are depicted in **Figure 5.**

## Bicycle-Pedestrian Needs

The TPO has consistently supported the development of bicycle, pedestrian, and regional trails throughout the planning area to provide improved connectivity and mobility options. Consideration of the needs of cyclists and pedestrians is critical in the development of a long range plan. The assessment of roadway project needs must also take into account factors such as safety for cyclists/pedestrians, as well as multimodal connections to other modes (e.g. transit) and regional trail networks.

The TPO's Bicycle and Pedestrian Plan, an important companion to Connect 2045, serves as the guide for decision-making in prioritizing bicycle and pedestrian facilities. Although the identification and advancement of specific bicycle-pedestrian projects takes place outside of the LRTP process, these needs are addressed as a program in Connect 2045.

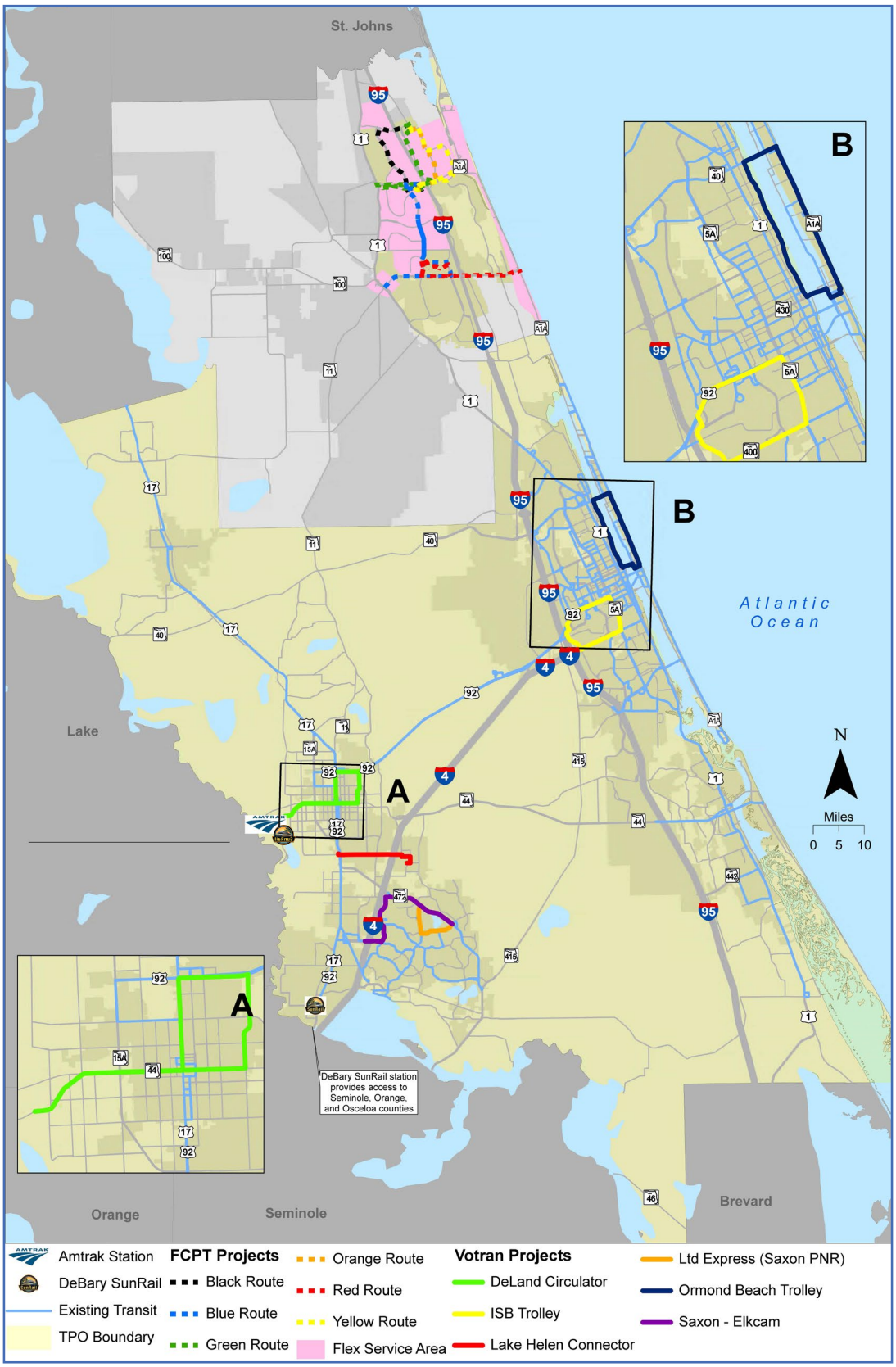

This means that funding set-asides provide for the long-range advancement and implementation of these projects. This is further explained in Chapter 6.

Input from the public is also important when planning for future bicycle and pedestrian infrastructure, and implementation of related programs. Through the public involvement process, participants expressed interest and support for safe and connected bike lane networks, trails, and scenic byways. The TPO's Bicycle/Pedestrian Advisory Committee (BPAC) was also consulted throughout the development of Connect 2045, including the identification of project needs. The BPAC is responsible for reviewing plans, policies and procedures as they relate to bicycle and pedestrian issues in the TPO planning area.

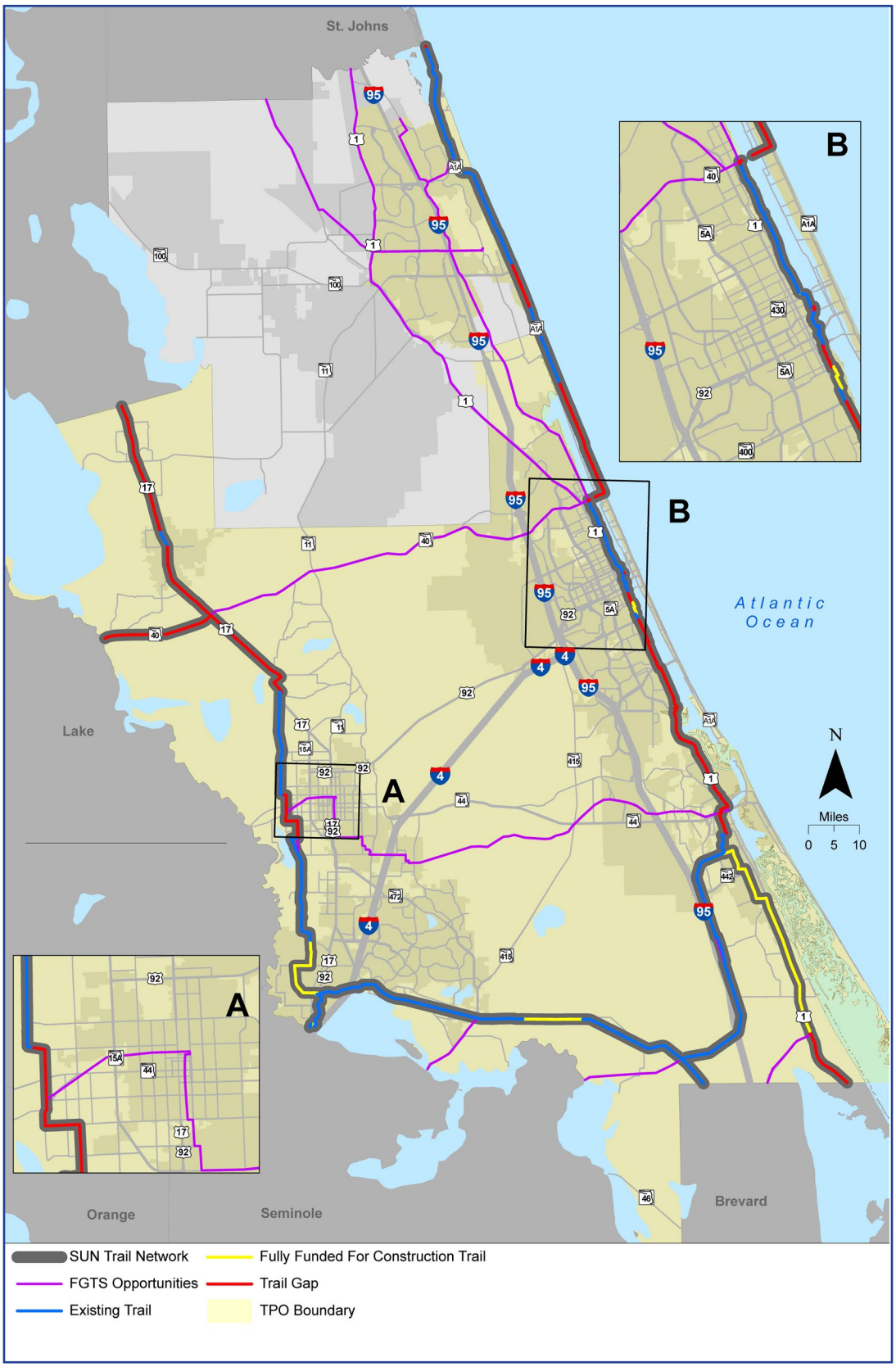
Similar to transit, the prioritization process and technical scoring criteria for roadway needs projects considered factors such as whether the project added a new bicycle/pedestrian route (e.g. sidewalk, bicycle lane) or added additional Complete Streets elements. Complete Streets are roadways designed to accommodate all users and may include elements such as sidewalks, bicycle lanes/paved shoulders, dedicated bus lanes, pedestrian crossings, and roundabouts.

**Figure 6** depicts Regional Trail needs which consist of corridors identified as part of the Florida Greenways and Trails System and Shared-Use Nonmotorized (SUN) Trail Network, and are consistent with the TPO's Bicycle and Pedestrian Plan.

## Figure 5: Mass Transit Map



## Figure 6: Regional Trails Map



## Roadway Needs

A variety of activities are taken to explore potential roadway improvements needed to satisfy the future demand for travel. Initially, a list of roadway projects were identified during the Needs Assessment. These roadway projects were analyzed as categories relative to the type of roadway and likely funding. Collectively, these roadway projects were included as identified needs for one or more of the following reasons:

- Identified in an existing cost feasible plan such as the FDOT Strategic Intermodal System (SIS) Long Range Cost Feasible Plan and/or River to Sea TPO 2040 LRTP
- Identified in the River to Sea TPO 2019 List of Prioritized Projects
- Identified as illustrative local needs
- Identified as a potential need based upon forecasted peak hour traffic demand from the Central Florida Regional Planning Model v7 which is based upon socioeconomic and other data

These identified needs are depicted in **Figures 7** through **9** and in corresponding **Tables 5-1** through **5-3**. Projects that are protected under the prioritization policies established in River to Sea TPO Resolution 2019-02 are delineated as such in the tables.

The three categories of projects are Strategic Intermodal System (SIS), Other Arterials, and Non-State Major Roadways.

### STRATEGIC INTERMODAL SYSTEM (SIS)

The SIS is Florida's high priority network of transportation facilities important to the state's economy and mobility. The SIS was established in 2003 to focus the state's limited transportation resources on the facilities most critical for interregional, interstate, and international travel. The SIS includes the state's largest and most significant commercial service and general aviation airports, spaceports, public seaports, intermodal freight terminals, interregional passenger terminals, urban fixed guideway transit corridors, rail corridors, waterways, and highways.

***The TPO advances the roadway component of the planning area's multimodal transportation network by prioritizing major non-SIS roadways for state and federal funding.***

***While the prioritization and selection of Strategic Intermodal System and local transportation projects is not determined through the TPO, these projects are incorporated in Connect 2045 to provide a comprehensive picture of priority roadway facilities in the planning area.***

All facilities designated on the SIS are eligible for state transportation investments consistent with the SIS Policy Plan. The SIS Policy Plan provides direction for the SIS financial strategy which consists of the: SIS First 5 Year Plan, the SIS Second 5 Year Plan, the SIS Cost Feasible Plan, and the SIS Multimodal Unfunded Needs Plan. SIS priorities are identified at the state level by FDOT with input from MPOs and local governments.

***The SIS projects identified during the Connect 2045 Needs Assessment are from the existing SIS Long Range Cost Feasible Plan, SIS 5-year Plans, the River to Sea TPO 2040 LRTP Cost Feasible Plan, or are related to SIS projects.*** In Connect 2045, these projects are included within a separate SIS cost feasible project list. While the LRTP development process may lead to suggested revisions to some of these projects, changes to the SIS plans and priorities are determined outside of this process.

## OTHER ARTERIALS

Other Arterials represent major non-SIS corridors that can be "On-System" (State Highway System) or "Off-System" (Non-State Highway System). These corridors are critical components of the roadway network, facilitating the movement of people and goods throughout and beyond the planning area. In addition, they serve as the connection to and between local roads, SIS highways and SIS facilities (airports, ports, passenger terminals, intermodal stations). This category includes roadways such as Clyde Morris Boulevard (SR 483), Old Kings Road, SR 44, and US 92.

Other Arterials projects are funded through federal (TMA) funds and state (non-SIS) funds defined as "Other Roads Construction and ROW" in the Connect 2045 Revenue Forecast. All TMA funds and up to 10% of "Other Roads Construction and ROW" funds can be estimated for "Off-System (Non-State Highway System)" projects. Specific TMA (SU) set-asides are also defined in River to Sea TPO Resolution 2017-03. Chapter 6 provides further detail on the revenue forecast.

## NON-STATE MAJOR ROADWAYS

This category consists of major non-state roadways that are not expected to receive state or federal funding. These roadway projects are prioritized and selected at the local level and would be expected to receive funding through local sources. In Connect 2045, locally identified projects are included as a separate list that represent illustrative needs. Example roadways include Beresford Avenue, Deltona Boulevard, Matanzas Woods Parkway, and Old Mission Road. In Connect 2045, locally identified projects are included as a separate list.

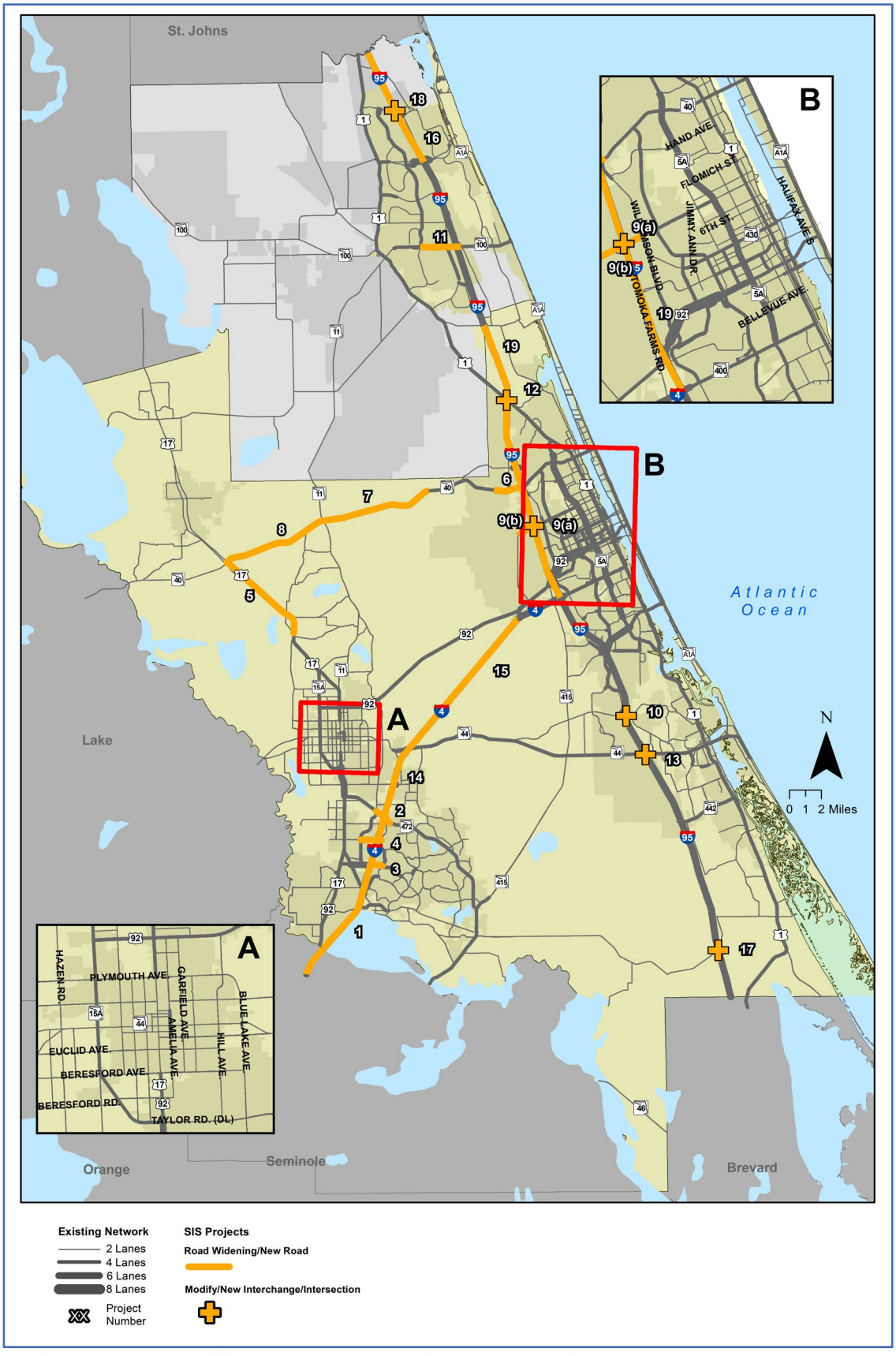
## Table 5-1: Strategic Intermodal System (SIS) Needs

| Map ID | Facility | From | To | Description | Need Level | Notes* |
|---|---|---|---|---|---|---|
| 1 | I-4 | Seminole County Line | SR 472 | Managed Lanes (10 lanes) | Cost Feasible (2040 LRTP, SIS 1st Five-Year, SIS Long Range | PE & ENV - 2020-2024<br>ROW & CST - 2029-2045<br>I-4 Beyond the Ultimate |
| 2 | SR 472 | Graves Ave | Kentucky/MLK Blvd | Widen to 6 lanes (including ramps) | Cost Feasible (2040 LRTP) | CST - 2026-2030<br>I-4 Beyond the Ultimate |
| 3 | Saxon Blvd | I-4 | Normandy Blvd | Roadway widening | Cost Feasible (2040 LRTP) | CST - 2026-2030<br>I-4 Beyond the Ultimate |
| 4 | Rhode Island Extension | Veterans Memorial Parkway | Normandy Blvd | New road | Cost Feasible (2040 LRTP) | CST - 2026-2030<br>I-4 Beyond the Ultimate |
| 5 | SR 15 (US 17) | Ponce De Leon Blvd | SR 40 | Widen to 4 lanes | Cost Feasible (2040 LRTP, SIS 1st Five-Year) | PE, ENV, ROW 2020-2022<br>CST - 2031-2040 |
| 6 | SR 40 | Breakaway Trails | Williamson Blvd | Widen to 6 lanes | Cost Feasible (2040 LRTP, SIS 1st Five-Year, SIS 2nd Five-Year, SIS Long Range) | PD&E & PE - 2020-2023<br>ROW - 2025-2029<br>PE & CST - 2029-2045 |
| 7 | SR 40 | SR 11 | Cone Road | Widen to 4 lanes | Cost Feasible (2040 LRTP, SIS 1st Five-Year, SIS 2nd Five-Year, SIS Long Range) | PE & ROW - 2020-2024<br>ROW - 2025-2029<br>PE & CST - 2029-2045 |
| 8 | SR 40 | SR 15 (US-17) | SR 11 | Widen to 4 lanes | Cost Feasible (2040 LRTP, SIS 1st Five-Year, SIS 2nd Five-Year, SIS Long Range) | PE & ROW - 2020-2024<br>ROW - 2025-2029<br>PE & CST - 2029-2045 |
| 9(a) | I-95/LPGA Blvd | At LPGA | Interchange/ intersection | Interchange/intersection modification | Cost Feasible (2040 LRTP, FDOT SIS Long Range) | PE & CST - 2029-2045 |
| 9(b) | Tomoka River Bridge | W of Champions Dr | E of Tomoka Farms Rd | Bridge widening/ replacement | Unfunded | Component of I-95/LPGA Blvd Interchange |
| 10 | I-95/Pioneer Trail New Interchange | At Pioneer Trail | Interchange/ intersection | Interchange/intersection modification | Cost Feasible (SIS Long Range) | PE & CST - 2029-2045 |
| 11 | SR 100 | Old Kings Rd | Belle Terre Pkwy | Widen to 6 lanes | Cost Feasible (2040 LRTP) | CST - 2029-2045 |
| 12 | I-95/US 1 Interchange | At US-1 | Interchange/ intersection | Interchange/intersection modification | Cost Feasible (2040 LRTP, SIS 2nd Five-Year) | PD&E - 2025-2029<br>PE & CST - 2029-2045 |
| 13 | I-95/SR 44 | At SR 44 | Interchange/ intersection | Interchange/intersection modification | Cost Feasible (FDOT SIS Long Range) | PE - 2029-2045 |
| 14 | I-4 | SR 472 | SR 44 | Widen to 10 lanes | Unfunded | Project Added* |
| 15 | I-4 | SR 44 | US-92 Connection | Widen to 8 lanes | Unfunded | Project Added* |
| 16 | I-95 | Palm Coast Parkway | Flagler/St. Johns Line | Widen to 8 lanes | Cost Feasible (FDOT SIS Long Range) | PE & CST - 2029-2045 |
| 17 | I-95 Interchange (Farmton Interchange) | At Maytown Rd | Interchange/ intersection | Interchange/intersection modification | Developer Funded | Developer Funded |
| 18 | I-95/Matanzas Woods Pkwy | At Matanzas Woods Pkwy | Interchange/ intersection | Interchange/intersection modification | Cost Feasible (SIS First 5-Year) | FDOT District Five – 2018 E+C Project List Development |
| 19 | I-95 | SR 400 | Old Dixie Hwy | Widen to 8 lanes | Unfunded | Project Added* |

**Needs identified based on initial CFRPM v7 2045 network model run*
*Note: These projects are not listed in priority order.*

Shaded items above represent projects that are protected under the prioritization policies established by the TPO (Resolution 2019-02).

## Figure 7: Strategic Intermodal System (SIS) Needs



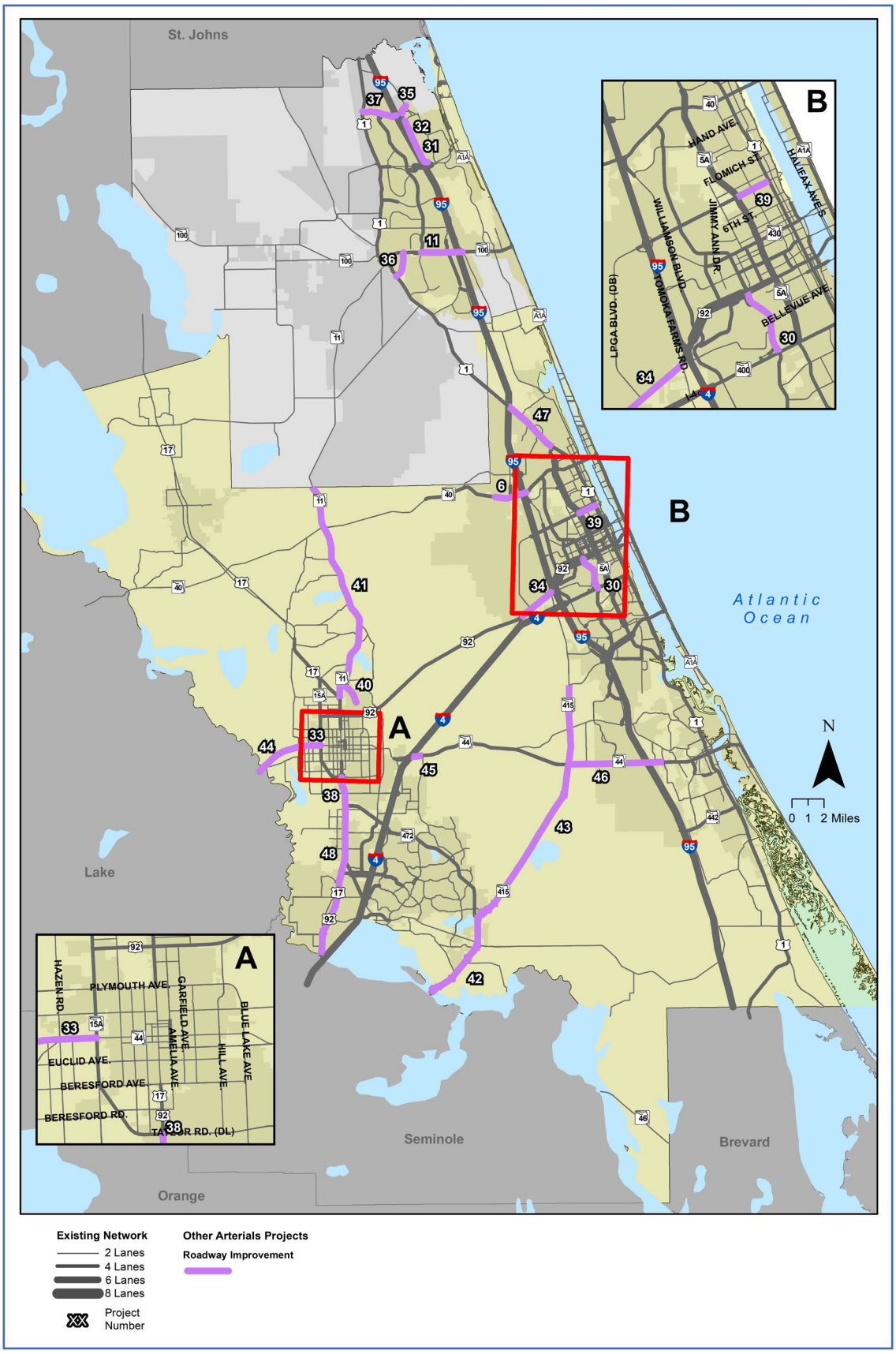
## Table 5-2: Other Arterials Needs

| Map ID | Facility | From | To | Description | Need Level | Notes* |
|---|---|---|---|---|---|---|
| **30** | SR 483 (Clyde Morris Blvd) | SR 400 (Beville Rd) | US-92 | Widen to 6 lanes | Cost Feasible (2040 LRTP) | PE completed in 2018<br>ROW funding deferred in 2017 |
| **31** | Old Kings Road | Palm Harbor Village Way | Farnum Ln | Widen to 4 lanes | Cost Feasible (2040 LRTP) | Phase 1 (Kingswood Dr to Palm Harbor Village Way) CST in 2020 CIP. Phases 2 (to Farnum Ln) & 3 (to Forrest Grove Dr) are complete until CST (unfunded) |
| **32** | Old Kings Road | Farnum Ln | Forest Grove Dr | Widen to 4 lanes | Cost Feasible (2040 LRTP) | Phase 1 (Kingswood Dr to Palm Harbor Village Way) CST in 2020 CIP. Phases 2 (to Farnum Ln) & 3 (to Forrest Grove Dr) are complete until CST (unfunded) |
| **33** | SR 44 | SunRail Station Entrance | SR 15A | Improve Access to DeLand SunRail | Cost Feasible (2040 LRTP) | SR 44 Corridor Study Completed;<br>ROW - 2019-2020<br>CST - 2021-2025 |
| **34** | US-92 | I-4 EB ramps | CR 415 (Tomoka Farms Rd.) | Widen to 6 lanes | Cost Feasible (2040 LRTP) | CST - 2026-2030 |
| **35** | Old Kings Road - Extension Roadway (Phase II) | Matanzas Woods Pkwy | Old Kings Rd | New 2-lane road | Cost Feasible (2040 LRTP) | CST - 2021-2025 |
| **36** | Commerce Pkwy Connector Road | SR 5 (US 1) | SR 100 | New 2-lane road | Cost Feasible (2040 LRTP) | CST - 2021-2025 |
| **37** | Matanzas Woods Pkwy | SR 5 (US1) | I-95 | Widen to 4 lanes | Cost Feasible (2040 LRTP) | ROW - 2019-2020<br>CST - 2021-2025 |
| **38** | US 17/92 | SR 472 | SR 15A (Taylor Rd) | ITS/Operations | Cost Feasible (2040 LRTP) | ROW - 2026-2030 |
| **39** | LPGA Blvd | Nova Rd | US-1 | Widen to 3 lanes | Cost Feasible (2040 LRTP) | ROW - 2026-2030<br>CST - 2026-2030 |
| **6** | SR 40 | Breakaway Trails | Williamson Blvd | Widen to 6 lanes | Cost Feasible (2040 LRTP) | ROW - 2025-2029<br>PE & CST - 2029-2045 |
| **11** | SR 100 | Old Kings Rd | Belle Terre Pkwy | Widen to 6 lanes | Cost Feasible (2040 LRTP) | CST - 2029-2045 |
| **40** | North Entrance DeLand Airport (Industrial Park) | Industrial Dr | SR 11 | New 2-lane road | Cost Feasible (2040 LRTP) | CST - 2026-2030 |
| **41** | SR 11 | N. Woodland Blvd. | Flagler County | Widen to 4 lanes | Unfunded | Project Added* |
| **42** | SR 415 (Tomoka Farms Rd) | Seminole C/L | Howland Dr | Widen to 6 lanes | Unfunded | Project Added* |
| **43** | SR 415 (Tomoka Farms Rd) | Howland Dr | Taylor Rd. | Widen to 4 lanes | Unfunded | Project Added* |
| **44** | SR 44 | Lake County | Grand Ave. | Widen to 4 lanes | Unfunded | Project Added* |
| **45** | SR 44 | I-4 | Prevatt Ave. | Widen to 6 lanes | Unfunded | Project Added* |
| **46** | SR 44 | Samsula Dr. | Glencoe Rd. | Widen to 6 lanes | Unfunded | Project Added* |
| **47** | US 1 | Nova Rd. (N) | I-95 | Widen to 6 lanes | Unfunded | Project Added* |
| **48** | US 17/92 | Seminole C/L | SR 472 | ITS/Operations | Unfunded | Project Added* |

**Needs identified based on initial CFRPM v7 2045 network model run*
*Note: These projects are not listed in priority order.*

Shaded items above represent projects that are protected under the prioritization policies established by the TPO (Resolution 2019-02).

