



Lee County Metropolitan Planning Organization Long Range Transportation Plan

Adoption December 18, 2020



Acknowledgments

Lee County Commissioners

Commissioner Brian Hamman
Commissioner Frank Mann
Commissioner Cecil Pendergrass
Commissioner Kevin Ruane,
MPO Treasurer
Commissioner Ray Sandelli

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Councilmember Rick Williams
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MPO Vice Chair
Vice-Mayor Katy Errington
(Alternate Voting
Member)

Advisory Member

Florida Department of Transportation

District One Secretary, L.K. Nandam, P.E.

Lee County MPO Staff



Don Scott, AICP, Executive Director
Ron Gogoi, AICP, Transportation
Planning Administrator
Brian Raimondo, Senior Planner
Calandra Barraco, Planner

P.O. Box 15045
Cape Coral, FL 33915
Tel: (239) 244-2220
Email: info@leempo.com
Website: www.leempo.com

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Lee County Metropolitan Planning Organization
P. O. Box 150045 Cape Coral, FL 33915-0045
239-244-2220, info@leempo.com

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Goods Movement Technical Memorandum (March 2021)

Transportation System Management & Operations (TSM&O) Master Plan (August 2019)

Long Range Transit Element (January 2021)

Bicycle Pedestrian Element

Lee County MPO Mobility Profile (2020)

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Chapter 1: Introduction

The Lee County Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP) is the 25-year vision for the community's transportation needs and expectations. The Plan outlines a balanced 25-year multimodal vision for Lee County that supports improved mobility and access for people and goods in support of a high quality of life and efficient transportation investments. To implement this long-term multimodal vision, the LRTP establishes cost feasible highway, transit, bicycle, pedestrian, and multi-use trail projects through the year 2045. The improvements identified in this Plan provide for future mobility needs with an emphasis on enhancing safety and security within the planning area boundary. **Map 1-1** shows the planning communities and key features within the MPO's planning area.

Map 1-1: Lee County MPO Planning Area Map



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1.1 What is the 2045 Transportation Plan?

The Federal Aid Highway Act of 1962 required each urbanized area with a population of 50,000 or more to establish a continuing, cooperative, and comprehensive (3-C approach), to multimodal transportation planning process as a condition of receiving federal funds for transportation improvements. Subsequent acts required the creation of a Metropolitan Planning Organization (MPO) in each such area and provided federal assistance for metropolitan planning. (Title 23, §§134 & 104, USC; 23 CFR part 450). As a result of this legislation, the Lee County MPO was created in 1977. The Lee County MPO is responsible for transportation planning in the Cities of Bonita Springs, Cape Coral, Fort Myers and Sanibel, the Town of Fort Myers Beach, the Village of Estero, and unincorporated Lee County.

The most significant aspect of the Lee County MPO's mission is to ensure future mobility for residents and visitors in Lee County. To do so, the MPO guides the transportation planning process which includes the development of the Long Range Transportation Plan (LRTP) to identify future transportation improvements.

The LRTP is required by the Federal Highway Administration (FHWA) to identify strategies that ensure current and future mobility needs. The analysis used to develop the plan is based on projects of future population and employment, the expected travel patterns, and amount of travel to the year 2045. The plan is updated every five years to refine the long-term strategy for the transportation system based on changes in transportation needs and outlook for the MPO's planning area.

The short-range component of the LRTP is the Transportation Improvement Program (TIP), which covers the first five years of the Plan. The TIP identifies, prioritizes, and allocates funding for transportation projects and is updated annually. Projects must be in the LRTP to be added to the TIP and receive federal funds.

The 2045 LRTP meets federal guidelines with the adoption of a set of goals and objectives that allow potential projects' performance to be measured. This ensures that projects included in the LRTP best address the goals and vision established by the MPO.





1.2 Where Have We Been?

Lee County is in Southwest Florida along the Gulf of Mexico. While it has roots as a retirement community, its population and its transportation needs have grown more diverse. Lee County covers 785 square miles of land and had a 2019 population of 770,577. The most pressing transportation challenge Lee County and its communities (see **Map 1-1**) face is an underfunded transportation system and a growing list of multi-modal transportation needs. Moving forward, new opportunities brought on by advancements in technology and challenges associated with coastal resiliency will require continued evaluation by the MPO in prioritizing and allocating the limited financial resources. As a desirable destination for living, retiring, and visiting, anticipated future growth will result in increased traffic and pressure on an already congested transportation system. In turn, greater amounts of traffic will lead to an increased concern for safety. Recognizing that Lee County is trending in the wrong direction with safety performance measures, the Lee MPO has placed safety as a key priority in developing the LRTP. The LRTP identifies transportation strategies and projects that address the county’s anticipated transportation needs between now and 2045, ensuring that scarce resources are used in a cost-effective way while continuing to help make Lee County a desirable place to live, work, and play.

1.3 How was the 2045 Transportation Plan Developed?

The LRTP is required by be updated every five years as part of the metropolitan planning requirements (23 C.F.R 450.324) for the purpose of guiding the MPO’s decision-making and prioritizing projected needs balanced with limited future resources. The analysis of the LRTP creates resulting plans that are used to determine transportation improvements to address the community’s most pressing needs. The needs and projects are developed in a financially feasible, community-approved manner, analyzing the top priority projects that are both affordable and provide a return on investment.

Using the step-by-step process shown in **Figure 1-1**, the 2045 Plan was developed beginning with the definition of assumptions, including goals and objectives and future growth estimations. The forecasting of growth allows for the identification of future community needs, thereby providing direction for transportation and mobility projects. Considering limited funding, however, projects are prioritized based on feasibility or highest community impact.

Public outreach during the LRTP development is always a critical component for understanding the needs and vision of the community while also providing updates on the decision being made. Developed during the global COVID-19 pandemic, the MPO’s ability to hold in person public outreach meetings was limited. However, several strategies were explored for gaining input through interactive and virtual methods. Additional details on the public involvement and outreach events are included in **Chapter 3**.

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Figure 1-1: 2045 LRTP Development Process



1.3.1 Federal and State Requirements

To ensure that the LRTP complies with the Federal and state requirements of the metropolitan planning process, a checklist has been included in **Appendix A** outlining the key requirements and sections of this report where each is addressed.

Fixing America's Surface Transportation (FAST) Act

The FAST Act is the first Federal law passed in more than a decade that provides long-term funding for surface transportation planning and investment. The Lee County MPO 2045 LRTP was developed to be consistent with the requirements of the FAST Act, which was signed into law on December 4, 2015. An extension of the act was signed in 2020 to extend the Act's provisions until September 30, 2021. As with previous transportation laws, the FAST Act includes a series of metropolitan planning factors that ensure that the work of the MPO is centered on a performance and outcome-based approach.

Planning Factors

The FAST Act includes specific planning factors that address the relationship between transportation, land use, and economic development. The following list provides the 10 FAST Act planning factors to be applied to the metropolitan planning process for all MPOs, including the Lee County MPO:

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

A matrix showing consistency between the 2045 LRTP goals and the 10 FAST Act planning factors is shown in **Chapter 3**.

Performance-Based Planning

Included in the FAST Act is the requirement that state departments of transportation (DOT) and metropolitan planning organizations (MPOs) conduct performance-based planning by tracking performance measures and develop data-driven targets for improve those measures. Performance-based planning ensures the efficient investment of transportation funds by increasing accountability, providing transparency, and linking investment decisions to key outcomes. The System Performance Report, found in **Appendix B**, evaluates the condition and performance of the transportation system in Lee County with respect to the federally required performance measures, and reports on progress achieved in meeting the targets. The required performance measures include:

- Highway safety measures
- Pavement and bridge condition measures
- Reliability and congestion on the National Highway System, including freight specific measures
- Transit asset management measures
- Transit safety measures

Florida Transportation Plan (FTP)

The FTP is the statewide transportation plan that guides Florida’s Transportation future. The Plan provides direction to the Florida Department of Transportation (FDOT) and all the regional and local agencies that are involved in planning and managing Florida’s transportation systems, including Lee County MPO. The Vision Element of the FTP details what the next 50 years of Florida’s transportation future might look like. It is centered around seven goals which are the building blocks of the FTP.

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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

A matrix showing consistency between the 2045 LRTP goals and the seven FTP goals is shown in **Chapter 3**.

1.3.2 Consistency with Local Plans

The 2045 LRTP recognizes the close link between land use and transportation and has been developed in a manner consistent with comprehensive plans and short-term transportation plans developed and adopted by local governments within the MPO’s planning area. The LRTP considers and builds upon the projects and initiatives of all local and regional transportation implementing agencies for a cohesive plan designed to address the needs of the communities. The LRTP ultimately considers all other plans and initiatives within and around the region of Lee County, sets priorities, and applies fiscal constraints to develop the most accurate picture of the region’s future transportation system.

1.4 Plan Highlights

The 2045 LRTP represents a significant and visionary effort to address the long-term transportation needs of Lee County MPO. Key highlights of this plan include:

- Preserving the existing transportation system as a key priority by funding rehabilitation and repair of major bridges and roadway maintenance in the cost feasible plan
- Addressing future technology initiatives through traffic operation, transit and mobility projects
- Evaluating environmental areas and community goals to reduce transportation impacts in developing a financially feasible plan.
- Addressing safety and safety needs of the transportation system and the public benefit of having mobility options.





1.5 Document Organization

The Lee County MPO LRTP is organized into 7 chapters, as follows:

Chapter 1: Introduction – This chapter introduces the plan, the purpose of the plan, and why the plan is updated every five years.

Chapter 2: Plan Context – This chapter establishes the existing transportation conditions and describes the regional setting and projections for future growth. Additionally, this chapter addresses the emerging transportation issues including mobility-on-demand, future technology, and public health.

Chapter 3: Guiding the Plan – This chapter outlines the key federal, state, and local regulations and policies that guide the framework of the plan. The important role of public involvement and environmental justice in guiding the plan are also emphasized in this chapter.

Chapter 4: Needs Plan – This chapter outlines the multimodal Needs Plan for all transportation modes and the project prioritization methodology. The Needs Plan includes roads (highway), public transportation (transit), and bicycle and pedestrian improvements identified as needed without financial constraints applied. Also, this chapter outlines the following elements of the transportation program: environmental mitigation, freight, and integration of advancing technologies.

Chapter 5: Cost Feasible Plan – This chapter outlines the project prioritization process and assumptions of reasonably available revenues for transportation. Using these assumptions, the needed transportation projects are narrowed down to create the fiscally constrained Cost Feasible Plan. This chapter also addresses the congestion management process and transportation safety and security. This chapter describes the performance of the 2045 Cost Feasible transportation network compared to the Existing plus Committed (E+C) Network.

Chapter 6: Implementation – This chapter documents issues and activities the MPO will need to consider in implementing the projects and objectives of the LRTP.

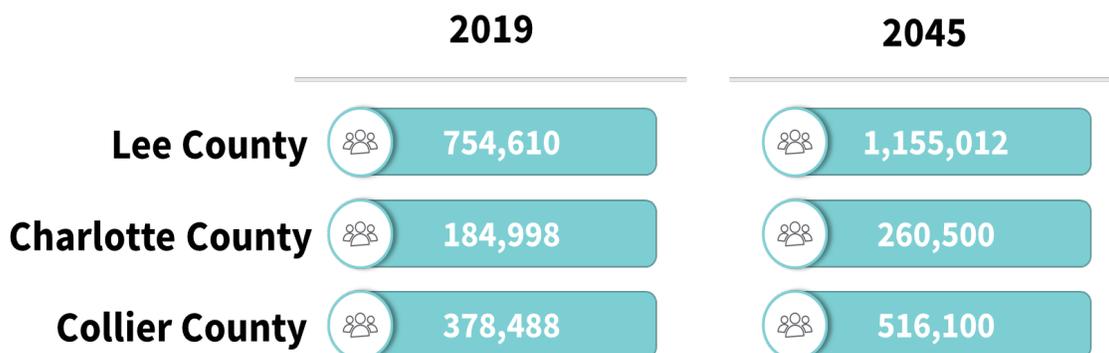




Chapter 2: Plan Context

As Lee County grows with the rest of Southwest Florida, seamless regional travel becomes increasingly important. Boundaries between the communities are getting closer as urbanized areas expand outward and begin to coalesce (see **Figure 2-1**). These expanding boundaries reflect the reality that people cross county lines for working, shopping, entertainment, education, and healthcare. Collaboration and connection of services is needed on a regional scale rather than solely focusing on a jurisdictional scale. Recognizing this reality, the MPOs in Charlotte, Collier, and Lee Counties work together to coordinate regional transportation planning through joint MPO Board Meetings and have collaborated to implement and prioritize projects of regional significance. The Burnt Store Road project identified in the Cost Feasible Plan is an example of collaboration between Charlotte and Lee Counties, while transit service along US 41 highlights the cooperation that connects Collier and Lee Counties. Additionally, regional collaboration between Charlotte, Lee, and Collier counties is emphasized in commercial movement of people and goods through the regional partnership established to support the administration and management of the Southwest Florida International Airport.

Figure 2-1: Regional Population Forecasts



2.1 Existing and Committed Transportation Conditions

Prior to identifying future transportation and travel needs, the existing transportation system and the projects that are committed to be completed over the next five years were reviewed. These projects are shown in **Map 2-1**. This permits existing transportation conditions to be compared to the forecasted demand on the transportation system in 2045 to predict the type of transportation improvements that will be needed in the future. In addition to projects that are funded for construction in the next five years, **Table 2-1** illustrates the transportation projects that have been prioritized by the MPO and an anticipated timeframe for construction.

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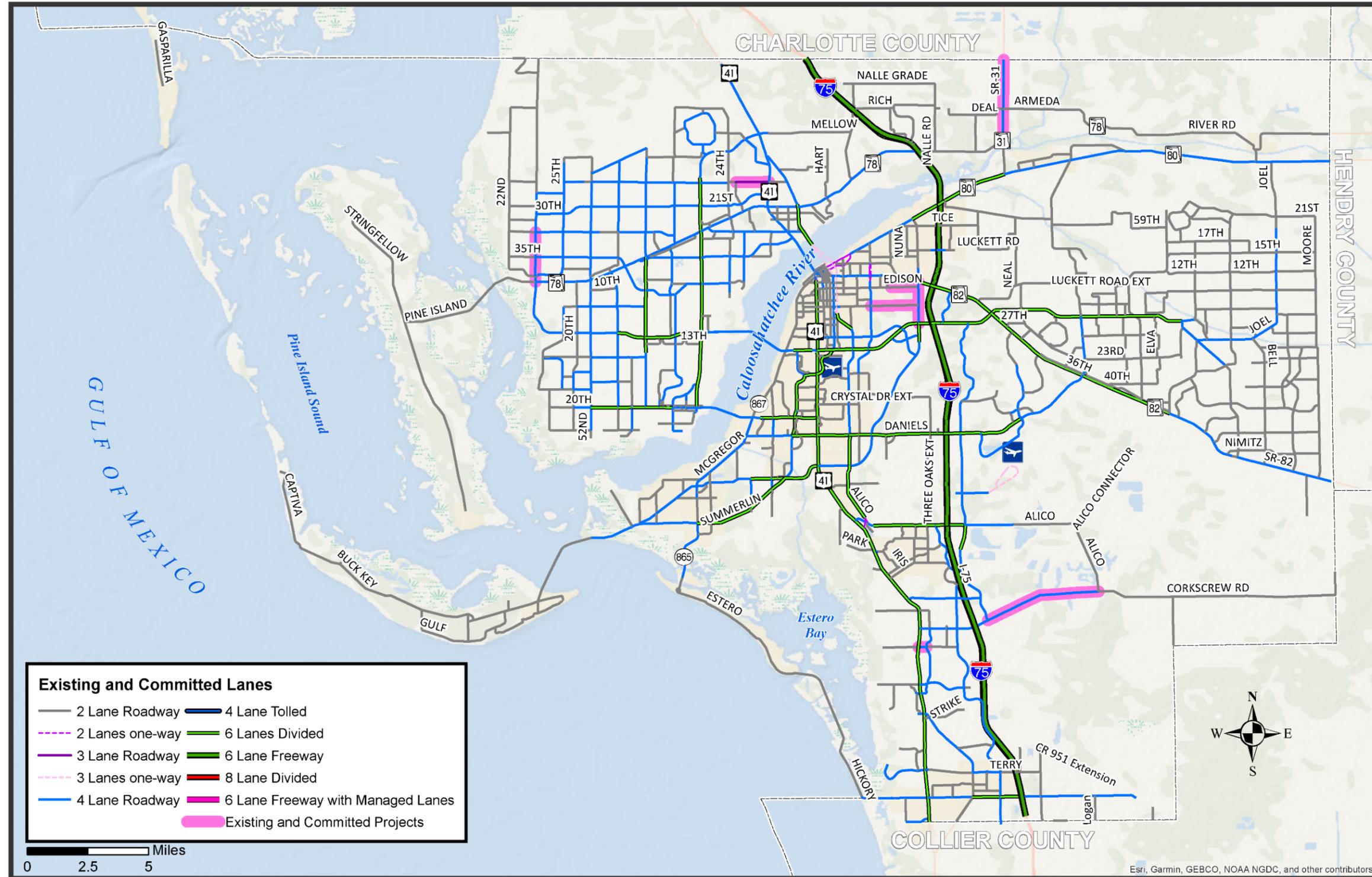


Table 2-1: Existing Priority Projects

Project Location	Project Description	Construction Timeframe
I-75 at Daniels Parkway	Interchange Improvement	2021—2025
I-75 at Colonial Blvd	Interchange Improvement	2021—2025
SR 31 from SR 78 to Cook Brown Road (Charlotte County)	Widen to 4 lanes	2021—2025
SR 865 from Estero Blvd to Summerlin Rd	Roadway Reconstruction	2021—2025
Big Carlos Bridge	Bridge Replacement	2021—2025
Advanced Traffic Management System	Traffic Signal Upgrades	2026—2030
Metro Parkway from Daniels Pkwy to Winkler Ave	Widen to 6 lanes	2026—2030
US 41 at SR 78	Intersection Improvement	2026—2030
Burnt Store Rd from Van Buren Pkwy to Charlotte County	Widen to 4 lanes	2031—2035
Old US 41 from Collier County to Bonita Beach Rd	Widen to 4 lanes	2031—2035
SR 31 from SR 80 to SR 78	Widen to 6 lanes	2031—2035
SR 78 from I-75 to SR 31	Widen to 4 lanes	2031—2035
US 41 at Six Mile Cypress Parkway	Intersection Improvement	2031—2035
US 41 at Bonita Beach Road	Intersection Improvement	2031—2035



Map 2-1: Existing and Committed Roadways





2.2 Population and Employment Forecast

Population and employment data are a vital component of forecasting future travel demand in the LRTP. The Interactive Growth Model (IGM) was used to develop the anticipated population projections, and employment growth areas through 2045. The model predicts where and when the residential growth will occur, starting with an aggregation of areas and then reducing that down to traffic analysis zones (TAZ's) used to analyze transportation demand in the Regional Transportation Demand Model. This data is then used to forecast where and when support land uses, both public and private, are needed to support the population. This includes the allocation of commercial, service and industrial jobs and the intensity needed to support current and future populations.

The model applies a series of algorithms to determine the optimal solution for the locations and timing of various land uses. Some of the parameters for the algorithms include the locations and timing of development, the proximity of existing development, propensity to assemble land parcels and the transportation network. The model is a collection of many sub-models which include demographic, economic, socio-political, spatial relationships and land resources. After the population forecast is complete, the housing sub-model forecasts the change in household size and vacancy rates over time to generate a housing demand forecast. As household sizes grow or shrink and vacancy rates, due to changes in occupancy and seasonal populations, increase or decrease the need for new housing changes. The housing demand sub-model forecasts change in household size and vacancy rates for both single-family and multi-family uses.

As part of the forecasting process, there were a tremendous amount of data points collected about the population history, plans for any geographic area and parcel data that is used to build that data into the model at the Traffic Analysis Zone level. The model then forecasts population growth in 5 year increments to 2045 which then is used to create the overall forecasts for the community. The algorithms analyze each TAZ's development potential on an individual basis. The model groups the zones by order from most likely to be developed to least likely. This same analysis is repeated in 5-year increments out to the horizon year of 2045. From the forecasted data, zones that are built out, experiencing rapid growth and those that demonstrate slow growth are identified. The population projections drive the demand for commercial goods and services needed to support the population. The commercial sub-model forecasts the commercial goods and services needed to support the population in each of the zones.

The process for determining the future land uses and level of development was reviewed and adjusted through coordination with the local governments planning staff. In addition, larger developers and other agencies were contacted to gain information that was used to help determine future development, construction, and facility needs. This coordination ensured consistency with the local government Comprehensive Plans and expectations for growth.

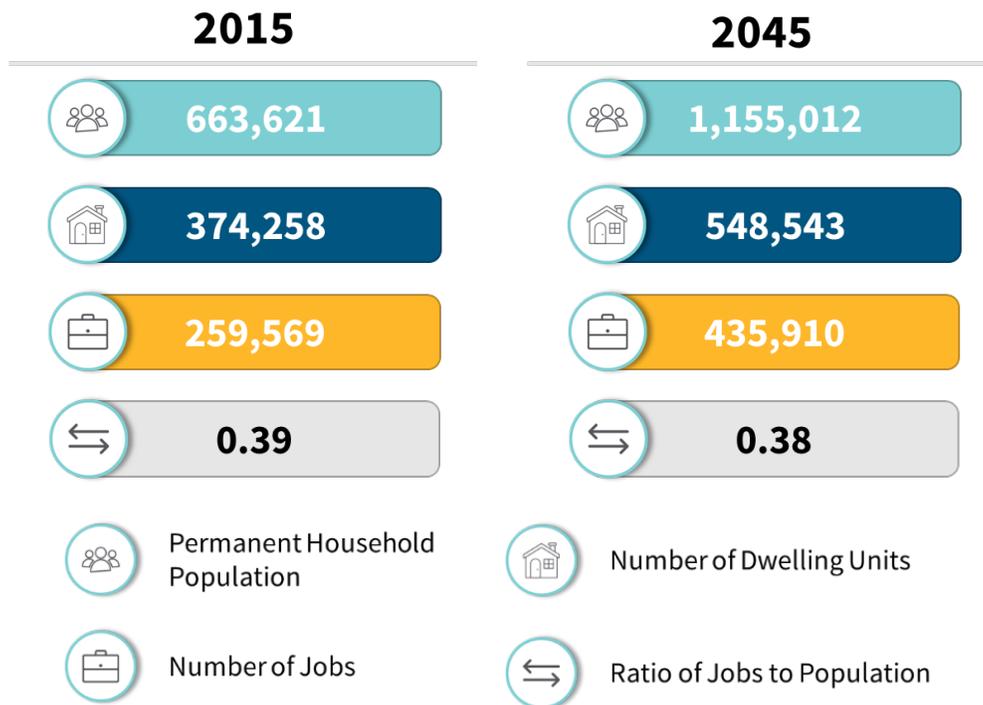
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Figure 2-2 shows the baseline data from 2015 and forecasted growth of population, household, and employment in Lee County in 2045 however, it is also important to note the natural and environmental hazards that can impact forecasts. In 2020, the State of Florida implemented stay-at-home orders and social distancing regulations in response to COVID-19. This pandemic is one example of uncertainties that exist when projecting future populations. While short periods of high growth or decline have and will continue to exist in Lee County, the population forecast to 2045 is based on an expectation of averaged growth over the 25-year time period.

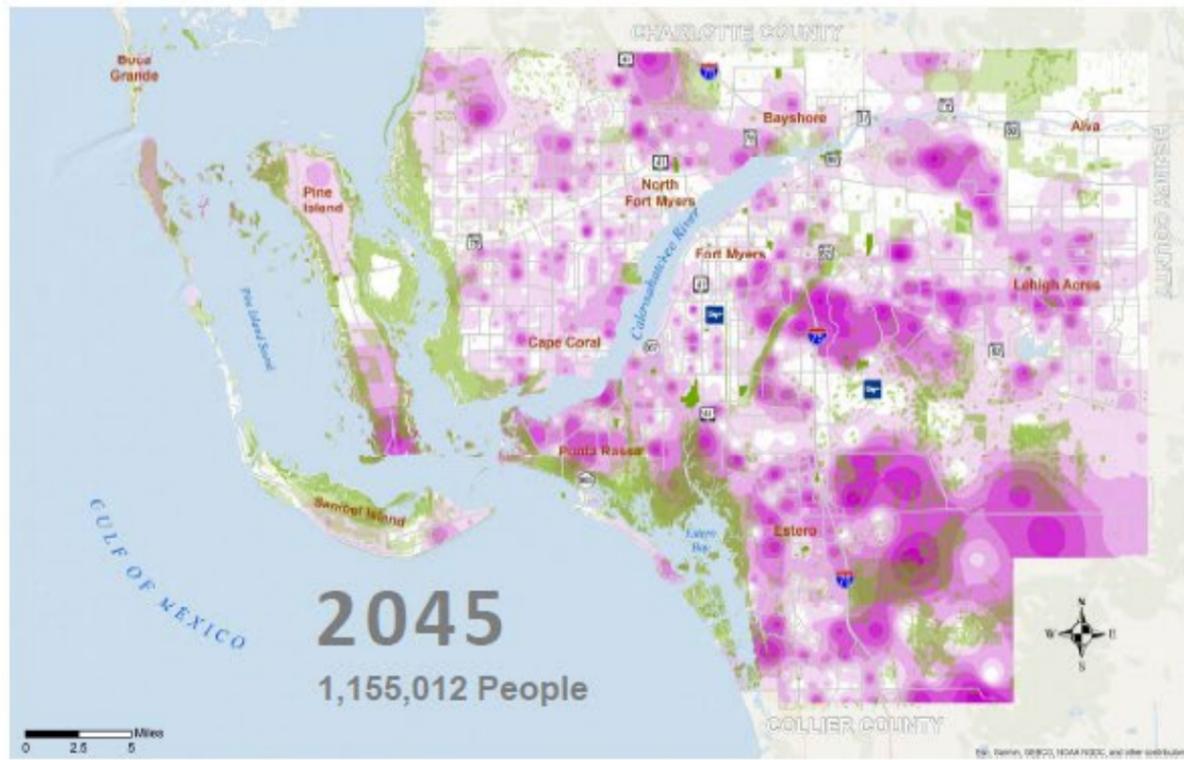
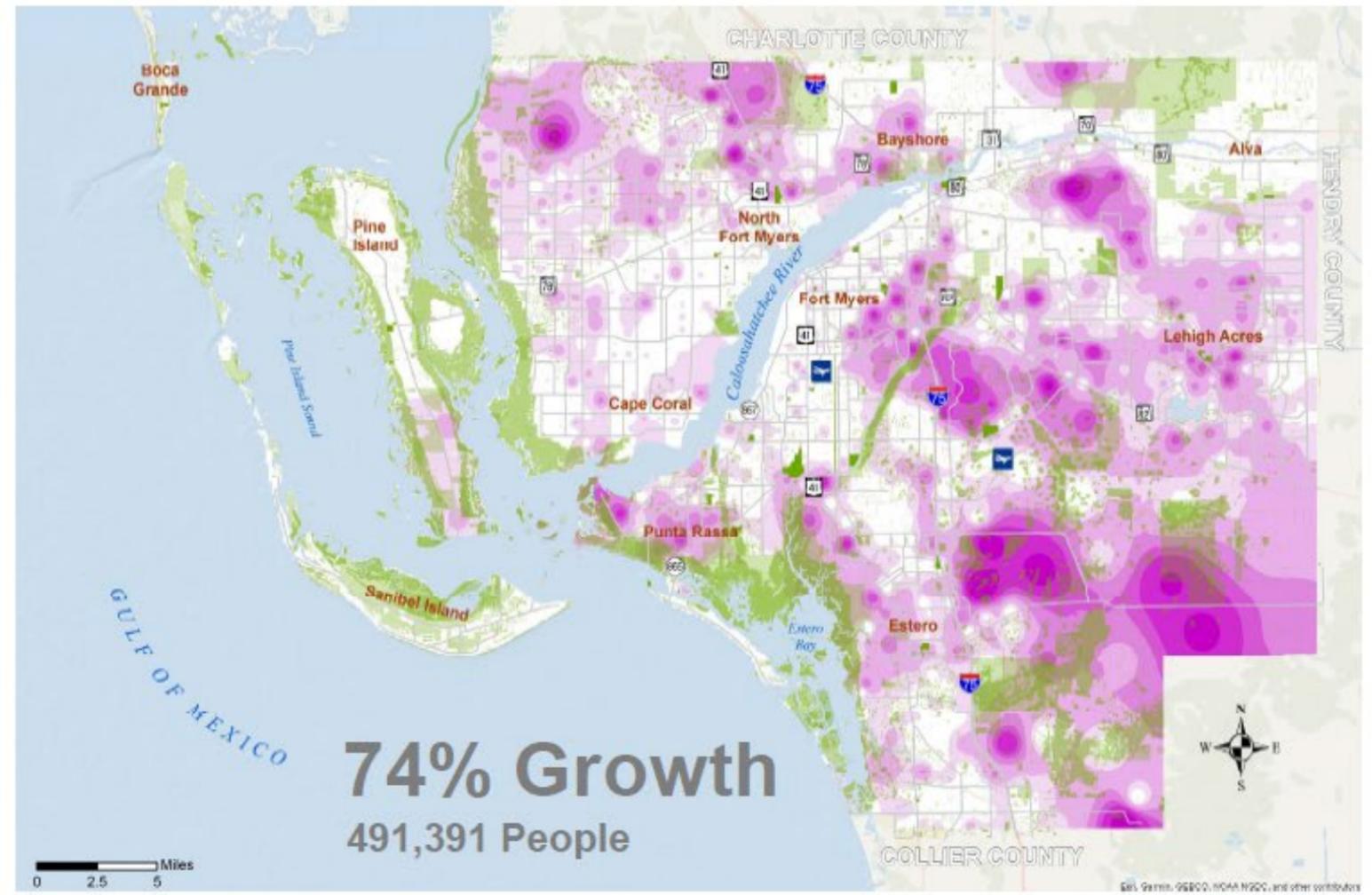
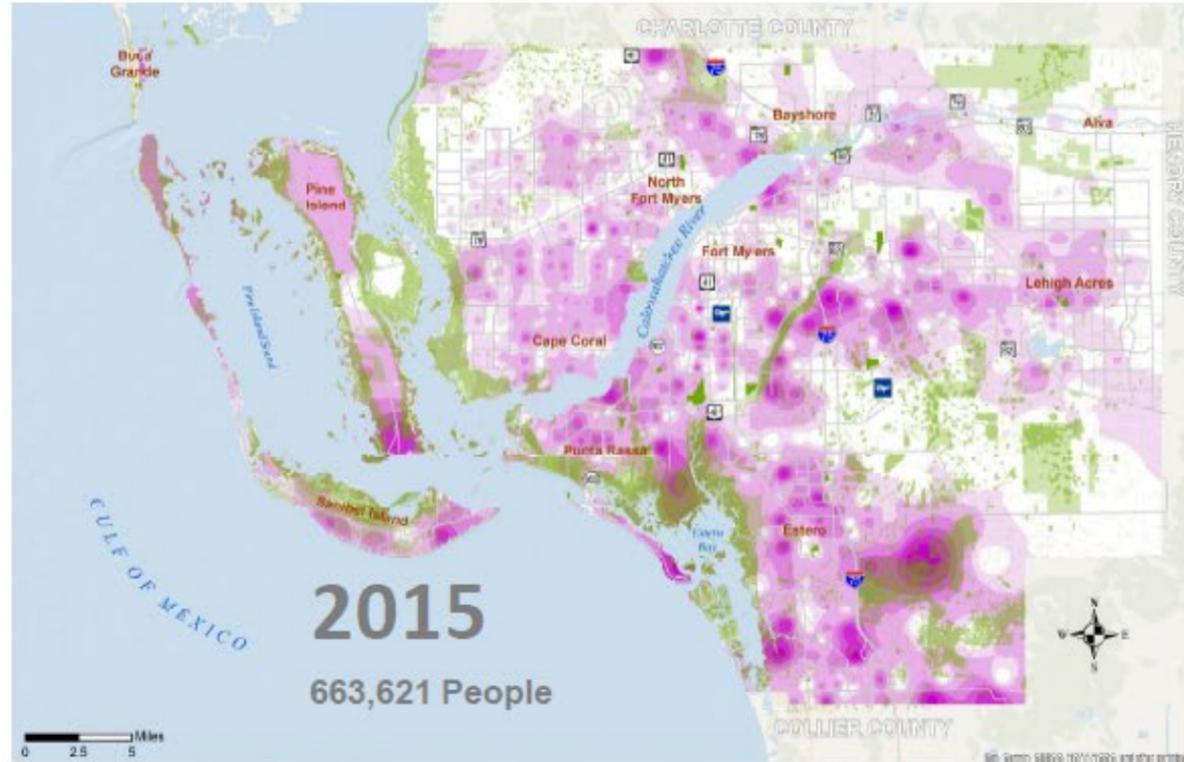
Figure 2-2: Lee County Household, Population, Job Baseline Data and Forecasts



Map 2-2 and **Map 2-3** show the results of the IGM population and employment modeling. Changes and shifts in demographic and socio-economic trends will continue to impact future transportation needs throughout Lee County. Future population growth is anticipated around existing population centers in Lee County and along major transportation corridors. Employment growth is expected around existing job centers in Fort Myers and along US 41 with smaller pockets of growth in Cape Coral and North Fort Myers. The largest area of job growth is anticipated to occur around the Southwest Florida International Airport.