## Figure 8: Other Arterials Needs

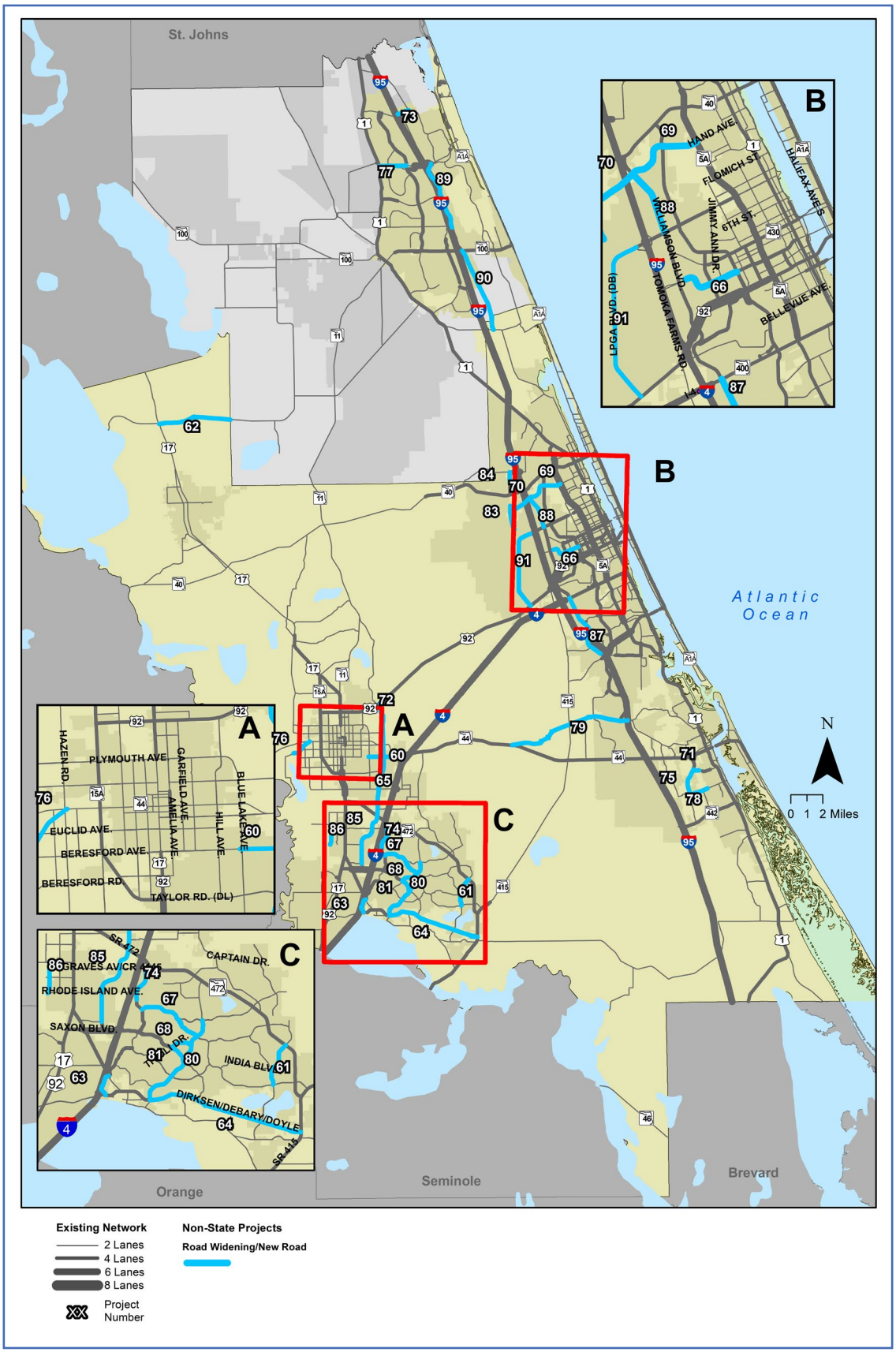


## Table 5-3: Non-State Major Roadway Needs

| Map ID | Facility | From | To | Notes* |
|---|---|---|---|---|
| | Beresford Ave | Blue Lake Ave | SR 44 | 2040 LRTP Local (Volusia County) Project |
| **61** | Courtland Blvd | Fort Smith Blvd | Howland Blvd | 2040 LRTP Illustrative Project |
| **62** | CR 305 (Bunnell Rd) | US-17 | Flagler County | Capacity Need |
| **63** | Deltona Blvd | Doyle Rd | Enterprise Rd | 2040 LRTP Illustrative Project |
| **64** | Doyle Rd (Dirksen Dr / DeBary Ave) | Providence Blvd | SR 415 | 2040 LRTP Local (Volusia County) Project |
| | Dr. MLK Jr | Taylor Rd | Orange Camp Rd | 2040 LRTP Local (Volusia County) Project |
| **66** | Dunn Ave | Williamson Blvd | Clyde Morris Blvd | 2040 LRTP Local (Volusia County) Project |
| **67** | Elkcam Blvd | Normandy Blvd | Fort Smith Blvd | 2040 LRTP Illustrative Project |
| **68** | Fort Smith Blvd | Elkcam Dr | Providence Blvd | 2040 LRTP Illustrative Project |
| **69** | Hand Ave | Williamson Blvd | Nova Rd | 2040 LRTP Illustrative Project |
| | Hand Ave Extension | Williamson Blvd | Tymber Creek Rd Ext | 2040 LRTP Illustrative Project |
| **71** | Josephine St | Old Mission Rd | Tatum St | 2040 LRTP Local (Volusia County) Project |
| **72** | Kepler Rd | US-92 | Beresford Ave Extension | 2040 LRTP Local (Volusia County) Project |
| **73** | Matanzas Woods Pkwy | I-95 | Old Kings Rd | 2040 LRTP Illustrative Project |
| **74** | Normandy Blvd | Firwood Dr | Howland Blvd | 2040 LRTP Illustrative Project |
| | Old Mission Rd | Park Ave | Josephine St | 2040 LRTP Illustrative Project |
| **76** | Old New York Ave | SR 44 | Deland SunRail Station | 2040 LRTP Local (Volusia County) Project |
| **77** | Palm Coast Pkwy | SR 5 (US 1) | Belle Terre Pkwy | 2040 LRTP Illustrative Project |
| **78** | Park Ave | Old Mission Rd | Massey Ranch Rd | 2040 LRTP Local (Volusia County) Project |
| **79** | Pioneer Tr | SR 44 | I-95 | 2040 LRTP Local (Volusia County) Project |
| | Providence Blvd | DeBary/Doyle Rd | Elkcam Rd | 2040 LRTP Illustrative Project |
| **81** | Saxon Blvd | Tivoli Dr | Providence Blvd | 2040 LRTP Illustrative Project |
| **82** | Tivoli Dr | Saxon Blvd | Providence Blvd | 2040 LRTP Illustrative Project |
| **83** | Tymber Creek Rd | South of SR 40 | LPGA Blvd | 2040 LRTP Local (Volusia County) Project |
| **84** | Tymber Creek Rd | Peruvian Ln | Airport Rd | 2040 LRTP Local (Volusia County) Project |
| | W. Volusia Bltwy | Harley Strickland Blvd | Taylor Rd | 2040 LRTP Local (Volusia County) Project |
| **86** | Westside Pkwy | French Ave | Rhode Island Ave | 2040 LRTP Local (Volusia County) Project |
| **87** | Williamson Blvd | Summer Trees Rd | SR 400/Beville Rd | 2040 LRTP Local (Volusia County) Project |
| **88** | Williamson Blvd | LPGA Blvd | Hand Ave | 2040 LRTP Local (Volusia County) Project |
| **89** | Old Kings Rd | Town Center Blvd | Kingswood Dr | 2040 LRTP Illustrative Project |
| | Old Kings Rd | Old Dixie Hwy | SR 100 | 2040 LRTP Illustrative Project |
| **91** | LPGA Blvd | US-92 | I-95 | Capacity Need* |

**Needs identified based on initial CFRPM v7 2045 network model run*

## Figure 9: Non-State Major Roadway Needs



# CONNECT 2045 SCENARIOS

As transportation planning organizations develop long-range plans, it is important to consider the potential effects of possible future conditions. Scenario analysis can be a useful tool to better understand the potential influence of alternative futures, aiding the development of policies and prioritization of projects. The use of scenarios for the development of LRTPs is encouraged but not required. Consistent with Connect 2045's overarching themes, the TPO conducted scenarios focused on the following:

- Technology
- Resiliency
- Funding

While three separate scenario evaluations were conducted, it is important to note that these topics have interrelationships. For example, impacts to the transportation system from a hurricane can lead to a diversion of funding to specific areas or projects. Meanwhile, the growth of a technology like electric vehicles is impacting revenue because of the reduction in fuel taxes. In addition to the results presented below, the interconnection among these issues is important to consider. The summary of these scenarios follows:

## Technology Scenario

### BACKGROUND

Technology is transforming transportation in new ways and the pace of change is accelerating, so it is more important than ever to understand how emerging technologies will shape transportation in the TPO area. Recognizing the importance of preparing for these technological changes, the TPO completed an Intelligent Transportation Systems (ITS) Master Plan and Transportation Systems Management and Operations (TSM&O) Master Plan that include and recommend technology-related strategies.

In addition, the Federal Highway Administration (FHWA) defined six scenarios for automated, connected, electric and shared mobility (ACES) for planning purposes. These scenarios model possible transportation outcomes of emerging transportation technology, policy decisions, and changes in infrastructure:

***ACES stands for Automated, Connected, Electric and Shared Mobility:***

- ***Automated – vehicles that drive without direct driver input***
- ***Connected – vehicles that communicate data to other vehicles and infrastructure***
- ***Electric – vehicles that use electric motor(s) instead of a gas-powered engine***
- ***Shared Mobility – shared use of a vehicle or other transportation mode, often in lieu of owning or using a personal vehicle***

- **Slow Roll:** Nothing beyond currently available technology and investments already in motion
- **Niche Service Growth:** Innovation proliferates, but only in special purpose zones identified for automated vehicle use
- **Ultimate Traveler Assist:** Connected Vehicle technology progresses rapidly, but automated vehicle use stagnates
- **Managed Automated Lane Network:** Special lanes with Connected Vehicle/Automated Vehicle integration
- **Competing Fleets:** Automated TNC-like (Transportation Network Companies such as Uber, Lyft) services proliferate
- **Robo Transit:** On-demand shared services proliferate and integrate with other modes

FDOT developed guidance for TPO/MPO long range transportation plans recommending consideration of the FHWA scenarios. FDOT District Five advanced this recommendation by creating ACES scenarios within CFRPM v7 to reflect the six FHWA categories.

## APPROACH

Because of the growing importance of technology and ACES to transportation, it is important that these issues become increasingly integrated into long range planning. As part of the development of Connect 2045, the TPO has set the stage for this transition through the following steps:

1. Review the ITS Master Plan and TSM&O Master Plan
2. Analyze results of the ACES scenarios from FDOT (CFRPM v7)
3. Identify corridors based upon the ITS/TSM&O Master Plans and results of the ACES scenarios
4. Prioritize corridors as candidates for future technology investments and/or pilot projects

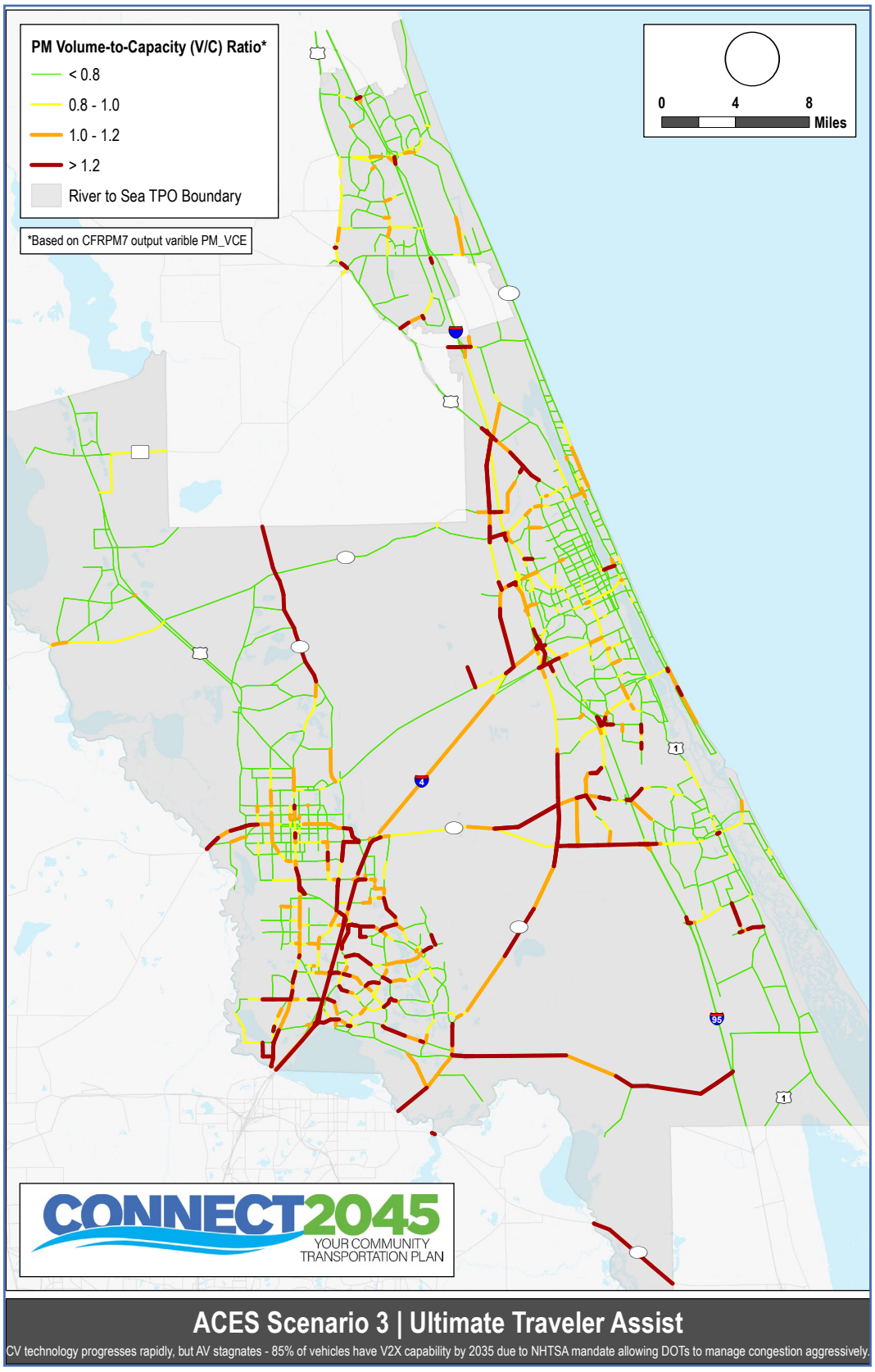
### *Identification and Prioritization*

An evaluation was performed to identify and prioritize potential corridors for future infrastructure technology improvements. This evaluation was based on the River to Sea TPO TSM&O Master Plan Phase 2, successor to the TPO ITS Master Plan Phase 1, and the ACES Scenario of the CFRPM v7. The TSM&O Master Plan assessed the current state of intelligent transportation assets in the region and identified corridors recommended for deployment of fiber, closed-circuit cameras, and other technologies based on need and access to existing networks, and to support corridor management and operation. It provided a thorough assessment of roadway characteristics that are also relevant to the deployment of ACES technologies, such as congestion, safety, and existing assets. The data, scoring system, and recommendations provided in that document were used extensively in this analysis. The CFRPM model output identified 2045 projected volume to capacity ratios (V/C) of the regional roadway system based on the Federal Highway Administration's (FHWA) six scenarios of ACES technology integration. **Figures 10** and **11** show the CFRPM v7 (2045) ACES Scenarios which had the least (Ultimate Traveler Assist) and greatest (Competing Fleets) impact on V/C. Maps depicting the model output for each scenario can be found in **Techical Appendix H**.

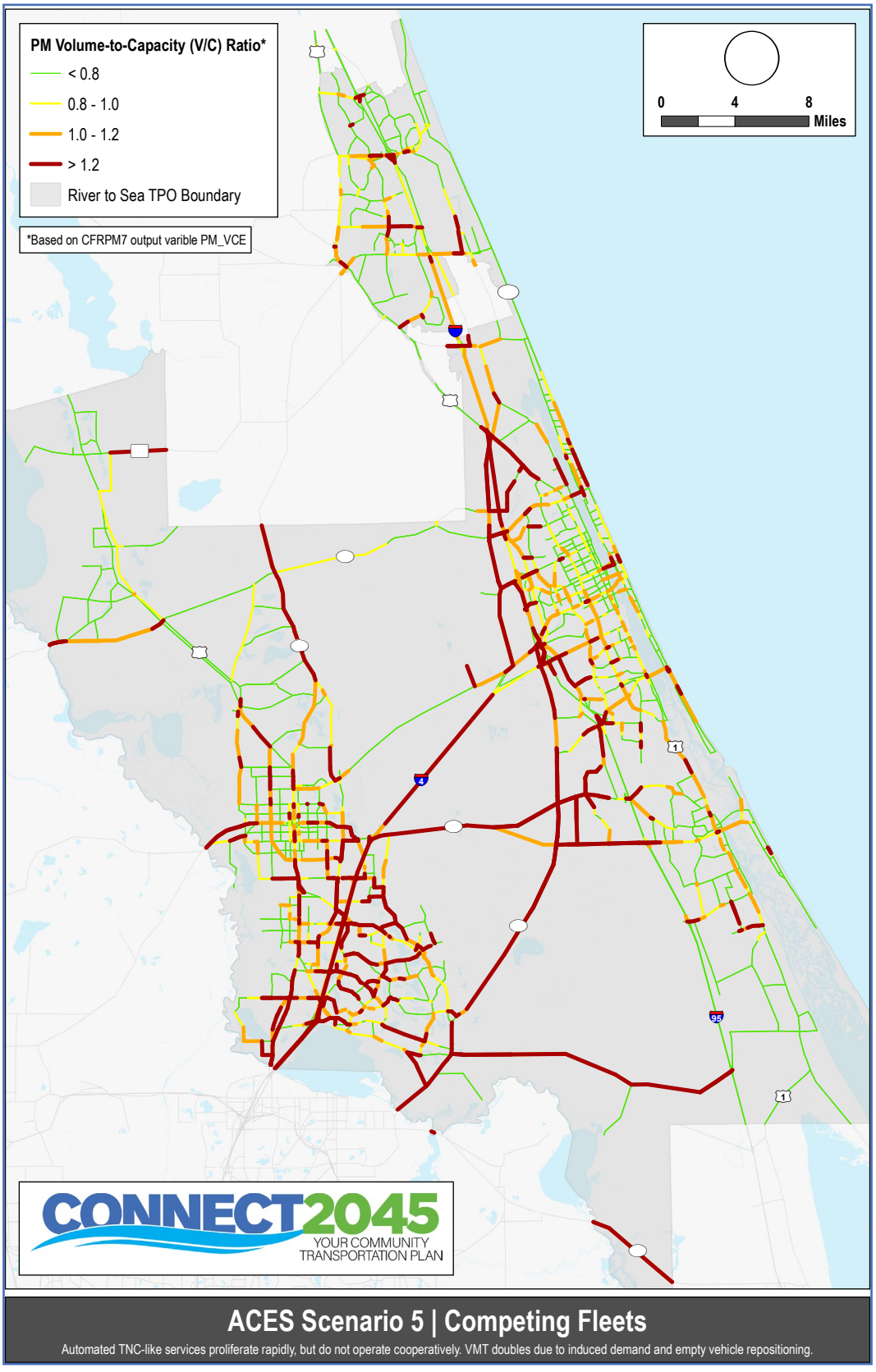
This evaluation used the following criteria to identify and propose prioritization of corridors for further evaluation as potential areas to focus future technology investments and/or pursue pilot projects, if desired:

- Worst-case V/C from the CFRPM v7 2045 ACES scenarios that exceeds 0.9 V/C
- Corridor is a designated Strategic Intermodal System (SIS) facility
- Corridor is a designated evacuation route
- Fiber infrastructure is installed or available for extension within the corridor

## Figure 10: ACES Scenario - Ultimate Traveler Assist



## Figure 11: ACES Scenario - Competing Fleets



Twenty-one corridor segments were identified for further review and prioritization based on the metrics listed above. The following contributing factors to the proposed prioritization process are provided for each corridor segment in **Table 5-4**.

- **Roadway Classification** described the segment's role in providing transportation among population centers in the state, region, or urban area. Most notably, if a facility was designated SIS it was given increased priority as a vital link in statewide traffic.
- **Length** was considered as the centerline distance of the segment in miles and was used to determine the scale of the improvement effort required.
- **Volume** documented in the TSM&O Master Plan was used to quantify use or significance of corridors. This value was provided as Annual Average Daily Traffic (AADT).
- **PM Peak Volume-to-Capacity** was averaged along the corridor length for each of the six CFRPM v7 2045 scenarios. Generally, V/C was used to quantify need for additional improvements with the scenarios.
- **Fiber Significance** was developed by overlaying the FDOT fiber network map available on cflsmartroads.com with each corridor to determine the relative presence or adjacency of fiber optic cable that could be used for ACES infrastructure improvements. This was cross referenced with documented existing conditions in the TSM&O Master Plan.
- **TSM&O Significance** indicated if the corridor segment was identified by the TSM&O Master Plan as a proposed improvement location to upgrade or add infrastructure.
- **Evacuation Routes** described the corridors designated as evacuation routes. A roadway that was designated as a primary evacuation route could be a higher priority for ACES technology to improve rapid movement of large volumes of traffic in emergency situations.

The following table includes each of the 21 corridors identified and the associated prioritization determined from this analysis. The resulting set was divided into three priority tiers that can generally be approached as near-term, mid-term and long-term needs respectively.

## SUMMARY AND FUTURE STEPS

- The Technology Scenario Analysis utilized the TPO's ITS and TSM&O studies, in companion with the CFRPM v7 ACES scenarios, to help prioritize technology related corridors.
- As part of the Cost Feasible Plan, it was recommended that $40 million be set-aside for local initiatives which could include the prioritized technology projects identified in the ACES Corridor Prioritization.
- As a follow-up to this analysis, and in support of the TPO's Connected and Automated Vehicle Readiness Study, an ACES committee or working group will be established to provide guidance regarding the approach to future technology investments and potential pilot projects.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## Table 5-4: ACES Corridor Prioritization

| Segment # | Segment Description | Roadway Classification | Length (mi) | Volume (AADT) | PM Volume/Capacity by CFRPM Scenario | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 |
| **Priority 1 – Near-term** | | | | | | | | | | |
| 1 | US 92 from Indian Lake Rd to SR A1A | Regional | 11.1 | 29400 | 0.97 | 0.97 | 0.86 | 0.98 | 1.02 | 0.92 |
| 2 | US 17/92 from Seminole County to Taylor Rd | SIS | 11.4 | 28800 | 1.18 | 1.18 | 1.03 | 1.16 | 1.17 | 1.10 |
| 3 | US 1 from N Nova Rd to I-95 | Regional | 3.9 | 25800 | 1.24 | 1.24 | 1.09 | 1.17 | 1.23 | 1.15 |
| 4 | SR 40 from S Tymber Creek Rd to SR A1A | SIS | 6.2 | 30600 | 1.03 | 1.03 | 0.90 | 1.06 | 1.09 | 0.99 |
| 5 | SR 44 from US 1 to S Atlantic Ave | Regional | 2.2 | 22400 | 0.89 | 0.87 | 0.73 | 0.90 | 0.94 | 0.80 |
| 6 | US 1 from SR 442 to Washington St. | Regional | 4.0 | 25800 | 0.92 | 0.94 | 0.65 | 0.85 | 0.93 | 0.74 |
| **Priority 2 – Mid-term** | | | | | | | | | | |
| 7 | US 17/92 from Taylor Rd to Glenwood Rd | Regional | 5.0 | 23700 | 0.96 | 0.95 | 0.82 | 0.91 | 0.97 | 0.88 |
| 8 | CR 415 / Tomoka Farms Rd from SR 44 to Taylor Rd | Non-Regional | 5.0 | 9400 | 1.41 | 1.43 | 1.35 | 1.41 | 1.54 | 1.46 |
| 9 | SR 44 from I-4 to CR 415 | Regional | 10.2 | 18500 | 0.88 | 0.90 | 0.74 | 0.87 | 0.91 | 0.81 |
| 10 | SR 472 / Howland Blvd from Dr. Martin Luther King Beltway to Catalina Blvd | Non-Regional | 2.7 | 30500 | 1.04 | 1.04 | 0.97 | 1.04 | 1.09 | 1.02 |
| 11 | SR 15 from Beresford Ave to US 92 | SIS | 2.8 | 24300 | 1.09 | 1.09 | 0.98 | 1.07 | 1.10 | 1.05 |
| 12 | Saxon Blvd from I-4 to Doyle Rd | Non-Regional | 4.6 | 21200 | 0.99 | 0.96 | 0.77 | 0.91 | 0.96 | 0.86 |
| 13 | Saxon Blvd from US 17/92 to I-4 | Non-Regional | 1.9 | 31500 | 0.94 | 0.98 | 0.74 | 0.95 | 0.98 | 0.84 |
| 14 | Doyle Rd / Debary Ave from the I-4 WB ramps to SR 415 | Non-Regional | 8.5 | 17500 | 0.96 | 0.98 | 0.83 | 0.96 | 1.03 | 0.93 |
| 15 | LPGA Blvd from US 92 to N Clyde Morris Blvd | Non-Regional | 6.5 | 17700 | 1.17 | 1.18 | 1.05 | 1.20 | 1.24 | 1.16 |
| **Priority 3 – Long-term** | | | | | | | | | | |
| 16 | Dirksen Dr from US 17/92 to I-4 | Non-Regional | 2.0 | 12300 | 1.03 | 1.14 | 0.62 | 0.84 | 0.78 | 0.69 |
| 17 | SR 15 from US 17/92 to Beresford Ave | Collector | 2.9 | 2800 | 1.05 | 1.04 | 0.94 | 1.02 | 1.06 | 1.03 |
| 18 | SR 15 from US 92 to US 17 | SIS | 2.3 | 12800 | 0.88 | 0.88 | 0.70 | 0.81 | 0.96 | 0.82 |
| 19 | Howland Blvd from Catalina Blvd to SR 415 | Non-Regional | 7.1 | 17400 | 0.84 | 0.85 | 0.65 | 0.83 | 0.88 | 0.73 |
| 20 | Tomoka Farms Rd from Taylor Rd to US 92 | Non-Regional | 6.0 | 7700 | 1.14 | 1.15 | 0.97 | 1.10 | 1.21 | 1.05 |
| 21 | SR 415 from Seminole Co to SR 44 | Regional | 17.6 | 14000 | 1.15 | 1.17 | 1.02 | 1.13 | 1.13 | 1.06 |

| Significance | | | Explanation |
|---|---|---|---|
| Fiber | TSMO | Evacuation | |
| | | | |
| Yes | Yes | Yes | Congested, high volume evacuation route with existing FOC |
| Yes | Yes | Yes | Congested, high volume SIS evacuation route with existing FOC |
| Some | Yes | Yes | Highly congested, high volume evacuation route with adjacent FOC |
| Some | Yes | Yes | High volume evacuation route with existing FOC and identified for TSM&O improvements |
| Yes | Yes | Yes | Evacuation route with existing FOC that connects key corridors |
| Some | Yes | Yes | High volume evacuation route with adjacent FOC and identified for TSM&O improvements |
| | | | |
| Yes | Yes | Yes | Evacuation route with existing FOC and moderate congestion |
| No | Yes | Yes | Extremely congested evacuation route with adjacent FOC |
| No | Yes | Yes | Evacuation route with adjacent FOC. Long corridor without severe congestion |
| No | Yes | Yes | Congested, high volume evacuation route with adjacent FOC |
| No | Yes | No | Congested SIS corridor with no existing FOC and identified for TSM&O improvements |
| No | Yes | No | Moderate congestion and volume connecting critical corridors, identified for TSM&O improvements |
| No | No | No | High volume with some congestion, connects critical corridors, not identified for TSM&O improvements and no existing FOC |
| No | Yes | Yes | Congested evacuation route with no existing FOC, connecting significant corridors |
| Some | No | Yes | Heavily congested evacuation route, not identified for TSM&O improvements with existing FOC at east end |
| | | | |
| No | No | No | Connects critical corridors, not identified for TSM&O improvements and no FOC |
| No | No | No | Congested and connects critical corridors, not identified for TSM&O improvements and no FOC |
| No | No | No | SIS and connects critical corridors, not identified for TSM&O improvements and no FOC |
| No | Yes | No | Identified for TSM&O improvements and moderately congested, no existing FOC |
| No | No | Yes | Congested evacuation route, not identified for TSM&O improvements and no FOC |
| No | No | Yes | Congested evacuation route, not identified for TSM&O improvements and no FOC |

# Resiliency Scenario

## BACKGROUND

Resiliency reflects the ability to anticipate, prepare for, and adjust to changing conditions, and recover rapidly after disruptive events such as flooding, hurricane damage, or major traffic incidents. It is important for the transportation system to be resilient in the face of these disruptions to ensure reliable movement of people and goods.

To understand the potential vulnerability of transportation infrastructure to disruptive events and changes, the TPO has participated in assessments of sea level rise (SLR) and 100-year storm surge within the planning area. These studies (Sea Level Rise Vulnerability Assessment - 2016, Resilient Volusia - 2017 and Resilient Flagler - 2018) have provided useful data to inform planning decisions regarding the impact of SLR and 100-year storm surge in the future. FDOT has also completed a Risk Assessment on SIS Corridors – 2018 to evaluate the vulnerability of SIS facilities related to hurricane storm surge.

These reports collectively provide an overview of the potential extent of impacts of sea level rise in the TPO planning area. For example, based upon the same US Army Corps of Engineers data that was used as the lower boundary for this LRTP scenario analysis, it is projected that four (4) miles of major roads could be inundated by 2040[1]. For a complete list of vulnerable transportation infrastructure facilities, please refer to each report which can be found at the links listed above.

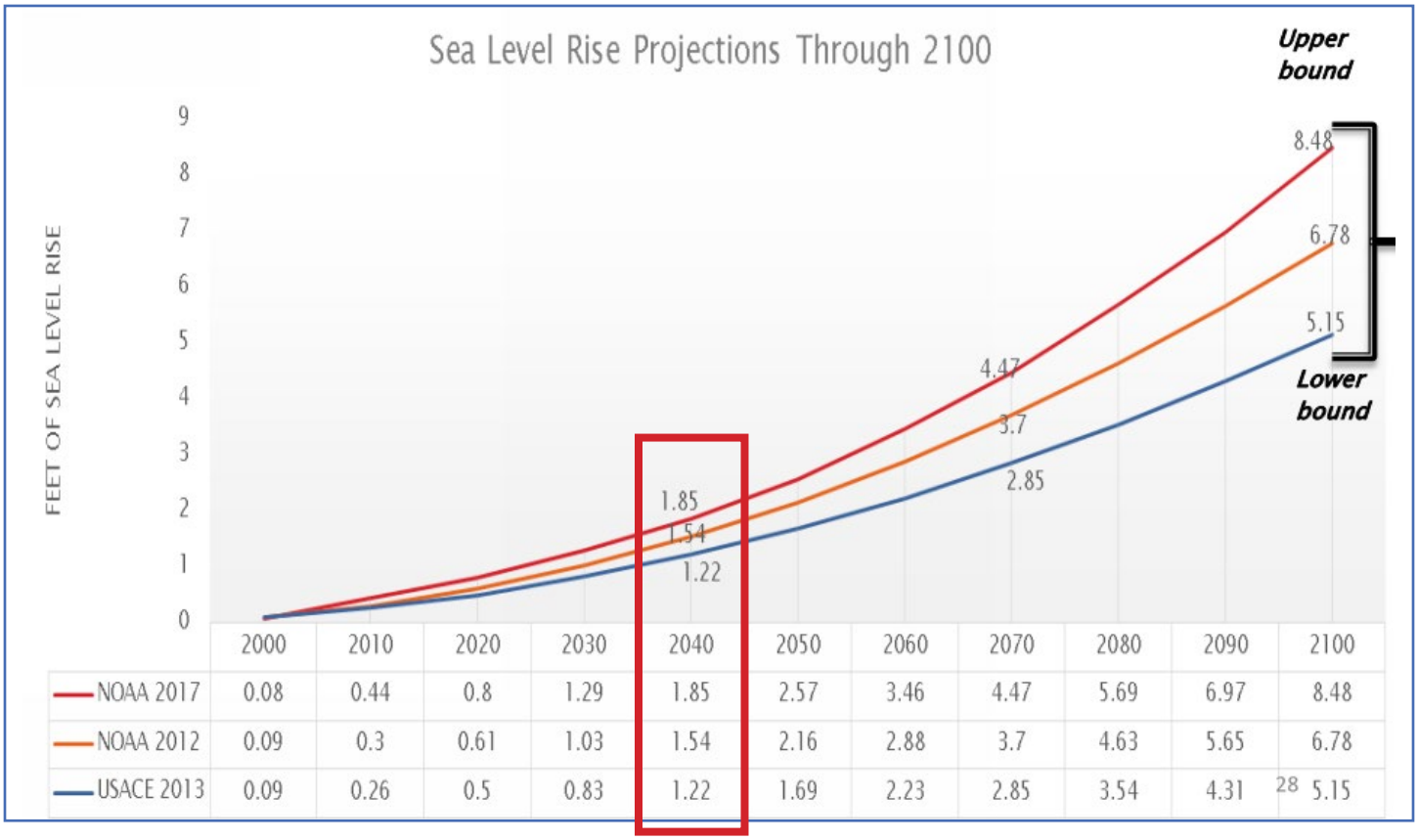
## APPROACH

For this evaluation, the US Army Corps of Engineers (USACE) 2013 High Scenario and the National Oceanic and Atmospheric Administration (NOAA) 2017 High Scenario were used as the lower and upper boundaries, respectively, to evaluate potentially vulnerable areas and/or facilities (**Figure 12)**.

These scenarios are documented in the Regional Resiliency Action Plan (RRAP), and are consistent with River to Sea TPO Resolution 2020-07. Through this resolution, the TPO Board adopted a Sea Level Rise Planning Policy Statement and Sea Level Rise Projection (**Figure 12**), and established 2040 as the Planning Horizon for Sea Level Rise Projections. The goal of the RRAP, in which the TPO is a partner, is to increase the ability of local and regional stakeholders to implement resiliency and climate adaptation strategies. The plan is led by the East Central Florida Regional Planning Council (ECFRPC) and is guided by a cross-disciplined steering committee, extensive stakeholder engagement and best practice research.

1 *Sea Level Rise Vulnerability Assessment (2016), Page 10 Table 4 and Table 5.*

Figure 12: Sea Level Rise Projections




| | 2000 | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 | 2080 | 2090 | 2100 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NOAA 2017 | 0.08 | 0.44 | 0.8 | 1.29 | 1.85 | 2.57 | 3.46 | 4.47 | 5.69 | 6.97 | 8.48 |
| NOAA 2012 | 0.09 | 0.3 | 0.61 | 1.03 | 1.54 | 2.16 | 2.88 | 3.7 | 4.63 | 5.65 | 6.78 |
| USACE 2013 | 0.09 | 0.26 | 0.5 | 0.83 | 1.22 | 1.69 | 2.23 | 2.85 | 3.54 | 4.31 | 5.15 |

*Chart source: East Central Florida Regional Planning Council*

The USACE 2013 data, which was also used for the previously approved TPO studies, is available for the full TPO planning area and was used for this evaluation.

The NOAA 2017 data is available for Volusia County through the East Central Florida Regional Planning Council (ECFRPC) and was used for this evaluation. The Northeast Florida Regional Council has not yet completed similar data for its planning area so this data is not available for Flagler County.

Therefore, only the lower SLR boundary (USACE 2013) was used for Flagler, while both lower and upper boundaries (USACE 2013 and NOAA 2017) were used for Volusia. The horizon year used was 2040, which is consistent with River to Sea TPO Resolution 2020-07. **Table 5-5** provides the estimated change in sea level rise relative to a baseline year of 2000.

Table 5-5: Estimated Sea Level Rise

| Sea Level Rise Scenario Data | Horizon Year | Estimated Feet of Sea Level Rise Relative to Baseline Year (2000) |
|---|---|---|
| USACE 2013 (lower boundary) | 2040 | 1.13 feet |
| NOAA 2017 (upper boundary) | 2040 | 1.77 feet |

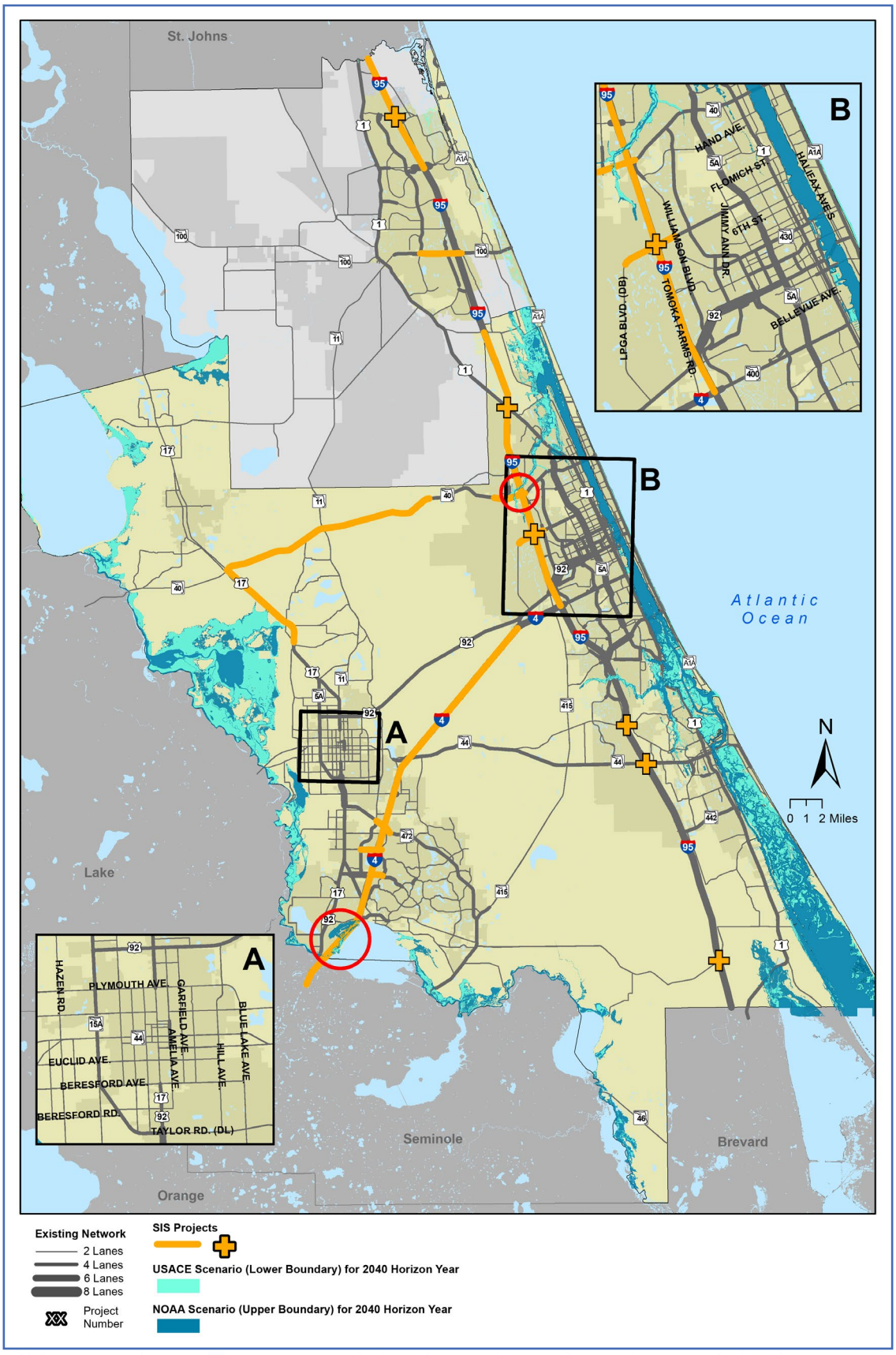
## *Identification of Potentially Vulnerable Roadway Projects*

The analysis compared the inundation area(s) of sea level rise scenarios with the projects identified through the Connect 2045 Needs Assessment. The result of this analysis is a set of potentially vulnerable projects that are identified for improvement or development (see **Table 5-6** and **Figures 13** to **15**). It is important to note that the intersection of an inundation area and an identified needs project does not definitively imply that a given road would be under water. The impact on travel lanes will be determined by the height of the roadway in the impact location. Nonetheless, even where roadway travel lanes are unaffected, the road structure, bridge facility and/or right of way would be subject to a sustained increase in water levels. All of the above will have implications for the design and engineering of specific improvements or facilities which would be determined at the project development level, and not during this high-level planning evaluation.

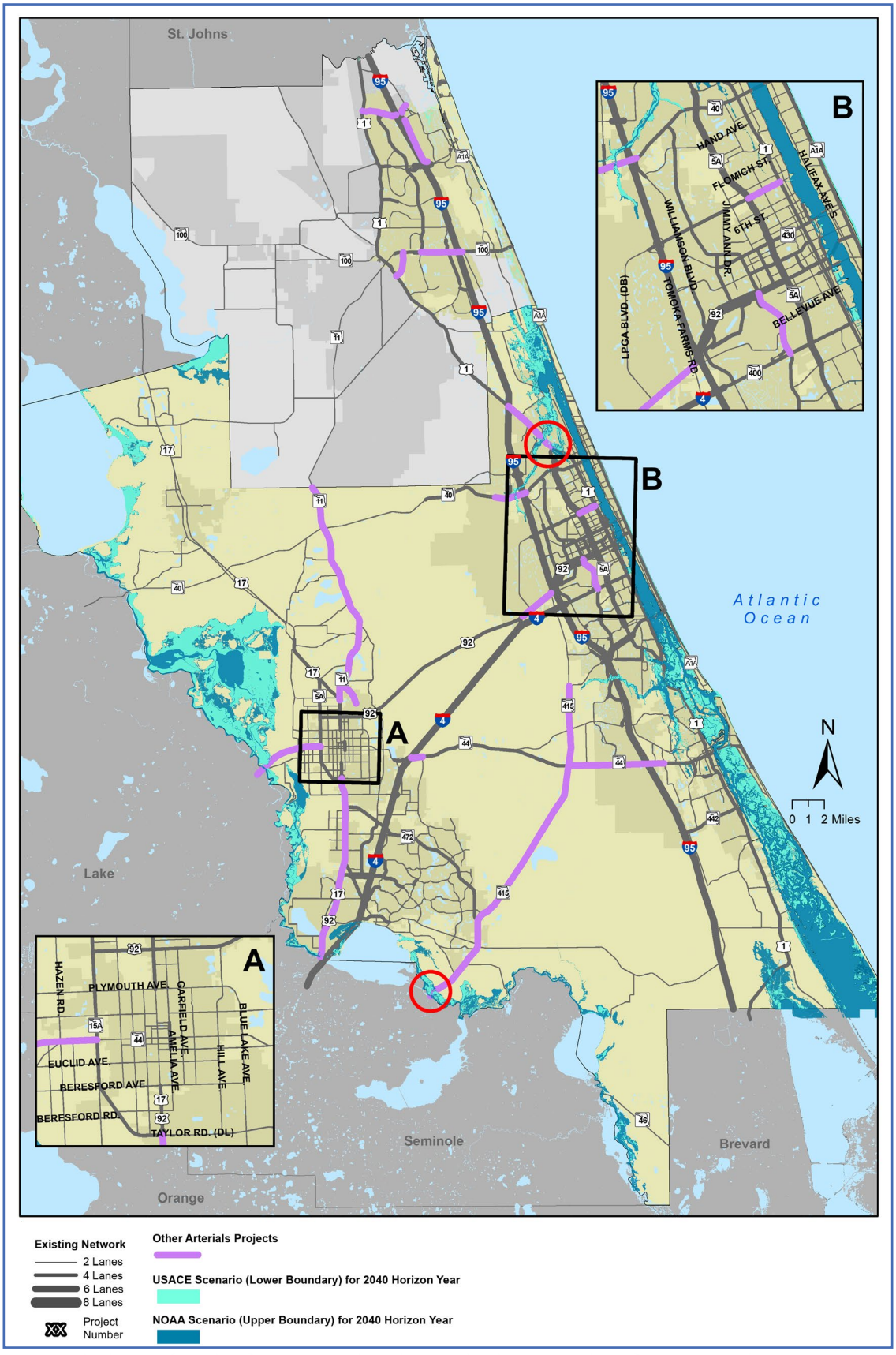
Table 5-6: Potentially Vulnerable Roadway Projects from Connect 2045 Needs Assessment

| Needs Map ID | Project Name | NOAA 2017 | USACE 2013 | Location |
|---|---|---|---|---|
| **Strategic Intermodal System (SIS) Roadways** | | | | |
| 1 | I-4 (Seminole C/L to SR 472) | X | X | Lake Monroe/St. Johns River |
| 6 | SR 40 (Breakaway Trails to Williamson Blvd) | X | X | Tomoka River |
| 19 | I-95 (SR 400 to Old Dixie Highway) | X | X | Tomoka River |
| **Other Arterial Roadways** | | | | |
| 42 | SR 415 (Seminole C/L to Howland Dr) | X | X | St. Johns River |
| 47 | US 1 (Nova Rd. to I-95) | X | X | Tomoka River |
| **Non-State Major Roadways** | | | | |
| 70 | Hand Ave Extension (Williamson Blvd to Tymber Creek Rd Ext) | X | X | Tomoka River |

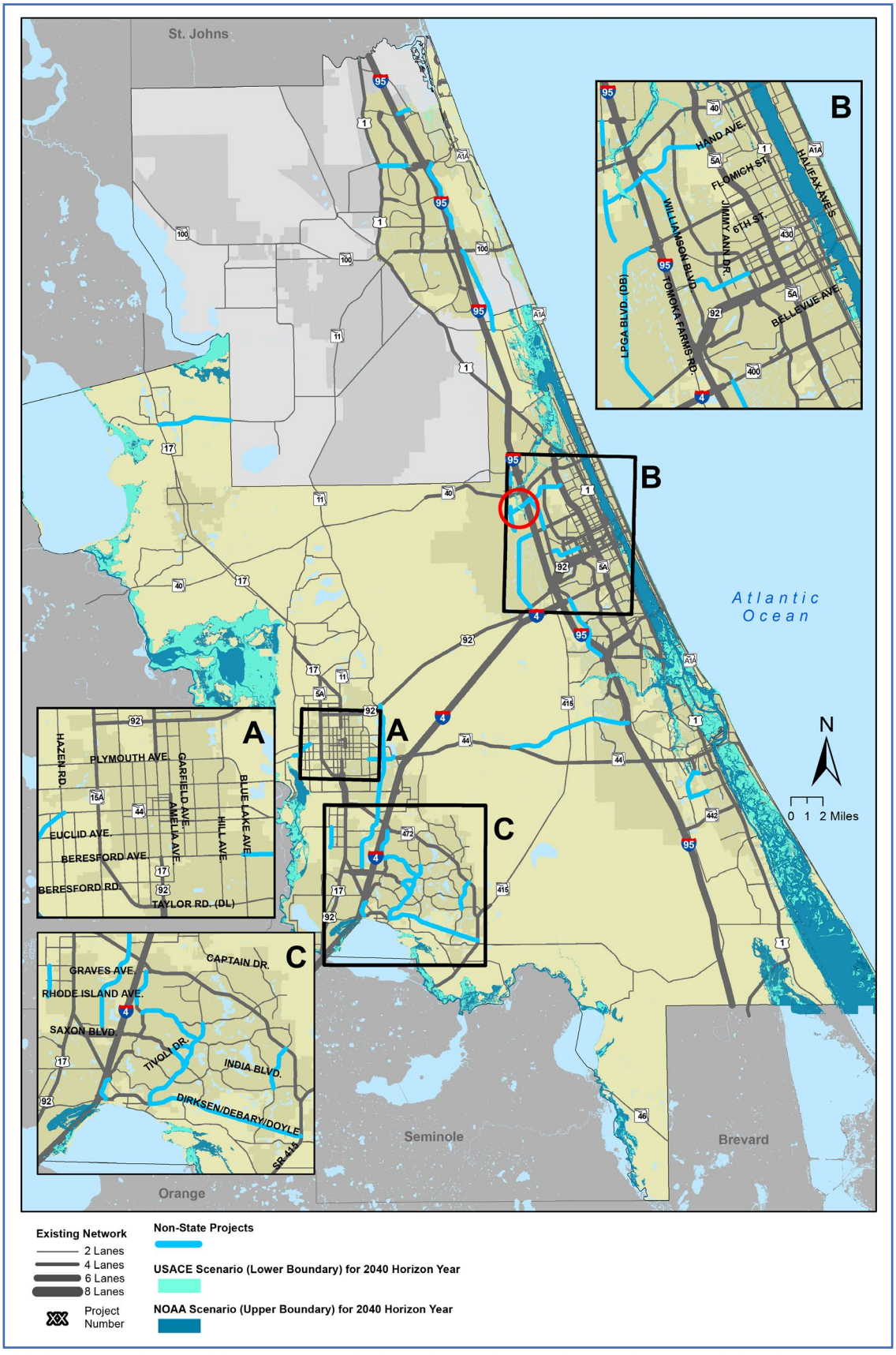
## Figure 13: Potentially Vulnerable Roadways - Strategic Intermodal System (SIS)



## Figure 14: Potentially Vulnerable Roadways - Other Arterial Roadways



## Figure 15: Potentially Vulnerable Roadways - Non-State Major Roadways



### *Consideration of Other Relevant Studies*

- The past Resilient Volusia – 2017 and Resilient Flagler – 2018 studies identified corridors as vulnerable to coastal flooding from a 100-year storm event influenced by sea level rise. The following projects identified in Table 5-6 coincide with potentially vulnerable corridor segments identified in those studies:
  - Project 6 – SR 40
  - Project 19 – I-95
  - Project 47 – US 1
- FDOT's Risk Assessment on SIS Corridors – 2018 was conducted to evaluate Strategic Intermodal System (SIS) facilities at risk during Category 1, Category 3 and Category 5 hurricanes. The following projects identified in Table 5-6 coincide with potentially vulnerable corridor segments or bridges identified in the FDOT study:
  - Project 1 – I-4
  - Project 6 – SR 40
  - Project 19 – I-95 (I-95 from SR 40 to US 1 is also identified as one of the Top 10 Impacted SIS Facilities during Category 1 Storm Surge)

## SUMMARY

The Resiliency Scenario Analysis affirms the critical need to be attentive to the potential impacts of SLR and storm surge on infrastructure. While this scenario analysis identifies potential projects that might be vulnerable in the future, it is important to emphasize that this does not tell the full story. It is important to consult the full range of studies undertaken by the TPO for a broader view of impacts to all existing infrastructure. The TPO is utilizing the information from the scenario analysis and prior studies to develop a strategy for future incorporation of resiliency data into long range planning that advances the Board's policy direction.

# Funding Scenario

## BACKGROUND

At the heart of developing Connect 2045 is the prioritization and selection of projects for funding within the constraints of forecasted revenues. A summary of the revenue forecast is included in Chapter 6. For each round of LRTP updates, FDOT develops the forecast of funds on the state highway system that are expected to be available over the 25-year planning period. The forecast uses factors known at the time it is developed. As with any long-range financial projection, actual revenue may vary due to unanticipated changes in economic conditions, revenue sources, and other factors. The evaluation of funding scenarios provides a window on potential changes to the Cost Feasible Plan set of projects that could be applied in the wake of differing revenue levels.

Within the categories of the revenue forecast, the TPO has the greatest influence over where funds will be prioritized under the Other Arterials funding category. This category is the prime focus of the Cost Feasible Plan (CFP) and the funding scenarios.

The scenarios consist of both a LOW and HIGH funding amount relative to the baseline revenue forecast used for development of the Connect 2045 CFP. These funding amounts provide the opportunity to illustrate how alternative futures would potentially change the projects and priorities included in the CFP.

## SCENARIO ALTERNATIVES

Below is a summary of the baseline and two scenarios. The scenarios consist of three alternatives – two LOW alternatives and one HIGH alternative. **Tables 5-7** and **5-8** show the potential impacts of the scenario alternatives on the cost feasible plan list of projects.

### *BASELINE / 2045 Cost Feasible Plan*

This is the Other Arterials funding amount from the Connect 2045 Revenue Forecast used to develop the CFP. See Chapter 6 for the complete CFP.

**The BASELINE 2045 CFP consists of more than $497 million in Other Arterials funds – more than $447 million for State Highway System (SHS) projects and a maximum of nearly $50 million for local or "off-system" projects.**

### *LOW Scenario / 2040 Plan*

This is the Other Arterials funding amount from the 2040 LRTP Revenue Forecast. This funding amount acts as an appropriate surrogate for a more constrained financial situation. The potential factors that could drive a more constrained financial future include:

- Growing shortfalls in federal transportation funding due to the highway fuel tax remaining at the same level since 1993
- Projected reductions in fuel tax revenue due to increasing vehicle fuel economy
- Projected reductions in fuel tax revenue due to growth in sales of electric and other alternative fuel vehicles

**The LOW Scenarios assume more than $233 million in Other Arterials funds – more than $210 million for SHS projects and a maximum of more than $23 million for local or "off-system" projects.**

*LOW Scenario A* assigns funding to the projects based on their rank as recommended by the LRTP Subcommittee. This scenario funds each of the SHS projects in the List of Priority Projects (LOPP), $40 million in SHS local initiatives (ITS and safety improvements), and the two highest-ranked projects. Of the two Old Kings Road projects included in the LOPP, the southern segment (Palm Harbor Village Way to Farnum Lane) can be fully funded. The remainder of the 10% Other Arterials funds earmarked for local projects is assigned to the other segment of Old Kings Road (Farnum Lane to Forest Grove Drive). This amount satisfies approximately 27% of the total needed funds. There is more than $7 million identified to fund operational improvements.

*LOW Scenario B* funds each of the SHS projects in the LOPP, $40 million in SHS local initiatives (ITS and safety improvements), and approximately $10 million (33%) of the highest-ranked SHS project (Tomoka River Bridge (LPGA Blvd)). This scenario enables a larger portion of the funds to be used for smaller-scale operational projects to maintain system performance. Of the two Old Kings Road projects included in the LOPP, the southern segment (Palm Harbor Village Way to Farnum Lane) can be fully funded. The remainder of the 10% Other Arterials funds earmarked for local projects is assigned to the other segment of Old Kings Road (Farnum Lane to Forest Grove Drive). This amount satisfies approximately 27% of the total needed funds. There is approximately $39 million identified to fund operational improvements.

## *HIGH Scenario / 2045 + New Funding Source*

This is the Other Arterials funding amount from the Connect 2045 Revenue Forecast plus a hypothetical new source of funding. For purposes of developing the specific funding amount, the figure is based on the estimate of 25% of a 1 cent sales tax going to transportation. This is not a policy recommendation. This example is used for illustrative purposes. The potential factors that could drive a more abundant financial future include:

- Increase in the federal highway fuel tax
- A new local sales tax
- Increase in state funding
- Implementation of a new revenue source based on miles driven rather than gallons of fuel sold

**The HIGH Scenario  assumes more than $770 million in funding. This is $273 million in addition to the BASELINE Other Arterials funding. The additional funding may or may not be restricted to 10% "off-system". For the purposes of this scenario alternative, we did not assume that restriction.**

In the HIGH Scenario, all *Other Arterials* projects receive full funding. There is more than $37 million identified to fund additional operational improvements.

## SUMMARY

The Funding Scenario provides an opportunity to understand the potential impact to the cost feasible plan of projects if revenues increase or decrease significantly relative to the baseline forecast. The analysis provides a straightforward illustration of the potential impact to the prioritized plan of projects. This assumes that as the threshold of available funds is lowered or raised, projects will be removed or added. The actual decision making process is more complex because significant funding shifts will possibly lead to a different prioritization and selection approach, including re-evaluating major capacity projects for other alternative approaches.

In late Summer 2020, as Connect 2045 was being finalized, a forecast from the Florida's State Revenue Estimating Conference was released identifying declining transportation revenues due to factors such as decreased consumption of motor fuels related to the effects of COVID-19 and lower economic expectations, and increased vehicle fuel efficiency from technological advancements. These factors along with the increase in projects costs will require further examination of future plans and the potential need to "downsize" projects and expectations. This topic will be the focus of further evaluation beyond this planning process.

## Table 5-7: Alternative Funding Scenarios - Local Roadways

| ID | Jurisdiction | On Street | From Street | To Street |
|---|---|---|---|---|
| E | Local | Old Kings Road | Palm Harbor Village Way | Farnum Ln |
| F | Local | Old Kings Road | Farnum Ln | Forest Grove Dr |
| K | Local | Old Kings Road - Extension Roadway (Phase II) | Matanzas Woods Pkwy | Old Kings Rd |
| L | Local | Commerce Pkwy Connector Road | SR 5 (US 1) | SR 100 |
| Y | Local | Williamson Blvd | Summer Trees Rd | SR 400 (Beville Rd) |
| X | Local | Veterans Memorial Pkwy | Harley Strickland | Graves Ave |
| J | Local | Matanzas Woods Pkwy | SR 5 (US1) | I-95 |
| I | Local | LPGA Blvd | Nova Rd | US-1 |
| V | Local | Hand Ave | Clyde Morris Blvd | SR 5A (Nova Rd) |
| W | Local | Josephine St | Old Mission | Tatum Blvd |
| M | Local | North Entrance DeLand Airport (Industrial Park) | Industrial Dr | SR 11 |

*Note: Revenue Forecast and project costs are estimated at a planning level using historic data and FDOT guidance.*

** Criteria Score is just one factor to consider in determining project prioritization.*

*§ In lieu of additional capacity projects, funding is identified to support smaller-scale operational to maintain system performance.*

*Projects are listed in priority order as recommended by the LRTP Subcommittee on June 1, 2020.*

*LOPP = List of Priority Projects; SHS = State Highway System; OA = Other Arterials on State Highway System; U = Undivided; D = Divided; F = Freeway; LN = Lanes*

| Improvement | LOPP | Cost | Baseline Percent Funded | Low Scenario A Percent Funded | Low Scenario B Percent Funded | High Scenario Percent Funded | 2045 Status | Criteria Score* |
|---|---|---|---|---|---|---|---|---|
| 2U-4D | 3 | $ 18,650,000 | 100% | 100% | 100% | 100% | COST FEASIBLE | N/A |
| 2U-4D | 3 | $ 17,450,000 | 100% | 27% | 27% | 100% | COST FEASIBLE | N/A |
| 00-2U | 6 | $ 7,381,000 | 100% | 0% | 0% | 100% | TBD | 10.0 |
| 00-2U | 7 | $ 9,680,000 | 64% | 0% | 0% | 100% | TBD | 10.0 |
| 2LN - 4LN | | $ 6,700,000 | 0% | 0% | 0% | 100% | TBD | 32.5 |
| 2LN - 4LN | | $ 9,800,000 | 0% | 0% | 0% | 100% | TBD | 30.0 |
| 2U-4D | 8 | $ 14,796,900 | 0% | 0% | 0% | 100% | TBD | 20.0 |
| 2U-3D | 10 | $ 12,950,000 | 0% | 0% | 0% | 100% | TBD | 19.5 |
| 2LN - 4LN | | $ 7,000,000 | 0% | 0% | 0% | 100% | TBD | 17.5 |
| 2LN - 4LN | | $ 4,950,000 | 0% | 0% | 0% | 100% | TBD | 10.0 |
| 00-2U | | $ 2,263,000 | 0% | 0% | 0% | 100% | TBD | 4.5 |

| | Baseline Total Revenues | Low Scenario A Total Revenues | Low Scenario B Total Revenues | High Scenario Total Revenues |
|---|---|---|---|---|
| Local | $49,722,614 | $23,369,628 | $23,369,628 | $77,070,051 |

Projects included in the 2040 LRTP Cost Feasible Plan; Per TPO Policy (Resolution 2019-02) projects 1-5 on the Other Arterials List are protected and remain until they are completed and drop out of the work program.

2045 Fully Funded Projects

2045 Partially Funded Projects

2045 Unfunded Projects

## Table 5-8: Alternative Funding Scenarios - State Highway System

| ID | Jurisdiction | On Street | From Street | To Street |
|---|---|---|---|---|
| A | SHS | US-1 | At Park Ave | Intersection |
| C | SHS | SR 483 (Clyde Morris Blvd) | SR 400 (Beville Rd) | US-92 |
| D | SHS | SR 44 | Grand Ave | SR 15A |
| B | SHS | US-92 | I-4 EB RAMP | CR 415 (Tomoka Farms Rd.) |
| Q | SHS | Tomoka River Bridge (LPGA Blvd)** | West of Champions Dr | E of Tomoka Farms Rd |
| G | SHS | Local Initiatives | N/A | N/A |
| H | SHS | US 17/92 | SR 472 | SR 15A (Taylor Rd) |
| N | SHS | SR 44 | I-4 | Prevatt Ave. |
| O | SHS | US 1 | Nova Rd. (N) | I-95 |
| R1 | SHS | SR 415 (Tomoka Farms Rd) | Acorn Lake Rd | Lake Ashby Rd |
| R2 | SHS | SR 415 (Tomoka Farms Rd) | Lake Ashby Rd | SR 44 |
| S | SHS | SR 44 | SR 415 | Glencoe Rd. |
| U | SHS | SR 44 | Lake County | Grand Ave |
| (SIS E) | SHS | SR 15 (US 17)** | Deleon Springs | SR 40 |
| P | SHS | SR 415 (Tomoka Farms Rd) - excludes bridge | Seminole C/L | Howland Dr |
| T | SHS | SR 11 | N. Woodland Blvd. | Flagler County |
| | SHS | SHS Operational Improvements§ | N/A | N/A |

*Note: Revenue Forecast and project costs are estimated at a planning level using historic data and FDOT guidance.*

** Criteria Score is just one factor to consider in determining project prioritization.*

*** LPGA Blvd Tomoka River Bridge and SR 15 (US 17) projects are included in the SIS needs list as well.*

*§ In lieu of additional capacity projects, funding is identified to support smaller-scale operational to maintain system performance.*

*Projects are listed in priority order as recommended by the LRTP Subcommittee on June 1, 2020.*

*LOPP = List of Priority Projects; SHS = State Highway System; OA = Other Arterials on State Highway System; U = Undivided; D = Divided; F = Freeway; LN = Lanes*

| Improvement | LOPP | Cost | Baseline Percent Funded | Low Scenario A Percent Funded | Low Scenario B Percent Funded | High Scenario Percent Funded | 2045 Status | Criteria Score* |
|---|---|---|---|---|---|---|---|---|
| Intersection Improvement | 1 | $ 6,3000,000 | 100% | 100% | 100% | 100% | COST FEASIBLE | N/A |
| 4D-6D | 2 | $ 63,900,000 | 100% | 100% | 100% | 100% | COST FEASIBLE | N/A |
| 2U-4D | 4 | $ 19,100,000 | 100% | 100% | 100% | 100% | COST FEASIBLE | N/A |
| 4D-6D | 5 | $ 37,500,000 | 100% | 100% | 100% | 100% | COST FEASIBLE | N/A |
| Bridge | | $ 10,000,000 | 100% | 100% | 100% | 100% | TBD | 34.5 |
| N/A | N/A | $ 40,000,000 | 100% | 100% | 100% | 100% | TBD | N/A |
| 6D-6D (ITS) | 9 | $ 2,000,000 | 100% | 100% | 0% | 100% | TBD | 65.0 |
| 4D-6D | | $ 6,623,038 | 100% | 0% | 0% | 100% | TBD | 52.5 |
| 4D-6D | | $ 34,463,484 | 100% | 0% | 0% | 100% | TBD | 52.5 |
| 2U-4D | | $ 51,542,036 | 100% | 0% | 0% | 100% | TBD | 32.5 |
| 2U-4D | | $ 61,383,899 | 100% | 0% | 0% | 100% | TBD | 32.5 |
| 4D-6D | | $ 54,291,449 | 100% | 0% | 0% | 100% | TBD | 27.0 |
| 2U-4D | | $ 25,771,018 | 100% | 0% | 0% | 100% | TBD | 25.0 |
| 2U-4D | 2 | $ 10,000,000 | 100% | 0% | 0% | 100% | | N/A |
| 4D-6D | | $ 54,551,711 | 0% | 0% | 0% | 100% | TBD | 42.5 |
| 2U-4D | | $ 141,899,190 | 0% | 0% | 0% | 100% | TBD | 30.0 |
| N/A | N/A | $ 2,263,000 | $24,628,601 | $31,526,656 | $33,526,656 | $74,304,638 | TBD | N/A |

| | Baseline Total Revenues | Low Scenario A Total Revenues | Low Scenario B Total Revenues | High Scenario Total Revenues |
|---|---|---|---|---|
| SHS | $447,503,524 | $210,326,656 | $210,326,656 | $693,630,463 |

Projects included in the 2040 LRTP Cost Feasible Plan; Per TPO Policy (Resolution 2019-02) projects 1-5 on the Other Arterials List are protected and remain until they are completed and drop out of the work program.

2045 Fully Funded Projects

2045 Partially Funded Projects

2045 Unfunded Projects

# TECHNICAL CRITERIA SCORING

Applicable roadway projects identified within the Needs Assessment were evaluated based upon criteria to inform the prioritization and selection of projects for inclusion in the Cost Feasible Plan. The project evaluation categories and criteria were guided by the policy direction of the approved Connect 2045 goals (see Chapter 2) and with consideration of Transportation Performance Measures as required under the FAST Act.

***Technical criteria are very important to translate specific requirements and Connect 2045 objectives into a prioritization approach that informs project selection. These criteria are an integral component of the planning process where critical factors such as safety, environmental justice, freight, tourism, and resource protection provide meaningful direction.***

The projects were evaluated utilizing criteria and scoring approved by the LRTP Subcommittee shown in **Table 5-9**. As shown in the table, each of the evaluation categories is intended to advance one or more goals of Connect 2045, which were developed to be consistent with the FAST Act planning factors (see Table 2-1).

Note that these criteria scores were just one of the factors considered when prioritizing and selecting projects. Other considerations influenced selection decisions such as the TPO's policy to protect certain projects based upon current priority status.

The results of the technical criteria scoring are provided in **Technical Appendix I.**

## Table 5-9: Project Prioritization Matrix

| Priority Evaluation Category | Connect 2045 Goals Implemented | Criteria Description | Criteria Scoring | Criteria Points |
|---|---|---|---|---|
| **Safety** | 4 | Number of Crashes by Severity (Fatal and Severe) | High | 10 |
| | | | Medium | 5 |
| | | | Low | 0 |
| **Congestion** | 1, 2, 3, 4 | Volume/Capacity (V/C) | V/C > 1.1 | 10 |
| | | | V/C 0.9 - 1.1 | 5 |
| | | | V/C < 0.9 | 0 |
| **Project Status** | 1 | Phases Funded and Priority Status | Funded Through Construction | 10 |
| | | | Funded Through ROW | 8 |
| | | | Funded Through Design | 5 |
| **Emergency Management** | 4 | Evacuation Route | Roadway is Emergency Evacuation Route | 10 |
| | | | Roadway is Not an Emergency Evacuation Route | 0 |
| **Multimodal/ Complete Streets** | 1, 2, 3, 5, 6 | Bicycle, Pedestrian, Transit and Complete Streets | Does project add new bicycle/pedestrian route or facility? | 2.5 |
| | | | Does project add new/contains existing transit route? | 2.5 |
| | | | Does project provide access to multimodal hubs/ stations? | 2.5 |
| | | | Does project add additional Complete Street elements? | 2.5 |
| **Economic and Community Development** | 1, 2, 3 | Access to Activity Centers and Improved Freight Movement | Provides access to a tourism/activity center? | 5 |
| | | | Provides access to an ecotourism location? | 3 |
| | | | Designated Freight Corridor? | 5 |
| **Regional Connectivity** | 1, 3 | Parallel Reliever and Consistent Lanes | New Connection/Upgraded Facility to Provide Parallel Capacity? | 5 |
| | | | Provides Consistent Number of Lanes Along Roadway? | 5 |
| **Environmental Justice** (avoiding disproportionate adverse effects on minority and low-income populations) | 5, 6 | Benefits vs. Impacts | Positive Benefit | 10 |
| | | | Neutral | 0 |
| | | | Potential Negative Impacts | -3 |
| **Environment** | 5 | Corridor Environmental Impact | No Anticipated Impacts | 10 |
| | | | Limited Impacts | 5 |
| | | | Potential Environmental Impacts | -3 |
| **Cost Effectiveness** | 1, 5, 6 | Project Type is Low Relative Cost/High Potential Benefit | Technology-based Solution/ITS/Operational Improvement | 10 |
| **Unique Attributes** | | Has Attributes Not Recognized Through Other Criteria | Project has Unique Attributes | 10 |

# ENVIRONMENTAL JUSTICE

Environmental Justice is the fair treatment of all groups within the community. In 1994, Presidential Executive Order 12898 directed every Federal agency to make environmental justice (EJ) part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low-income populations." This order was consistent with Title VI of the Civil Rights Act of 1964 which prohibits discrimination on the basis of race, color, or national origin. Environmental Justice provides a framework for conducting assessments pertaining to matters of equity and nondiscrimination.

The TPO performed an Environmental Justice analysis to be consistent with the TPO's mission as well as the goals and objectives of Connect 2045. The analysis utilized data provided by the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-Year Estimates, which were the most recent data available at the time of the analysis. The ACS 5-year Estimates are more reliable than the more current 1-year estimates. **Table 5-10** shows the ACS data used for the plan's EJ analysis.

Table 5-10: Environmental Justice Populations Summary

| | Volusia County | Flagler County | Florida (Statewide) |
|---|---|---|---|
| *Estimate; Population for whom poverty status is determined* | *508,631* | *103,921* | *19,858,469* |
| Population Below Poverty Level | 81,729 | 13,839 | 3,070,972 |
| Percent Below Poverty Level | 16.1% | 13.3% | 15.5% |
| *Estimate; Population for whom race is determined* | *518,660* | *105,015* | *20,278,447* |
| Minority Population | 88,508 | 18,320 | 4,934,450 |
| Percent Minority Population | 17.0% | 17.4% | 24.3% |

*Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates*

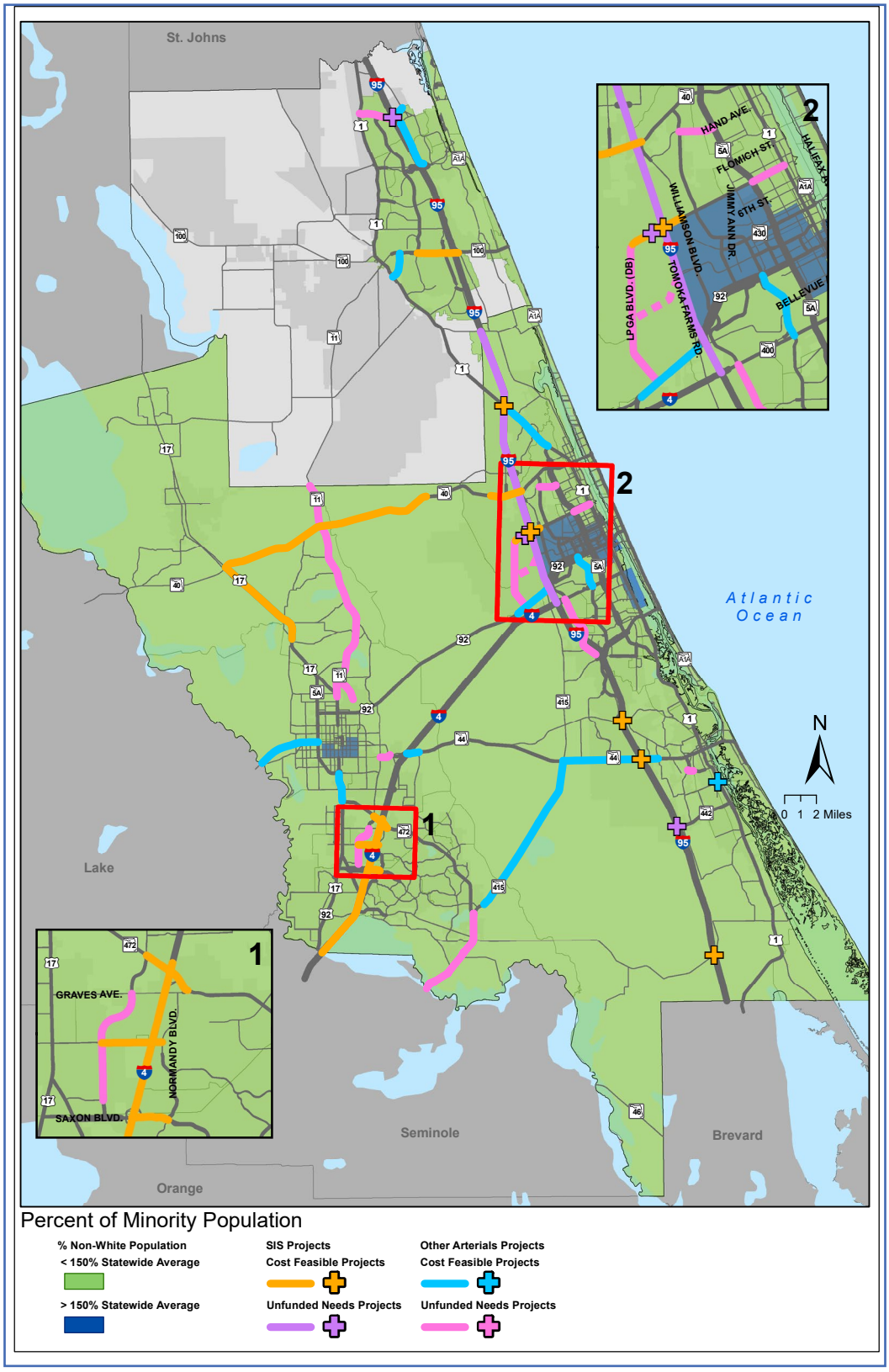
The two driving characteristics of EJ areas in the TPO planning area are percentage of households at or below poverty level and percentage of minority population. Percentages of population meeting the criteria were compared to the statewide average. Those Census Tracts that were estimated to have levels of EJ populations that were equal to or exceeded 150% of the statewide average were highlighted and considered to be potential areas for Environmental Justice considerations throughout the planning process. These considerations included additional outreach efforts to those living in these areas and additional consideration to serve the areas with alternate transportation modes.