Map 2-2: Lee County Population Density Forecast (persons/square mile)



Legend

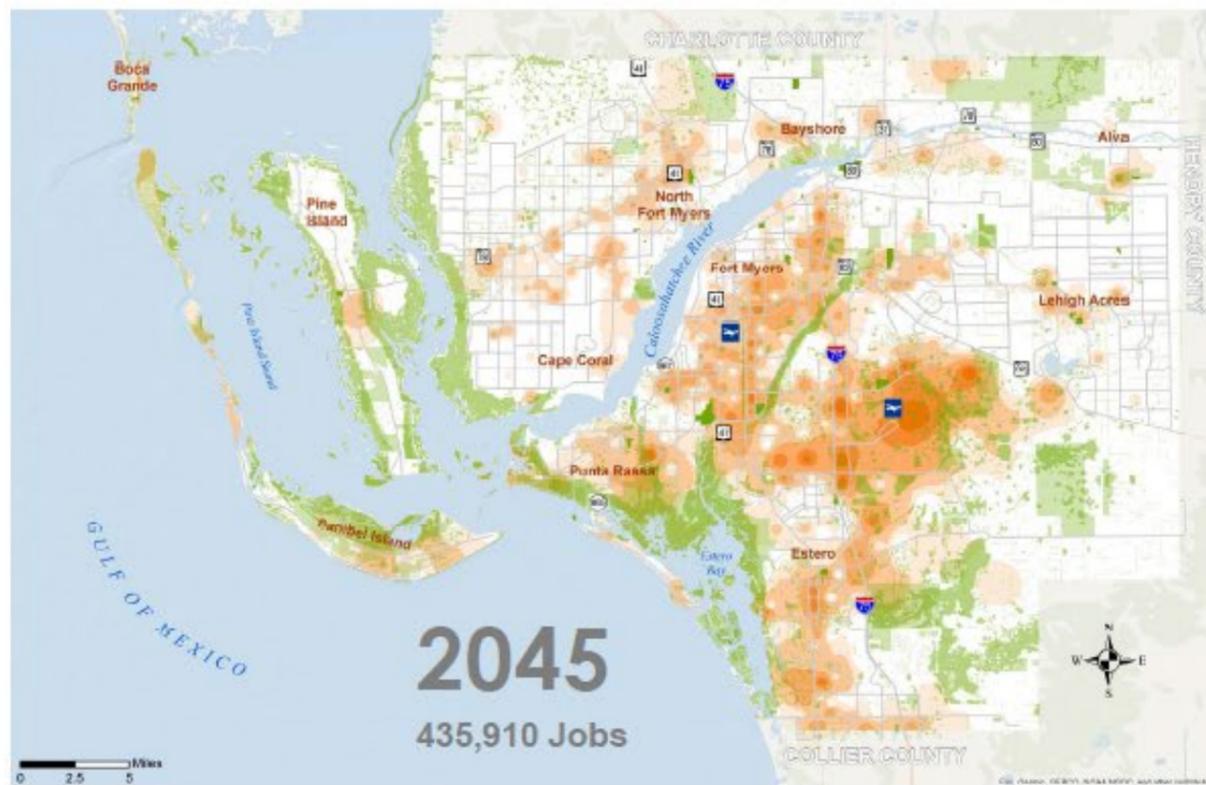
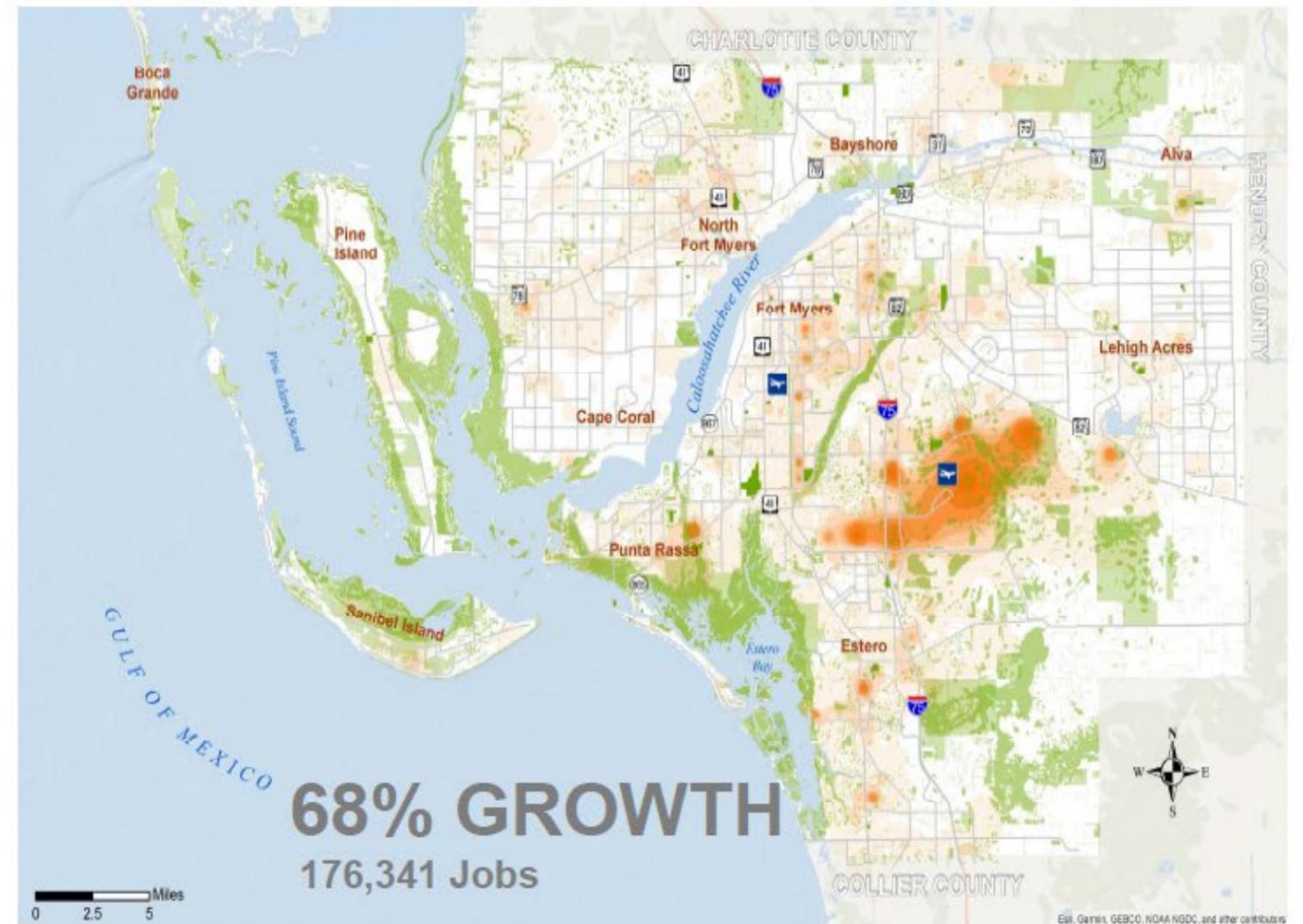
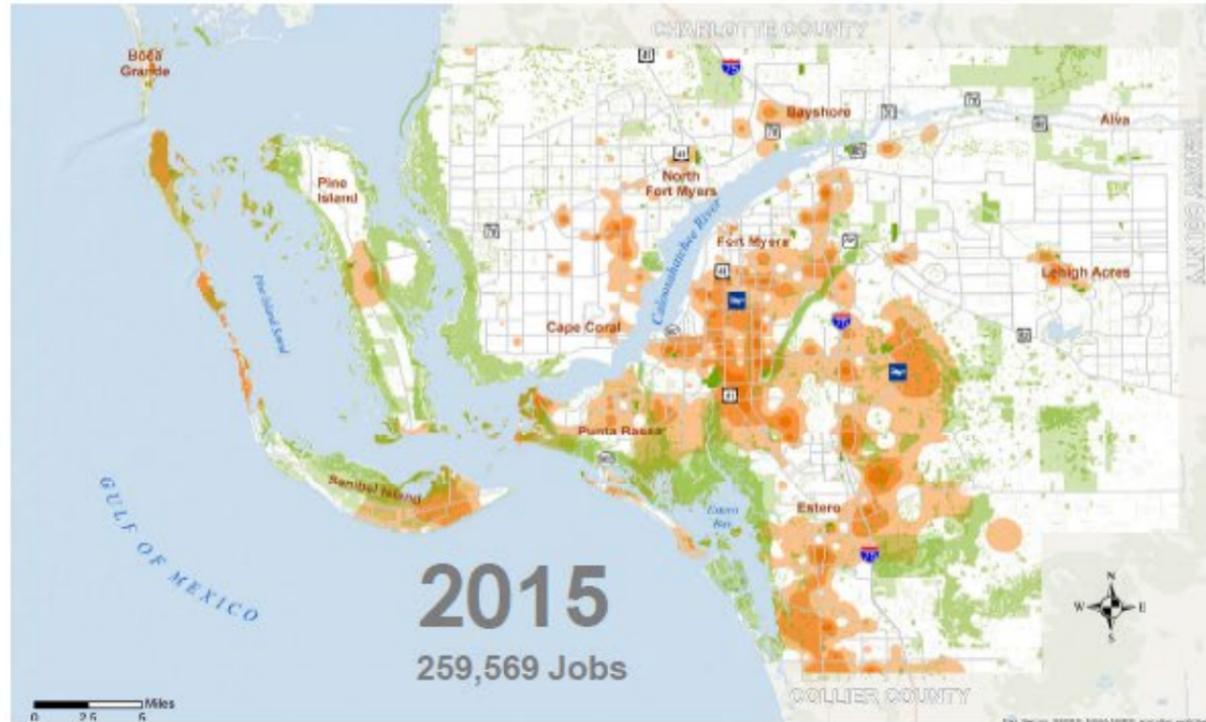
Population Density

- HIGH
- LOW
- Major Roads
- Managed Lands
- Wetlands
- County Parks

2045 Transportation Plan



Map 2-3: Lee County Employment Growth Forecast



Legend

- Employment Density**
- HIGH
- LOW
- Major Roads
- Managed Lands
- Wetlands
- County Parks

2045 Transportation Plan





2.3 Emerging Issues

Rapid advances in transportation technology are expected to radically transform how Floridians move around the state within the next few decades. Advancement and developments in big- and shared-data, mobility on-demand, micro-mobility, autonomous- and connected-vehicles have come to the forefront of public interest and are changing the way people travel. In the same way, significant growth in e-commerce is already changing the way freight moves on our highways and local streets.

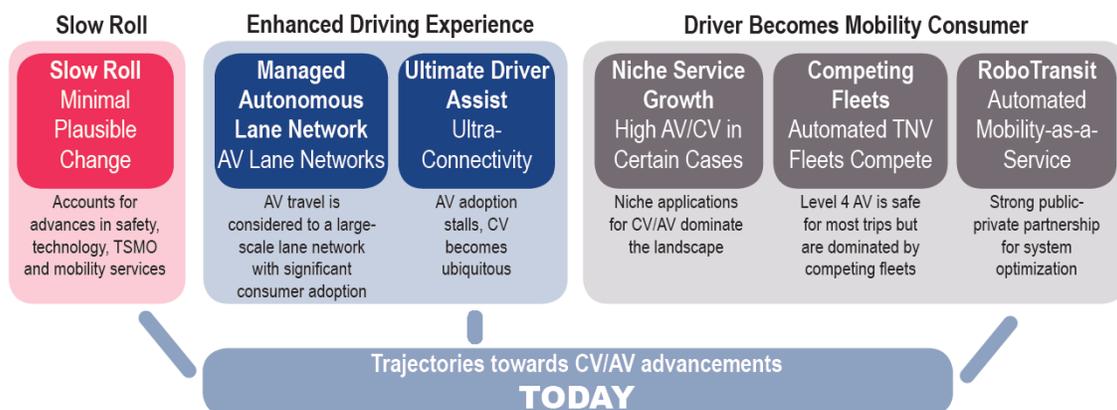
2.3.1 Future Technology/ACES

Incorporating technology considerations in long-range transportation planning is more vital than ever given emerging technologies that have the potential to completely transform prevailing transportation practices. Yet there is great uncertainty, with outcomes depending on a variety of factors such as the types and rate of technology adoption and market penetration. Discussion of emerging transportation technologies in Florida has been categorized as “ACES,” representing:

- Automated - vehicle guiding itself with little or no input; minimal effects are anticipated with lower levels of automation, yet profound effects are possible with the highest levels of automation where the human occupant is removed from the driving process.
- Connected - devices linking vehicles and the transportation infrastructure for improved safety and efficiency.
- Electric – vehicles using one or more electric motors for propulsion.
- Shared-use – vehicles used and not necessarily owned by more than one person or organization.

While these technologies are distinct, communities will likely adopt them to some degree in a combination. As a result, one effort of long-range planning with regards to these technologies is developing locally tailored scenarios. The Federal Highway Administration has developed six scenarios based on a future year of 2035 as starting points for input and local scenarios for the purposes of LRTPs (**Figure 2-3**).

Figure 2-3: FHWA 2035 Connected Vehicle (CV)/Autonomous Vehicle (AV) Scenarios



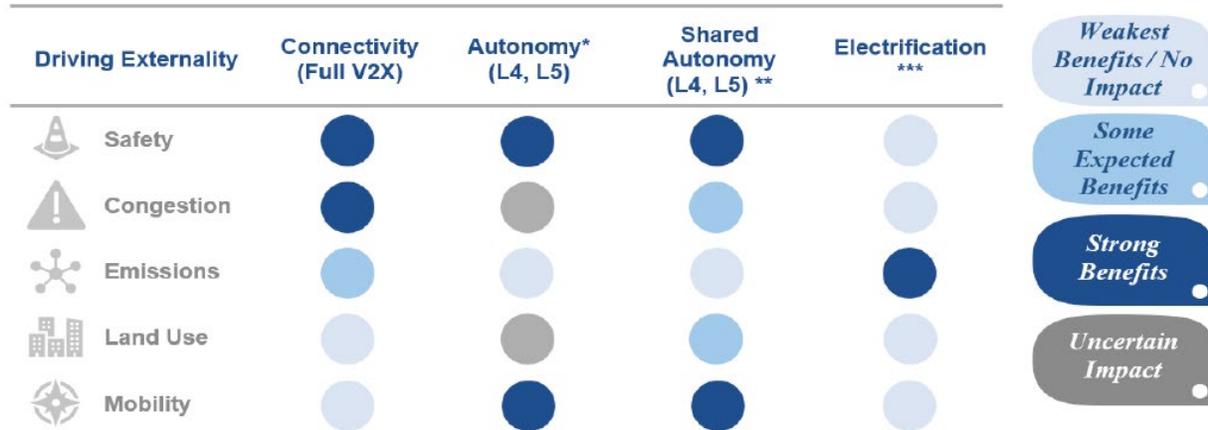
Source: Florida Department of Transportation Office of Policy Planning (September 2018) Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles, page 3.





There are both gains and negative impacts to consider in the adoption of these different technologies. **Figure 2-4** broadly summarizes benefits by driving externalities with a relative comparison among the different technology types. Safety emerges as a key benefit in adopting these technologies, echoed by several tenets of the Institute for Transportation Engineers position paper on CV/AV technology.¹

Figure 2-4: Potential Benefits of ACES Technologies



*Autonomy is defined for this purpose as individually owned vehicle.

**Shared Autonomous Vehicles (SAV) are on-demand self-driving vehicles supporting shared rides as part of a privately or publicly managed fleet.

***While not a focus of this NCHRP research, the team provides assumptions of potential benefits of electrification based on known literature.

Source: Florida Department of Transportation Office of Policy Planning (September 2018) *Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles*, page 18.

2.3.2 Legislative and Agency Response

States vary in terms of whether they have adopted or are considering legislation regarding autonomous vehicles, and rules vary among states that have passed these laws.² Federal agencies such as the U.S. Department of Transportation (U.S. DOT) and Congress have taken steps to move towards more standardized guidance and requirements to address this technology in transportation. In 2016, U.S. DOT released non-binding performance guidance on autonomous vehicles.³ In 2019, it released *Automated Vehicles 3.0: Preparing for the Future of Transportation*, which includes:

- Principles for guiding the federal approach to shaping policy for automated vehicles.
- Roles in engaging with automation at the federal level; at the state, local, and tribal government levels; and in the private sector.
- Implementation strategies moving forward.

¹ Institute of Transportation Engineers (December 4, 2018) ITE Statement on Connected and Automated Vehicles.

² John Paul MacDuffie, PhD (May 2018) *The Policy Trajectories of Autonomous Vehicles*, University of Pennsylvania Penn Wharton Public Policy Initiative, Issue Brief, Vol. 6, No. 4

³ U.S. Department of Transportation (September 2016) *Federal Automated Vehicles Policy*, <https://www.transportation.gov/AV/federal-automated-vehicles-policy-september-2016>





Key principles guiding U.S. DOT's approach include:

- Prioritizing safety
- Remaining technology neutral
- Modernizing regulations
- Encouraging a consistent regulatory and operational environment
- Preparing proactively for automation
- Protecting and enhancing mobility choice freedoms (including the freedom to drive one's vehicle).

While the document does not explicitly call out a specific MPO role, many initiatives geared towards more localized entities may apply to the efforts of the MPO. These initiatives relate to the following themes:

- Public engagement and education
- Research to understand impacts of automation, remove barriers, and address market failures and public needs
- Identifying data needs and opportunities for data exchange
- Scenario development
- Assessment of roadway readiness and support for piloting/safety testing
- Improving organizational capacity and expertise related to automation.

Initiatives related to other roles will contextualize these efforts, such as the development of policy/regulatory guidance to remove barriers to automation and voluntary standards and safety assessments, including those related to vehicle design.