A virtual Environmental Justice Workshop was conducted on August 4, 2020 to understand and address the potential effects of planning and prioritization decisions on traditionally underserved members of the community, which often includes minority and low-income populations. The workshop included a description of the planning process, efforts to consider potential adverse impacts to minority and low-income populations, an overview of the draft plan, and plenty of opportunity for questions and discussion.

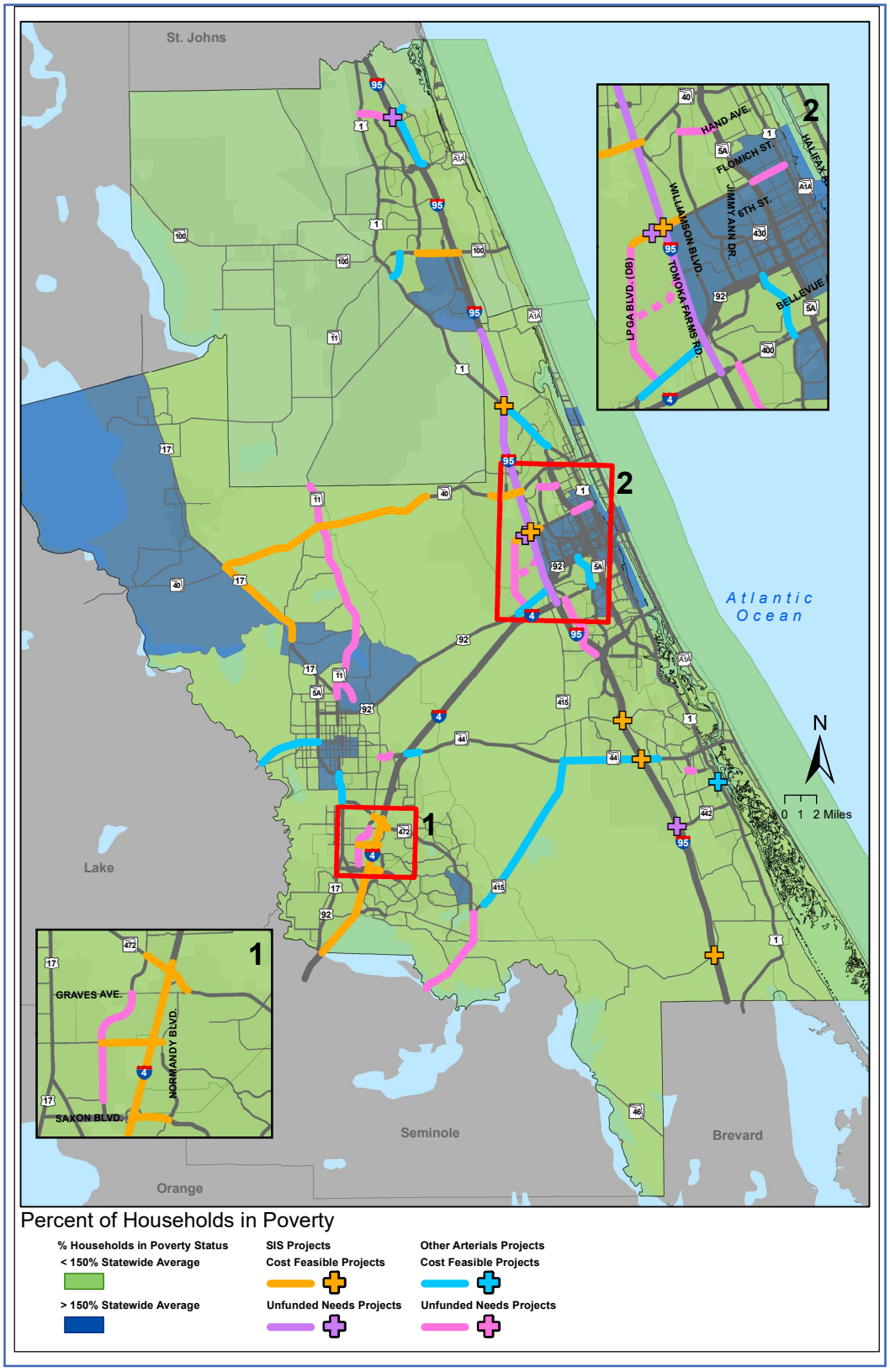
As shown previously in **Table 5-9**, EJ was integrated into the project priorization process and technical criteria scoring. Projects identified as needs were evaluated for their positive benefits or potential negative impacts on EJ population areas.

**Figure 16** and **Figure 17** show where the higher levels of EJ populations are located by U.S. Census tract within the TPO's planning area.

## Figure 16: Minority Population



## Figure 17: Households in Poverty Status



# ENVIRONMENTAL MITIGATION

## Environmental Consultation

As part of the development of Connect 2045, federal, state, and local regulatory agencies were contacted to obtain comments and consultation on the following:

- Potential environmental impacts from the draft plan of projects
- Environmental factors to consider as part of the plan
- Considerations from applicable conservation plans
- Potential environmental mitigation activities, and areas to carry out these activities, including those with the greatest potential to restore and maintain environmental functions

The responses from this outreach were considered when developing this plan. Comments from reviewing agencies included noting the potential for impacts to public conservation lands such as Tiger Bay State Forest, Lake George State Forest, Heart Island Conservation Area and Longleaf Pine Preserve. Figure 21 includes conservation lands.

As part of evaluation and prioritization, projects were assigned an environmental impact criteria score. This evaluation utilized various datasets including public conservation lands, Volusia ECHO environmental/cultural/historic sites, and Critical Lands and Waters Identification Project (CLIP) biodiversity resource and wetland priorities. See **Technical Appendix F** for additional information about the environmental mitigation review.

Connect 2045 addresses potential environmental mitigation activities as required by federal regulations.

23 C.F.R. 450.322:

(f) The metropolitan transportation plan shall, at a minimum, include:

(7) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation.

Transportation projects can significantly impact many aspects of the environment including wildlife and their habitats, wetlands, and groundwater resources. In situations where impacts cannot be completely avoided, mitigation or conservation efforts are required. Environmental mitigation is the process of addressing damage to the environment caused by transportation projects or programs. The process of mitigation is best accomplished through enhancement, restoration, creation and/or preservation projects that serve to offset unavoidable environmental impacts.

In the State of Florida, environmental mitigation for transportation projects is completed through a partnership between MPOs, FDOT, and state and federal environmental resource and regulatory agencies, such as the Water Management Districts (WMDs) and the Florida Department of Environmental Protection (FDEP). These activities are directed through Chapter 373, F.S., which establishes the requirements for mitigation planning as well as the requirements for permitting, mitigation banking, and mitigation requirements for habitat impacts. Under this statute, FDOT must identify projects requiring mitigation, determine a cost associated with the mitigation, and place funds into an escrow account within the Florida Transportation Trust Fund. State transportation trust funds are programmed in the FDOT work program for use by the WMDs to provide mitigation for the impact identified in the annual inventory.

Section 373.4137, F.S., establishes the FDOT mitigation program that is administered by the state's WMDs, which are responsible for developing an annual mitigation plan with input from Federal and State regulatory and resource agencies, including representatives from public and private mitigation banks. Each mitigation plan must focus on land acquisition and restoration or enhancement activities that offer the best mitigation opportunity for that specific region. The mitigation plans are required to be updated annually to reflect the most current FDOT work program and project list of a transportation authority. The FDOT Mitigation Program is a great benefit to MPOs because it offers them an additional method to mitigate for impacts produced by transportation projects and it promotes coordination between federal and state regulatory agencies, MPOs, and local agencies.

When addressing mitigation, there is a general rule to avoid all impacts, minimize impacts and mitigate impacts when impacts are unavoidable. This rule can be applied at the planning level, when MPOs are identifying areas of potential environmental concern due to the development of a transportation project. A typical approach to mitigation that MPOs can follow is to:

- Avoid impacts altogether
- Minimize a proposed activity/project size or its involvement
- Rectify the impact by repairing, rehabilitating, or restoring the affected environment
- Reduce or eliminate the impact over time by preservation and maintenance operation during the life of the action
- Compensate for environmental impacts by providing appropriate or alternate environmental resources of equivalent or greater value, on or off-site

Sections 373.47137 and 373.4139, F.S. require that impacts to habitat be mitigated through a variety of mitigation options, which include mitigation banks and mitigation through the Water Management District(s) and the DEP. Potential environmental mitigation opportunities that could be considered when addressing environmental impacts from future projects proposed by MPOs may include, but are not limited to, the items presented in **Table 5-11**.

Table 5-11: Potential Environmental Mitigation Opportunities

| Resource / Impacts | Potential Mitigation Strategy |
|---|---|
| Wetlands and Water Resources | • Restore degraded wetlands<br>• Create new wetland habitats<br>• Enhance or preserve existing wetlands<br>• Improve storm water management<br>• Purchase credits from a mitigation bank |
| Forested and other natural areas | • Use selective cutting and clearing<br>• Replace or restore forested areas<br>• Preserve existing vegetation |
| Habitats | • Construct underpasses, such as culverts<br>• Other design measures to minimize potential habitat fragmentation |
| Streams | • Stream restoration<br>• Vegetative buffer zones<br>• Strict erosion and sedimentation control measures |
| Threatened or Endangered Species | • Preservation<br>• Enhancement or restoration of degraded habitat<br>• Creation of new habitats<br>• Establish buff areas around existing habitat |

Planning for specific environmental mitigation strategies over the life of the long range transportation plan can be challenging. Potential mitigation challenges include lack of funding for mitigation projects and programs, lack of available wetland mitigation bank credits, improperly assessing cumulative impacts of projects, and permitting issues with the county, local, state and federal regulatory agencies. These challenges can be lessened when TPOs engage their stakeholders, including regulatory agencies, the public and other interested parties, through the public involvement process. The public involvement process provides TPOs with an efficient method to gain input and address concerns about potential mitigation strategies and individual projects.

In addition to the process outlined in Florida Statutes and implemented by the TPO and its partner agencies, the Efficient Transportation Decision Making (ETDM) process is used for seeking input on individual qualifying long range transportation projects allowing for more specific commentary. This provides assurance that mitigation opportunities are identified, considered and available as the plan is developed and projects are advanced. The ETDM process allows resource and regulatory agencies, as well as the public, an opportunity to review and comment on potential impacts of proposed transportation projects. The intent is to provide a method for early consideration of ecosystem, land use, social, and cultural issues, prior to a project moving into the Work Program and into the Project Development and Environmental (PD&E) study phase.

**Technical Appendix F** includes more detailed background on ETDM and a table of the status of ETDM screening for appropriate projects in this plan. Through these approaches, the State of Florida, along with its TPO partners, ensures that mitigation will occur to offset the adverse effects of proposed transportation projects.

## Wetlands

There are wetlands adjacent to several of the existing corridors as shown in **Figure 19**. As mentioned above, the TPO has and will continue to coordinate with FDOT, FDEP, Florida Fish and Wildlife Conservation Commission (FWC), and St. Johns River Water Management District (SJRWMD) to mitigate transportation impacts on the environment including wetlands.

## Flood Zones

Floods are one of the most common hazards in the United States. The TPO has used flood zone mapping to display vulnerable areas depicted in **Figure 20**. It is important to specifically understand the impacts of flooding to transportation infrastructure such as major roads and bridges and evacuation routes.

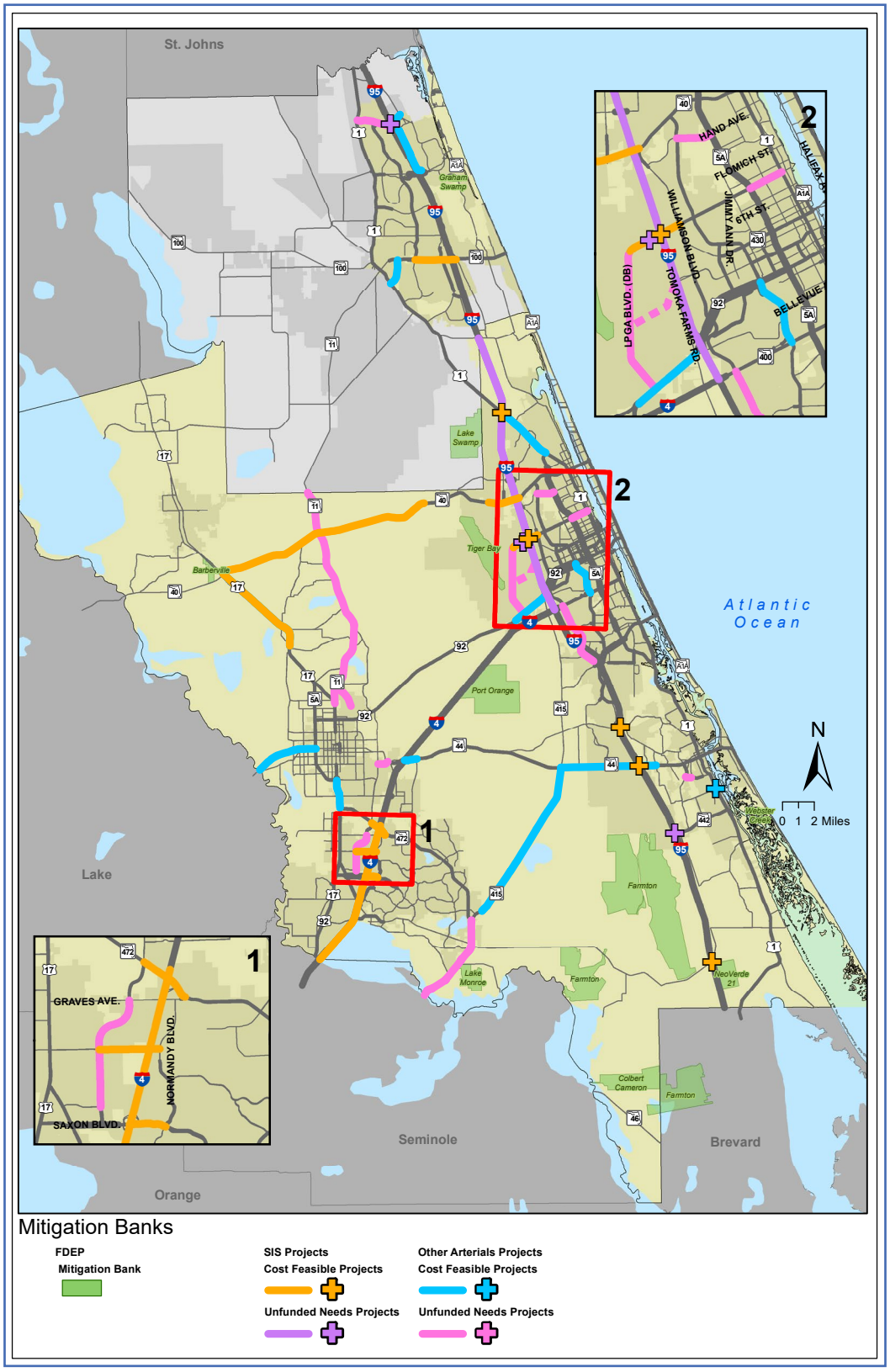
The TPO will coordinate with local municipalities, Volusia County, Flagler County, and other local and regional agencies to mitigate potential impacts to the transportation system from sea level rise and climate change. The Resiliency Scenario considered during the planning process is discussed earlier in this chapter.

## Wildlife and Habitat Coordination

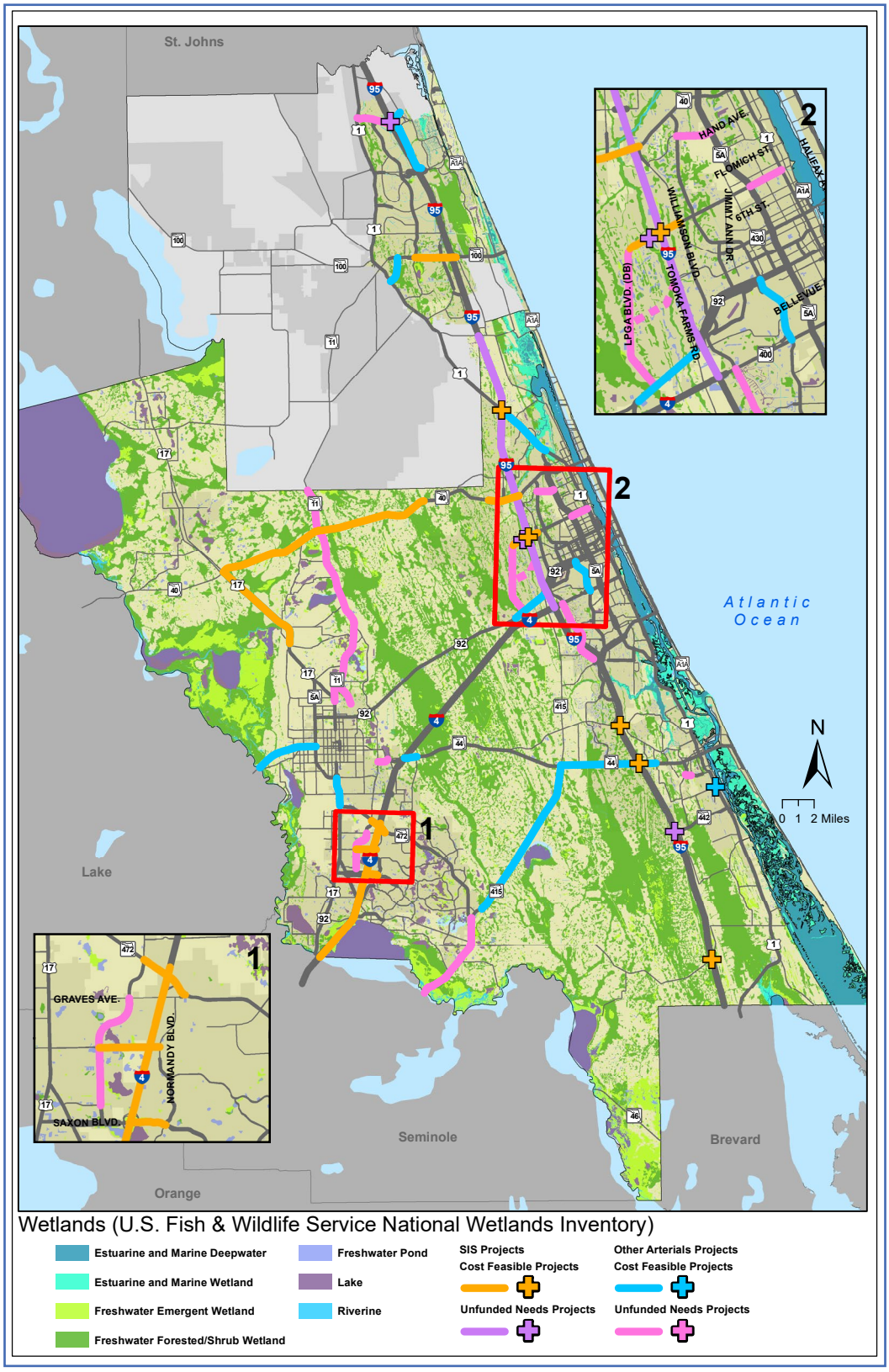
Potential wildlife and habitat impacts must be coordinated as another step of environmental mitigation. The importance of not only preserving land but connecting wildlife corridors to create an integrated ecosystem is paramount in considering transportation impacts. There are significant public/private conservation areas within the planning area.

Projects and particular areas that will require future coordination are identified through comments provided by reviewing agencies (**Technical Appendix F**) and defined during the Technical Criteria review (**Technical Appendix I**).

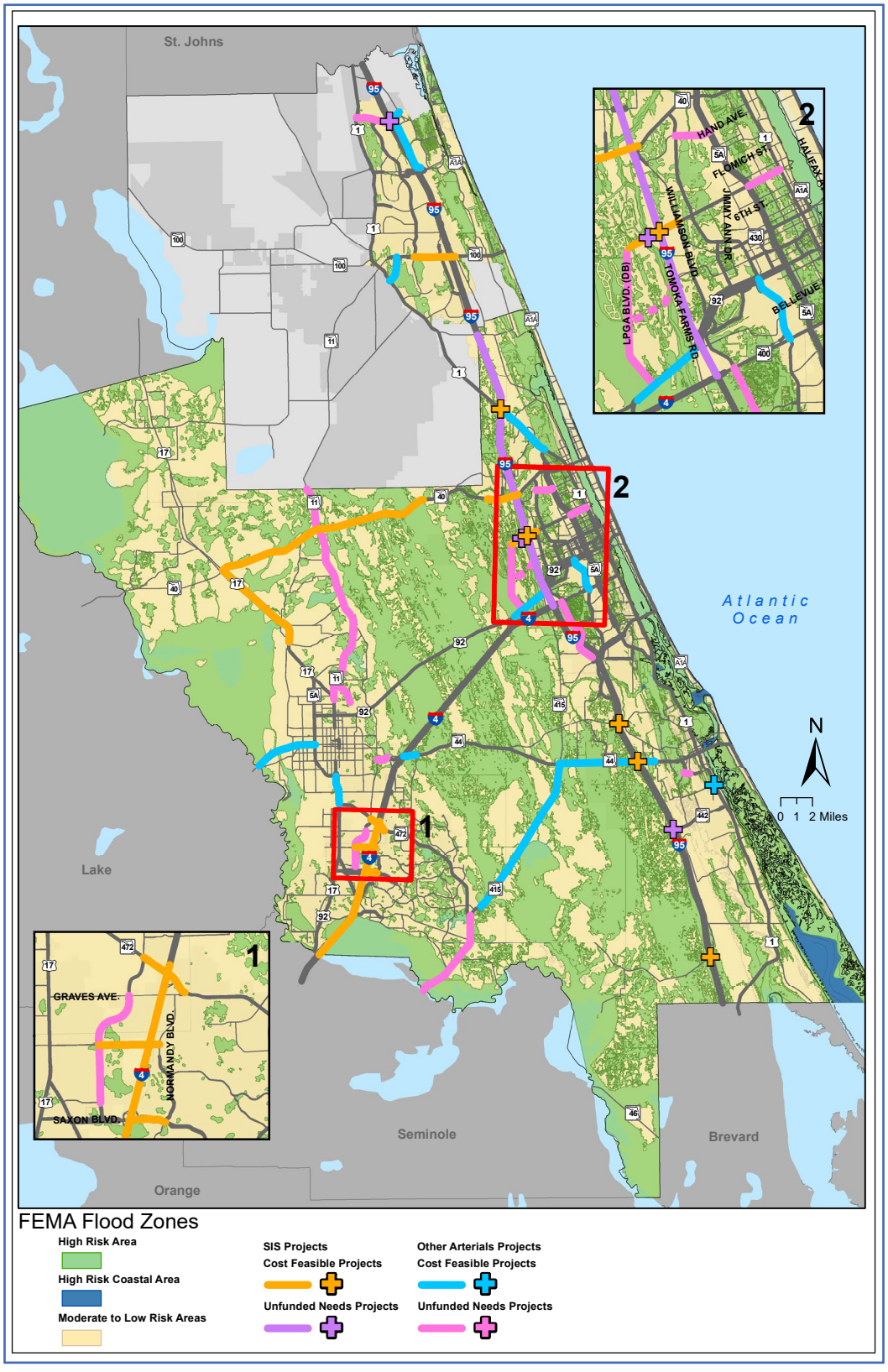
## Figure 18: Mitigation Banks



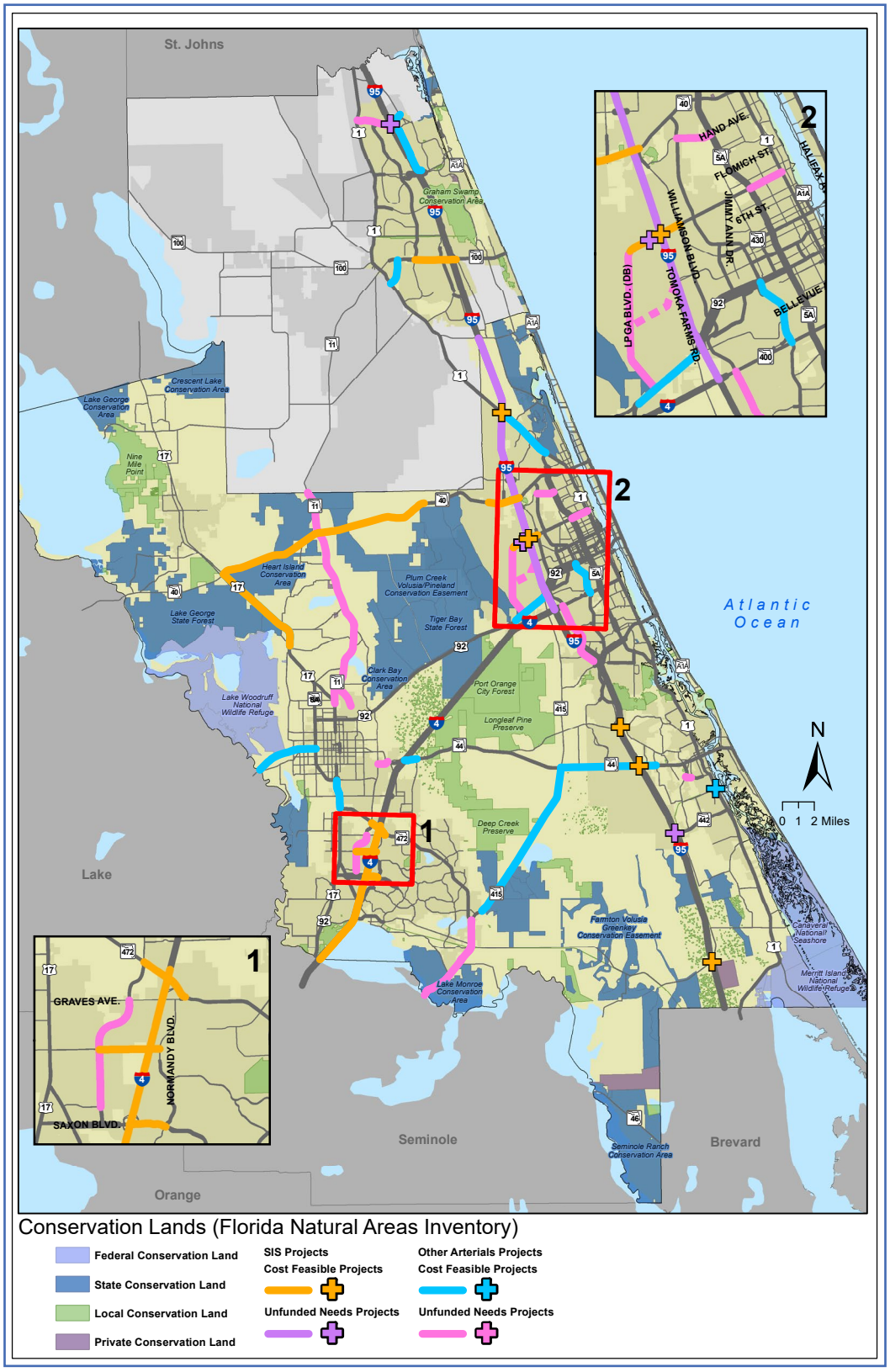
## Figure 19: Wetlands

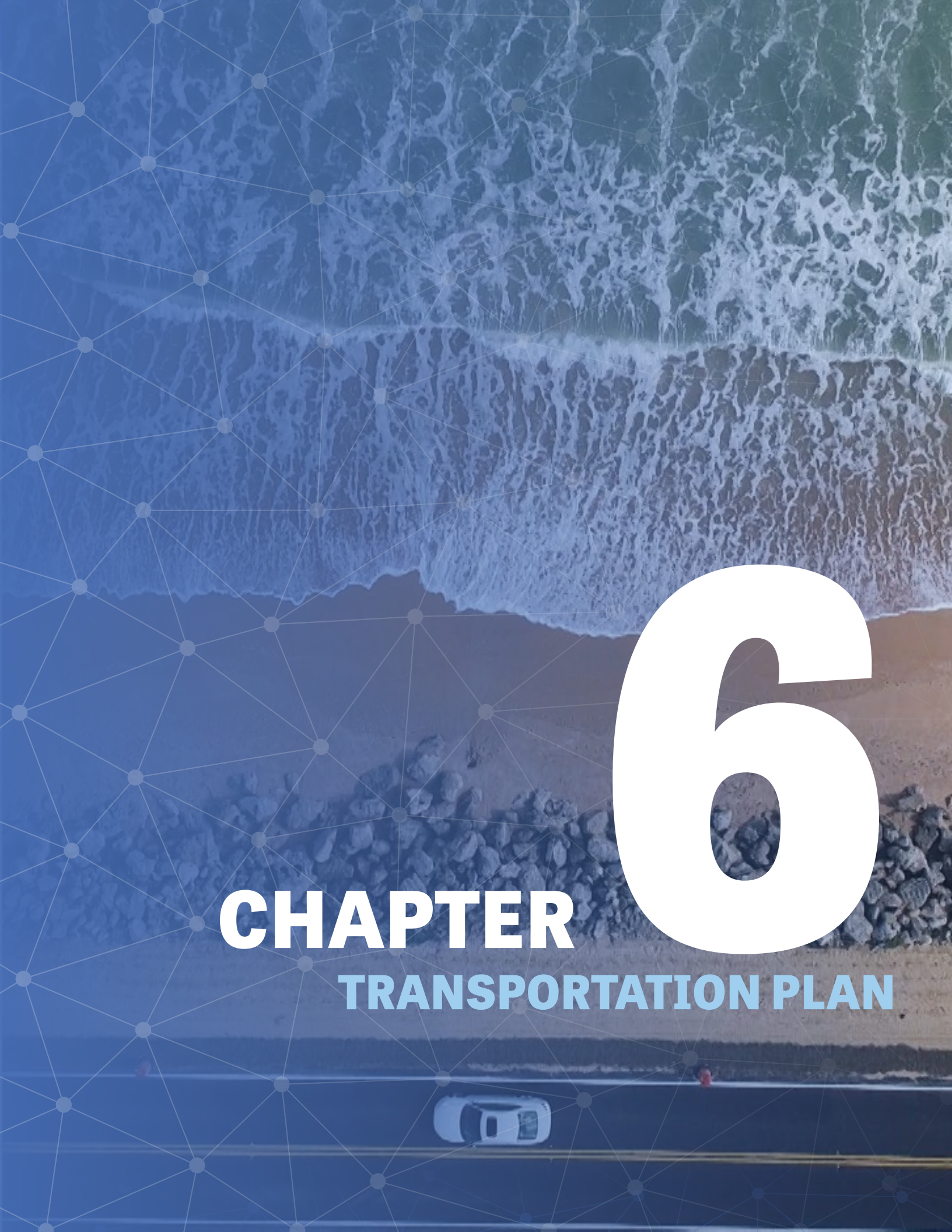


## Figure 20: Flood Zones



## Figure 21: Conservation Lands





# CHAPTER 6

# TRANSPORTATION PLAN

# CHAPTER 6 - TRANSPORTATION PLAN

This chapter provides an overview of Connect 2045's multimodal transportation plan, including the Cost Feasible Plan component. The plan is guided by projected financial resources that define the anticipated revenues available to plan for the region's transportation network. Guided by this forecast, the Cost Feasible Plan includes a fiscally constrained list of projects that define the highest priority roadway needs in bands of years going out to 2045. The plan also summarizes programmatic, policy and planning steps that support the development of a comprehensive multimodal network.

## FINANCIAL RESOURCES

Long range transportation plans rely upon revenue forecasts that project anticipated financial resources that will be available to preserve and improve the transportation system. A revenue forecast is used to determine which identified and prioritized transportation needs can reasonably be expected to be funded over the timeframe of the LRTP. These projects will make up the Cost Feasible Plan.

The Florida Department of Transportation (FDOT) develops the State Revenue Forecast every five years in coordination with the MPO Advisory Council (MPOAC) to support development of LRTPs. The Revenue Forecast assists MPOs in complying with the federal requirements to develop cost feasible transportation plans and demonstrates coordinated planning for transportation facilities and services. The State Revenue Forecast is also used by FDOT for the Strategic Intermodal System (SIS) Cost Feasible Plan. The forecast is based on current federal and state laws, funding sources, and FDOT policies, as well as assumptions concerning factors affecting state revenue sources (e.g., population growth rates, motor fuel consumption, and tax rates). The River to Sea TPO Interlocal Agreement that defines coordination with FDOT and the TPO planning area local governments is available upon request.

The State Revenue Forecast is focused on state and federal funds that "pass through" the FDOT Five-Year Work Program. Local estimates were prepared separately based upon anticipated revenues for Volusia and Flagler counties.

### Trends and Funding Considerations

A major challenge in funding transportation is the gap between revenues and the growing demand and costs of transportation needs. This challenge has been a major focus of the conversation and input behind the development of Connect 2045 as the TPO plans for a sustainable transportation network for the area. As referenced in the discussion of the Funding Scenarios in Chapter 5, there are a number of potential factors that could cause funding to be more constrained, including:

- Growing shortfalls in federal transportation funding due to the highway fuel tax remaining at the same level since 1993
- Projected reductions in fuel tax revenue due to increasing vehicle fuel economy
- Projected reductions in fuel tax revenue due to growth in sales of electric and other alternative fuel vehicles

In contrast, there are potential factors, including those listed below, that may provide additional financial resources in the future:

- Increase in federal highway fuel tax
- A new local sales tax
- Increase in state funding
- Implementation of a new revenue source based on miles driven rather than gallons of fuel sold

A key theme from input during plan development was to balance funding across a range of project types (capacity, safety/operational, technology, complete streets, etc.) rather than placing a more singular focus on one type. Of the project categories, there was also particular interest in the potential of technology to provide for less costly improvements than major capacity projects. Responding to evolving trends and input like this, Connect 2045 includes key implementation actions such as the following:

- ***In anticipation of shifting funding availability and increasing funding shortfalls, the TPO will re-evaluate major capacity projects that face significant fiscal limitations to completion.*** As a key financial strategy, this effort will provide the ability to right-size projects relative to available revenue which may assist in reliably funding a broader set of projects.
- ***Utilize the $40 million set-aside from the Cost Feasible Plan (see page 6-19) for prioritized Local Initiatives projects which could include technology projects identified in the ACES Corridor Prioritization.*** As a key financial strategy, this funding also helps to ensure a balanced plan of project types since it includes bicycle, pedestrian, trail, complete streets, operational and transit projects and programs.

## Revenue Summary

Financial resources are necessary to maintain, develop, and build transportation services or facilities to serve the community. As part of Connect 2045, a revenue forecast and projection was performed to identify the potential revenues available to fund prioritized projects in the Cost Feasible Plan. The Connect 2045 revenue forecast is based on current and assumed future federal, state, and local funding sources, and consideration of projected population and employment growth rates, fuel consumption, transit ridership, Florida Revenue Estimating Conference tax rates, and local tax rates.

The available revenues for the long range transportation plan can be categorized into four major categories:

1. **SIS Funding** - FDOT funding that is earmarked exclusively for SIS projects
2. **Other Federal and State Funding** - includes Other Arterials (OA) funds, Transportation Alternative funds (TALU/TALL/TALT), and Transportation Management Area (TMA) funds
3. **Local Revenues** - includes county and city impact fees, gas taxes, and other taxes where applicable
4. **Transit Revenues** - projections include federal, state, and local sources

**Table 6-1** provides a summary of projected revenue totals by source.

Table 6-1: Connect 2045 Revenue Forecast Summary - Year of Expenditure (YOE)

| Category | Total Projected Revenues 2026 2045 |
|---|---|
| **Projected State and Federal Revenues** | |
| Other Roads Construction & ROW | $872,750,000 |
| TMA (for MPO Population > 200,000) | $112,910,000 |
| TALU (Transportation Alternatives for TMAs) | $9,120,000 |
| **Strategic Intermodal System Projects** | |
| SIS Revenues | $1,385,520,017 |
| **Projected Local Revenues** | |
| Volusia County Revenues (Capital Improvements) | $655,078,000 |
| Volusia County Revenues (Operations & Maintenance) | $448,161,000 |
| Volusia County Revenues (Distributed to Municipalities) | $265,968,000 |
| Flagler County Revenues | $357,555,000 |
| **Projected Transit Revenues[1]** | |
| Volusia County Transit Revenues | $827,901,000 |
| Flagler County Transit Revenues | $86,245,000 |
| ***TOTAL*** | ***$5,021,208,017*** |

*[1]Transit revenue projections include federal, state, and local sources.*

## STRATEGIC INTERMODAL SYSTEM (SIS) REVENUES

The Strategic Intermodal System (SIS) was established by the Florida Legislature in 2003 as high- priority transportation facilities that enhance Florida's economic prosperity and competitiveness. The SIS includes significant statewide and interregional infrastructure, and places importance on safely and efficiently moving both passengers and freight. Revenues are used specifically and exclusively for SIS facilities with the goals of enhancing Interregional Connectivity, Intermodal Connectivity, and Economic Development.

The FDOT Systems Implementation Office produces the SIS Funding Strategy. This is comprised of three sequential documents that identify potential SIS projects, anticipated phase scheduling, and estimated costs. The documents include the following:

- SIS First Five Year Plan, which includes project phases over the next five years in the FDOT Five Year Work Program and TPO Transportation Improvement Program (TIP), both of which are updated annually
- SIS Second Five Year Plan, which includes the project phases planned for Years 6 through 10 and is updated annually after the First Five Year Plan is updated
- SIS Cost Feasible Plan, which includes the phases that are considered financially feasible for Years 11 through 25 based on current revenue forecasts; updated after new revenue forecasts are developed, generally every three to five years

## OTHER STATE AND FEDERAL TRANSPORTATION FUNDING

Connect 2045's estimates for the State and Federal revenues plus affiliated inflation factors were guided by both FDOT's 2045 Revenue Forecast for the River to Sea TPO, dated November 21, 2018 (**Technical Appendix J**), and the 2019 FDOT Revenue Forecasting Guidebook (**Technical Appendix J**). Projected State and Federal Revenues are shown in **Table 6-2**.

**Transportation Alternative Funds:** FDOT has provided estimates of funds for Transportation Alternatives to assist MPOs in developing their plans. They can be utilized to fund pedestrian and bicycle improvements. Estimates of Transportation Alternatives funds allocated for TMAs (i.e., "TALU" funds) are provided to each TMA. In addition, "TALT" (Transportation Alternative funds for any area of the state) funds are provided for FDOT District Five.

**Transportation Regional Incentive Program (TRIP):** These funds are allocated to improve regionally significant transportation facilities. FDOT funds 50% of project costs, or up to 50% of the non-Federal share of project costs for public transportation facility projects.

## OPERATIONS AND MAINTENANCE FUNDING

The 2045 Revenue Forecast for the River to Sea TPO (**Technical Appendix J**) developed by FDOT includes a commitment to non-capacity programs designed to support, operate, and maintain the state transportation system. It should be noted that in the State of Florida, funding for operations and maintenance is set aside first prior to the funding of capital improvements. **Table 6-1** includes the allocation of local funding to operations and maintenance.

Table 6-2: Connect 2045 Revenue Forecast Summary by Time Frame (in millions/YOE)

| Revenue | 2026 to 2030 | 2031 to 2035 | 2036 to 2045 | 2045 LRTP Total | 2040 LRTP Total** | Change from 2040 to 2045 |
|---|---|---|---|---|---|---|
| Other Roads Construction & ROW[1] | $199.73 | $217.72 | $455.3 | $872.75 | $409 | 213.4% |
| TMA (for MPO Population > 200,000) | $28.23 | $28.23 | $56.45 | $112.91 | $94.4 | 119.6% |
| TALU (Transportation Alternatives for TMAs)**** | $2.28 | $2.28 | $4.56 | $9.12 | N/A*** | N/A*** |
| ***TOTAL*** | ***$230.24*** | ***$248.23*** | ***$516.31*** | ***$994.78*** | ***N/A*** | ***N/A*** |

*1* *A portion of Other Roads Construction & ROW revenue may be used for non-State roads*

* *Includes years 2026 to 2045 (20 years). Note that year 2021 to 2025 revenues will be derived from the Transportation Improvement Program (TIP).*

** *Includes years 2021 to 2040 (20 years)*

*** *Not included in 2040 LRTP revenue forecast*

**** *In addition to TALU, other competitive funding sources include:*

- *TALL (Transportation Alternatives for areas with population[s] between 5,000 and 200,000)*
- *TALT (Transportation Alternatves for any area of the state)*
- *TRIP (Transportation Regional Incentive Program)*
- *TLWR (SUN Trail)*
- *CIGP (County Incentive Grant Program)*
- *SCOP (Small County Outreach Program)*

*Source for State and Federal Revenue Data: FDOT 2045 Revenue Forecast*

## LOCAL FUNDING

There are several local sources that currently fund operations and maintenance projects including the 9th Cent Gas Tax, 1st Local Option Gas Tax, 2nd Local Option Gas Tax, Constitutional Gas Tax, County Gas Tax, and Impact Fees. Volusia County, Flagler County and the City of Palm Coast provided projections for future funding levels from their current funding sources and further analysis of these projections was developed by the TPO. **Table 6-3** includes projected Volusia County revenues while **Table 6-4** includes projected revenues for Flagler County and the City of Palm Coast. This local revenue data is provided for informational purposes only.

Table 6-3: Projected Volusia County Revenues (YOE)

| Revenue | 2026 to 2030 | 2031 to 2035 | 2036 to 2045 | Total |
|---|---|---|---|---|
| **County** | | | | |
| County Gas Tax | $12,677,000 | $13,368,000 | $28,812,000 | $54,857,000 |
| Constitutional Gas Tax | $28,720,000 | $30,203,000 | $64,857,000 | $123,780,000 |
| Local Option Gas Tax | $46,824,000 | $49,811,000 | $108,586,000 | $205,221,000 |
| 9th Cent Gas Tax | $14,685,000 | $15,613,000 | $34,005,000 | $64,303,000 |
| 2nd Local Option Gas Tax | $34,515,000 | $36,639,000 | $79,644,000 | $150,798,000 |
| Road Impact Fees | $94,250,000 | $113,930,000 | $296,100,000 | $504,280,000 |
| ***SUBTOTAL*** | ***$231,671,000*** | ***$259,564,000*** | ***$612,004,000*** | ***$1,103,239,000*** |
| **Municipalities**[1] | | | | |
| Local Option Gas Tax | $34,980,000 | $37,212,000 | $81,120,000 | $153,312,000 |
| 2nd Local Option Gas Tax | $25,785,000 | $27,372,000 | $59,499,000 | $112,656,000 |
| ***SUBTOTAL*** | ***$60,765,000*** | ***$64,584,000*** | ***$140,619,000*** | ***$265,968,000*** |
| ***TOTAL*** | ***$292,436,000*** | ***$324,148,000*** | ***$752,623,000*** | ***$1,369,207,000*** |

1 *42.7% of Local Option Gas Tax countywide totals are distributed to municipalities. See the 2018 Local Government Financial Information Handbook, Page 215.*

## Table 6-4: Projected Flagler County and City of Palm Coast Revenues (YOE)

| Revenue | 2026 to 2030 | 2031 to 2035 | 2036 to 2045 | Total |
|---|---|---|---|---|
| **County** | | | | |
| County Gas Tax | $3,286,000 | $3,601,000 | $8,147,000 | $15,034,000 |
| Constitutional Gas Tax | $7,351,000 | $8,014,000 | $18,016,000 | $33,381,000 |
| Local Option Gas Tax | $2,766,000 | $2,929,000 | $5,404,000 | $11,099,000 |
| 9th Cent Gas Tax | $2,690,000 | $2,891,000 | $6,390,000 | $11,971,000 |
| ½ Cent Small County Sales Tax1 | $37,323,000 | $16,449,000 | $0 | $53,772,000 |
| ***SUBTOTAL*** | ***$53,416,000*** | ***$33,884,000*** | ***$37,957,000*** | ***$125,257,000*** |
| **Palm Coast[2]** | | | | |
| Local Option Gas Tax3 | $10,995,000 | $11,829,000 | $26,160,000 | $48,984,000 |
| ½ Cent Small County Sales Tax4 | $41,225,000 | $18,169,000 | $0 | $59,394,000 |
| Road Impact Fees | $22,590,000 | $23,360,000 | $77,970,000 | $123,920,000 |
| ***SUBTOTAL*** | ***$74,810,000*** | ***$53,358,000*** | ***$104,130,000*** | ***$232,298,000*** |
| ***TOTAL*** | ***$128,226,000*** | ***$87,242,000*** | ***$142,087,000*** | ***$357,555,000*** |

1 *The ½ Cent Small County Sales Tax is set to expire in 2032*

2 *The TPO's planning area in Flagler County is limited to Palm Coast and its immediate surrounding area*

3 *73.3% of the Local Option Gas Tax countywide total is distributed to Palm Coast. See the 2018 Local Government Financial Information Handbook, Page 210.*

4 *49.9% of the ½ Cent Small County Sales Tax countywide total is distributed to Palm Coast. See the 2018 Local Government Financial Information Handbook, Page 162.*

## 2045 Transit Revenue Forecast

Anticipated transit revenues for Connect 2045 total nearly $828 million for Votran and approximately $86 million for Flagler County Public Transportation. **Tables 6-5** and **6-6** provide the revenues forecasted to be available for transit from 2026 to 2045.

Table 6-5: Projected Votran Revenues (YOE)

| Revenue | 2026 to 2030 | 2031 to 2035 | 2036 to 2045 | Total |
|---|---|---|---|---|
| **Operating** | | | | |
| Federal Operating | $32,495,000 | $34,390,000 | $74,850,000 | $141,735,000 |
| FDOT State Block Grant | $12,592,000 | $13,780,000 | $31,146,000 | $57,518,000 |
| FDOT Service Development | $4,696,000 | $5,140,000 | $11,616,000 | $21,452,000 |
| FDOT Corridor | $0 | $0 | $0 | $0 |
| Commission for TD Operation | $8,638,000 | $9,453,000 | $21,365,000 | $39,456,000 |
| Local Operating | $80,552,000 | $83,295,000 | $174,885,000 | $338,732,000 |
| **Capital** | | | | |
| Federal Capital | $46,741,000 | $46,306,000 | $93,875,000 | $186,922,000 |
| State Capital | $5,192,000 | $5,625,000 | $12,578,000 | $23,395,000 |
| Local Capital | $4,673,000 | $4,630,000 | $9,388,000 | $18,691,000 |
| ***TOTAL*** | ***$195,579,000*** | ***$202,619,000*** | ***$429,703,000*** | ***$827,901,000*** |

Table 6-6: Projected Flagler County Public Tranportation Revenues (YOE)*

| Revenue | 2026 to 2030 | 2031 to 2035 | 2036 to 2045 | Total |
|---|---|---|---|---|
| **Operating** | | | | |
| Federal Operating | $5,520,000 | $6,053,000 | $13,707,000 | $25,280,000 |
| Commission for TD Operation | $4,279,000 | $4,693,000 | $10,626,000 | $19,598,000 |
| Local Operating | $4,742,000 | $5,200,000 | $11,775,000 | $21,717,000 |
| **Capital** | | | | |
| Federal Capital | $2,884,000 | $3,138,000 | $7,039,000 | $13,061,000 |
| State Capital | $1,455,000 | $1,583,000 | $3,551,000 | $6,589,000 |
| ***TOTAL*** | ***$18,880,000*** | ***$20,667,000*** | ***$46,698,000*** | ***$86,245,000*** |

** The extrapolation of Flagler transit revenues assuming linear growth based on the values presented in the 2015 TDP resulted in higher-than-expected annual growth. As such, the Flagler transit revenue forecast presented here assumes that the 2025 Flagler transit revenues forecasted in the 2015 TDP will increase at a rate equal to that of total population growth for the County, according to available socioeconomic data. For capital revenues, values were only forecast to 2020 in the 2015 TDP; in this case, values were extrapolated based on 2020 forecasts.*

## Transportation Improvement Program (TIP)

The adopted Fiscal Year (FY) 2020/21 – 2024/25 Transportation Improvement Program (TIP) serves as the first five years of the long range transportation plan. The TIP is incorporated into the LRTP in order to capture revenues for the entire duration of time from plan adoption (2020) through the plan's horizon year of 2045.

While the federal regulations call for a TIP that includes four years of improvements, Florida requires and recognizes a full five years. Amendments and updates to the TIP go through a formal process which includes a public comment period for major changes.

General revenue sources for TIP projects are listed in **Table 6-7**. The full table can be found in the River to Sea TPO FY 2020/2021-2024/25 Transportation Improvement Program on the TPO's website.

The current TIP includes several projects which are scheduled to be at least partially-funded as listed in **Tables 6-8** to **6-11**. It should be noted that the TIP five-year program includes year-of-expenditure (YOE) costs.

Table 6-7: Five-Year TIP Fund Summary by Fund Type, 2021-2025

| 2020/2021 – 2024/2025 Total TIP Funds | |
|---|---|
| Federal | $135,640,276 |
| State | $381,349,101 |
| Local | $70,733,609 |
| **All Sources** | **$587,722,986** |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## TIP ROADWAY (CAPACITY) PROJECTS

**Table 6-8** summarizes the roadway capacity projects included in the River to Sea TPO FY 2020/2021 – FY 2024/2025 TIP and associated costs by phase and timeframe. This includes both SIS and non-SIS projects. Many of the projects identified in this table are included in the Connect 2045 Cost Feasible Plan.

Table 6-8: Summary of TIP Roadway (Capacity) Projects for FY 2020/21 - 2024/25

| Project | From | To | Mi | Improve Type | PE Time | PE Cost | PE Revenue Source |
|---|---|---|---|---|---|---|---|
| SR 40 | SR 15/US 17 | SR 11 | 6.38 | 2U-4D | < 2020/21 | $5,696,397 | N/A |
| SR 40 | W OF SR 11 | W OF CONE RD | 7.64 | 2U-4D | < 2020/21 | $6,685,110 | N/A |
| SR 15 (US 17) | DELEON SPRINGS | SR 40 | 6.85 | 2U-4D | < 2020/21 | $23,295,661 | N/A |
| | S of SPRING ST | LAKE WINONA RD | 1.55 | 2U-4D | N/A | N/A | N/A |
| I-95 | AT SR 5 (US 1) | n/a | 1 | INT IMP | 2021/22 (PDE) | $2,800,000 | STATE (SIS) |
| | | | | | 2021/22 (PE) | $3,300,000 | ARPA |
| SR 600 (US 92) | I-4 EASTBOUND RAMP | TOMOKA FARMS RD | 2.2 | 4D-6D | < 2020/21 | $5,096,676 | N/A |
| SR 40 | BREAKAWAY TRAIL | WILLIAMSON BLVD | 2.46 | 4D-6D | 2022/23 (PE) | $2,750,000 | STATE (SIS) |
| I-95 | AT PIONEER TRAIL | n/a | | NEW INT | < 2020/21 | $6,976,198 | N/A |
| | | | | | 2020/21 (ENV) | $4,000,000 | STATE (SIS) |
| | | | | | 2021-2025 | $7,500,000 | ARPA |
| I-95 | AT MAYTOWN RD | n/a | 0.05 | NEW INT | 2020/21 (PDE) | $2,550,000 | STATE (SIS) |
| I-95/LPGA BLVD | WILLIAMSON BLVD | US 92 | | INT IMP WIDEN | 2021/22 (PDE) | $3,420,000 | FEDERAL/LF |
| | | | | | 2021/22 (PE) | $7,000,000 | ARPA |
| Flagler Central Commerce Parkway Connector | US 1 | SR 100 | 1.7 | New 2U | | | |



| ABBREVIATION | DEFINITION |
|---|---|
| 2U | 2 Lane Undivided Road |
| 4U | 4 Lane Undivided Road |
| 4D | 4 Lane Divided Road |
| 6D | 6 Lane Divided Road |
| SR | State Road |
| US | US Road |
| PDE | Project Development & Environment |
| PE | Preliminary Engineering |

| ABBREVIATION | DEFINITION |
|---|---|
| ROW | Right-of-Way |
| CST | Construction |
| ENV | Environmental |
| ARPA | American Rescue Plan Act |
| LF | Local Funds |
| SIS | Strategic Intermodal System |
| INT IMP | Interchange Improvement |
| NEW INT | New Interchange |

| ROW Time | ROW Cost | ROW Revenue Source | CST Time | CST Cost | CST Revenue Source | Total Programmed Amount | Funded Level |
|---|---|---|---|---|---|---|---|
| 2022/23 - 2024/25 | $4,206,411 | STATE (SIS) | TBD | TBD | TBD | $4,206,411 | PARTIAL |
| 2022/23 - 2024/25 | $2,411,357 | STATE (SIS) | TBD | TBD | TBD | $2,411,357 | PARTIAL |
| 2020/21 - 2021/22 | $9,090,704 | STATE (SIS) | TBD | TBD | TBD | $9,090,704 | PARTIAL |
| N/A | N/A | N/A | 2022/23 | $32,607,028 | STATE/ FEDERAL | $32,607,028 | FULLY FUNDED |
| TBD | TBD | TBD | TBD | TBD | TBD | $6,100,000 | PARTIAL |
| 2021/22 - 2023/24 | $8,870,200 | STATE | TBD | TBD | TBD | $8,870,200 | PARTIAL |
| 2024/25 | $635,000 | STATE (SIS) | TBD | TBD | TBD | $3,385,000 | PARTIAL |
| 2021-25 | $17,000,000 | ARPA | 2021-2025 | $94,000,000 | ARPA | $126,262,791 | FULLY FUNDED |
| TBD | TBD | TBD | TBD | TBD | TBD | $2,550,000 | PARTIAL |
| TBD | TBD | TBD | TBD | TBD | TBD | $10,420,000 | PARTIAL |
| | | | 2021-2025 | $6,800,000 | STATE | $6,800,000 | FULLY FUNDED |

| | |
|---|---|
| ***TOTAL*** | ***$212,703,491*** |
| ***SIS*** | ***$61,050,500*** |
| ***OTHER STATE/ FEDERAL*** | ***$151,652,491*** |
| ***LOCAL*** | ***$500*** |

## TIP PUBLIC TRANSIT AND TRANSPORTATION DISADVANTAGED (TD) PROJECTS

**Table 6-9** summarizes the transit and transportation disadvantaged projects included in the River to Sea TPO FY 2020/2021 – FY 2024/2025 TIP and associated costs. The table details projects including new or enhanced routes. The other project types are summarized cumulatively.

Table 6-9:TIP FY 2020/2021-2024/25 Transit & Transportation Disadvantaged Projects

| Project | Cost | Revenue Source | PDV Total |
|---|---|---|---|
| Votran Increase Headways | $4,089,020 | STATE | $4,089,020 |
| Sunrail Feeder Bus Service Phase I & II | $327,000 | STATE (SIS) | $327,000 |
| Volusia Express Routes Serving SunRail in DeBary | $347,040 | STATE | $347,040 |
| SunRail Phase II North Expansion | $11,249,565 | STATE | $44,968,262 |
| | $33,718,697 | FEDERAL | |
| Operations, Maintenance, and Other Project Types | $64,262,819 | FEDERAL | $211,279,295 |
| | $98,589,443 | STATE | |
| | $48,427,033 | LOCAL | |
| | | ***TOTAL*** | **$261,010,617** |
| | | ***LOCAL*** | ***$48,427,033*** |
| | | ***STATE*** | **$42,420,756** |
| | | ***STATE (SIS)*** | ***$72,181,312*** |
| | | ***FEDERAL*** | **$97,981,516** |

## TIP BICYCLE, PEDESTRIAN & ENHANCEMENT PROJECTS

**Table 6-10** summarizes the bicycle and pedestrian facility and enhancement projects included in the River to Sea TPO FY 2020/2021 – FY 2024/2025 TIP and associated costs. The table details bicycle, pedestrian, and multiuse trail projects.

Table 6-10:TIP FY 2020/2021-2024/25 Bicycle, Pedestrian & Enhancement Projects

| Project | Cost | Revenue Source | PDV Total |
|---|---|---|---|
| River To Sea TPO Bike/Pedestrian SU/TALU Set-Aside Reserve | $4,782,045 | FEDERAL/STATE | $ 4,782,045 |
| Graham Swamp Multi-Use Trail and Pedestrian Bridge | $6,393,744 | FEDERAL/STATE | $ 6,393,744 |
| SR 400 (Beville Rd) from Williamson Blvd to Clyde Morris Blvd | $111,000 | LOCAL | $ 964,030 |
| | $853,030 | FEDERAL/STATE | |
| Spring-to-Spring Trail Phase 3C W Highbanks Rd to Debary Plantation Blvd | $1,173,000 | FEDERAL/STATE | $ 1,173,000 |
| US 17/92 at Sunrail Station (Fort Florida Rd) Coast to Coast Trail | $225,000 | LOCAL | $ 225,000 |
| Titusville to Edgewater Trail from Roberts Rd to Dale Ave | $9,240,281 | FEDERAL/STATE | $ 9,240,281 |
| St Johns River to Sea Loop Myrtle Av from 10th St to SR 44/Lytle Av | $3,190,503 | FEDERAL/STATE | $ 3,190,503 |
| SJR2C Loop Trail (Spruce Creek Rd) from S of Selin Cir to Herbert St | $200,000 | FEDERAL/STATE | $ 200,000 |
| SJR2C Loop Trail from Sauls St/Mcdonald Rd to Carmen Dr | $1,100,000 | FEDERAL/STATE | $ 1,100,000 |
| SR A1A Trail (SJR2C) in Flagler Beach | $2,500,000 | FEDERAL/STATE | $ 2,500,000 |
| St Johns River to Sea Loop from Lake Beresford Park to Grand Ave | $9,097,238 | FEDERAL/STATE | $ 9,097,238 |
| SR 15 (US 17) from SR 40 to Putnam County Line | $2,840,000 | FEDERAL/STATE | $ 2,840,000 |
| Navy Canal Trail from Museum Blvd West to Clyde Morris Blvd | $599,624 | LOCAL | $ 827,597 |
| | $227,973 | FEDERAL/STATE | |
| Volusia Pines Elementary & Ivy Hawn Charter School Sidewalk Gaps | $728,950 | FEDERAL/STATE | $ 728,950 |
| Amelia Ave from Voorhis Ave to Ohio Ave | $2,149,612 | FEDERAL/STATE | $ 2,149,612 |
| Derbyshire Sidewalks Phase II | $85,694 | LOCAL | $ 859,440 |
| | $773,746 | FEDERAL/STATE | |
| Campbell Middle School & Turie T. Small Elementary | $865,962 | FEDERAL/STATE | $ 865,962 |
| A1A from Millsap Drive to State Road 40 | $2,138,631 | FEDERAL/STATE | $ 2,138,631 |
| Providence Blvd from Perimeter Dr to Alexander Ave South Segment | $367,739 | LOCAL | $ 1,104,218 |
| | $736,479 | FEDERAL/STATE | |
| SR A1A from N of Ocean Marina Dr to S of Westmayer Pl | $1,483,461 | FEDERAL/STATE | $ 1,483,461 |
| Willow Run Blvd from Harms Way to Clyde Morris Blvd | $108,100 | FEDERAL/STATE | $ 120,000 |
| | $11,900 | LOCAL | |
| | | ***TOTAL*** | ***$51,983,712*** |
| | | ***FEDERAL/STATE*** | ***$50,582,755*** |
| | | ***LOCAL*** | ***$1,400,957*** |

## OTHER TIP PROJECT TYPES

**Table 6-11** summarizes other project types included in the River to Sea TPO FY 2020/2021 – FY 2024/2025 TIP and associated costs. The table summarizes Traffic Operations, Intelligent Transportation System (ITS) & Safety projects, which includes primarily non-capital roadway improvements, maintenance projects, and planning studies.

Table 6-11: TIP FY 2020/2021-2024/25 Other Project Types

| Project Type | Revenue Identity | Revenue (2020$) |
|---|---|---|
| Traffic Operations, ITS & Safety Projects | TOTAL | $60,396,943 |
| | FEDERAL/STATE | $57,960,792 |
| | LOCAL | $2,436,151 |
| Maintenance Projects | TOTAL | $158,162,239 |
| | FEDERAL/STATE | $157,064,333 |
| | LOCAL | $1,097,906 |
| Transportation Planning Studies | TOTAL | $5,684,521 |
| | FEDERAL/STATE | $5,590,987 |
| | LOCAL | $93,534 |


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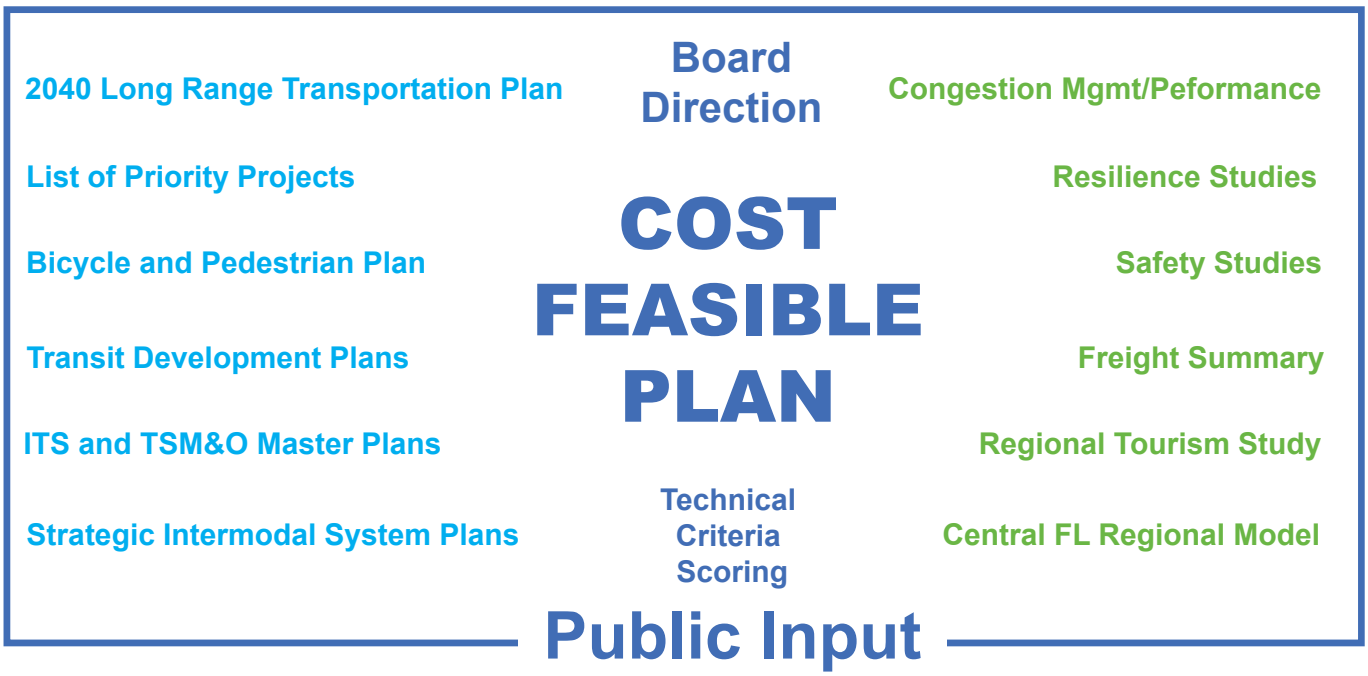
# COST FEASIBLE PLAN

In long range transportation planning, a Cost Feasible Plan (CFP) identifies financially viable improvements to an area's transportation network. The estimated available revenue for roadway capital improvements is not sufficient to fund all projects identified through the comprehensive Needs Assessment described in Chapter 5. Proposed projects are eligible for funding from different sources depending on the type and jurisdiction of the project. Funding was allocated to projects considering priority and eligibility of funding source. The CFP was developed in a fiscally constrained manner based on reasonable transportation revenues anticipated to be available through 2045. See **Appendix B** for demonstration of fiscal constraint.

The CFP focuses on roadway needs at the project level and includes other multimodal needs programmatically through a $40 million set-aside for Local Initiatives. Funding for Local Initiatives – such as transit, bicycle-pedestrian, and traffic operations-safety – is further addressed through the TPO's Surface Transportation Program Urban Attributable (SU) Funding Set-Aside Policy (Resolution 2017-3).

A range of plans, studies, and input come together to create the Cost Feasible Plan.



# ROADWAY PLAN

Roadway projects are categorized as follows:

## Strategic Intermodal System (SIS)

The SIS is Florida's high-priority network of transportation facilities. SIS projects are identified at the state level by FDOT with input from MPOs and local governments. Pursuant to s. 339.64, F.S., the River to Sea TPO performs a critical role in the development and the advancement of SIS projects within its planning area. The inclusion and prioritization of SIS projects in the TPO's planning and programming processes are influential with regard to SIS Plan updates and may lead to revisions or reprioritization of SIS projects in the statewide plan.

## Other Arterials

The Other Arterials projects represent major non-SIS corridors that are "On-System" (State Highway System) or "Off-System" (Non-State Highway System). These projects could be funded through federal (TMA) funds and state (non-SIS) funds defined as "Other Roads Construction and ROW" in the Connect 2045 Revenue Forecast. All TMA funds and up to 10% of "Other Roads Construction and ROW" funds can be estimated for "Off-System (Non-State Highway System)" projects. Specific TMA (SU) set-asides are defined in River to Sea TPO Resolution 2020-23.

## Non-State Major Roadways

These projects are determined at the local level and are illustrative needs that would be expected to receive funding through local sources. In Connect 2045, locally identified projects are included as a separate list.

**Table 6-12** includes the Strategic Intermodal System (SIS) Cost Feasible projects. **Table 6-13** includes Other Arterial Cost Feasible Projects. The map in **Figure 22** illustrates the SIS Cost Feasible and Unfunded Needs projects shown in **Table 6-12** and **Table 6-14**, while **Figure 23** illustrates Other Arterial Cost Feasible and Unfunded Needs projects shown in **Table 6-13** and **Table 6-15**. The Map ID listed for each project in Tables 6-12 and 6-13 are used to label the corresponding projects in Figures 22 and 23.

Detailed tables of the Cost Feasible Plan projects are included in **Appendix B** and **Appendix C** of this document. **Appendix B** includes the projects with the Year-of-Expenditure (YOE) costs, while **Appendix C** includes the projects in terms of Present Day Value (PDV). These tables ensure the proposed improvements included in the Cost Feasible Plan are identified sufficiently per 23 C.F.R. 450.322(f)(6).