In addition to the guidelines from U.S. DOT, federal legislation is also under consideration to influence the direction of autonomous vehicle technologies. A recent policy brief by John Paul MacDuffie of the University of Pennsylvania Wharton School summarizes some of the implications of H.R. 3388, or the SELF-DRIVE Act, awaiting a vote in the Senate, as well as policy trajectories of autonomous vehicles. The SELF-DRIVE Act in its latest form would include provisions for:

- A uniform standard for technology and safety
- Prohibiting states from blocking use of automated vehicles without human controls within their borders
- Prohibiting state from setting rules on automated vehicle production and testing standards
- The exemption of self-driving car manufacturers from existing safety standards up to a certain number of cars in the first year
- Requiring self-driving car manufacturers to demonstrate the safety of their vehicles.

While some observers support the safety provisions, others are concerned at the pre-emption of state authority to set safety standards without clear regulation at the federal level to fill the gap.





MacDuffie highlights additional policy considerations summarized below.

- “Geo-fencing” may be particularly relevant to local and regional transportation planning efforts.
- Whether federal guidance may support an approach to increased automation that includes levels where the automated system monitors the driving environment, but the human driver is still “in the loop” to take over driving in certain situations; some argue that having drivers come back into control is too risky, which supports an increase in automation from vehicles where the human driver is predominantly monitoring the driving environment straight to full-blown automation.
- The possibility of enforcing a single standard for performance evaluation (e.g., a “driver’s license” for automated vehicles) and ethical dilemmas.
- How to invest in infrastructure; some argue that “smart” infrastructure is necessary for the success of automated vehicles, while some have moved forward with automated vehicles that are not reliant on direct communication with other cars or upgraded infrastructure.
- The allowance by local jurisdictions for testing and expansion of automated vehicles, in conjunction with meeting local priorities (e.g., expansion of green vehicles); “geo-fencing,” or the ability to limit the activity of automated vehicles to certain geographic areas mapped in detail, is one aspect of this method of increasing testing and expansion of this technology.
- How liability will shift with the emergence of automated vehicles and the need for expanded public and supporting private insurance.

The Lee County MPO in partnership with the Florida Department of Transportation (FDOT) has already begun to explore the impacts of ACES and future transportation technology for Lee County. The 2045 LRTP incorporates emerging transportation issues and their respective impacts on the transportation network as identified in the plans and projects outlined below.

Transportation System Management and Operations (TSM&O) Plan

A Transportation System Management and Operations (TSM&O) Plan was completed for Lee County MPO in August of 2019 to identify strategies to address safety and congestion systemwide and at the corridor level in Lee County. Assessment of the Intelligent Transportation Systems (ITS) and analysis of gaps in the transit, fiber optics/communication network, bicycle and pedestrian network were conducted to document where strategies could be used to enhance connectivity of operations and improve the safety and efficiency of the multimodal system. The projects and strategies outlined in this plan contributed to the identification of future transportation needs and projects to mitigate and address congestion in the MPO’s planning area.





US 41 Florida's Regional Advanced Mobility Elements (FRAME)

The FDOT is currently studying more than 6 miles of US 41 in Lee County as a part of Florida's Regional Advanced Mobility Elements (FRAME) project. The goal of the project in Lee County is to improve safety and mobility along the US 41 corridor in Lee County through implementing emerging safety and mobility solutions such as Automated Traffic Signal Performance Measures (ATSPM) and Connected and Automated Vehicles (CAV) solutions. The Lee County project includes 25 traffic signals along the corridor and all interconnected signals with fiber. The project is currently in the analysis and research phase with implementation planned for late 2022.



Mobility On-Demand

Mobility On-Demand (MOD) is the concept of fostering shared mobility options through big data, intelligent transportation systems (ITS), and wireless connectivity to provide travelers with flexible and convenient transportation options. Popular MOD options include demand-responsive bus services, ride-hailing services, ridesharing, and bike and electric scooter sharing services. Where traditional mobility-sharing is limited, MOD options involving single-person automobiles, rented by the hour or day, have played a significant role in the expansion of shared-user services.

The Federal Transit Administration (FTA) has conducted initiatives to aid in the development and integration of MOD services into transportation systems. In 2016, the FTA developed a funding and demonstration program for MOD, the MOD Sandbox Demonstration Program. Funding is aimed at projects that explore new business models, integrate transit and MOD solutions, investigate enabling technical capabilities such as integrated payment systems, and incentives for traveler choices. The Pinellas Suncoast Transit Authority in nearby Pinellas County was granted into the program to test MOD strategies to develop a more cost-effective and efficient means for paratransit customers with disabilities to gain access to activities throughout Pinellas County.

LeeTran's 2021-2030 Transit Development Plan (TDP) is also exploring methods for integrating MOD into the transit system. The TDP proposes use of MOD services as a "technologically-enhanced public dial-a-ride" service that is equally accessible to persons with disabilities as well as the general public. The services would be provided with smaller transit vehicles and rides would be requested using an app or a phone number. The main goal of employing MOD is to make LeeTran more efficient in low-density areas and to enhance access to transit beyond the current service areas. The TDP

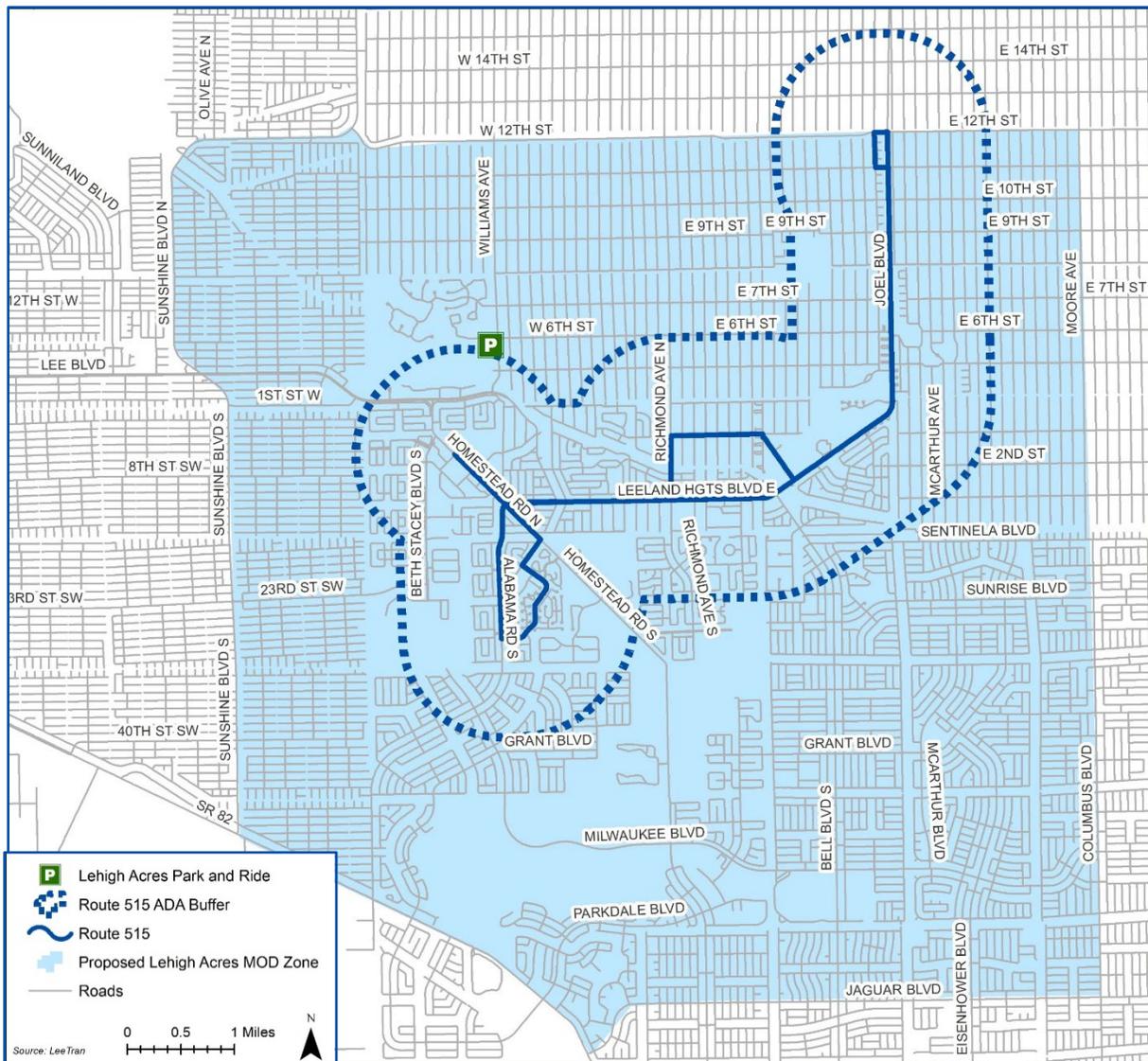
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recommends MOD zones in Lehigh Acres, Cape Coral, Shell Point, Estero, North Fort Myers, and West Lehigh Acres however, MOD services in Lehigh Acres were identified as an immediate need and short-term transit improvement. It is proposed that MOD services would replace a fixed bus route, Route 515, in the Lehigh Acres service area. **Map 2-4** shows how the current fixed route 515 (solid blue line) provides transit service to an area of 13 square miles (dashed line). Replacing the fixed route with a technologically enhanced public dial-a-ride would allow commuters to request bus transportation and expand the service area to 42 square miles of Lehigh Acres.

Map 2-4: LeeTran Proposed Mobility On-Demand Lehigh Acres Service Area





2.3.3 Tourism and Travel

Lee County is a major travel destination, with a high volume of domestic tourists and international visitors. The County has a thriving tourist industry, which welcomes millions of seasonal residents⁴ and visitors every year and, as a result, has a gross economic output in billions of dollars every year. Growth in economic activity and development such as hotels increases the need for connectivity to key hubs and to the airport and beaches, as visitors may want to access attractions throughout the county and may not have access to a personal vehicle.

Lee County's tourism industry was taken into consideration in the development of the 2045 LRTP. Stakeholders within the tourism industry were included in the public involvement process and tourism and regional travel needs were integrated in the goals and project prioritization process for developing the Cost Feasible LRTP. Tourism and regional travel connections were also included in the 2021-2030 TDP with the proposal of a direct transit connection from Southwest Florida International Airport (RSW) to Downtown Fort Myers. Identifying opportunities to improve the multimodal connections between key downtown centers and the airport could potentially reduce the need for using/renting cars that add to peak-season congestion. Currently, there is no direct transit connection between the airport and Downtown Fort Myers and multiple transfers are required to make this trip.

Another project of note that supports tourism and travel in the MPO's planning area currently under construction is the reFRESH Estero Boulevard. This project improves multimodal access and safety along six miles of Estero Boulevard on Fort Myers Beach, one of the major tourist destinations in the region. Improvements include:

- Sidewalks on both sides of Estero Boulevard for the entire length
- Center turn lanes along much of the corridor
- Trolley pull-offs and stops
- On-road bike lanes from Red Coconut RV Park to the south end of the island
- Safety improvements at crosswalks
- Improved water drainage
- Reliable sidewalk lighting



⁴ According to Florida Senate Bill 8A, a seasonal Florida resident is defined as any person who resides in Florida for at least 31 consecutive days in each calendar year, maintains a temporary residence, returns to their Florida residence at least once a calendar year, and is registered to vote or pays income tax in another jurisdiction.





Chapter 3: Guiding the Plan

Developing the 2045 LRTP began with residents imagining a vision of Lee County in the future. That vision of how residents want to grow and get around the county has led to supportive goals and objectives. This plan is guided by these overarching goals that meet and support the expectations of the Federal and state requirements.

3.1 Goals and Objectives

The foundation of the LRTP process began with developing the vision, goals, and objectives to guide decisions and define how the MPO expects to meet the future growth and travel needs through implementation of the plan. The 2045 Transportation Plan’s goals and objectives were adopted by the MPO Board on September 20, 2019, after collaboration from the Executive Committee, Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC), and community partners. The vision from the 2040 LRTP was determined to be relevant for 2045 LRTP. Together, the vision and goals adopted by the Lee MPO establish a long-term framework for developing and maintaining the county’s transportation system.

Vision

Lee County will be a highly desirable place to live, work, and visit—recognized for its commitment to a sustainable future characterized by a healthy economy, environment, and community. Lee County will be a community of choice—valued for its quality of life; varied natural environment; unique sense of history and place; distinct urban, suburban, and rural communities; diverse economy and workforce; and varied travel options.



Photo Credit Jerome Miller

2045 Transportation Plan





GOAL 1: Enhance the **safety and security** of the transportation system for both motorized and non-motorized users.



GOAL 2: A transportation system that offers meaningful **transportation choices** for existing and future residents, visitors and businesses.



GOAL 3: A transportation system that is **financially feasible** and uses the best available technology to improve the efficiency of the system.



GOAL 4: A transportation system that is sensitive to the community's **health**, the community **character** and the changing **environment**.



GOAL 5: A sustainable transportation system that supports the **economic competitiveness** of the region.



GOAL 6: A transportation system that manages congestion, enhances **connectivity between modes** and improves the resiliency and reliability of the system to keep people and goods moving.



GOAL 7: A transportation system that is **coordinated** through local, regional and state agencies and encourages quality growth and sustainable land development practices.



GOAL 8: A transportation system that supports the development and implementation of **Autonomous, Connected and Mobility on Demand** options for our residents and visitors.

3.2 Consistency with State and Local Plans

Consistency with the National Planning Factors and Goals of the Florida Transportation Plan (FTP) are critical components of the Lee County MPO 2045 LRTP. Demonstrating this consistency is a major milestone in conducting the LRTP and ensuring that the planning conducted by the Lee County MPO meets and supports the expectations of the Federal and State requirements. The following section demonstrates consistency with the local Comprehensive Plans, the Metropolitan Planning Factors included in the Fixing America's Surface Transportation (FAST) Act and the Florida Transportation Plan (FTP) Policy Element. **Table 3-1** provides the correlation between the Goals of the FTP and the Goals of the Lee County MPO 2045 LRTP.





Table 3-1: Comparison of FTP and Lee County 2045 LRTP Goals

May 2020 FDOT FTP Policy Element Goals	Lee County MPO 2045 LRTP Goals
1. Safety & Security for Residents, Visitors, and Businesses.	Goal 1 – Safety & Security Goal 7 – Coordinated Goal 8 – Autonomous & Connected
2. Agile, Resilient, and Quality Infrastructure.	Goal 5 – Economy Goal 6 – Connectivity Goal 7 – Coordinated
3. Efficient and Reliable Mobility for People and Freight.	Goal 1 – Safety & Security Goal 3 – Financially Feasible Goal 6 – Connectivity
4. Transportation Choices that Improve Equity and Accessibility.	Goal 2 – Transportation Choices Goal 6 – Connectivity Goal 8 – Autonomous & Connected
5. Transportation Solutions that Strengthen Florida’s Economy.	Goal 3 – Financially Feasible Goal 5 – Economy Goal 8 – Autonomous & Connected
6. Transportation Solutions that Enhance Florida’s Communities	Goal 1 – Safety and Security Goal 2 – Transportation Choices Goal 4 – Community & Environment
7. Transportation Systems that Enhance Florida’s Environment.	Goal 2 – Transportation Choices Goal 4 – Community & Environment

Table 3-2 demonstrates the consistency between the ten National Planning Factors listed in the FAST Act and the Goals of the Lee County 2045 LRTP. These Planning Factors outline the federal position on planning. The Goals identified by the MPO are aligned with these factors.





Table 3-2: Comparison of FAST Act Planning Factors and Lee County MPO 2045 LRTP Goals

Lee MPO 2045 LRTP	Goal 1 Safety & Security	Goal 2 Transportation Choices	Goal 3 Financially Feasible	Goal 4 Community & Environment	Goal 5 Economy	Goal 6 Connectivity	Goal 7 Coordinated	Goal 8 Autonomous & Connected
FAST Act Planning Factors								
1 - Support Economic Vitality								
2 - Increase Safety								
3 - Increase Security								
4 - Increase Accessibility and Mobility of People and Freight								
5 - Improve Quality of Life, Environment, Energy Conservation, and Plan Consistency								
6 - Integration and Connectivity								
7 - System Management								
8 - Preservation of Existing Transportation System								
9 - Improve Resiliency and Reliability								
10 - Enhance Travel and Tourism								

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3.3 Consistency with Local Plans

The 2045 LRTP is consistent with the intent of the comprehensive plans adopted by the local government within the MPO’s planning area. Coordinating the 2045 LRTP decisions with local comprehensive plans included a review of roadways constrained from future widening. As a policy constrained plan, the 2045 LRTP does not consider roadway widening or capacity adding projects on constrained roadways. Constraints on these roadways include environmental impacts, impacts to existing neighborhoods and businesses, and limitations of the existing rights-of-way. Constrained roadways in Lee County were identified through a review of local comprehensive plans and land use policies. Error! Reference source not found. shows the constrained roadways within Lee County.

3.4 Resiliency

When the FAST Act was signed into law in 2015, improving the resiliency of the transportation system was included as one of the ten planning factors discussed previously. As an emerging topic guiding the MPO’s planning and funding decisions, several studies and planning efforts are currently underway which look at increasing transportation resiliency in Lee County and Southwest Florida.