## Local Initiatives

As shown in **Table 6-13**, Connect 2045 also aims to create high-quality transportation facilities by allocating approximately $40 million (in present day dollars) in funding for Local Initiative projects on the state highway system. These include projects that address complete streets retrofits, roundabouts, technology projects, climate change adaptation and other improvements that support the goals of Connect 2045.

Table 6-12: Connect 2045 SIS Cost Feasible Projects

| Map ID | Facility | Improvement | Cost (Year of Expenditure) |
|---|---|---|---|
| A | **I-4/SR 400** from Seminole County Line to East of SR 472 | Managed Lanes | $937.99 M |
| | **SR 472** from Graves Avenue to Kentucky/ MLK Boulevard | Widen to 6 lanes | |
| | **Saxon Boulevard** from I-4 to Normandy Boulevard | Widen and Ramp Improvements | |
| | **Rhode Island Avenue Extension** from Veterans Memorial Parkway to Normandy Boulevard | New Road and ML Ramps | |
| B | **SR 15 (US 17)** from DeLeon Springs to SR 40 | Widen to 4 lanes | $65.86 M[1] |
| | **SR 15 (US 17)** from S of Spring Street to Winona Rd | Widen to 4 lanes | $32.60 M |
| C | **SR 40** from Breakaway Trails to Williamson Boulevard | Widen to 6 lanes | $49.39 M |
| D | **SR 40** from West of SR 11 to West of Cone Road | Widen to 4 lanes | $79.92 M |
| E | **SR 40** from SR 15 (US-17) to SR 11 | Widen to 4 lanes | $68.94 M |
| F | **I-95/LPGA Boulevard Interchange** from Williamson Boulevard to US 92 | Interchange Improvement | $32.48 M |
| G | **I-95 Interchange at Pioneer Trail** | New Interchange | $126.2M |
| H | **I-95/US-1 Interchange** | Interchange Improvement | $59.55 M |
| I | **SR 100** from Old Kings Road to Belle Terre Parkway | Widen to 6 lanes | $59.95 M |
| J | **I-95/SR 44 Interchange** | Interchange Improvement | $2.25 M |
| K | **I-95 Interchange at Maytown Road** (Farmton Interchange) | New Interchange | Developer Funded |
| L | **Tomoka River Bridge (LPGA Boulevard)** from West of Champions Drive to East of Tomoka Farms Road | Bridge to match interchange configuration | Funded[2] |

*[1] It is anticipated that this SR 15 (US-17) widening will be a SIS-funded project. $10,000,000 is identified in Table 6-13 for funding to show local commitment and priority.*

*[2] Replacement of the Tomoka River Bridge on LPGA Blvd included in Project F - I-95/LPGA Boulevard Interchange project from Williamson Blvd to US 92.*

## Table 6-13: Connect 2045 Other Arterial Cost Feasible Projects

| Map ID | Facility | Improvement | Cost (Year of Expenditure) |
|---|---|---|---|
| P | **US-1 at Park Avenue** | Intersection Improvement | $7.95 M |
| Q | **SR 483 (Clyde Morris Blvd.)** from SR 400 (Beville Road) to US-92 | Corridor Improvement | $84.35 M |
| R | **Old Kings Road** from Palm Harbor Village Way to Farnum Lane | Widen to 4 lanes | $28.91 M |
| S | **Old Kings Road** from Farnum Lane to Forest Grove Drive | Widen to 4 lanes | $35.77 M |
| T | **SR 44** from Grand Ave to SR 15A | Widen to 4 lanes | $27.05 M |
| U | **US-92** from I-4 Eastbound Ramp to CR 415 (Tomoka Farms Road) | Widen to 6 lanes | $67.00 M |
| L | **Tomoka River Bridge (LPGA)** W of Champions Drive to E of Tomoka Farms Road | Bridge to match interchange configuration | $3.57 M[1] |
| V | **US 17/92** from SR 472 to SR 15A (Taylor Road) | ITS | $46.50 M |
| W | **SR 44** from I-4 to Prevatt Avenue | Widen to 6 lanes | $10.82 M |
| X | **US-1** from Nova Road (N) to I-95 | Widen to 6 lanes | $65.62 M |
| Y | **SR 415 (Tomoka Farms Road)** from Acorn Lake Road to Lake Ashby Road | Widen to 4 lanes | $98.14 M |
| Z | **SR 415 (Tomoka Farms Road)** from Lake Ashby Road to SR 44 | Widen to 4 lanes | $130.15 M |
| AA | **SR 44** from SR 415 to Glencoe Road | Widen to 6 lanes | $117.31 M |
| BB | **SR 44** from Lake County line to Grand Avenue | Widen to 4 lanes | $55.69 M |
| CC | **Old Kings Road Extension (Phase II)** from Mantanzas Woods Parkway to Old Kings Road | New 4-lane road | $15.13 M |
| DD | **Flagler Central Commerce Parkway Connector** from SR 5 (US-1) to SR 100 | New 2-lane road | $6.80 M |
| B | **SR 15 (US 17)** from DeLeon Springs to SR 40 | Widen to 4 lanes | $10.00 M[2] |
| - | **Local Initiatives** | Varies | $72.08 M |
| - | **SHS Operational Improvements** | Varies | $3.34 M |

*[1] It is anticipated that the Tomoka River Bridge will be a SIS-funded project. $3,570,000 (YOE) is identified for funding to show local commitment and priority. This project is also included in the SIS Cost Feasible Projects table (Table 6-12).*

*[2] SR 15 (US 17) is also included in the SIS Cost Feasible Projects table (Table 6-12). $10,000,000 is identified for funding to show local commitment and priority for this project.*

# UNFUNDED TRANSPORTATION NEEDS

There are several unfunded needs that the River to Sea TPO will look to fund should additional revenues become available. The unfunded needs for both the SIS and Other Arterial groupings are shown in **Table 6-14** and **Table 6-15**.

Table 6-14: Unfunded SIS Needs Projects

| Map ID | Facility | Improvement | Cost |
|---|---|---|---|
| **L** | **Tomoka River Bridge (LPGA Boulevard)** from West of Champions Drive to East of Tomoka Farms Road | Bridge | Partially Funded |
| **M** | **I-95/Matanzas Woods Parkway Interchange** | Interchange Improvement | TBD |
| **N** | **I-95** from SR 400 to Old Dixie Highway | Widen to 8 lanes | TBD |
| **O** | **I-95/SR 442 Interchange*** | Interchange Improvement | TBD |

*Note: These projects are not listed in priority order.*

** The I-95/SR 442 interchange improvement project was identified as an unfunded need after the needs assessment phase was completed. The LRTP Subcommittee recommended adding the project to the Unfunded SIS Needs Projects list.*

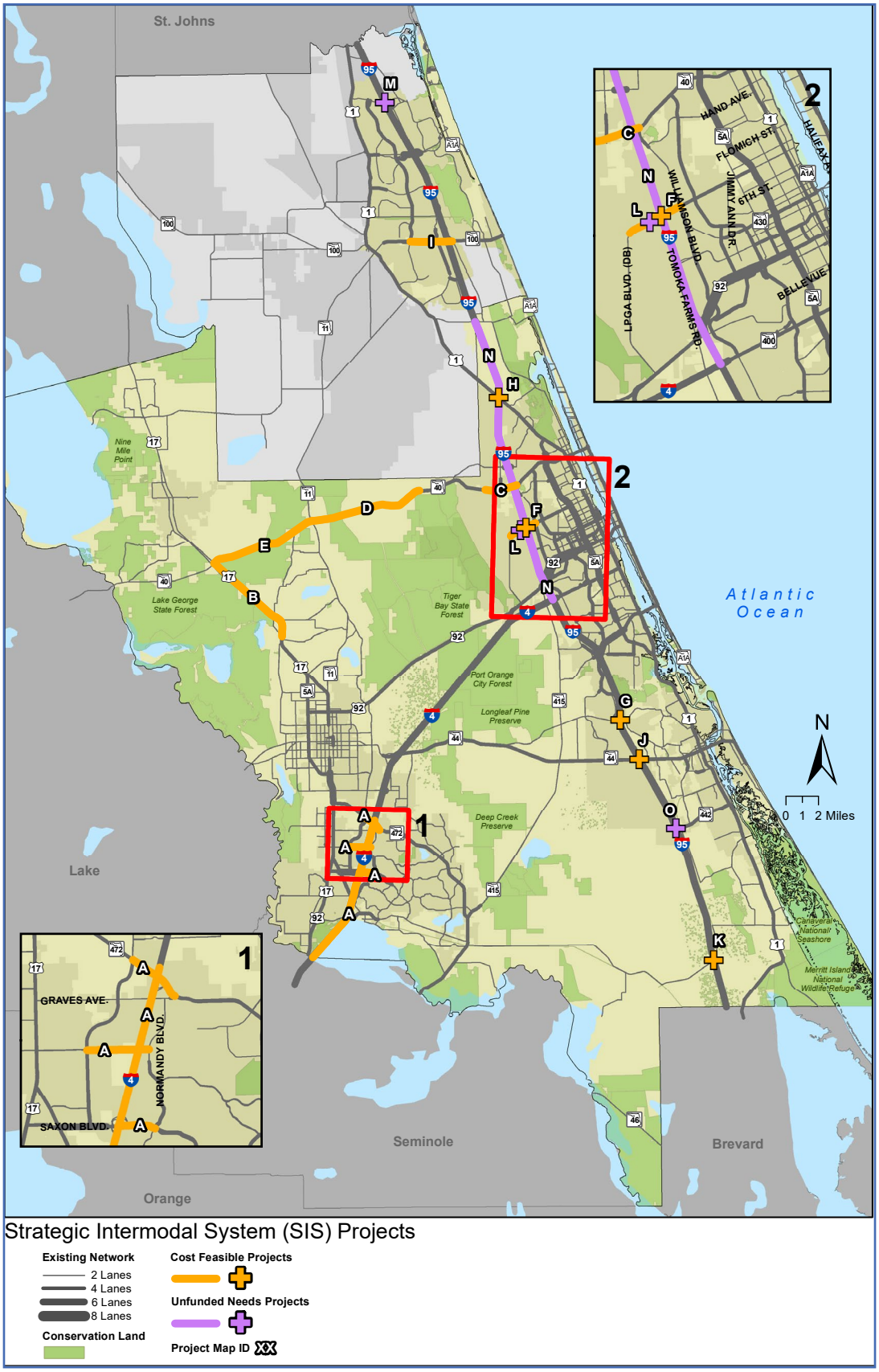
## Table 6-15: Unfunded Other Arterial Needs Projects

| Map ID | Facility | Improvement | Cost (Year of Expenditure)* |
|---|---|---|---|
| **EE** | **SR 415 (Tomoka Farms Road)/excludes bridge** from Seminole County line to Howland Drive | Widen to 6 lanes | $111.83 M |
| **FF** | **SR 11** from N. Woodland Boulevard to Flagler County line | Widen to 4 lanes | $290.89 M |
| **GG** | **Williamson Boulevard** from Madeline Avenue to SR 400 (Beville Road) | Widen to 4 lanes | $13.74 M |
| **HH** | **Veterans Memorial Parkway** from Harley Strickland Boulevard to Graves Avenue | Widen to 4 lanes | $20.09 M |
| **II** | **Mantanzas Woods Parkway** from SR 5 (US-1) to I-95 | Widen to 4 lanes | $30.34 M |
| **JJ** | **LPGA Boulevard** from Nova Road to US-1 | Widen to 3 lanes | $26.55 M |
| **KK** | **Hand Avenue** from Clyde Morris Boulevard to SR 5A (Nova Road) | Widen to 4 lanes | $14.35 M |
| **LL** | **Josephine Street** from Old Mission Road to Tatum Boulevard | Widen to 4 lanes | $10.15 M |
| **MM** | **North Entrance DeLand Airport** from Industrial Drive to SR 11 | New 2-lane road | $4.63 M |
| **NN** | **LPGA Boulevard** from Tymber Creek Road to I-95 | Widen to 4 lanes | $63.96 M |
| **OO** | **LPGA Boulevard** from US 92 to Tymber Creek Road | Widen to 4 lanes | $35.67 M |
| **PP** | **Dunn Avenue** from LPGA Boulevard to Tomoka Farms Road | New 2-lane road | $45.1 M |
| **QQ** | **Williamson Boulevard** from N of Summertrees Road to Madeline Avenue | Widen to 4 lanes | $55.35 M |
| **RR** | **Beresford Avenue Extension** from Kepler Road/ MLK Boulevard to SR 44 | New 2-lane road | $32.47 M |

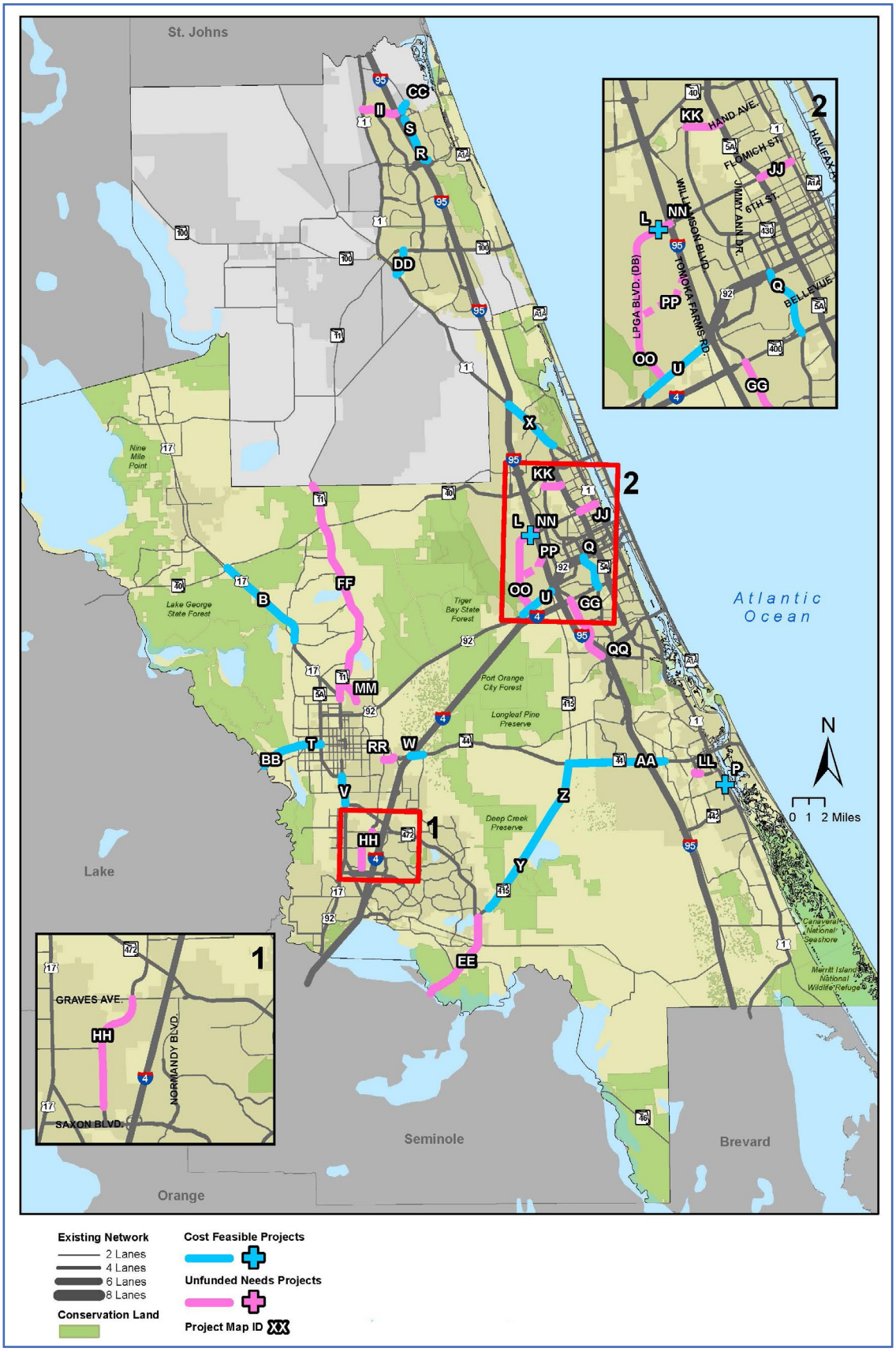
*Note: These projects are not listed in priority order.*

**The costs (YOE) of these unfunded needs are calcuated utilizing the same inflation rate as the final timeframe of the LRTP (2036-2045).*

## Figure 22: Strategic Intermodal System (SIS) Projects



## Figure 23: Other Arterials Projects



# LOCAL ROADWAY PROJECTS

Local roadway projects were submitted by Volusia County and the City of Palm Coast for inclusion in Connect 2045 for informational purposes. While these local projects are not part of the Cost Feasible Plan, they reflect additional needs for the area's transportation network. These projects are funded through local resources and are managed by the respective local governments. The local projects provided by Volusia County and Palm Coast are illustrated in **Tables 6-16** to **6-18**.

Table 6-16: Volusia County – Local Projects for Connect 2045

| Projects | Limits (To - From) | Cost ($millions)* | Timing | General Location |
|---|---|---|---|---|
| **Zone 1 - NE Volusia** | | | | |
| LPGA Blvd - widening to 4 lanes | Tymber Creek Rd to I-95 Interchange | $21.70 | 2026 to 2030 | Daytona Beach |
| Tymber Creek Road - New 2 lane road | South of SR 40 to LPGA Blvd | $17.10 | 2026 to 2030 | Daytona Beach/ Ormond Beach |
| Beach St - Raise Road | Pine Tree Dr to Tomoka River bridge | $4.00 | 2031 to 2035 | Ormond Beach |
| Hand Ave - widening to 4 lanes | Williamson Blvd to SR 5A/ Nova Rd | $24.00 | 2031 to 2035 | Ormond Beach |
| Williamson Blvd - widening to 4 lanes | Madeline Ave to SR400/Beville Rd | $6.70 | 2031 to 2035 | Daytona Beach/ Port Orange |
| Dunn Ave - widening to 4 lanes | Williamson Blvd. to Bill France Blvd. | $9.40 | 2036 to 2040 | Daytona Beach |
| Dunn Ave - widening to 4 lanes | Bill France Blvd. to Clyde Morris Blvd. | $7.10 | 2036 to 2040 | Daytona Beach |
| Tymber Creek - widening to 4 lanes | Peruvian to Airport | $8.80 | 2036 to 2040 | Ormond Beach |
| LPGA Blvd - widening to 4 lanes | US 92 to Tymber Creek Rd | $16.10 | 2041 to 2045 | Daytona Beach |
| Taylor Branch Rd - widening to 4 lanes | SR 421/Dunlawton Av to Clyde Morris Blvd | $8.30 | 2041 to 2045 | Port Orange |
| Tomoka Farms Rd - widening to 4 lanes | I-4 Overpass to US 92/ISB | $6.40 | 2041 to 2045 | Daytona Beach |
| **Zone 2 - SE Volusia** | | | | |
| Pioneer Tr/Tomoka Farms Rd - Roundabout | Intersection Improvement | $3.50 | 2026 to 2030 | Samsula |
| Pioneer Tr/Wallace Rd - Safety & Paved Shoulders | I-95 to SR 44 (East) | $13.50 | 2026 to 2030 | New Smyrna Beach |
| Joesphine St./10th St - widening to 4 lanes | Old Mission to Tatum St | $5.00 | 2031 to 2035 | New Smyrna Beach |
| Pioneer Tr - Safety & Paved Shoulders | SR 44 (West) to Airport Rd | $5.50 | 2031 to 2035 | Samsula |
| Sugar Mill Rd - widening to 4 lanes | SR 44 to Pioneer Tr | $9.80 | 2041 to 2045 | New Smyrna Beach |

## Table 6-16: Volusia County – Local Projects for Connect 2045 (Continued)

| Projects | Limits (To - From) | Cost ($millions)* | Timing | General Location |
|---|---|---|---|---|
| **Zone 3 - SW Volusia** | | | | |
| W Volusia Beltway (VMP Extension) - New 4 lane | SR 472 to Graves | $15.00 | 2026 to 2030 | Orange City |
| W Volusia Beltway (VMP) - widening to 4 lanes | Rhode Island Ave to Harley Strickland | $7.40 | 2026 to 2030 | Orange City |
| W Volusia Beltway (VMP) - widening to 4 lanes | Graves to Rhode Island Ave | $9.90 | 2031 to 2035 | Orange City |
| Dirksen - adding bi-directional turn lane | US 17/92 to I-4 | $7.90 | 2031 to 2035 | DeBary |
| Doyle Road - widening to 4 lanes | Providence Blvd. to Saxon Blvd | $16.80 | 2036 to 2040 | Deltona |
| Doyle Road - widening to 4 lanes | Saxon Blvd. to Courtland Blvd. | $15.50 | 2041 to 2045 | Deltona |
| **Zone 4 - NW Volusia** | | | | |
| Beresford Ave - extend road | Blue Lake Ave to SR 44 | $15.80 | 2026 to 2030 | DeLand |
| W Volusia Beltway (Kepler Rd) - widening to 4 lanes | US 92 to SR 44 | $16.50 | 2031 to 2035 | DeLand |
| W Volusia Beltway (Kepler Rd) - widening to 4 lanes | SR 44 to Beresford Ave Extension | $4.60 | 2031 to 2035 | DeLand |
| W Volusia Beltway (Dr MLK Jr) - widening to 4 lanes | Beresford Ave Extension to Taylor Rd | $6.20 | 2036 to 2040 | DeLand |
| W Volusia Beltway (Dr MLK Jr) - widening to 4 lanes | Taylor Rd to Orange Camp Rd | $6.20 | 2036 to 2040 | DeLand |
| W Volusia Beltway (Dr MLK Jr) - widening to 4 lanes | Orange Camp Rd toSR 472 | $10.50 | 2041 to 2045 | DeLand |

## Table 6-17: Volusia County – Unfunded Local Projects for Connect 2045

| Projects | Limits (To - From) | Cost ($millions)* | General Location |
|---|---|---|---|
| **Zone 1 - NE Volusia (Unfunded Projects)** | | | |
| Airport Road (PO) - widening to 4 lanes | Sabal Creek to Creekside Middle | $6.7 | Port Orange |
| Airport Road (PO) - widening to 4 lanes | Creekside Middle to Pioneer Trail | $7.6 | Port Orange |
| Airport Road (OB) - widening to 4 lanes | Tymber Creek Rd. to Pineland Tr. | $8.1 | Ormond Beach |
| Airport Road (OB) - widening to 4 lanes | Pineland Tr. to Sunshine Blvd. | $8.7 | Ormond Beach |
| Airport Road (OB) - widening to 4 lanes | Sunshine Blvd. to US 1 | $10.5 | Ormond Beach |
| Dunn Ave. - New 2 lane road | LPGA Blvd. to Tomoka Farms Rd. | $37.8 | Daytona Beach |
| Knox Bridge Replacement | Bridge | $25.0 | Ormond by the Sea |
| Main St. Bridge Replacement | Bridge | $50.0 | Daytona Beach |

## Table 6-17: Volusia County – Unfunded Local Projects for Connect 2045 (Continued)

| Projects | Limits (To - From) | Cost ($millions)* | General Location |
|---|---|---|---|
| Old Kings Hwy - widening to 4 lanes | Old Dixie Hwy to Flagler Co. Line | $7.6 | Ormond Beach |
| Talyor Road (CO) - widening to 4 lanes | Tomoka Farms Rd. to Summer Tree Rd. | $20.4 | Port Orange |
| Tomoka Farms Fd. - widening to 4 lanes | Taylor Rd. to I-4 Overpass | $22.8 | Port Orange |
| Williamson Blvd. -widening to 4 lanes, incl I-95 Overpass | Summer Tree Rd. to Madeline Ave. | $27.0 | Port Orange |
| **Zone 2 - SE Volusia (Unfunded Projects)** | | | |
| Pioneer Trail - widening to 4 lanes | Airport Road to I-95 | $13.8 | New Smyrna Beach |
| Pioneer Trail - widening to 4 lanes | SR 44 (West) to Airport Rd | $47.2 | Samsula |
| Williamson Blvd. - New 4 lane | SR 44 to Pioneer Tr | $33.0 | New Smyrna Beach |
| **Zone 3 - SW Volusia (Unfunded Projects)** | | | |
| Doyle Road - widening to 4 lanes | Courtland Blvd. to SR 415 | $9.6 | Deltona |
| Providence Blvd - widening to 4 lanes | Doyle Road to East Normandy | $14.1 | Deltona |
| Providence Blvd - widening to 4 lanes | East Normandy to Saxon | $7.3 | Deltona |
| Providence Blvd - widening to 4 lanes | Saxon to Tivoli | $8.8 | Deltona |
| Providence Blvd - widening to 4 lanes | Ft. Smith Blvd. to Howland Blvd. | $14.5 | Deltona |
| Rhode Island Ext with I-4 overpass - extend as 2 lane road | Veterans Memorial Pkwy to Normandy Blvd. | $15.5 | Deltona/ Orange City |
| Rhode Island Ext - I-4 Interchange | I-4 Interchange | $73.0 | Deltona/ Orange City |
| Saxon Blvd - widening to 4 lanes | Tivoli to Providence | $8.3 | Deltona |
| Saxon Blvd Extension - extend road | US 17/92 to Westside Parkway | $9.9 | Debary/ Orange CIty |
| Westside Pkwy - extend road | French Ave. to Rhode Island Ave. | $8.5 | Orange City |
| Westside Pkwy - extend road | Rhode Island Ave. to Saxon Blvd. Extension | $11.8 | Orange City |
| Westside Pkwy - extend road | McGregor Rd. to Minnesota/Hamilton | $6.2 | Orange City/ Deland |
| **Zone 4 - NW Volusia (Unfunded Projects)** | | | |
| Blue Lake Avenue Extn - New 2 LN | Blue Lake Ave (in Victoria Park) to Orange Camp Rd | $8.0 | DeLand |
| CR 305 (Bunnell Rd) - widening to 4 lanes | US-17 to Flagler Co. Line | $38.4 | Seville |
| Orange Camp Rd - widening to 4 lanes | US 17/92/Woodland Blvd to W Volusia Bltwy/MLK | $19.1 | DeLand |
| Plymout Ave - adding bi-directional turn lane | SR 15A to US 17/92 | $9.2 | DeLand |

## Table 6-18: City of Palm Coast Unfunded Local Projects for Connect 2045

| Projects | Limits (To - From) | Cost ($millions)* | Date of Estimate |
|---|---|---|---|
| Belle Terre Parkway - widening to 6-lanes | Pine Lakes Pkwy to Palm Coast Parkway (EB) | $2.60 | 2018 |
| Bulldog Drive - widening to 4-lanes | SR100 to Central Ave. | $3.60 | 2018 |
| Matanzas Woods Pkwy. - widening to 4-lanes | US1 to Southbound I-95 ramps | $14.10 | 2014 |
| Matanzas Woods Pkwy. - widening to 4-lanes | I-95 to Old Kings Rd. Extension | $2.46 | 2014 |
| Old Kings Rd. South - widening to 4-lanes | SR100 to Old Dixie Hwy. | TBD | |
| Old Kings Rd. - widening to 4-lanes | Town Center Blvd. to Palm Coast Pkwy. | $7.80 | 2018 |
| Royal Palms Parkway - widening to 4-lanes | US1 to Town Center Blvd. | $29.30 | 2018 |
| Town Center Blvd - widening to 4-lanes | Central Ave. to Royal Palms Pkwy. | $6.10 | 2018 |
| Belle Terre Pkwy. Corridor Turn-lane Project | Eastwood Dr. to Burroughs Dr. | $1.89 | 2018 |
| Belle Terre Blvd. Corridor Turn-Lane Project | Karas Trail to Zonal Geranium Trail | $0.39 | 2018 |
| Colbert Lane @ Blare Dr. Turn-Lane Project | Colbert Lane @ Blare Dr. | $0.10 | 2018 |
| Palm Harbor Pkwy. Corridor Turn-Lane Project | Crystal Way to Fernmill Lane | $1.76 | 2018 |
| Pine Lakes Pkwy. S. Corridor Turn-Lane Project | Wellington Dr. to Commerce Blvd. | $1.27 | 2018 |
| Ravenwood @ Rolling Sands Dr. Turn Lane | Ravenwood Dr. @ Rolling Sands Dr. | $0.10 | 2018 |
| Rymfire Dr. Corridor Turn-Lane Project | Ryan Dr. E to Rymfire Elementary | $1.46 | 2018 |
| Seminole Woods Blvd. Corridor Turn-Lane Project | Sloganeer Tr. W. to Pinnacles Plaza | $1.56 | 2018 |
| Whiteview Pkwy. Corridor Turn-Lane Project | Rolling Sands Dr. to Princess Rose Dr. | $2.08 | 2018 |
| Palm Coast Pkwy. And Pine Lakes Pkwy. SB Right Turn Lane | Palm Coast Pkwy. and Pine Lakes Pkwy. | $0.10 | 2018 |
| Palm Coast Pkwy. (EB) @ Pine Cone Dr. Turn Lane and Signal Improvement | Palm Coast Pkwy. and Pine Cone Dr. | $0.53 | 2018 |
| Palm Coast Pkwy. (EB) Turn-lane Projects | Corporate Dr. to Belle Terre Pkwy. | $0.20 | 2018 |
| Palm Coast Pkwy. (WB) Turn Lane Projects | Bridgehaven Dr. to Corporate Dr. | $0.39 | 2018 |
| Palm Coast Pkwy. (WB) Turn Lane Projects & Signal Improvement | Pine Cone Dr. to Frontage Rd. | $0.72 | 2018 |
| Palm Coast Pkwy. (WB) @ Colbert Lane Turn-lane Projects | Palm Coast Pkwy. and Colbert Lane | $0.10 | 2018 |

* *No Right-of-Way Costs Included*

# OPERATIONAL AND MANAGEMENT STRATEGIES

To improve the performance of existing transportation facilities, relieve vehicular congestion, and maximize the safety and mobility of people and goods, a variety of operational and management strategies may be utilized, including the Congestion Management Process (CMP) and Intelligent Transportation Systems (ITS), as discussed further on the following pages. As noted previously in this chapter, Connect 2045 allocates approximately $40 million (in present day dollars) to fund these types of improvements and strategies as Local Initiatives which are prioritized on an annual basis.

## Congestion Management

Maintenance of a Congestion Management Process (CMP) is a requirement for all MPOs under Florida law and for MPOs in Transportation Management Areas (TMA) under federal law. Consistent with the guidance from the Federal Highway Administration (which provides the funding for this program), the intent of the Congestion Management Process is to "address congestion management through a process that provides for safe and effective integrated management and operation of the multi-modal transportation system." A vibrant congestion management process can serve a valuable role in addressing the region's transportation needs in light of the following:

- Many roadway corridors have already been built out to their maximum number of travel lanes.
- Funding levels limit the number of new large scale projects which can be planned and constructed.
- Transportation safety is becoming an increasingly important planning consideration.

The elements of a successful CMP are defined in the Federal Highway Administration's (FHWA) Process Model, which includes eight actions or steps which are crucial for developing a comprehensive CMP. The River to Sea TPO CMP closely follows these eight actions as defined by FHWA and listed below:

1. Develop Regional Objectives for Congestion Management
2. Define CMP Network
3. Develop Multimodal Performance Measures
4. Collect Data/Monitor System Performance
5. Analyze Congestion Problems and Needs
6. Identify and Assess Strategies
7. Program and Implement Strategies
8. Evaluate Strategy Effectiveness

The River to Sea TPO CMP was adopted by the TPO Board on August 26, 2015 by Resolution 2015-16. The TPO adopted a Congestion Management/Performance Measures Report on October 24, 2018.

The CMP provides additional performance measures to evaluate the network over time. The TPO developed the initial performance evaluation of the transportation system as prescribed in the CMP, as well as an overall "Performance Scorecard" that includes key performance measures and provides a snapshot of how the transportation system is functioning. The scorecard identified unfavorable trends in auto demand, auto safety, bicycle and pedestrian safety, and total crashes. Some favorable trends were found related to transit demand.

The 2018 Congestion Management/Performance Measures Report identifies congested corridors within the TPO's planning area which are listed beginning on Page 12 of the report. These corridors were considered in the development of Connect 2045. As identified in its current two-year work plan, the TPO will also be updating the Congestion Management Process to ensure even greater alignment with this plan.

## Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) are made up of a variety of communications and computer technologies focused on detecting and relieving congestion and improving safety within the transportation system by enabling drivers to make smart travel choices. ITS technology communicates in real time to travelers about where congestion is occurring and provides information on alternative routes or modes to reduce the severity and duration of congestion. ITS can also communicate where a crash has occurred, and alert officials to request assistance in clearing the accident, which helps restore traffic flow.

The River to Sea TPO ITS Master Plan, Phase 1 includes a vision, goals, and objectives consistent with the 2040 LRTP; an inventory of existing ITS elements and organizational relationships; and stakeholder interviews with Volusia and Flagler counties, municipalities, FDOT District Five, law enforcement agencies, Votran, and SunRail.

The ITS Master Plan provides an overview of existing and planned ITS infrastructure within the TPO's boundary, and a general overview of the types of communication infrastructure utilized by various agencies including FDOT District Five and its related services (e.g. Florida 511, Regional ITS Architecture, Traffic Incident Management). A qualitative assessment of the existing ITS system notes that there are some challenges related to communication breakdowns between agency networks and other interagency coordination issues. Staff shortages, aging equipment, maintenance, and the need for specialized training are other issues facing the ITS system. It is noted that each local transportation agency has a focus on connecting traffic signals to a common ITS network, automated vehicles, and pedestrian/bicycle data collection.

The successor to the ITS Master Plan, Phase 1, was the TPO's Transportation Systems Management and Operations (TSM&O) Master Plan Phase 2. This plan provides an overview of various TSM&O strategies, and based on a scoring and ranking of roadway segments within the LRTP network, offers recommendations regarding the most applicable strategies and projects. TSM&O is an approach to improving the performance and efficiency of the transportation network by addressing traffic-related problems and minimizing congestion through the utilization of ITS, signal system control, and other management and operational strategies. This plan includes a respective Top 25 ranking for SIS, Regional, Non-Regional, and Collector roadway segments within the LRTP network to determine where TSM&O strategies are expected to provide the greatest benefit and optimum return on investment. It also includes four (4) recommended TSM&O deployments with related cost information.

## AUTOMATED, CONNECTED, ELECTRIC, AND SHARED-USE (ACES) VEHICLES

As technology continues to evolve and transform transportation at an accelerating pace, it is noted that ACES technologies will have significant impact on the TPO's future transportation systems. Personal and public vehicles alike are using increased levels of technology, and combined with shared mobility, are integrating into an existing transportation system that must be supportive of the technology. The FDOT developed guidance for ACES planning in September 2018. This guidance was the basis for Connect 2045's Technology Scenario. The TPO is also using this guidance in planning for congestion management and the evolution of transportation throughout the community and region.

In June 2020, the TPO adopted a Connected and Automated Vehicle Readiness Study – Technology Transition Plan. The study includes a thorough review of connected and automated vehicle (CAV) readiness, including an assessment of the region's preparedness to adopt and adapt to new technologies and mobility solutions. The Technology Transition Plan outlines a transition plan specific to the planning area for adopting transformational technologies at the local community level and for incorporating new transportation technologies into regional plans, land development codes, and funding.

**Chapter 5** discusses the Technology Scenario that was performed to identify and prioritize potential corridors for future infrastructure technology improvements. The $40 million set-aside for local initiatives on the state highway system could include technology projects identified within the ACES Corridor Prioritization developed in this scenario.

# TRANSIT (PUBLIC TRANSPORTATION)

Transit plays an important role in providing access to education, employment, healthcare, and cultural/environmental resources. Although transit may benefit those that choose to utilize it regularly, it also has the capacity to improve the quality of life for those who cannot otherwise freely travel by other modes. Transit can also provide economic benefits—such as ensuring that local and regional businesses have dependable access to the workforce.

Connect 2045 continues to provide support for local transit service by reserving a portion of the TMA set-aside to provide funding of approximately $34 million through the plan horizon. The TPO recognizes that the TMA set-aside funding, along with the Federal, State and local funding shown in the revenue forecast, is only sufficient to support the continuation of existing service. Funding for service expansion in the long run has not been identified. The TPO will continue to seek additional transportation funding strategies that will support efforts to expand transit service in the area.

## Regional Transit Opportunities

### REGIONAL TRANSIT STUDY

Led by the Central Florida Metropolitan Planning Organization Alliance (CFMPOA), the Regional Transit Study, completed in October 2018, is a ten-county effort to establish a regional transit vision and create a consensus on regional transit priorities in Central Florida. The study presents strategies for advancing the regional vision, including identifying high priority transit investments that could be implemented in the short-term, as well as detailing approaches and processes for advancing the near- and long-term elements of the vision in state, regional and local plans. This study includes a survey of intercity bus services such as Greyhound that provide expanded mobility options within and beyond the TPO area. The River to Sea TPO continues to support the regional effort to link high-priority transit elements.

### PASSENGER RAIL

Brightline is the only privately owned and operated intercity passenger railroad in the United States. In Florida, service is currently operating between Miami, Fort Lauderdale and West Palm Beach. An expansion is currently under construction to provide service from West Palm Beach to the Orlando International Airport with plans to further extend the service to Tampa. The River to Sea TPO recognizes the importance of rail travel and the opportunity it presents to offer additional transportation choices that may enhance and alter traveler behaviors across the state. The TPO is in support of, and will continue to pursue, a future expansion of the service north to Jacksonville with a potential station located in the TPO planning area.

### I-4 RAIL ENVELOPE

The River to Sea TPO continues to support the preservation of a rail envelope to accommodate future passenger rail service within the I-4 corridor extending throughout the metropolitan planning area (MPA) from SR 46 eastward to I-95 (based on logical termini).

# BICYCLE AND PEDESTRIAN

The River to Sea TPO has a long-standing commitment to bicycle and pedestrian planning and project implementation, and works closely with local, regional, and state stakeholders. The TPO has completed numerous bicycle and pedestrian feasibility studies and plans focused on school safety, as well as regional and local comprehensive and multimodal transportation plans. The continued allocation of TMA Local Initiative set-aside funding for Bicycle/Pedestrian projects (roughly $34 million through the year 2045) and the use of Transportation Alternatives (TA) funding reaffirms the River to Sea TPO's commitment to the development of bicycle and pedestrian facilities and regional trail facilities that provide vital connections within the state and national trail and greenway network.

Additionally, the TPO is fortunate to have the Tier 1 & 2 SUN Trail regional trail networks (Coast to Coast Trail and St. Johns River to Sea Loop Trail) within the planning area. SUN Trail projects within the regional network are funded over time through various sources including the dedicated $25 million annual state SUN Trail funding [Section 339.81(5), F.S.]. SUN Trail projects outside of the regional trail network can also be pursued for funding under the SUN Trail Individual Project category.

## River to Sea TPO Bicycle and Pedestrian Plan

The TPO's Bicycle and Pedestrian Plan outlines a vision, goals, and objectives for providing a safe, accessible, and connected network of bicycle, pedestrian, and trail facilities for the TPO's planning area and respective regional connections. The Bicycle and Pedestrian Plan conveys the TPO's commitment to bicycle and pedestrian planning, safety, and project implementation – all of which informed the goals and objectives of Connect 2045.

The goals of the Bicycle and Pedestrian Plan include:

1. Reduce the number of bicycle and pedestrian-related injuries and fatalities for all ages and users
2. Make all facilities safe places to walk and ride a bicycle for all ages and users
3. Enhance connectivity and multi-modal transportation choices
4. To continue to identify and map existing and proposed facilities
5. To provide for the safety of all mobility-impaired users

The plan provides data related to bicycle crashes, pedestrian crashes, and the location of high crash intersections. Inventories of bicycle, pedestrian, and regional trail facilities are also provided. The Bicycle and Pedestrian Plan provides background on the concept of Complete Streets, related FDOT policy, and how it may be implemented within varying local contexts. The plan also outlines bicycle pedestrian facility design considerations including wayfinding, markings, crosswalks, and signal timings.

### BICYCLE AND PEDESTRIAN NEEDS AND PRIORITIES

The River to Sea TPO prioritizes on an annual basis bicycle, pedestrian, and trails projects which may be eligible for funding. These projects are included in the List of Priority Projects (LOPP) which serves as the bridge between the 5-year program of projects funded in the TIP and the long range plans and programs supported by the TPO.

For the purpose of documenting bicycle and pedestrian priorities that are being pursued to support development of an integrated multimodal transportation system, **Appendix E** includes the highest priority projects from the 2020 LOPP. These projects are grouped as follows: Bicycle and Pedestrian Projects Tier A (Projects with One or More Phases Funded); Bicycle and Pedestrian Projects Tier B (Projects Ready for Funding); SUN Trail Tier A (Projects with One or More Phases Funded); and SUN Trail Tier B (Projects Ready for Funding). Projects listed in Tier B are those that are protected under the prioritization policies established in River to Sea TPO Resolution 2019-02. Protected status means that the TPO commits to retaining these projects in their ranking to ensure program stability and predictability for project sponsors. It is important to emphasize that longer term priorities are established at the "program" level and determined through the annual LOPP process. Please view the current LOPP for the most up to date bicycle and pedestrian priorities.

## FREIGHT

The River to Sea TPO is committed to the efficient movement of goods and supporting the needs of the freight community throughout the planning area and the region. The TPO looks forward to continued involvement in planning to meet these needs. As part of the planning process, the TPO engaged the freight community, including extensive coordination with the FDOT Freight Coordinator and organizations that represent freight industry companies. Stakeholder input emphasized that it is critical for the area's transportation network to support Trader Joe's, Amazon, US Foods, Boston Whaler and other commercial and manufacturing operations that demonstrate increased demand for freight activity. Continuing partnerships with economic development organizations like Team Volusia are important to ensure that long range transportation planning supports the future location of manufacturing and distribution to this area. Freight parking is also an issue that has been identified as a problem that needs to be addressed. This plan considered the findings of both FDOT's District Five Truck Parking Study and Statewide Truck Parking Study.

Freight mobility was one of the criteria used in the technical criteria scoring, giving increased points to corridors that are designated as freight routes. Strategic Intermodal System (SIS) projects identified in the Cost Feasible Plan (**Figure 22**) are among the most critical needs that address efficient and safe movement of freight. Through a coordinated effort with FDOT, the Connect 2045 Freight Summary (**Technical Appendix G**) was developed to provide a comprehensive overview of freight issues and needs in the TPO area and beyond. Potential freight-related strategies for the TPO are also included. Connect 2045 is consistent with the Central Florida Regional Freight Mobility Study.

## TRANSPORTATION SAFETY

The River to Sea TPO has had a longstanding commitment to improving transportation safety. Connect 2045 reflects this commitment by allocating funds to improve traffic safety and operations, and to utilize new technology to improve the efficiency of our existing system. This plan allocates roughly $45 million in TMA Local Initiative set-aside funding through the year 2045 for projects that improve safety and efficiency.

Additionally, activities included in the Unified Planning Work Program such as the completion of school safety studies for all elementary and middle schools within the planning area, pedestrian law enforcement training and exercises, health and safety partnerships with local agencies, participation on the Community Traffic Safety Teams and helmet distribution programs have led to increased safety awareness and project-specific recommendations to reduce injuries and fatalities throughout the planning area.

As noted in Chapter 2 and described in Chapter 5, safety data was utilized in the prioritization of projects for inclusion in the Cost Feasible Plan. A project prioritization process was developed that assigned higher scores to projects based on an analysis of number of crashes by severity in an effort to prioritize projects within the plan that are likely to reduce fatalities and serious injuries.

The River to Sea TPO 2017 Crash Analysis Report provides a detailed review and analysis of crash data for Volusia and Flagler Counties, covering the period from 2011-2015. Both roadway segments and intersections were analyzed based on crash frequency and severity, as well as the types of crashes (rear-end, left-turn, sideswipe, right angle, head-on, impaired driving, distracted driving, crashes involving bicyclists/pedestrians). Of note, annual crash totals increased substantially over the study period, with rear-end collisions accounting for 28% of the total.

The report recommended a more detailed review of the high-crash intersection and roadway segments, rear-end collisions, motorcycle crashes, and crash-related behavior to identify causes and potential countermeasures.

The River to Sea TPO Roadway Safety Evaluation & Improvement Study further refined the crash analysis in order to develop a process to address and mitigate the high volume of crashes within the planning area.

## STRATEGIC HIGHWAY SAFETY PLAN EMPHASIS AREAS

The TPO considered federal and state safety documents, including the FDOT State Strategic Highway Safety Plan (SHSP), during this LRTP process. To ensure consistency with the SHSP, the River to Sea TPO will support the Key Safety Emphasis Areas as listed here:

- **Lane Departures**
- **Impaired Driving**
- **Pedestrians and Bicyclists**
- **Intersections**
- **Occupant Protection**
- **Motorcyclists**
- **Aging Road Users**
- **Commercial Motor Vehicles**
- **Speeding and Aggressive Driving**
- **Teen Drivers**
- **Distracted Driving**
- **Work Zones**
- **Traffic Records and Information Systems**

## Vision Zero

*Vision Zero* is a multi-dimensional effort to eliminate all traffic fatalities and severe injuries while increasing safe, healthy, and equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero is increasingly being adopted across the United States. It takes a traditional approach to safety and reconsiders some of the most basic assumptions made over the past decades to reduce the number of deaths on American roadways. The FDOT initially established a Vision Zero policy in 2012, and the 2016 update of the SHSP supports the policy.

As highlighted in Chapter 2, the TPO acknowledges and supports FDOT's statewide safety targets, which set the target at "0" for each performance measure to reflect the Department's goal of zero deaths. On January 24, 2018, the TPO adopted Resolution 2018-02 to establish the TPO's target of a 2% reduction based on a five-year rolling average for the required safety performance measures. In February 2019, and most recently on February 26, 2020, the TPO adopted Resolution 2020-03 and reaffirmed its commitment to a 2% reduction based on a five-year rolling average for the required safety measures.

# TRANSPORTATION SECURITY

Better planning in transportation security can help reduce the negative impacts to local and regional transportation systems from major natural or manmade events, such as hurricanes, tornadoes, flooding, or terror attacks. In addition, Federal requirements for metropolitan planning also include considering security as a factor in LRTPs. The metropolitan planning process should provide for consideration and implementation of projects, strategies, and services that will increase the security of the transportation system for motorized and non-motorized users.

The TPO can play a key role in planning both before and after a disaster. Pre-disaster planning involves efforts to guard against, prepare for, and mitigate a disaster's effects; while post-disaster planning focuses on restoring essential functions, speeding recovery, and rebuilding in the wake of a disaster.

Largely because of its vulnerability to hurricanes and tropical storms, Florida has become a leader in emergency management and disaster mitigation planning. Local governments prepare several types of plans that MPOs should be aware of and, as appropriate, participate in developing:

- Comprehensive Emergency Management Plans: Operational procedures used to prepare for, respond to, recover from, and mitigate emergencies.
- Local Mitigation Strategies: Identify and prioritize hazard mitigation needs and strategies to reduce the vulnerability to natural hazards.
- Post-Disaster Redevelopment Plans: Outlining recovery and reconstruction procedures and policies.

Considerations of transportation security were integrated into the project prioritization process for this plan as scoring criteria was included for those projects located along evacuation routes. As an important follow-up to Connect 2045's Resiliency Scenario (Chapter 5), the TPO will utilize the information from the scenario analysis and prior studies to develop a strategy for future incorporation of resiliency data into long range planning that advances the Board's policy direction.

# TOURISM AND TRAVEL

Owing to the TPO planning area's status as a leading tourism destination, long range planning must not only consider a burgeoning resident population, but constantly growing visitation as well. Significant influxes of visitors translate into major seasonal impacts to the transportation network associated with races at Daytona International Speedway, motorcycle rallies, festivals, and other events. The area is also noted for its nature-based destinations and opportunities as highlighted through corridors such as the A1A Scenic & Historic Coastal Byway, River of Lakes Heritage Corridor, Halifax Heritage Byway, Ormond Scenic Loop and Trail and extensive regional trail investments.

Tourism and travel industry representatives were among those providing feedback to this plan through input mechanisms such as the Focus Group Workshops. Indicative of the issues raised was the need to provide transportation choices for visitors who come to the area but don't intend to use a private vehicle. This affirms the TPO's efforts to expand multimodal transportation choices addressed in other sections of this plan. During the planning process, the concept of utilizing tourism corridors like A1A as pilot areas for emerging transportation technologies was also raised. As a future technology working group is formed, this will be an appropriate topic to consider as part of that effort. Tourism and travel were also integrated into the planning and project prioritization process through scoring criteria that gave points to projects providing access to tourism activity centers. The review of tourism data for Connect 2045 included the Central Florida Visitor Study.

## The Florida Scenic Highways Program

As stated above, the TPO's planning area is home to a number of Florida Scenic Higways, and the TPO supports the goals of the Florida Scenic Highways Program. The program is a grass-roots effort to heighten awareness of the state's intrinsic resources along its highway system — cultural, recreational, natural, archeological, historical, and scenic — which collectively enhance the overall traveling experience. Program support and participation provides benefits to the community such as resource preservation, enhancement, and protection.

While enhancing the traveler's experience, designation results in benefits to local communities. Designated scenic highways promote a heightened awareness of the state's exceptional resources and unique history through educational and visual experiences. Recent studies have documented the potential financial rewards that receiving a scenic highway designation can have on the local economy.

## REGIONAL COORDINATION

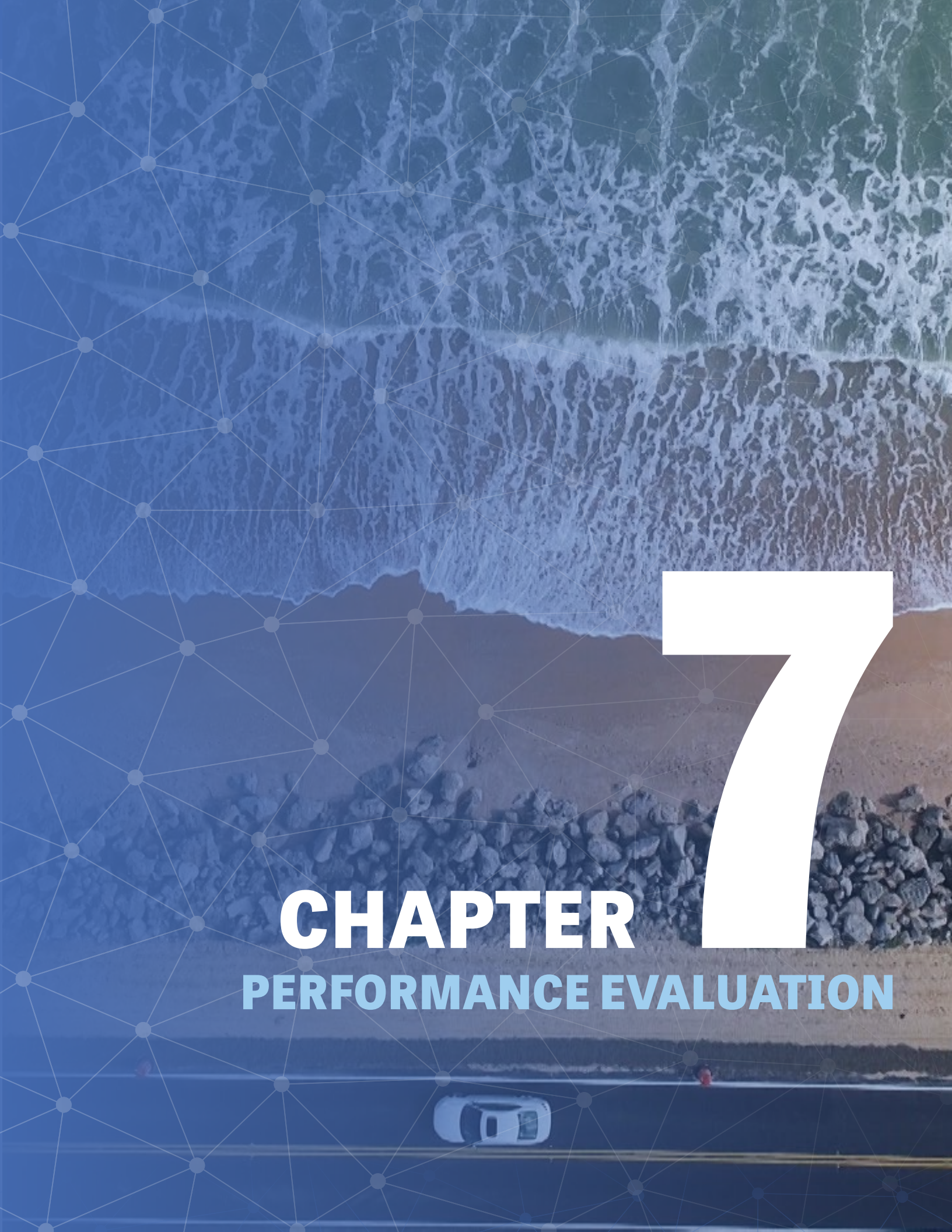
Due to the amount of growth the TPO's planning area has experienced and the expectations that it will continue, ongoing regional transportation planning is critical. The TPO has maintained strong alliances and collaboration with partners in the region and throughout the state through organizations including the East Central Florida Regional Planning Council (ECFRPC), the Central Florida MPO Alliance (CFMPOA), and the Florida Metropolitan Planning Organization Advisory Council (MPOAC).

The CFMPOA is a partnership of metropolitan planning organizations in the Central Florida area encompassing Orange, Osceola, Seminole, Brevard, Lake, Sumter, Polk, Volusia, Ocala, and Marion counties that meet to collaborate on the transportation needs of the region. The CFMPOA continues to develop a regional list of priority projects for the mutual benefit of the region and to improve the communication of regional priorities to the FDOT. The TPO will ensure that the appropriate regional projects contained in Connect 2045 are reflected in regional transportation plans.

## SUMMARY POINTS

Connect 2045 provides for an integrated multimodal and intermodal transportation system that serves national, regional and local transportation needs. Key points include the following:

- The plan serves regional and national needs through incorporation of projects on the National Highway System, State Highway System and Strategic Intermodal System (SIS), and through regional connectivity criteria in project prioritization. For certain regional and national corridors, the plan also evaluated the potential implications of technology scenarios and vulnerability to extreme weather and environmental change.
- The plan supports and advances regional freight, emergency management, travel, and tourism efforts through emphasis on projects in designated freight corridors and emergency evacuation routes, and those that enhance access to tourism and economic activity centers. Development of the plan included coordination with entities representing freight providers, convention and visitors bureaus, agencies that plan for emergency response, and many other key stakeholders.
- The plan advances multimodal transportation choices through the continuation of Local Initiatives funding that provides for the expansion of bicycle, pedestrian, trail and complete streets facilities, and provides dedicated funding support for transit. Consistent with Connect 2045's goals and objectives and the TPO's Bicycle and Pedestrian Master Plan, bicycle and pedestrian facilities will also be considered, where appropriate, in conjunction with new or reconstructed transportation corridors.
- The plan provides for intermodal transportation connectivity through recognition and incorporation of prioritization criteria that emphasizes connectivity to multimodal hubs such as Votran transfer facilities, DeBary SunRail station, DeLand Amtrak station and Daytona Beach International Airport.



# CHAPTER 7
# PERFORMANCE EVALUATION

# CHAPTER 7 - PERFORMANCE EVALUATION

Transportation system performance measures provide objective indications of how well the system meets demand and can help inform decision making. **Chapter 2** provides an in-depth description of the ongoing performance measurement that guides the current/short term planning efforts of the TPO, the selection for funding of transportation projects and programs, and the annual evaluation of the transportation system. Importantly, Chapter 2 also encompasses the federally required System Performance Report.

***While Chapter 2 encompasses the performance-based planning foundation to develop Connect 2045, this chapter provides a "report card" on the performance of the plan***

In this Chapter, the performance of Connect 2045's Cost Feasible Plan was evaluated through indicators relative to the plan's goals, objectives, and performance targets. The goal areas of Connect 2045 are:

- Multimodal
- Economic Development
- Connectivity
- Safety
- Livability
- Involvement

**Performance Measures** established through the Federal Highway Administration (FHWA) address each of the national planning goal areas. TPOs are required to conduct performance-based planning by setting data-driven performance targets for the performance measures and programmed transportation investments that are expected to contribute to achieving those targets. **Tables 7-1** through **7-3** present the adopted targets and thresholds as identified in Chapter 2 and describes the 2045 Outlook relative to each Performance Measure Category. The 2045 Outlook takes into consideration the policies and programs identified within the plan.

The **Performance Indicators** included in **Tables 7-4** through **7-9** have been established by the River to Sea TPO to evaluate the effectiveness of the Connect 2045 Cost Feasible Plan in addressing the plan's objectives.

The 2045 performance is expected to stay relatively consistent with existing levels based on current funding. Performance indicators are intended to be reviewed continuously and this evaluation is a snapshot in time.

## Table 7-1: Fast Act Performance Measures
## Performance Measure 1 (PM1) - Safety

| Connect 2045 Goal/Objective | Performance Measure | 2020 Target | 2045 Outlook |
|---|---|---|---|
| <u>Goal 4</u><br><br>Objective 4.1 - Identify and prioritize improvements to reduce the frequency and severity of crashes, and eliminate fatalities and serious injuries.<br><br>Objective 4.2 - Identify and implement safety programs, enhancements, and innovations to improve the safety of bicycle and pedestrian facilities. | Number of fatalities | 118 | The TPO:<br>• Supports the statewide goal of Vision Zero over the long-range horizon<br>• Sets a current target in each category that represent a two percent annual reduction<br><br>Connect 2045 increases the safety of the transportation system for motorized and non-motorized users by:<br>• Implementing community safety programs that improve safety performance<br>• Allocating funds specific to bicycle and pedestrian enhancements, traffic operations improvements, and safety projects<br>• Utilizing a project prioritization and technical scoring criteria that included an assessment of severe crash data to evaluate the plan's cost feasible projects |
| | Rate of fatalities | 1.549 | |
| | Number of serious injuries | 808 | |
| | Rate of serious injuries | 10.604 | |
| | Number of non-motorized fatalities and non-motorized serious injuries | 96 | |

## Table 7-2: Fast Act Performance Measures
## Performance Measure 2 (PM2) - Pavement & Bridge

| Connect 2045 Goal/Objective | Performance Measure | 2021 Target | 2045 Outlook |
|---|---|---|---|
| Goal 1<br><br>Objective 1.6 - Adequately fund preservation of transportation assets (National Highway System Pavement Condition, Bridge Condition, and Transit Assets). | Percent of Interstate pavements in good condition | ≥60% | The TPO:<br>• Supports and has adopted the statewide targets/thresholds<br>• Currently is meeting 5/6 adopted targets<br><br>Connect 2045 maintains or improves upon the existing bridge and pavement conditions by:<br>• Setting-aside funding for operations and maintenance first prior to the funding of capital improvements.<br>• The 2045 Revenue Forecast for the River to Sea TPO developed by FDOT includes a commitment to non-capacity programs designed to support, operate, and maintain the state transportation system |
| | Percent of Interstate pavements in poor condition | < 5% | |
| | Percent of non-Interstate NHS pavements in good condition* | ≥40% | |
| | Percent of non-Interstate NHS pavements in poor condition | < 5% | |
| | Percent of NHS bridges by deck area in good condition | ≥ 50% | |
| | Percent of NHS bridges by deck area in poor condition | < 10% | |

**Target not currently met – Programming of resurfacing funds is state policy and not under the direct control of the TPO. The TPO supports FDOT in meeting this goal.*

## Table 7-3: Fast Act Performance Measures
## Performance Measure 3 (PM3) - System Performance and Freight

| Connect 2045 Goal/Objective | Performance Measure | 2021 Target | 2045 Outlook |
|---|---|---|---|
| <u>Goal 1</u><br><br>Objective 1.2 - Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand. | Percent of person-miles on the Interstate system that are reliable—Level of Travel Time Reliability (Interstate LOTTR) | ≥ 70% | The TPO:<br>• Supports and has adopted the statewide targets/thresholds<br>• Currently is meeting all adopted targets<br><br>Connect 2045 maintains or improves upon the existing travel time reliability of the system by providing predictable service based on:<br>• Efficient incident management<br>• Establishing a parallel network of facilities<br>• Data sharing<br>• Availability of real time data and information provided to the traveling public |
| | Percent of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR) | ≥ 50% | |
| <u>Goal 2</u><br><br>Objective 2.2 - Identify and support safe and efficient truck routes and other facilities that improve the movement of freight and goods. | Freight travel time reliability | ≤ 1.75 | |

Table 7-4: Connect 2045 Performance Evaluation - Goal 1

| Goal 1 – Develop and maintain a balanced and efficient multimodal transportation system | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 1.1 - Develop a multimodal transportation system that improves accessibility and mobility to economic centers for all users (including motor vehicle, bicycle, pedestrian, transit) as well as the movement of goods. | Did the plan consider each project's accessibility to economic activity centers? | Yes | The technical criteria scoring process included an analysis of projects to determine whether they would provide additional access to downtown locations, beaches, visitor destinations, large regional shopping/entertainment centers, or other similar activity centers. |
| Objective 1.2 - Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand. | % VMT with V/C >1.0 | Increase in congestion | The 2045 roadway network is expected to experience an increase in the percentage of segments with V/C > 1.0 over the base year condition. |
| | Does the prioritization process consider congestion on project corridors? | Yes | The technical criteria scoring process included an analysis of projects against 2045 Peak Hour volumes from the Central Florida Regional Planning Model v7. Projects located on segments with higher V/C ratios received 5 or 10 points contingent upon the ratio. |
| | Does the plan fund operational improvements? | Yes | Connect 2045 allocates approximately $40 million (in present day dollars) to fund operational improvements and strategies as Local Initiatives which are prioritized on an annual basis. |
| | Did the plan consider improvements identified through the CMP and provide funding for short-range improvements? | Yes | |
| Objective 1.3 - Provide public transit systems that serve diverse populations and deliver efficient and convenient transit service. | % of major road network serviced by transit | Maintained | No change in transit service coverage area as funding only sufficient to support continuation of existing service. |

| Goal 1 – Develop and maintain a balanced and efficient multimodal transportation system | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 1.4 - Develop a plan that maximizes the use of all available existing and alternative revenue sources and is financially feasible. | Is the plan financially feasible, and does it maximize all available revenue sources? | Yes | See Appendix B. |
| Objective 1.5 - Incorporate measures that give priority to projects that provide high benefit-to cost value. | Did project prioritization process include criteria scoring for cost effectiveness? | Yes | The technical criteria scoring process allocated more points to projects which did not require an increase in capacity through widening and had a scope that involved primarily ITS-related improvements. |
| Objective 1.6 - Adequately fund preservation of transportation assets (National Highway System pavement Condition, Bridge Condition, and Transit Assets). | % of Interstate pavements in good condition | Maintained | See Table 7-2. |
| | % of Interstate pavements in poor condition | Maintained | |
| | % of non-Interstate NHS pavements in good condition | Maintained | |
| | % of non-Interstate NHS pavements in poor condition | Maintained | |
| | % of NHS bridges by deck area in good condition | Maintained | |
| | % of NHS bridges by deck area in poor condition | Maintained | |
| Objective 1.7 - Address incident management including improving response and mitigating impacts through development of alternative routes and other solutions. | Does the project prioritization process consider new connections and upgraded facilities to provide parallel capacity? | Yes | The technical criteria scoring process included an evaluation of projects for whether they are a new facility or, based on their location, would relieve congestion on parallel facilities and/or provide additional capacity during emergency or evacuation events.<br><br>Projects were also evaluated as to whether they added lanes that would match the number of lanes of the adjacent segment of the roadway. |

Table 7-5: Connect 2045 Performance Evaluation - Goal 2

| Goal 2 – Support the economic development and growth of the TPO area and region | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 2.1 - Develop a transportation system that supports regional and local economic growth and diversity and improves the economic competitiveness of the region. | Does the plan prioritize projects that improve access to economic activity centers? | Yes | The technical criteria scoring process included an analysis of projects to determine whether they would provide additional access to downtown locations, beaches, visitor destinations, large regional shopping/entertainment centers, or other similar activity centers. |
| Objective 2.2 - Identify and support safe and efficient truck routes and other facilities that improve the movement of freight and goods. | % VMT below adopted standard on roads designated as truck routes | Increase in congestion | The 2045 roadway network is expected to experience an increase in the percentage of VMT below adopted standard on designated truck routes over the base year condition. |
| | Average weighted V/C ratio on roads designated as truck routes | Increase in congestion on truck routes | The 2045 roadway network is expected to experience an increase in the average weighted V/C on designated truck routes over the base year condition. |
| | Does the plan consider freight specific infrastructure improvements/programs? | Yes | The technical criteria scoring process included an analysis of projects for whether they were within corridors identified on the National Highway Freight Network, SIS, regional freight subsystem, and select state corridors (see Technical Appendix I). The TPO also engaged the freight community during the planning process. |
| | Does the plan identify and improve high crash truck route corridors? | Yes | Technical Appendix G identifies truck crash hot spots in the TPO planning area. |
| | Does the plan reduce Highway Truck Daily Total Hours of Delay (Percent)? | No | Highway Truck Daily Total Hours of Delay is expected to increase on the 2045 network. |
| | % truck miles severely congested (V/C > 1.2) | Increase in truck miles severely congested | The 2045 network is expected to experience an increase in the percentage of truck miles severely congested over the base year condition. |

| Goal 2 – Support the economic development and growth of the TPO area and region | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 2.3 - Improve connectivity and access to rail, port, bus, and airport facilities. | Does the plan fund projects that improve access and connections to rail, bus, and airport facilities? | Yes | The technical criteria scoring process included an analysis of projects in relation to the location of Votran transfer facilities, DeBary SunRail station, DeLand Amtrak station, and Daytona Beach International Airport. |
| Objective 2.4 - Support funding of transit service that improves access to employment activity centers. | Does the plan allocate funding for the planning of improved transit service? | Yes | Connect 2045 provides funding to maintain current transit service and supports the future expansion of passenger rail in the TPO planning area, includng the preservation of a rail envelope on I-4. |

Table 7-6: Connect 2045 Performance Evaluation - Goal 3

| Goal 3 – Enhance and expand transportation connectivity and choice for all users | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 3.1 - Provide a range of transportation alternatives to improve mobility for all residents and visitors which includes addressing the unique needs of the elderly, people with disabilities, and those unable to drive. | % of elderly population within ¼ mile of bus stops | Maintained | No change in transit service as funding only sufficient to support continuation of existing service. |
| | % service area coverage | Maintained | No change in transit service coverage area as funding only sufficient to support continuation of existing service. |
| Objective 3.2 - Maximize the interconnectivity of roadways, sidewalks, bicycle facilities, trails, transit and other transportation system components to provide safe and convenient pedestrian, bicycle, transit and motor vehicle mobility. | % of major road network with bicycle facilities | Increased | It is anticpated that cost feasible roadway projects will include context-appropriate bicycle and pedestrian facilities. |
| | % of major road network with sidewalk facilities | Increased | |
| | % of major road network serviced by transit | Maintained | No change in transit service coverage as funding only sufficient to support continuation of existing service. |

| Goal 3 – Enhance and expand transportation connectivity and choice for all users | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 3.3 - Enhance regional connectivity to employment, education, health, entertainment and other major activity centers. | Does the plan identify projects that provide access to tourism/activity centers and ecotourism locations? | Yes | The technical criteria scoring process included an analysis of projects to determine whether they would provide additional access to downtown locations, beaches, visitor destinations, large regional shopping/entertainment centers, or other similar activity centers. Projects were also evaluated in relation to ecotourism locations including public conservation lands, trails, and cultural/historic sites. |
| | Number of regional transit routes | Maintained | SunRail provides regional transit service from the DeBary station linking the area to multiple stops in Seminole, Orange, and Osceola counties. |
| Objective 3.4 - Enhance transportation connectivity between local government jurisdictions within the region. | Does the plan identify projects that provide connectivity within the region? | Yes | The technical criteria scoring process included an evaluation of projects for whether they are a new facility or, based on their location, would relieve congestion on parallel facilities and/or provide additional capacity during emergency or evacuation events.<br><br>Projects were also evaluated as to whether they added lanes that would match the number of lanes of the adjacent segment of the roadway. |
| Objective 3.5 - Plan for transportation infrastructure resiliency to maintain and ensure system connectivity. | Did the plan consider transportation infrastructure resiliency and identify potentially vulnerable corridors? | Yes | See the Resiliency Scenario detailed in Chapter 5. |