- *Lee County Flood Mitigation Plan:* Lee County engaged consultant services to establish plans and recommend projects to reduce flooding on a larger regional scale and include Lehigh Acres, Southeast Lee County, South Lee County, and Whiskey Creek watersheds in the Plan. A comprehensive regional model will be developed to identify areas of flood high risk and to determine regional effects of proposed flood control projects.
- *Mullock Creek Basin Drainage Study:* Under the Rebuild Florida Infrastructure Repair Program, Lee County has been awarded a \$7.1 million grant for flood resiliency projects. These funds will speed up the timeline of drainage improvements in the Mullock Creek basin such as debris removal, drainage repair, and sidewalk replacements.
- *Southwest Florida Regional Planning Council (SWFRPC) Resiliency & Climate Change Projects:* The Climate Change Planning Section of the SWFRPC is involved in a variety of research and planning initiatives designed to provide technical assistance and decision services based upon the best available contemporary science.

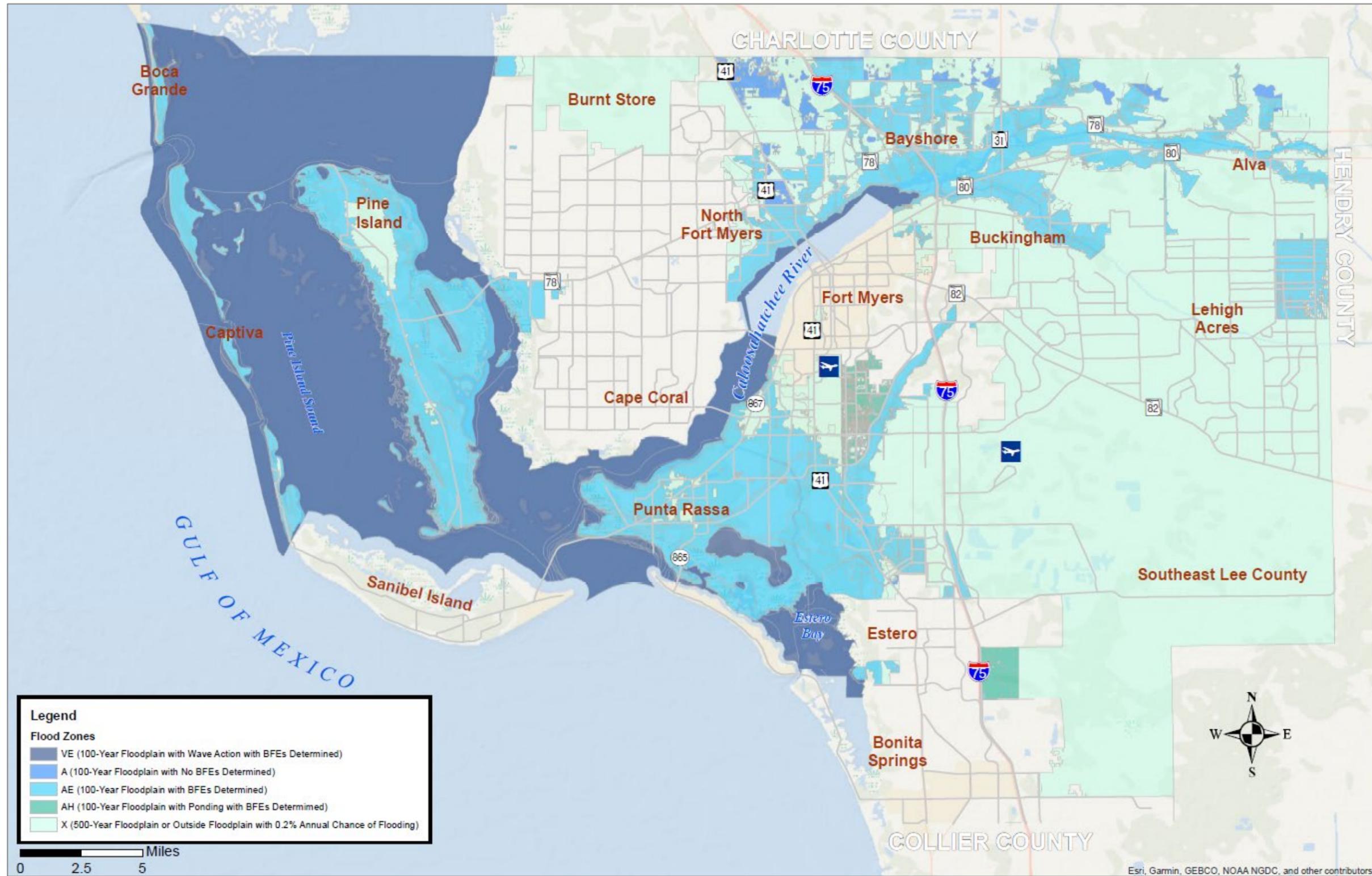
Results of these studies and the environmental and flood hazard areas shown in Error! Reference source not found. were used in the prioritization of transportation projects for the LRTP. Error! Reference source not found. shows the land area in the county that is located in the Special Flood Hazard Area (SFHA) and areas where floodplain management regulations must be enforced.



Map 3-1: Lee County Constrained Roadways



Map 3-2: Lee County Flood Zones



*Flood zones in the Special Flood Hazard Area begin with V or A. SFHA is an area that could be inundated by a flood event, with a 1 percent chance of reaching or exceeding the Base Flood Elevations (BFE) in any given year.

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3.5 Environmental Justice Considerations

Like many Florida Counties, Lee County is made up of mix of ethnicities, incomes, and individuals of diverse needs. Identifying concentrations of populations with diverse needs across the county will aid in assessing the demands and impact upon Lee County’s transportation and transit system and help target public investments to areas with specific needs in an efficient manner.

Environmental Justice prohibits discrimination based on race, color and national origin and requires the inclusion of minority and low-income populations. Compliance with environmental justice is required by Title VI of the Civil Rights Act of 1964 and reinforced by the Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994). When making investments, the MPO strives to provide access to transportation services on an equitable basis across the county including providing options for low-income and minority communities. A minority is defined by the number or percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. Low income is defined as the number or the percent of a block group population in households where the household income is less than or equal to twice the federal poverty level. **Table 3-3** includes the 2020 federal poverty guidelines.

Table 3-3: 2020 Federal Poverty Guidelines

Persons in Family/Household	Poverty Guideline
1	\$12,760
2	\$17,240
3	\$21,720
4	\$26,200
5	\$30,680
6	\$35,160
7	\$39,640
8	\$44,120
>8	add \$4,480 for each additional person

The LeeTran Transit Development Plan analyzed the individual factors of minority and poverty for prioritizing transit investments and future service needs. Areas in Lee County with a high density of minorities are shown in **Map 3-3** and **Map 3-4** shows the distribution of individuals below the poverty line in 2018 in Lee County.

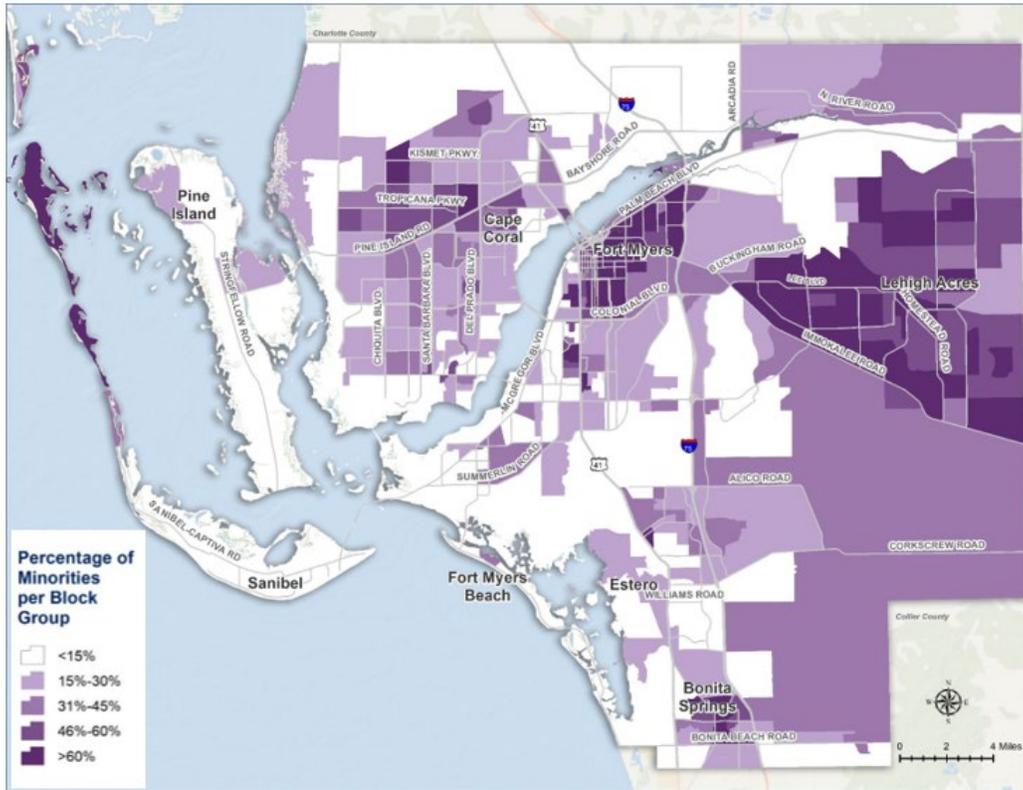
The 2045 Transportation Plan includes efforts to assess the transportation projects with regard to socio-cultural effects and Environmental Justice. The potential positive and adverse impacts of proposed transportation projects were considered. Using the US Environmental Protection Agency (EPA) EJ Screening Tool, Environmental Justice areas with the highest minority populations and areas with higher densities of households below the poverty level were identified and shown in **Map 3-5**. An analysis of the transportation investments in the 2045 Cost Feasible LRTP relative to the Environmental Justice areas is included in **Chapter 5**.

2045 Transportation Plan

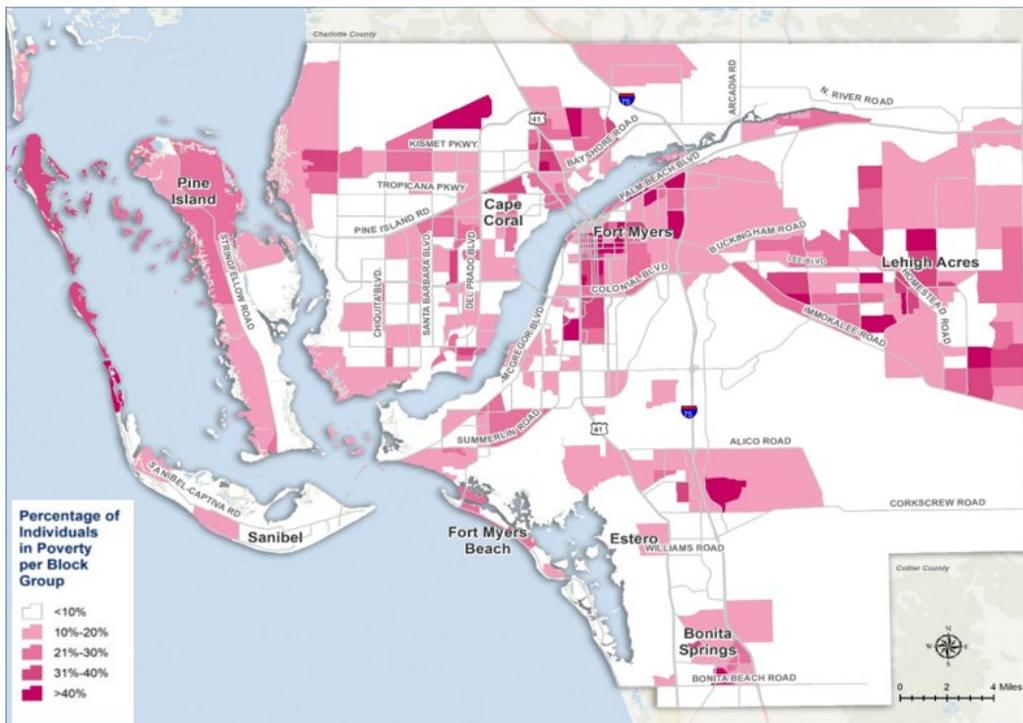




Map 3-3: 2018 Minority Populations, Lee County



Map 3-4: 2018 Individuals in Poverty, Lee County

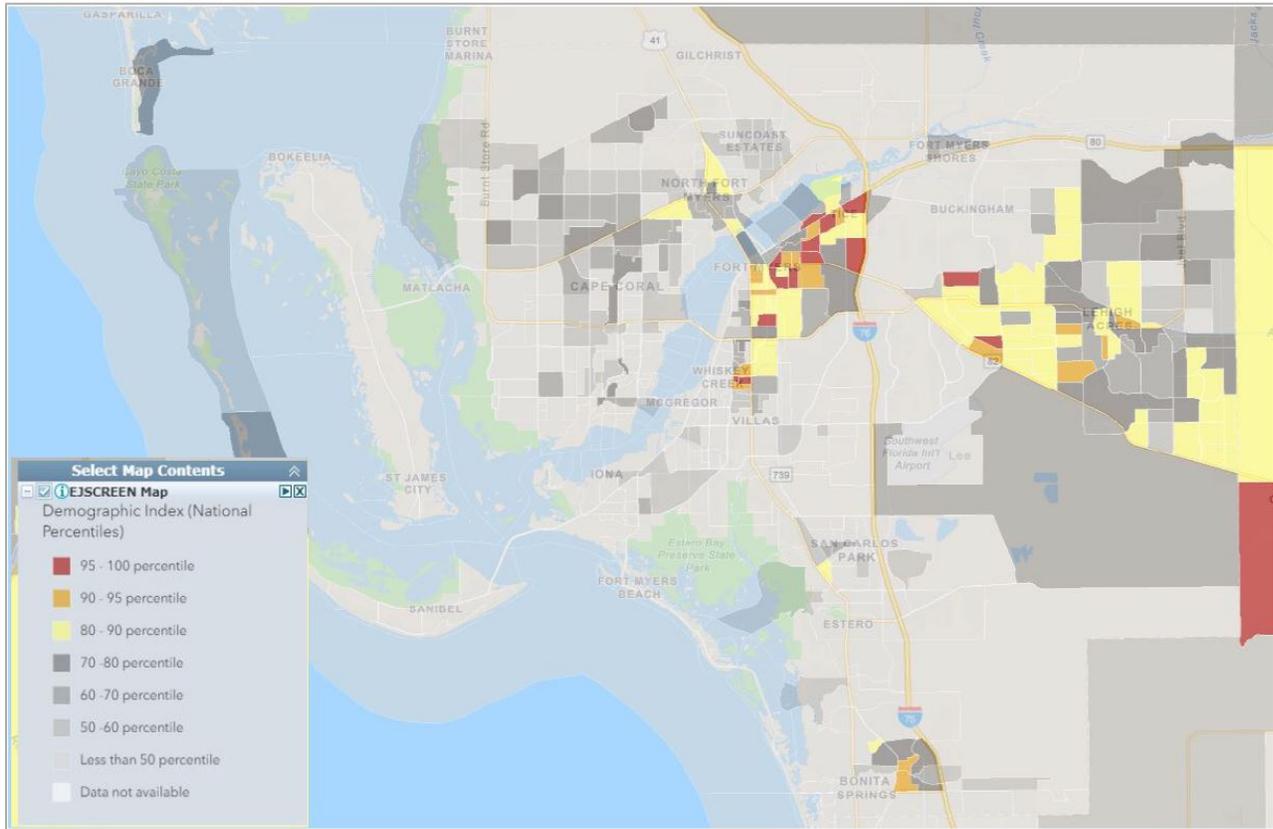


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Map 3-5: Environmental Justice Areas





3.6 Public Involvement

The primary purpose of public outreach is to facilitate meaningful communication with the public to understand the priorities and needs of citizens. The MPO provided public notice, press releases, and numerous outreach efforts – both virtual and in-person – to ensure community access and participation. Typically, citizens with minority backgrounds, low-income status, or disability are unaware or unable to partake in the public decision-making process. It was a high priority of the MPO to stimulate participation for these citizens in order to guarantee equitable voice in the planning process. The MPO meets public involvement requirements set forth in 23 C.F.R. 450.316 and Title 23 of the United States Code at the Federal level and Section 339.175 of the Florida Statutes. Chapter 339 requires citizens, public agencies and other known interested parties be provided a reasonable opportunity to comment and provide input on the LRTP. To meet these requirements, a specific 2045 LRTP Public Involvement Plan (PIP) was developed prior to the public outreach events occurring to ensure that federal requirements for public participation were met and served as a resource for the public as the LRTP was being updated.

Title VI

The Lee County MPO complies with the provisions of Title VI of the Civil Rights Act of 1964, which states “No person in the United States shall, on grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.” It is also the policy of the Lee County MPO to comply with all requirements of the Americans with Disabilities Act.

3.6.1 Public Involvement Summary

Engaging the public throughout the LRTP development process is vital to accurately capture the needs and collective vision for the area and region. The MPO employed a series of communication and outreach tools to solicit input and feedback during the LRTP process. Press releases, news articles, TV interviews, and social media posts garnered awareness about the project schedule, public input opportunities, and other benchmarks in the development of the LRTP. Committee meetings, in-person and virtual workshops, and an online survey were held to provide interactive and varied opportunities to provide feedback and input on current and future transportation needs. A project website was also developed for consistent, accessible information and updates and was able to serve as a repository for maps, documentation, and agendas. All these outreach methods were developed to engage the public and ensure that the LRTP was a community effort.

Between August of 2018 and the adoption of the LRTP in December 2020, there were 1,322 citizens that participated in the LRTP update, in-person and virtually, to offer their input on future transportation needs in the MPO’s region. There were 67 public meetings and workshops held throughout Lee County during the LRTP update, including 2 virtual workshops, 63 Committee and Board meetings with the LRTP update on the agenda, and 2 community meetings with Bonita Chamber and Estero Council of Community Leaders.





67

Events & Meetings

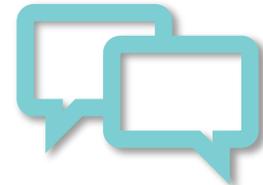
- Community Meetings (2)
- Virtual Workshops (2)
- Committee and Board Meetings (63)



1,322

Participants

- Online Survey (178)
- Committee and Board (939)
- Virtual Workshops (86)
- Community Meetings (119)



8

Outreach Methods

- ✓ Virtual Workshops
- ✓ In-Person Community Meetings
- ✓ Online Survey
- ✓ Press Releases and Newspaper Articles
- ✓ TV and Radio Interviews
- ✓ Social Media Posts and Advertisement
- ✓ Committee and Board Meetings
- ✓ Project Website





3.6.2 Response to COVID-19 State of Emergency

On March 9, the Governor issued Executive Order 20-52, declaring a State of Emergency for COVID-19. In response, the MPO demonstrated concerted efforts to remain flexible and create safe engagement opportunities to involve the public and receive input from residents and visitors during the LRTP process. Consistent with the LRTP Public Involvement Plan (PIP) goals, information regarding changes to meeting times, formats and locations were advertised on the MPO’s website.

The MPO Board adopted a resolution on May 15, 2020 regarding the declared emergency allowing for virtual meetings and alternative strategies for gathering public input on the LRTP. Access to material developed for the 2045 LRTP was primarily provided through the MPO’s website. Outreach efforts included virtual meetings hosted through online video and presentation sharing platforms, coordination with the local government’s websites and their outreach capabilities, LeeTV, Lee County’s government access channel, and local media outlets.

3.6.3 Engagement Efforts

The following section provides a summary of the public involvement events held during the 2045 LRTP process. These events were consistent with the Public Involvement Plan that was prepared to guide outreach and engagement during the LRTP. See **Appendix C** for a detailed summary of the public involvement events and key themes and responses received from the public.

Table 7-3: Public Engagement Results Between August 2018 and November 2020

Method	Result
In-Person Community Meetings	119 Participants
Committee and Board	939 Participants
Public Workshop #1 and Public Workshop #2	77 Participants
Online Survey	178 Responses

Committee/Board Meetings & In-Person Community Meetings

Meetings were held throughout the LRTP planning process to update boards and committees about the LRTP process and seek input about future transportation needs and solutions in the MPO’s region. Meetings were held with the following Committees:

- MPO Board
- MPO Executive Committee
- Technical Advisory Committee
- Citizens Advisory Committee
- Bicycle Pedestrian Coordinating Committee
- Traffic Management & Operations Committee

During the initial stages of the LRTP process, in-person community meetings were held with the Bonita Chamber and Estero Council of Community Leaders. Additionally, each member jurisdiction was consulted individually during the project development and prioritization process for the Needs





and Cost Feasible Plan to ensure that the 2045 LRTP reflected community transportation needs and goals.

Virtual Workshops

The LRTP workshops were adapted to a virtual format to provide safe and accessible public engagement during the COVID-19 pandemic. Two virtual workshops were held during the LRTP process. The first meeting was held on June 25, 2020 with a total of 47 individuals attending the meeting. The workshop provided a basic overview of the long range planning and current status of transportation in Lee County. A press release about the workshop was distributed to the media and a link to the meeting was shared with the Lee MPO's Transportation Advisory Network. Additionally, the workshop was advertised on county and municipal social media pages.



The second workshop was held on September 24, 2020 with a total of 30 individuals attending the meeting. The meeting provided an update on the LRTP process and presented the project prioritization process. A press release, social media posts, and a mobile banner ad campaign were used to advertise the meeting.

2045 Transportation Plan





Specific stakeholder groups were targeted for engagement including:

- Lee MPO's Transportation Advisory Network
- City of Fort Myers and City of Bonita Springs Bicycle & Pedestrian Advisory Committee liaisons
- Chambers of Commerce (11 total)
- Lee County Housing Authority
- APA Promised Lands Section and FPZA Calusa Chapter
- Streets Alive of Southwest Florida, Caloosa Riders Bicycle Club, and local motorcycle clubs

Several of the main projects and themes that were brought up by participants during the virtual workshops included:

- Transitioning the rail corridor in Estero to a trail facility
- CR 951 Extension
- M- CORES Project
- Del Prado extension/I-75 interchange with Babcock Ranch
- Trail facility on Pine Island Road
- Alico Road Extension
- Transit related comments in coordination with the Transit Development Plan (TDP)

Online Survey

A web-based survey was conducted to gain insights on the community's vision and priorities for the transportation network and to ensure that the 2045 LRTP reflected the needs and desires of the community. Input was collected on travel patterns and options, current travel conditions, and transportation solutions.

The survey process was conducted online and was active from September 18, 2020 until October 22, 2020. Due to the pandemic and the limited opportunities of in-person engagement, considerable effort was put into advertising the survey through virtual means, such as social media, website updates, TV and radio interviews, and news releases to increase exposure. In total, 178 surveys were successfully completed by residents and visitors who live, work or play in Lee County.

Several of the main trends from the survey included:

- Respondents indicated that there was a significant need for improved transit service and safer and more options for walking and biking.





- Technology solutions (i.e. traffic signal timing, digital information signs) were chosen most frequently by respondents for improving congestion while autonomous vehicle shuttles and express service were noted as key transit priorities.
- Half of the respondents indicated that they do not have jobs that accommodate working from home while over half indicated that working from home was not an option prior to the COVID-19 pandemic.
- Approximately 40% of respondents indicated that they would less likely to use an alternative mode of transportation for commuting to/from work because of the COVID-19 pandemic

3.6.4 30-Day Comment Period and Board Adoption

The MPO encouraged public participation in the development, review, and adoption process of the LRTP. In addition to the public outreach conducted during the LRTP development, the MPO provided a 30-day review and comment period for the draft report prior to adoption by the MPO Board on December 18, 2020. This comment and review period ended during the Public Hearing portion of the MPO's Meeting.

The draft 2045 LRTP report was posted on the MPO's website and citizens and stakeholders were encouraged to provide input through phone calls, emails, or online comments forms up until the date of the LRTP adoption by the MPO Board. The MPO continued to maintain and update the 2045 LRTP website with the draft 2045 LRTP report and other relevant project materials including workshop recordings and meeting presentations.





Chapter 4: Needs Plan

The Needs Assessment identifies projects to meet the future transportation demands for the Lee County MPO planning area without regard for cost and available funding. An extensive process was conducted to identify transportation projects that are needed in the future and support the community’s and MPO’s vision of mobility within the region. This included a comprehensive review of the projects identified in the 2040 LRTP; review of the LeeTran 2021-2030 Transit Development Plan for consistency; review of partner jurisdiction Bicycle/Pedestrian Master Plans and Comprehensive Plans; working with Lee County MPO and member jurisdiction staff; and input from stakeholders, including the MPO Board and the public.

Understanding and prioritizing transportation needs is the starting point for developing the 2045 LRTP.

Determining the transportation projects and strategies to include in the 2045 Cost Feasible LRTP was based on evaluation of the prioritized needs and availability of transportation revenues. A major step in the 2045 Transportation Plan development process is to identify the policy constrained needs.

4.1 Defining the Needs

The purpose of completing an assessment of needed projects is to identify the transportation infrastructure essential for meeting the future travel demand and addressing safety issues without regard to economic, local, or political considerations. A variety of resources were used to identify needs, including coordination with local and regional agencies, analysis using the regional travel demand model known as the District One Regional Planning Model (D1RPM) version 2.0, and the identification of high crash locations.

Constrained Roads

Shown in **Chapter 1**, the constrained roads represent locations where future roadway widenings are restricted. In these cases, other solutions such as improving or widening parallel facilities and intersection improvements can be considered.

Deficient Roadways

Prior to developing the list of projects needed to ensure mobility in the future, problem areas were identified to understand where deficiencies are likely to occur in the future. For this effort, the Needs Assessment analyzed the existing transportation network plus the projects with committed funding through the year 2025 as described in **Chapter 2**.

The D1RPM model was used to identify congested or deficient transportation conditions on the Existing plus Committed (E+C) network, and future population/employment projections discussed in **Chapter 3**. The results of this analysis indicate deficient roadways without additional transportation investments. **Map 4-1** illustrates the relationship of the future traffic compared with estimated roadway capacities in terms expressed as the ratio of volume to capacity if no additional roadway improvements are made. Roads shown in orange, red, and black are anticipated to be deficient or congested by 2045.

2045 Transportation Plan





Safety

In response to requirements of Moving Ahead for Progress in the 21st Century Act (MAP-21) Federal Legislation and the incorporation of performance-based goals aimed at reducing traffic related fatalities and serious injuries, FDOT updated the Strategic Highway Safety Plan (SHSP) in 2016. The SHSP is a comprehensive roadway safety plan for achieving Florida’s vision of zero traffic-related fatalities. Overarching strategies for improving transportation safety in the SHSP include the “4 Es” - engineering, enforcement, education, and emergency response countermeasures by identifying thirteen emphasis areas to reduce fatalities and serious injuries. The 2045 LRTP supports the SHSP safety strategies and key safety emphasis areas. The thirteen emphasis areas and “4 Es” are shown in **Figure 4-1**.

Figure 4-1: SHSP Emphasis Areas and 4 Es

SHSP Emphasis Areas



Source: FDOT 2016 Strategic Highway Safety Plan

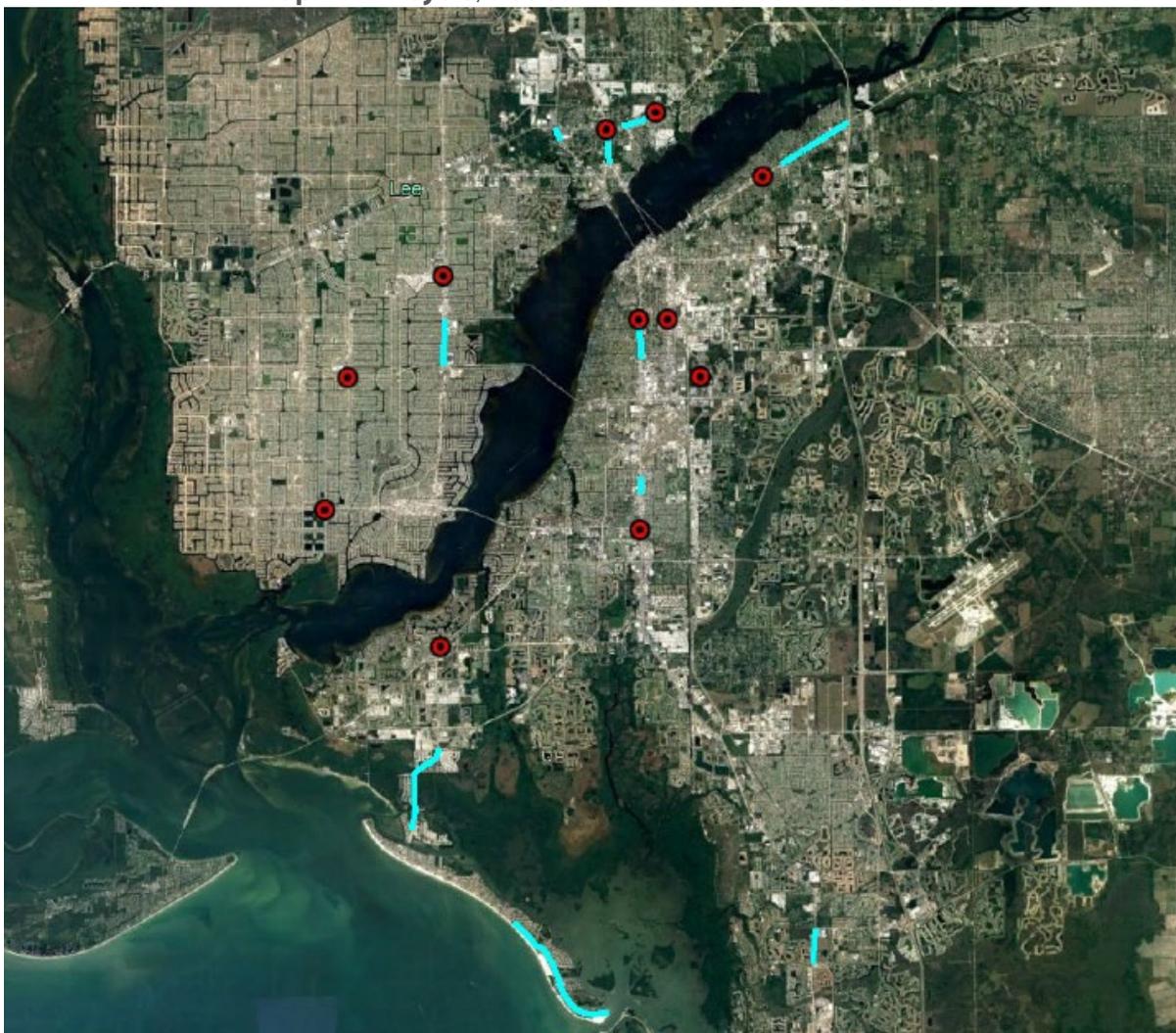




In 2020, the Lee MPO conducted an update of the MPO’s 2013 Countywide Bicycle and Pedestrian Action Plan. As a part of the Plan update, a detailed risk-based analysis of crash data in Lee County was conducted to prioritize and recommend countermeasures for safety improvements. The report identified corridors and intersections with the highest bicycle and pedestrian crash densities and countermeasures for site-specific locations to improve pedestrian and bicycle safety.

The study showed that 88% of severe pedestrian- and bicycle-related crashes occurred on only 22% of countywide roadway miles. The intersections and corridors with high densities of severe injury crashes were ranked and evaluated for site specific countermeasures. **Map 4-2** provides a map of the multi-crash locations.

Map 4-2: Bicycle/Pedestrian Multi-Crash Locations



Source: 2020 Lee MPO Bicycle and Pedestrian Action Plan Update





The Plan identified intersection and segment countermeasures based on Crash Modification Factors (CMF) clearinghouse research and guidance provided by the Lee MPO.

Intersection countermeasures included:

- Upgrade signal heads to include backplate with retroreflective sheeting
- Upgrade to special emphasis style crosswalk markings
- Leading Pedestrian Intervals (at signals only)
- Prohibiting Right Turn on Red by installation of Blank Out Signs (at signals only)
- Installation of R10-15 Turning Vehicles Yield to Pedestrian sign (at signals only)

Segment countermeasures included:

- Upgrade Roadway Pavement Markings
- Upgrade Bike Lane Markings
- Street Lighting
- Access Management
- Rectangular Rapid Flashing Beacons (midblock treatment)
- Pedestrian Hybrid Beacons (midblock treatment)
- Pedestrian Refuge Islands (midblock treatment)

Safety countermeasures and projects from this Plan aided in the development of the non-motorized transportation safety needs listed in the Needs Plan.

Goods Movement

The Lee MPO is committed to the efficient movement of goods and supporting the transportation needs of freight throughout the region. Freight was considered in future transportation needs as it is a critical component to the county’s economic vitality. Lee County’s roads carry the majority of freight traffic, and freight must compete with traffic from the county’s residents and visitors, especially during peak tourist seasons. A multimodal freight network that includes air cargo and rail service remains a significant strategy for ensuring freight mobility and transportation projects that will accommodate future freight demand were identified for inclusion in the list of roadway needs.

Several of the main commercial and manufacturing operations that have a significant impact on freight movement in the region are Walmart, Publix, Amazon, UPS, and FedEx. Key fulfillment centers for a number of these commercial operations are located in central Florida and service southwest Florida via I-75 and US 17. There is a fulfillment center based in Fort Myers that serves the tri-county area.

The MPO conducted an update of the Regional Freight Study for the MPO’s planning area. The purpose of the study was to conduct a comprehensive inventory of freight, goods movement, and services mobility needs. Furthermore, the Study developed a framework to proactively address freight and goods movement needs and challenges and develop recommendations to be included in the 2045 LRTP. Additional details can be found in the Good Movement Technical Report





4.2 Roadway Capacity

Roadway needs through 2045 have been identified based on future travel demand. In coordination with Florida Department of Transportation (FDOT), the MPO evaluation of future travel demand is conducted using the D1RPM. As part of the 2045 LRTP update, the D1RPM has allowed each MPO/TPO in District 1 to test a series of transportation networks based on future estimates of population and employment in order to assess future roadway needs and regional travel demand. Regional coordination and testing of alternatives were conducted with the Sarasota/Manatee MPO, Charlotte County-Punta Gorda MPO, Heartland Regional Transportation Planning Organization (TPO), Collier MPO, and Polk TPO. Coordinating the modeling as a regional process allowed the Lee County MPO to better understand travel demands that cross county boundaries. The Regional Planning Model uses a traditional four-step process (see **Figure 4-2**) to forecast traffic demand and transportation choice options for the future 2045 conditions in Lee County.