Table 7-7: Connect 2045 Performance Evaluation - Goal 4

| Goal 4 – Eliminate or reduce crash-related fatalities and serious injuries (safety) and improve security throughout the transportation network | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 4.1 - Identify and prioritize improvements to reduce the frequency and severity of motorized vehicle crashes, and eliminate fatalities and serious injuries. | Does the plan use crash data to prioritize projects? | Yes | Project prioritization and technical scoring criteria process included an evaluation of severe crash data. |
| Objective 4.2 - Identify and implement safety programs, enhancements and innovations to improve the safety of pedestrian and bicycle facilities. | Does the plan consider safety programs for multimodal facilities? | Yes | Safety is a focus of the 2018 TPO Bicycle and Pedestrian Plan. See page 6-34. |
| Objective 4.3 - Enhance the safety and security of transit systems and other modes such as airports through appropriate design, monitoring, and enforcement programs. | Are security plans considered for transit systems serving the planning area? | Yes | Connect 2045 supports the security of transit systems in the planning area. See pages 2-34 to 2-36. |
| Objective 4. 4 - Develop a transportation plan that supports emergency evacuation, response and post-disaster recovery, and improves national, state and local security and emergency management functions. | Does the plan identify evacuation routes? | Yes | The technical criteria scoring process included an analysis of projectsin relation to evacuation routes as delineated by the Florida Department of Emergency Management and local government comprehensive plans. |
| | Does the plan consider projects that maintain or enhance evacuation routes? | Yes | |
| | Total lane miles of evacuation routes | Increased | Projects include additional lanes on existing evacuation routes. |
| | Is an evacuation plan in place? | Yes | The TPO supports the Florida Statewide Regional Evacuation Study Program and the Emergency Management Plans of Volusia and Flagler counties. |

Table 7-8: Connect 2045 Performance Evaluation - Goal 5

| Goal 5 – Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 5.1 - Promote compact, walkable, mixed-use development and redevelopment opportunities that encourage a range of transportation options and maximize the effectiveness of the transportation system. | Does the plan identify corridors that support compact, walkable, and mixed-use development and redevelopment opportunities? | Yes | The technical criteria scoring process included an evaluation of projects based on criteria related to Mulitmodal/Complete Streets elements and in support of Economic and Community Development. |
| | Are alternative modes of transportation considered when developing operational management strategies? | Yes | Strategies listed in the TPO's Congestion Management Process include measures to encourage the use of non-traditional modes such as bicycle facilities, pedestrian facilities, and ferry service. |
| Objective 5.2 - Develop a transportation plan with components planned and designed to preserve and enhance existing urban areas and communities. | Does the plan preserve and enhance the existing character of surrounding areas and corridors? | Yes | Improvements on the State Highway System are required to be appropriate for the the assigned Context Classification. |
| Objective 5.3 - Support local visioning and planning principles by developing a plan that is consistent with local government comprehensive plans to the maximum extent feasible. | Are projects identified consistent with local government comprehensive plans? | Yes | The adopted Comprehensive Plans of the local governments in the TPO planning area were reviewed as part of the planning process and Connect 2045 was developed to be consistent with these plans. |
| Objective 5.4 - Develop and support a multimodal transportation system that maintains or reduces vehicle greenhouse gas emissions and reduces or mitigates stormwater impacts. | Does the plan consider the potential environmental impacts of project corridors and include appropriate mitigation strategies? | Yes | Environmental mitigation was considered throughout the development of this plan and is discussed further in Chapter 5. |

| Goal 5 – Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 5.5 - Develop and support a multimodal transportation system that maintains or reduces vehicle greenhouse gas emissions and pollutants that degrade water quality. | % miles severely congested (V/C > 1.2) | Increase in the % of miles severely congested | The percentage of miles severely congested on the 2045 network is expected to increase over the base year condition. |
| Objective 5.6 - Locate and design transportation facilities to avoid or minimize impacts to historic and cultural assets. | Does the plan identify those projects in the Cost Feasible Plan that previously had not been screened in the ETDM process? | Yes | Technical Appendix F includes a table with the status of ETDM screening for appropriate projects in Connect 2045. |

Table 7-9: Connect 2045 Performance Evaluation - Goal 6

| Goal 6 – Promote equity, transparency, and opportunities for the public to be involved with their transportation system | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 6.1 - Provide opportunities for public participation that are open, inclusive and accessible for all citizens; and develop outreach programs to engage citizens in all jurisdictions as well as the traditionally underserved and underrepresented. | Do projects identified consider the input obtained from an inclusive and accessible public involvement process? | Yes | A variety of public involvement opportunities were available throughout development of the plan for members of the community, local and agency representatives, and other stakeholders to provide their perspective, input, and feedback. |
| Objective 6.2 - Include provisions to identify the needs of low income and minority populations and ensure that projects in the plan do not disproportionally burden low income and inority populations, and include measures to avoid, minimize or mitigate adverse impacts. | Do projects identified consider potential benefits and adverse impacts to Environmental Justice areas? | Yes | Environmental Justice was considered throughout the development of this plan and is discussed in detail in Chapter 5 and Technical Appendix E. |

| Goal 6 – Promote equity, transparency, and opportunities for the public to be involved with their transportation system | | | |
|---|---|---|---|
| **Objective** | **Performance Indicator** | **Connect 2045** | **Comments** |
| Objective 6.3 - Support transportation investments that improve public transit services for low income and transit-dependent populations to gain access to jobs, schools, health services, and other needed services. | % of major road network serviced by transit | Maintained | No change in transit service coverage area as funding only sufficient to support continuation of existing service. |

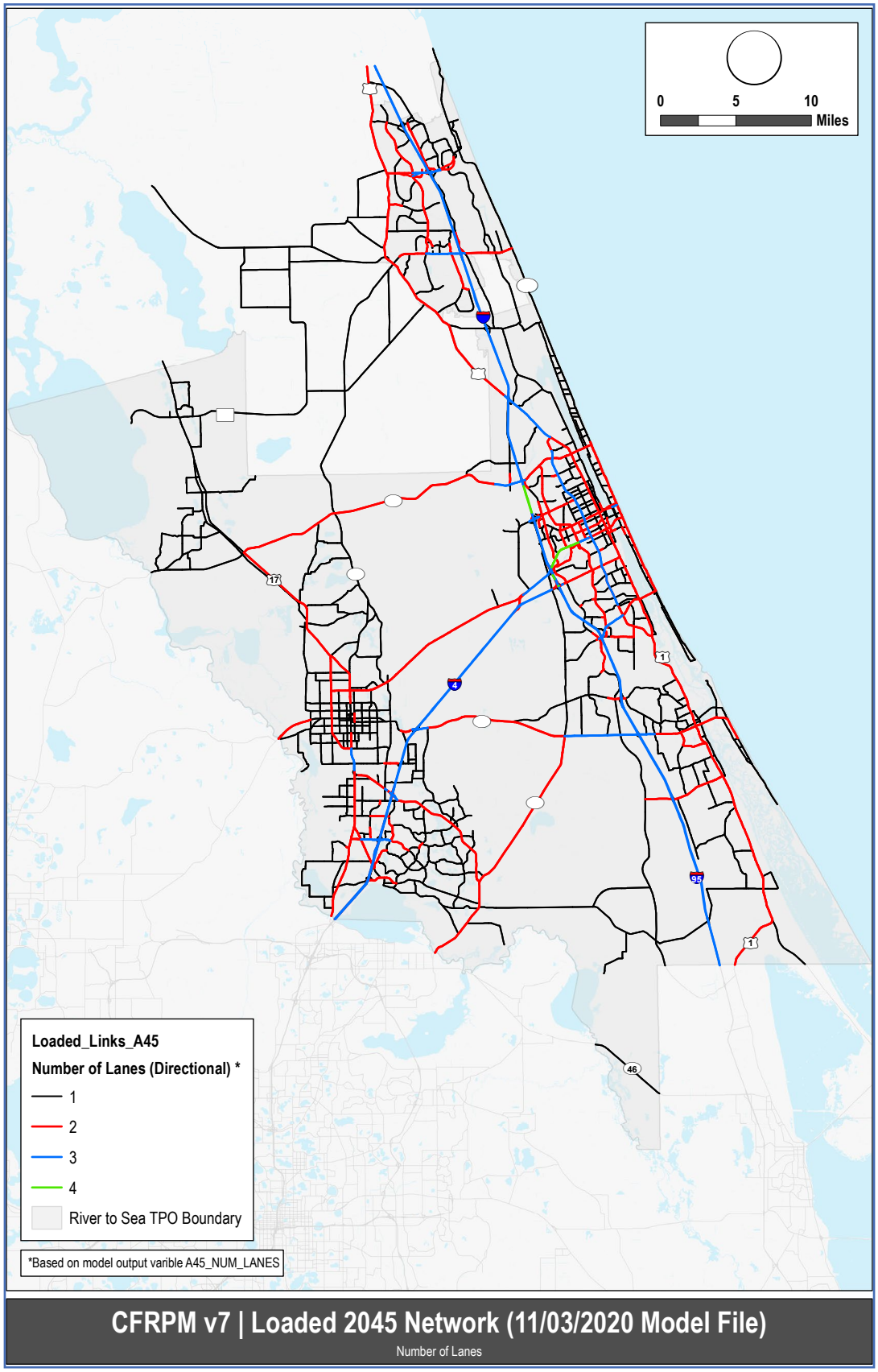
# NETWORK PERFORMANCE

## Travel Demand Model Results

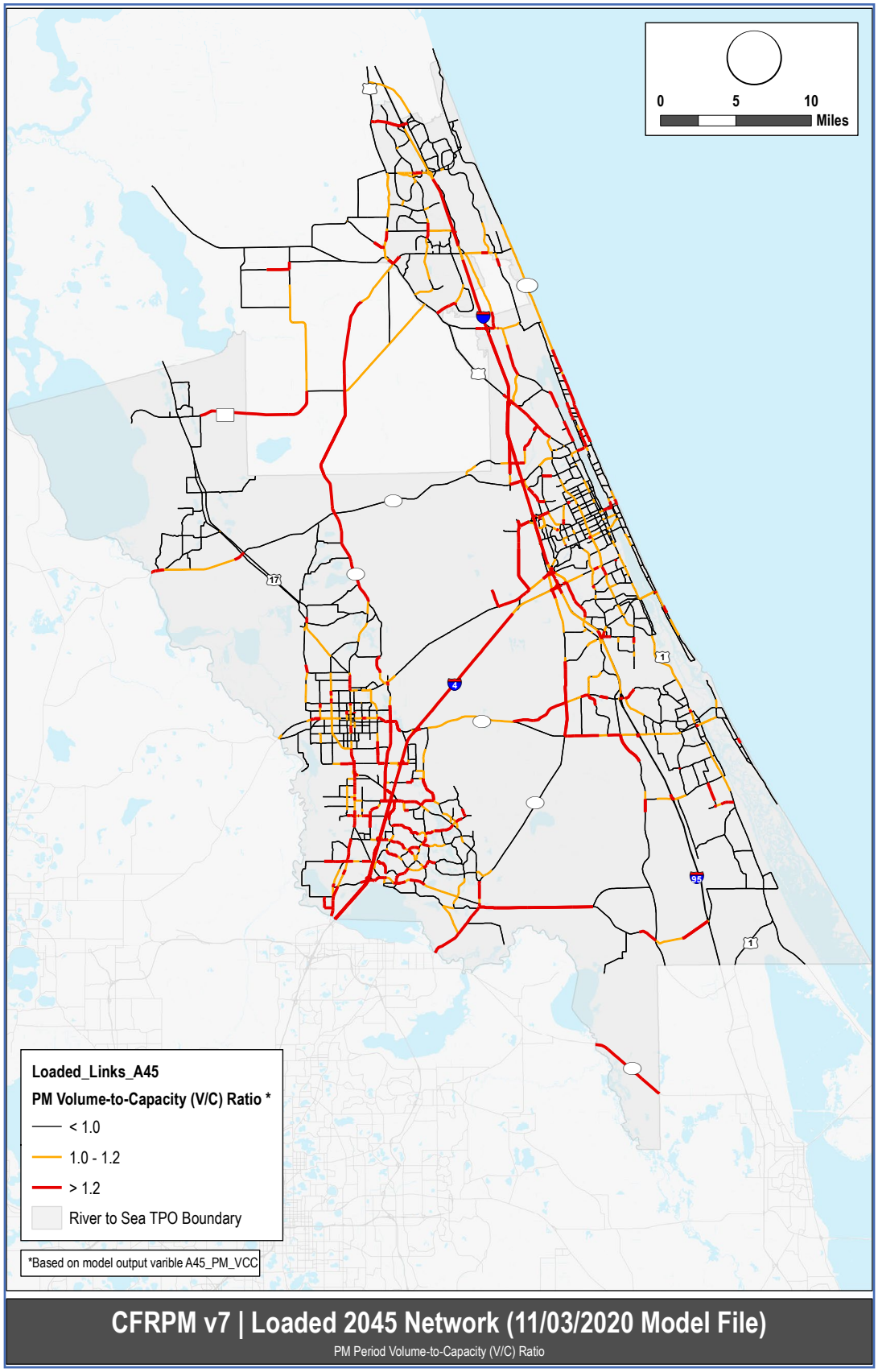
In addition to identifying the current and projected transportation demand of persons and goods, the travel demand model was used to evaluate the performance of the plan against identified performance targets and indicators, as well as the performance of the highway network in different scenarios. The travel demand model provides an indication of how effective the Cost Feasible Plan network is in managing congestion and travel delay. An overall analysis of volume/capacity (V/C) ratios for the roadway network was conducted to demonstrate the level of congestion expected in 2045.

While the overall performance of the road network is satisfactory, there are some individual corridors in the planning area that are anticipated to have V/C ratios greater than 1.0. These roads are depicted in **Figure 25,** which highlights the V/C ratios of the 2045 roadway network. Additional maps depicting the 2045 roadway network are included on the following pages, incuding the number of directional lanes (**Figure 24**) and annual average daily traffic (**Figure 26**).

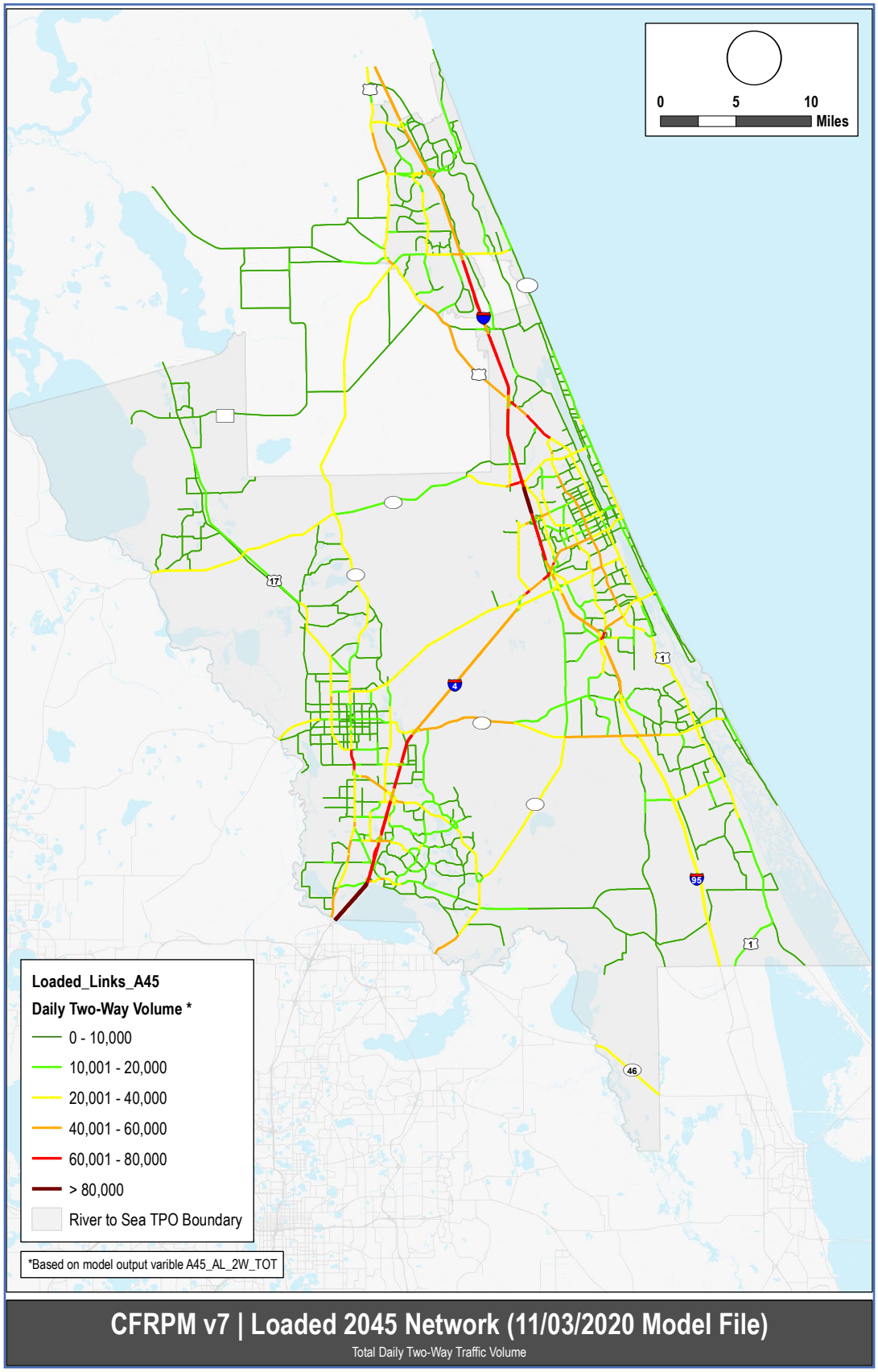
## Figure 24: Number of Directional Lanes (2045 Network)

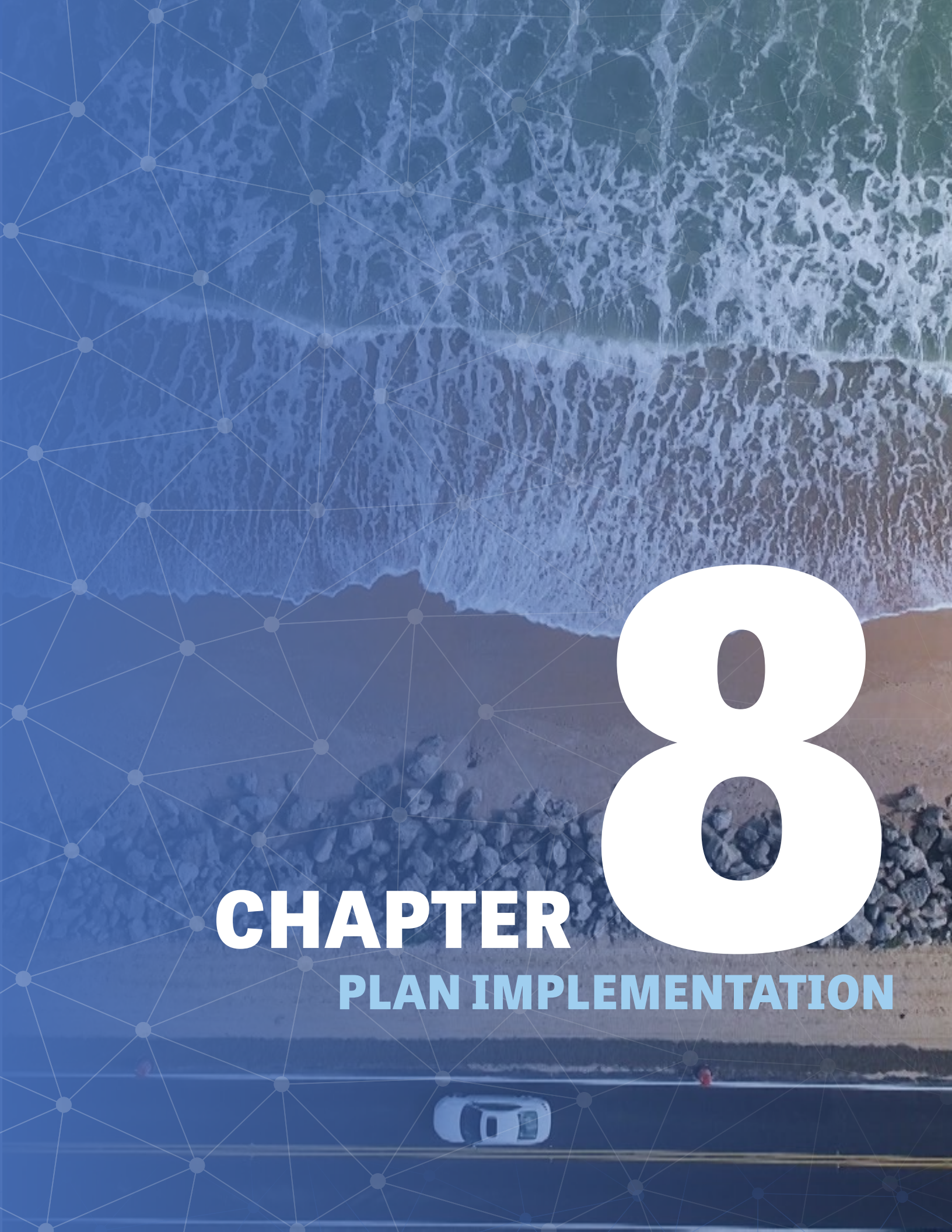


## Figure 25: Volume-to-Capacity (2045 Network)



## Figure 26: Annual Average Daily Traffic (2045 Network)





# CHAPTER 8

## PLAN IMPLEMENTATION

# CHAPTER 8 - PLAN IMPLEMENTATION

Connect 2045 was developed to set the long-range transportation vision and plan for Volusia and eastern Flagler counties, and will guide the TPO for the next five years. Successful implementation of Connect 2045 will rely upon the support and cooperation of local municipalities, Volusia County, Flagler County, FDOT District Five, transit service providers, neighboring counties and TPO/MPOs, and the community.

The TPO will work closely with transportation planning partners to secure funding and program projects that will meet the needs of this area.

The Connect 2045 LRTP is an integral component of the TPO's overall planning and programming framework. Connect 2045's Cost Feasible Plan (CFP) provides the pipeline of projects that will support annual development of the List of Priority Projects (LOPP). The LOPP subsequently determines which projects will advance into the Transportation Improvement Program (TIP) and FDOT Five-Year Work Program.

In addition to the implementation of specific CFP projects and other planning and policy steps, Connect 2045 includes the following recommended **Implementation Actions**:

- Utilize the $40 million set-aside from the CFP for prioritized Local Initiatives projects which could include technology projects identified in the ACES Corridor Prioritization (see Table 5-4).
- Establish an ACES committee or working group to provide guidance regarding the approach to future technology investments and potential pilot projects.
- Utilize information from the Resiliency Scenario analysis and prior studies to develop a strategy for future incorporation of resiliency data into long range planning that advances the Board's policy direction.
- Undertake planning studies for corridors that were acknowledged during the development of Connect 2045 as having operational and/or safety challenges and needs. Potential study corridors include Mason Avenue (SR 430), SR A1A, I-4 (Regional Transportation System Management and Operations (TSM&O)), and SR 100 in Palm Coast.
- In anticipation of shifting revenue availability and increasing funding shortfalls, re-evaluate major capacity projects that will face significant fiscal limitations to completion.
- Seek additional public input as defined in the Connect 2045 Public Involvement Plan in response to COVID-19 (as noted in Chapter 4).
- Explore studying the impact of COVID-19 on travel behavior and the demand for transportation within the TPO planning area to understand implications for the next LRTP.

# PLAN ADOPTION

At the June 24, 2020 meeting of the TPO Board, the draft Connect 2045 LRTP Project List was approved for public outreach and a 60-day public comment period was initiated. On August 24, 2020, a 30-day public notice period was initiated for the draft Connect 2045 LRTP, pursuant to the TPO's Public Participation Plan. The Connect 2045 LRTP was formally adopted by the TPO Board on September 23, 2020.

# COMPLIANCE WITH THE FAST ACT

Connect 2045 is governed by the Fixing America's Surface Transportation Act (FAST Act), which was signed into law on December 4, 2015. The FAST Act enacted changes to the MAP-21 planning processes for the development of long range transportation plans, including the incorporation of Transportation Performance Management (TPM) which intends to establish a data driven approach to transportation investments. Changes also included the addition of new planning factors. The TPO has been proactive in addressing these new requirements and incorporating them into their core planning activities, including the Connect 2045 LRTP.

# LRTP AMENDMENT PROCESS

The River to Sea TPO may find it necessary to revise the LRTP at times other than at the 5-year update cycle. Should this need occur, the TPO will follow the procedure laid out in Chapter 4 of the Metropolitan Planning Organization Program Management Handbook as well as the guidance provided by FDOT, the FHWA Florida Division, and the Code of Federal Regulations. This chapter outlines the procedure for amending Connect 2045.

It should be noted that the River to Sea TPO Board retains the authority to bypass this procedure and amend the long range transportation plan as necessary to comply with the administrative requirements of either the federal or state governments.

## LRTP Amendment Procedure

The LRTP can be revised at any time based on need. When making changes to a long range transportation plan, there are two types of revisions that need to be considered: 1) an administrative modification (minor revision) and; 2) a plan amendment (major change)[23 C.F.R. 450.104].

## Administrative Modification

An administrative modification is a minor revision to the LRTP. It includes minor changes to project/phase costs, funding sources, or project/phase initiation dates. It does not require public review and comment or the re-demonstration of fiscal constraint. [23 C.F.R. 450.104] Examples of these include:

A. Design Concept or Scope Changes: A minor change in the project termini equal to or less than 10% of the total project, i.e., adjusting length for turn lane tapers.

B. Identification of planned use of federal funds for the existing cost feasible plan projects if federal funds are added to a project funded with only state or local funds in the adopted LRTP.

C. Project or Project Phase Initiation Date:

1. Advancing a project from a 5 or 10-year band to an adjacent 5-year band beyond the TIP/STIP years/1st 5-year band.
2. Adding a new phase to an existing cost feasible plan project (e.g. if ROW is funded, adding CST phase) where the new phase is funded beyond the TIP/STIP years/1st 5-year band of the LRTP.
3. Adding a new phase to an existing cost feasible plan project (e.g. if ROW is funded, adding CST phase) from a Needs or Illustrative list to the cost feasible plan where the new phase is funded beyond the TIP/STIP years/1st 5-year band of the LRTP.
4. Adding a new phase to an existing cost feasible plan project (e.g. if ROW is funded, adding CST phase) from a Needs or Illustrative list to the CFP where (1) the new phase is funded in the TIP/STIP years/1st 5-year band of the LRTP and (2) the added phases use new funds not contained in the LRTP Revenue Forecast to the cost feasible plan.

Should it be determined that an administrative modification is needed, information regarding the need for modification should be presented to the River to Sea TPO Executive Director for review and determination. If the change satisfies the definition of an administrative modification, the Director will notify FHWA and FDOT representatives and direct TPO staff to process the change. If it is above the thresholds for a modification, the change should follow procedures for a plan amendment.

## Plan Amendment

An amendment is a major revision to the LRTP and includes adding or deleting projects from the plan and/or major changes to project costs, initiation dates, or design concepts and scopes for existing projects. An amendment requires public review and comment in accordance with the LRTP amendment and public involvement processes and re-demonstration of fiscal constraint. Changes to projects, included only for illustrative purposes, do not require an amendment. [23 C.F.R. 450.104]

Should an amendment be requested, information regarding the proposed change should be presented to the River to Sea TPO Executive Director for initial review. The Director, along with TPO staff, will review supporting documentation and convene a technical review committee to evaluate the impact of the change and supporting documentation. The committee will provide their findings to the TPO standing committees and board.

The Director will follow the plan amendment process depicted on page 8-6. In addition, plan amendments will:

- Require an update to the revenue and cost estimates supporting the plan to use an inflation rate(s) to reflect year of expenditure dollars, based on reasonable financial principles and information. [23 C.F.R. 450.322(f)(10)(iv)] These estimates must demonstrate that the change preserves the financial feasibility of the plan.
- Provide a purpose and need for the change. This may include supporting data and analysis.

- Follow a public involvement period consistent with adoption of the original plan. This includes review of the full draft proposal, followed by a 30-day public input period, and then adoption of the amendment by a recorded roll call vote or hand-counted vote of the majority of the membership present. [Section 339.175(13), F.S.].

Copies of the amended long range plan should be distributed in accordance with the Metropolitan Planning Organization Program Management Handbook. Although the LRTP does not require approval by the FHWA or the FTA, these agencies are involved in the development of the plan and should be provided an opportunity to comment on amendments to the plan.

Guidance has also been provided by FDOT and the FHWA Florida Division regarding plan amendments. This guidance states that an LRTP amendment will be required for LRTP cost increases that exceed both 50% of project cost and $50 million. When assessing project cost changes (including project costs documented in NEPA documents), the cost of the project includes the phases after the PD&E which, for purposes of this document, are Design/PE, ROW and Construction phases.

Other changes that require an LRTP Amendment include:

A. Design concept or scope changes: A major change in the project termini (e.g. expansion) or a change in a project concept(s) such as adding a bridge, addition of lanes, addition of an interchange, etc.

B. Deleting a full project from the CFP.

C. Adding a new project where no phases are currently listed in the CFP.

D. Projects or Project Phase Initiation Date for projects in the CFP:

1. Advancing a project phase from the 3rd 5 years and the last 10-year band of the LRTP to the TIP/STIP years; advancing a project more than one 5-year band.

2. Adding a phase to an existing CFP project (e.g. if ROW is funded, adding CST phase) where (1) the new phase is funded in the TIP/STIP years/1st 5-year band of the LRTP and (2) one or more phases of a different project must be deferred to a later band or to the Needs/Illustrative List in order to demonstrate fiscal constraint.

3. For advancing phases of minor projects, please see the Administrative Modification section beginning on page 8-3.

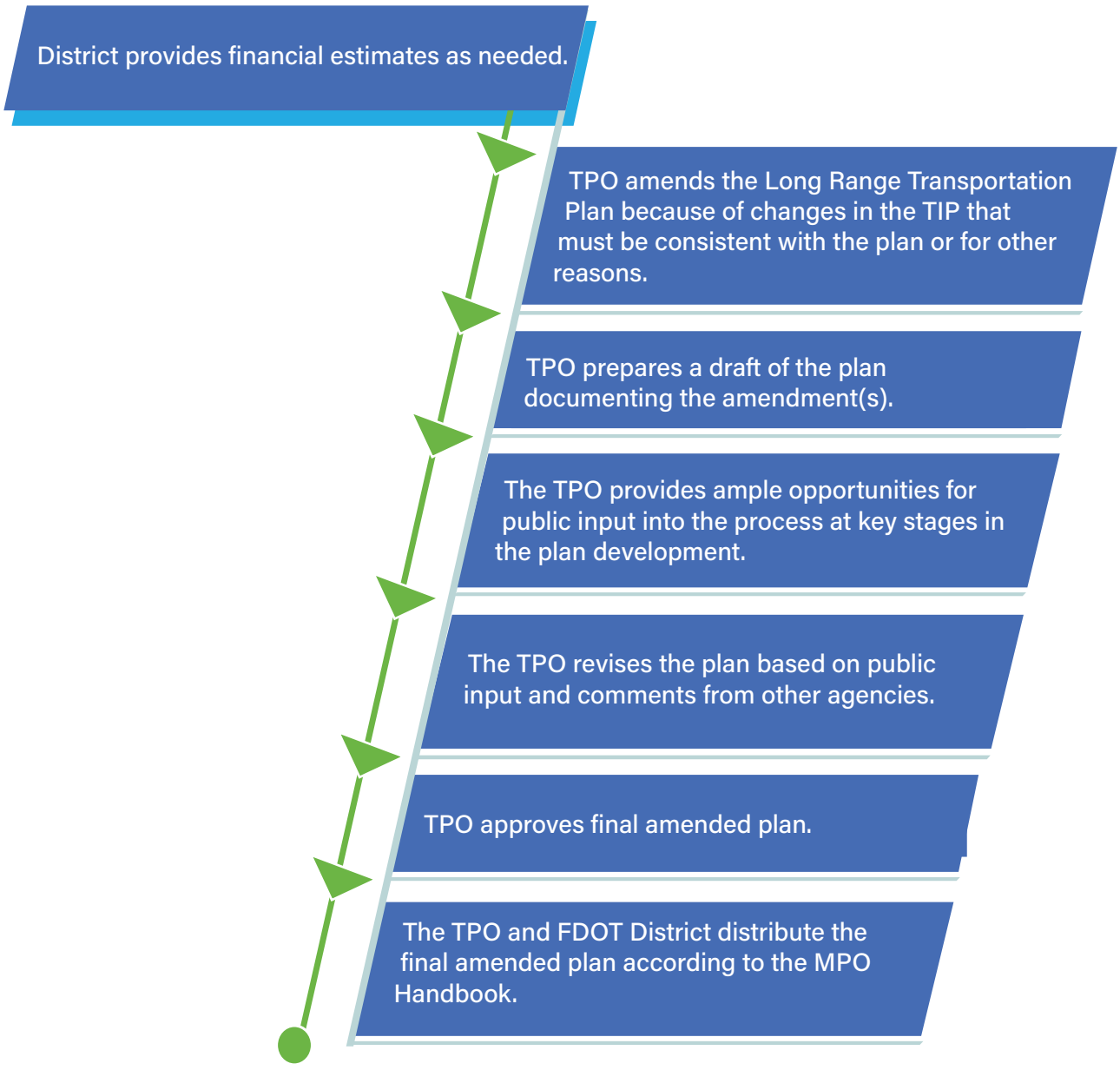
D. Projects or Project Phase Initiation Date for projects beyond the CFP:

1. Moving a new project from a Needs or Illustrative List to the CFP where no phases are currently listed in the CFP.

2. Moving new phases from a Needs or Illustrative List to an existing CFP project where (1) the new phase is funded in the TIP/STIP years/1st 5-year band of the LRTP and (2) one or more phases of a different project must be deferred to a later band or to the Needs/Illustrative List in order to demonstrate fiscal constraint.

**Figure 27** provides an overview of the LRTP Amendment Process.

Figure 27: LRTP Amendment Process



# List of Plan Revisions

| Revision Date | Type of Revision | Resolution | Description |
|---|---|---|---|
| 5/26/2021 | Amendment | 2021-12 | Revisions to Chapters 5, 6 and Appendix D to reflect updated funding for the Central Florida Commuter Rail System Phase II North Expansion Project. |