Figure 4-2: Four-Step Travel Demand Modeling Process

(1) Trip Generation - How many trips will I make?

(2) Trip Distribution - Where will my trip take me?

(3) Mode Choice - How will I travel?

(4) Route Choice - Which roads will I travel on?

4.2.1 Roadway Needs

As a result of the travel demand modeling, freight considerations, input from the public, and the constrained roadway analysis, the MPO has identified the need for more than 77 roadway projects through the year 2045. This includes reconstructing 9 existing bridges, major improvements at 7 intersections and widening of approximately 130 miles of roadways. Estimated to cost approximately \$4.8 billion dollars in present day costs, the MPO reduced the list of projects based on their performance against the established set of evaluation criteria, public input, and available revenues projected to be available through 2045. A listing of the roadway needs is found in **Table 4-1** and **Map 4-3** shows the limits of the projects identified in the needs list.



Table 4-1: Roadway Needs List (\$ Millions, 2020 Present Day Cost)

Project #	Rank	Facility	From	To	Jurisdiction	Improvement	Unweighted Score	Weighted Score	Cost	Length (miles)
1	18	1 st Street	Fowler St	Palm Beach Blvd	Fort Myers	Two way	40	3.7	\$ 2.50	1.00
2	47	2nd Street	Fowler St	Palm Beach Blvd	Fort Myers	Two way	30	2.28	\$ 2.50	1.00
3	54	40 th Street	End of 40th Street	Alabama	County	New 2L	10	1.6	\$ 4.51	0.20
4	56	Airport Haul Rd Ext	Corkscrew Road	Alico Road	County	New 4 lanes	24	1.33	\$ 93.60	3.70
5	53	Alico Road/Alico Road Connector	Airport Haul Road	SR 82	County	2 to 4 lanes/New 4 L.	29	1.68	\$ 96.88	9.20
6	24	Bonita Beach Rd	US 41	Old US 41	County	4 to 6 lanes	32	3.23	\$ 27.70	1.70
7	30	Buckingham Road	Orange River Blvd.	SR 80	County	2 to 4 lanes	30	3	\$ 50.30	2.60
8	14	Burnt Store Road	Van Buren Parkway	Charlotte Co. Line	County	2 to 4 lanes	45	3.9	\$ 57.09	5.50
9	39	Chiquita Blvd.	Cape Coral Parkway	Pine Island Road	Cape Coral	4 to 6 lanes	31	2.75	\$ 98.50	5.50
10	1	Colonial	McGregor	US 41	County	Intersections	50	5.28	\$ 44.45	1.20
11	5	Corkscrew Road	US 41	Three Oaks Pkwy	County	4 to 6 lanes	48	4.68	\$ 18.20	1.30
12	7	Corkscrew Road	Three Oaks	I-75	County	4 to 6 lanes	50	4.58	\$ 7.70	1.00
13	63	CR 951 Extension	Lee Co/L.	Corkscrew Road	County	New 4 lanes	10	0.85	\$ 426.00	11.80
14	36	Crystal Drive	US 41	Metro Pkwy	County	2 to 3 lanes	30	2.83	\$ 10.25	1.20
15	61	Crystal Drive Ext.	Plantation	Six Mile Cypress	County	New 2L	15	1.03	\$ 8.10	1.00
16	23	Daniels Parkway	Gateway Blvd	SR 82	County	4 to 6 lanes	30	3.28	\$ 38.00	2.80
17	71	Del Prado Extension	e/o US 41	e/o Prairie Pines	County	2 to 4 lanes	7	0.55		3.00
18	65	Del Prado Extension	e/o Prairie Pines	I-75	County	New 4 lanes	12	0.73		1.30
19	60	Del Prado Extension	I-75	SR 31	County	New 4 lanes	17	1.05	\$ 263.20	6.80
20	51	Diplomat Parkway	Burnt Store Road	US 41	Cape Coral	4 to 6 lanes	18	1.98	\$ 49.11	8.80
21	72	East West	Ben Hill Griffin	Airport Haul Road	Developer	New 2 lane	7	0.48	\$ 46.90	2.60
56	50	Edison Ave Extension	Arcadia Street	Ortiz Avenue	Fort Myers	New 2 lanes	32	2.03		
22	73	Estero Ext.	Ben Hill Griffin	Airport Haul Ext	County	New 2 lanes	7	0.48	\$ 34.50	1.20
23	10	Fowler Street	Metro/Fowler	SR 82	State	Reconstruct 3/2	43	4.08		
24	57	Hanson Street	US 41	Fowler St	Fort Myers	2 to 4 lanes	20	1.28	\$ 13.60	0.60
25	49	Homestead Road	SR 82	Milwaukee	County	2 to 4 lanes	20	2.1	\$ 36.41	2.30
26	48	Homestead Road	Milwaukee	Sunrise	County	2 to 4 lanes	20	2.1	\$ 21.30	1.60
27	37	I-75	Collier Co. Line	SR80	State	Managed Lanes	29	2.8	\$1,534.00	
28	28	I-75	at Daniels Parkway		State	Interchange	32	3.1	\$ 19.30	0.50
29	34	I-75	SR 78		State	Interchange	37	2.85	\$ 40.00	1.00
30	46	Joel Blvd	17th St	Palm Beach Blvd	County	2 to 4 lanes	25	2.35	\$ 60.30	3.25
61	Not Ranked	Joel Blvd	Leeland Heights	East 17th Street	County	Reconstruction			\$33.69	4.5
31	33	Leeland Heights Boulevard	Lee Blvd	Bell Blvd	County	4 to 6 lanes	38	2.88	\$ 39.40	1.70
32	68	Luckett Road ext.	e/o I-75	Buckingham Rd	County	New 4 lanes	12	0.73	\$ 124.90	3.90
33	66	Luckett Road ext.	Buckingham Rd	Gunnery Rd	County	New 4 lanes	12	0.73	\$ 67.20	2.10
34	67	Luckett Road ext.	Gunnery Rd	Sunshine Blvd	County	2 to 4 lanes	12	0.73	\$ 34.00	1.90
35	26	Metro Parkway	Daniels Parkway	South of Winkler Avenue	State	4 to 6 lanes	42	3.18	\$ 101.10	4.10
36	27	MidPoint Bridge	Del Prado	W. of Summerlin	County	4 to 6 lanes	34	3.18	\$ 106.00	3.30
37	52	NE 24th Avenue	Pondella Road	NE 28th Street	Cape Coral	2 to 4 lanes	21	1.78	\$ 53.10	2.50
38	44	NE 24th Avenue	NE 28th Street	Del Prado Boulevard	Cape Coral	New 4 lanes	28	2.48	\$ 32.10	0.80

Project #	Rank	Facility	From	To	Jurisdiction	Improvement	Unweighted Score	Weighted Score	Cost	Length (miles)
39	38	Old US 41	Bonita Beach Road	Collier Co. Line	Bonita	2 to 4 lanes	30	2.8	\$ 21.00	1.20
40	42	Ortiz Avenue/Luckett Rd	Martin Luther King	I-75	County	2 to 4 lanes	31	2.63	\$ 22.04	1.30
41	19	Ortiz Avenue	Luckett Road	SR 80	County	2 to 4 lanes	43	3.68	\$ 16.86	1.30
42	41	Pine Island Road	Del Pine Dr	Hancock Creek Blvd (NE 24th Ave)	State	4 to 6 lanes	28	2.68	\$ 12.90	0.90
43	55	Sandy Lane Extension	Strike Lane	Pelican Colony	Bonita	New 2 lane	14	1.38	\$ 28.80	1.00
44	2	SR 31	SR 80	SR 78	State	2 to 6 lanes	57	4.85	\$ 100.00	1.40
45	11	SR 31	SR 78	Charlotte Co. Line	State	2 to 6 lanes	45	4	\$ 67.00	3.30
46	25	SR 78	Chiquita Boulevard	w/o Santa Barbara	State	4 to 6 lanes	38	3.23	\$ 28.40	2.00
47	20	SR 78	W. of Santa Barbara	East of Pondella	State	4 to 6 lanes	34	3.58	\$ 41.10	2.90
48	31	SR 78	24th Ave	US 41	State	4 to 6 lanes	31	2.98	\$ 21.40	1.50
49	13	SR 78	Business 41	I-75	State	4 to 6 lanes	41	3.98	\$ 73.70	5.20
50	4	SR 78	I-75	SR 31	State	2 to 4 lanes	55	4.73	\$ 24.60	1.40
51	12	SR 80	SR 31	Buckingham Rd	State	4 to 6 lanes	39	4	\$ 35.40	2.50
59	Not Ranked	Sunshine Blvd	Lee Blvd	75th Street West	County	2L to 4L			Included with total below	6
60	Not Ranked	Sunshine Blvd	75th Street West	SR 80	County	New 4L			\$96.50	1.9
52	59	Sunshine Blvd	SR 82	Lee Blvd	County	2 to 4 lanes	13	1.15	\$ 48.50	3.60
53	15	US 41	Bonita Beach Road		State	Intersection	45	3.9	\$ 22.00	0.50
54	16	US 41	Six Mile Cypress		State	Intersection	46	3.8	\$ 30.00	0.50
55	22	US 41	SR 78		State	Intersection	39	3.35	\$ 3.30	0.50
57	Not Ranked	Veterans Parkway	Santa Barbara Blvd		Cape Coral	Intersection			\$ 30.00	
58	Not Ranked	US 41	Daniels Parkway		State	Intersection			\$ 30.00	
b1	40	Alva Drawbridge			County	Reconstruct Bridge	31	2.73	\$ 17.89	
b2	17	Big Carlos Bridge	Bridge Replacement		County	Reconstruct Bridge	47	3.78	\$ 25.00	
b3	3	Cape Coral Bridge			County	Reconstruct Bridge	53	4.78	\$ 99.10	0.80
b4	6	Hancock Bridge Parkway Bridge			County	Reconstruct Bridge	53	4.63	\$ 3.92	
b5	58	Harbor Drive Bridge	Over Boca Grande Canal		County	Reconstruct Bridge	14	1.18	\$ 2.04	
b6	32	Little Carlos Pass, New Pass & Big Hickory Bridges			County	Reconstruct Bridge	32	2.93	\$ 46.72	
b7	9	Orange River Road Bridge			County	Reconstruct Bridge	50	4.46	\$ 2.42	
b8	8	Stringfellow Road Bridge	Over Monroe Canal		County	Reconstruct Bridge	51	4.51	\$ 1.75	
b9	Not Ranked	Sunrise Blvd	Bridge Connection		County	Reconstruct Bridge			\$4.11	0.1
other	62	Intermodal Freight Terminal	Rail/Truck at Hanson/Veronica Shoemaker		State		20	0.93	\$ 3.00	
other	74	ATMS Last Phase			State		0	0	\$ 9.20	
other	75	Intersection and AV/CV Box			State		0	0		
other	76	Traffic Operations Center			County		0	0	\$ 0.92	
Other	77	Transportation Enhancement Box	Bike/Ped/CMP/Transit		State		0	0	\$ 89.10	



4.2.2 Strategic Intermodal System

In 2003, the state of Florida created the Strategic Intermodal System (SIS). The SIS consists of transportation facilities critical to the movement of goods and services as well as regional and statewide travel. SIS facilities include FDOT-owned state highways, federally-owned interstates, airports, spaceports, seaports, waterways, rail lines, terminals, and locally-owned roads. Nearly all rail freight and air cargo travels on the SIS. While the roads on the SIS account for only 17 percent of Florida's road network, these critical facilities carried more than 40 percent of the traffic that traveled throughout the state in 2019.¹

Lee County's SIS facilities include:

- I-75: Collier County Line to Charlotte County Line
- SR 31: SR 80 to the Charlotte County Line
- SR 80: I-75 to Hendry County Line
- SR 82: I-75 to Hendry County Line
- Terminal Access Road from I-75 to Ben Hill Griffin Parkway
- Southwest Florida International Airport
- Seminole Gulf Rail Line from Alico Road to the Charlotte County Line



¹ <https://www.fdot.gov/statistics/mileage-rpts/>

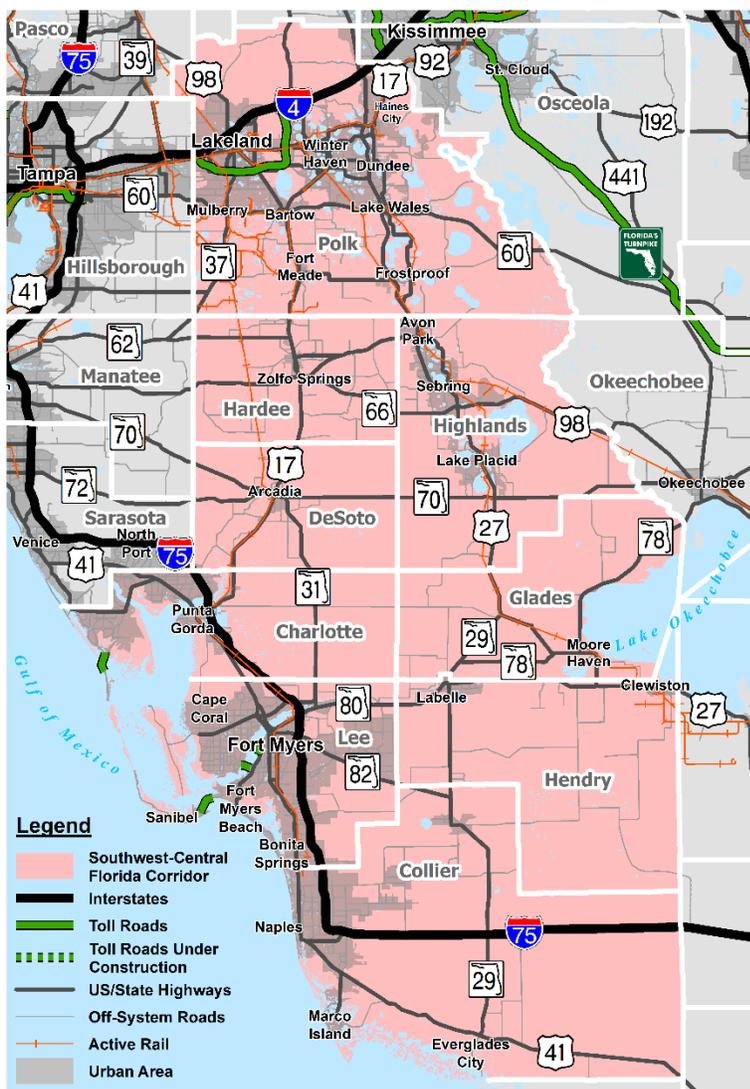


4.2.3 FDOT Multi-use Corridors of Regional Economic Significance

The Multi-use Corridors of Regional Economic Significance (M-CORES) Program has been created by Section 338.2278, Florida Statutes (F.S.) to revitalize rural communities, encourage job creation and provide regional connectivity while leveraging technology, enhancing quality of life and public safety, and protecting the environment and natural resources. FDOT was charged with assembling task forces to study three specific corridors:

- The Suncoast Corridor, extending from Citrus County to Jefferson County
- The Northern Turnpike Corridor, extending from the northern terminus of Florida’s Turnpike northwest to the Suncoast Parkway
- The Southwest-Central Florida Corridor, extending from Collier County to Polk County

Map 4-4: Southwest-Central Florida Corridor



The objective of the M-CORES program is to advance the construction of regional corridors that will accommodate multiple modes of transportation and multiple types of infrastructure. The Program benefits include, but are not limited to, addressing issues such as hurricane evacuation; congestion mitigation; trade and logistics; broadband, water, and sewer connectivity; energy distribution; autonomous, connected, shared, and electric vehicle technology; other transportation modes, such as shared-use non-motorized trails, freight and passenger rail, and public transit; mobility as a service; availability of a trained workforce skilled in traditional and emerging technologies; protection or enhancement of wildlife corridors or environmentally sensitive areas; and protection or enhancement of primary springs protection zones and farmland preservation. Additional information is available at www.floridamcores.com.



Southwest-Central Florida Corridor Study Area

The Southwest-Central Florida Corridor study area spans nine (9) counties, from Collier County to Polk County, as shown in Error! Reference source not found.. The Lee County MPO planning area is part of the Southwest-Central Florida Corridor study area.

L RTP Considerations

M-CORES projects are considered to be projects of regional significance and therefore are required by Title 23 of the Code of Federal Register (CFR), Section 450.324(d) and Section 339.175(7), F.S. to be included in the MPO/ TPO Long-Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), and the State Transportation Improvement Program (STIP).

MPOs and TPOs are responsible for actively involving all affected parties in an open, cooperative, and collaborative process when developing the LRTPs and TIPs. Regional coordination is required since M-CORES projects affect more than one MPO. Public participation required for the development of LRTP and TIP is neither affected nor replaced by the public engagement activities conducted as part of the M-CORES corridor development process.

The Lee County MPO will use travel demand forecasts generated by the Florida Turnpike Statewide Model for M-CORES projects. As such, the Lee County MPO, will coordinate all M-CORES related analyses with FDOT for consistency purposes.

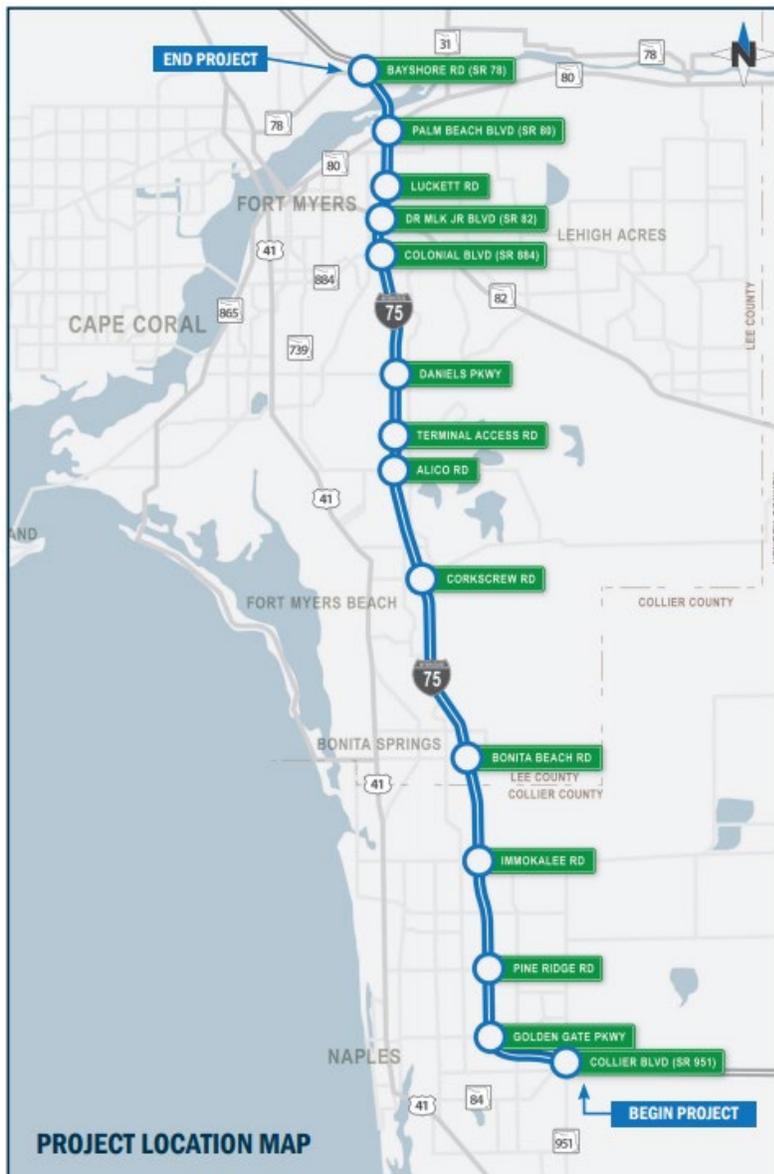
The proposed project within the Southwest-Central Florida Corridor will be tolled facilities and will be part of the Florida Turnpike system and the Strategic Intermodal System (SIS). The projects will be included in the LRTP and TIP/STIP in accordance with guidance provided in the FDOT MPO Program Management Handbook. FDOT worked with the Southwest-Central Florida Corridor Task Force to develop purpose and need, guiding principles, and potential paths/courses. The Lee County MPO was a member of the Southwest-Central Florida Corridor Task Force and was actively engaged in pertinent aspects of planning and corridor analysis through the Task Force activities. The Task Force submitted its evaluation report to the Governor, the President of the Senate, and the Speaker of the House of Representatives in November. As the Program progresses to Project Development and Environment (PD&E), design and construction phases, FDOT will identify projects, prepare cost estimates, and coordinate with the Lee County MPO to add identified projects into the LRTP and TIP. Subject to the economic and environmental feasibility statement requirements of Section 337.25, F.S., projects may be funded through Turnpike revenue bonds or right-of-way and bridge construction bonds or financing by the Florida Department of Transportation Financing Corporation; by advances from the State Transportation Trust Fund; with funds obtained through the creation of public-private partnerships; or any combination thereof. FDOT also may accept donations of land for use as transportation rights-of-way or to secure or use transportation rights-of-way for such projects in accordance with Section 337.25, F.S. To the maximum extent feasible, construction of the M-CORES projects will begin no later than December 31, 2022, and the corridors will be open to traffic no later than December 31, 2030.



I-75 Southwest Connect

Southwest Connect Interstate Program is a FDOT District 1 program developed to lead construction of transportation solutions that address the long-term needs of the interstate corridors in Southwest Florida. The Program consists of multiple studies and projects within four corridors along I-75 and I-4 in District 1. Each project is focused on improving mobility and providing transportation options to support the region's economic development. The corridor within Lee County, I-75 South Corridor, is 42 miles in length that traverses major urban areas including Naples and Fort Myers.

Map 4-5: Interstate 75 (I-75) South Corridor



Source: FDOT D1 South Corridor Public Kickoff Meeting – Handout

The project currently underway along the I-75 South Corridor is a capacity improvement project that involves the potential construction of Managed Lanes in each direction on I-75, from north of Collier Boulevard (SR 951) in Collier County to SR 80 in Lee County.

General-use lanes, collector distributor roadways, auxiliary lanes and interchange operational improvements are also being considered.

The purpose of this project is to address the existing operational deficiencies of the interstate within both Collier and Lee Counties and accommodate future travel demand projections as a result of population and employment growth.



4.2.4 Roadway Needs Prioritization

To identify transportation projects which best address the goals and vision of the LRTP and community need, the MPO developed a list of 12 project evaluation criteria to prioritize transportation projects. The criteria were developed in collaboration with the Technical Advisory Committee, Citizens Advisory Committee and the Executive Committee to be used as a guide for determining the transportation projects with the greatest impact and the greatest need. The criteria ask the following questions of each proposed transportation project:

EVALUATION CRITERIA



1. Is there an existing or future congestion issue?
2. Are pedestrian, bicycle, or transit improvements included?
3. Has a weather related event impacted this project?
4. Is there a safety concern at this project's location?
5. Does this project need resurfacing or repairs?
6. Does this project connect with intermodal facilities?
7. Has funding been committed to this project?
8. Does this project impact Environmental Justice Areas?
9. Is the project impacting environmental areas?
10. Is the project providing access to an activity center?
11. Does the project include technology innovations (i.e. ACES)?
12. Does the project have high truck volumes?

Appendix D provides the detailed scoring methodology for project prioritization criteria.





Table 4-2: 2045 LRTP Project Evaluation Criteria

Project Evaluation Criteria	Weight	MAP-21 Planning Factors							
		Economic Vitality	Safety	Security	Access / Mobility	Quality of Life / Environment	Connectivity	Efficient System Management	System Preservation
Existing volume-to-capacity ratio	20%	✓	✓		✓	✓	✓	✓	
Safety	16%		✓						
Project commitment	15%	✓						✓	
Provides bicycle, pedestrian, or transit improvement	8%	✓	✓		✓	✓	✓	✓	
Infrastructure resiliency	8%		✓	✓		✓	✓	✓	✓
Maintenance of assets	8%	✓	✓			✓		✓	✓
Intermodal connectivity	5%	✓			✓		✓		
Environmental impacts	5%	✓			✓	✓	✓	✓	
Roadway significance and access to major activity centers	4%	✓			✓	✓	✓	✓	
ACES innovation	4%					✓			
Truck route	4%	✓			✓		✓		
Social and cultural effects	3%		✓		✓	✓	✓	✓	
TOTAL	100%								





4.3 Public Transit

Lee County’s long-term goal is to develop a more robust network of transit services and facilities to make transit a truly viable travel option and an integral component of the multimodal transportation network in Lee County and the region. Additionally, public transit and private transportation services such as taxis and ride-hailing services can support independent living for the aging population who are no longer able to drive. Advances in automotive technology such as autonomous vehicles, micro transit, and shared user services may help prolong independent living for those who do not live near public transit, provided the cost is not significant. Private services can be cost-prohibitive for those living on a limited income therefore, expansion of lower-cost public transit is essential to maintaining independent living for lower income individuals.

Several service and capital/infrastructure/technology improvement needs have been identified to help Lee County realize this larger strategic vision for transit. It should be noted that these needs were developed without any consideration of funding constraints to reflect the true needs of the community and the immediate region. A full description of the region’s transit needs is detailed in the Transit Technical Report.

The 2045 transit needs consist of improvements that enhance existing LeeTran services and expand service to new areas. The improvements reflect the transit needs for the next 25 years and have been developed based on information gathered through the following aspects:

- **Local and Regional Plan & Policy Direction** – Plan and policy direction from the LeeTran 2021-2030 Transit Development Plan (TDP) and other recent transit-related local and regional study efforts were used. A TDP is a 10-year strategic plan that outlines the transit agency’s vision for transit and identifies funded and unfunded needs.
- **Transit Operating Environment and Market Analysis** – Analysis of LeeTran’s operating environment and discretionary and traditional transit markets also guided the needs development.
- **Community Input/Direction** – Public input received as part of LeeTran’s Long Range Transit Element (LRTE) and 2021-2030 TDP public outreach efforts were used to ensure that the needs include a set of service and capital strategies that would transform LeeTran’s transit network to an attractive and viable travel option for the community.

The 2045 transit needs, developed based on the input from these aspects, are shown in **Map 4-6** and summarized below.

4.3.1 Premium Transit Services

- **US-41 BRT** (Bus Rapid Transit), providing service along the US-41 corridor between downtown Fort Myers and Daniels Parkway at 10-minute frequencies.
- **Colonial BRT** service, offering 10-minute service frequencies along the Colonial Boulevard corridor between Del Prado Boulevard in Cape Coral and The Forum in Fort Myers.

2045 Transportation Plan





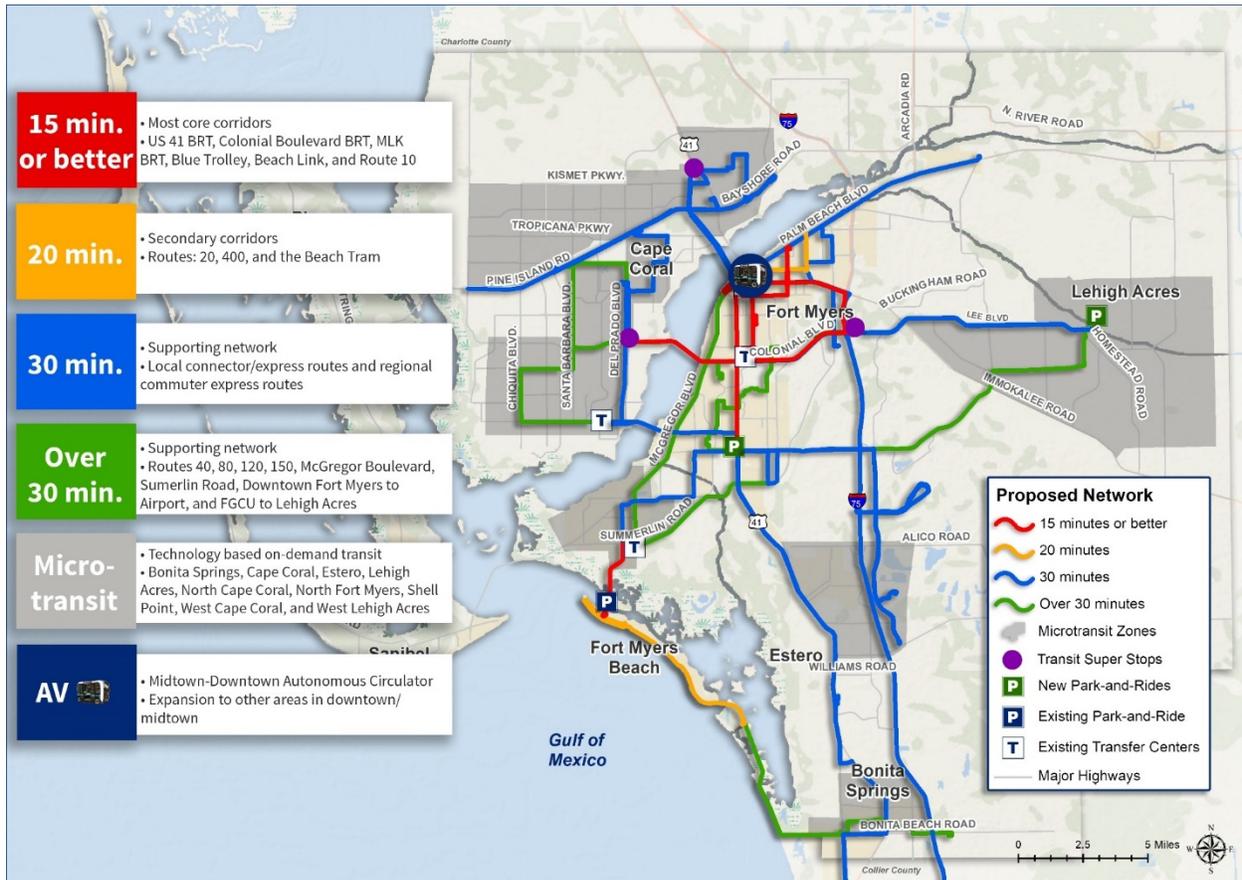
- **MLK BRT** service, connecting Downtown Fort Myers and The Forum via Dr. Martin Luther King Jr. Boulevard and I-75 at 10-minute service frequencies.

4.3.2 Autonomous Circulator

- A driverless Midtown-Downtown Circulator that connects Downtown Fort Myers to the Midtown area.



Map 4-6: Transit Needs Plan, 2020–2045





4.3.3 High-Frequency Core Network

In addition to the premium transit options mentioned, which will be provided at a higher frequency, the following improvements are considered to be a part of the high-frequency core network for the 2045 LRTE:

- **15-minute or better frequency** - on Beach Link, Blue Trolley, and Route 10
- **20-minute frequency** - on Beach Tram and routes 20 and 400
- **30-minute frequency** - on routes 5, 15, 30, 50, 70, 100, 170, 240/600, 590, and 595

4.3.4 Commuter Express Services

Fast and convenient connections between key points locally and regionally are needed to serve current and potential riders. These services may also help bolster economic development, connecting growth centers and jobs to people locally and regionally. The following improvements were identified to address this need.

- **Cape Coral- Lehigh Express** – This improvement would extend the North Fort Myers-Lehigh Acres route included in the LeeTran 2021-2030 TDP to connect Lehigh Acres to key employment and activity centers on the western part of the county.
- **Lee-Collier Commuter Express on I-75** – This regional commuter express will be on the general-purpose lanes on I-75 as proposed, shifting to the I-75 Managed Lanes once they are implemented.
- **Downtown Fort Myers- Airport LX** – This route would be a direct connection from RSW to Downtown Fort Myers.

4.3.5 Secondary/Feeder Network

Currently, the secondary network includes routes 40, 80, 120, and 150, which will have frequencies that are 30+ minutes, per the LeeTran 2021-2030 TDP. To improve the secondary network in Lee County, the following additions were identified for the next 25 years:

- **McGregor Boulevard** – This route would operate along McGregor Boulevard between downtown Fort Myers and Summerlin Road.
- **FGCU-Lehigh Acres Connector** – This local route would connect FGCU and Lehigh Acres.
- **Summerlin Road** – This route would operate on Summerlin Road between San Carlos Boulevard and the South Hub Park-and-Ride.

4.3.6 Microtransit

Mobility on Demand (MOD) zones with microtransit services are proposed beyond what is already included in the LeeTran 2021-2030 TDP, in Bonita Springs, on the west side of Lehigh Acres, and on the west side of Cape Coral.





4.3.7 Transit Capital/Infrastructure/Technology Needs

Capital needs include infrastructure components that must be implemented to accommodate the service improvements identified previously. With the implementation of premium services such as BRT, frequency upgrades, and other new transit improvements, there is an opportunity and a need to improve the network of capital/infrastructure elements for LeeTran to support these operational changes. In addition, some of the proposed service improvements would also need additional new technologies to elevate the quality and reliability of the transit network in the next 25 years.

Some of the major capital/infrastructure/technology improvements to support the 2045 transit needs include the following:

- Branded BRT stations and running ways
- Transit Signal Priority/Queue Jumps
- Transit super stops
- Vehicle replacement and new acquisitions
- Transit marketing/education program
- Bus stop infrastructure and accessibility program

4.3.8 Summary of 2045 Transit Needs

Table 4-3 summarizes the operating characteristics of the transit service needs for the 2045 LRTE, and **Table 4-4** outlines operating and capital costs for those transit needs. It should be noted that the schedule shown in the table does not preclude the opportunity to delay or advance any projects. As priorities change, funding assumptions do not materialize, or more funding becomes available, the LRTP will be amended accordingly.





Table 4-3: 2045 Transit Needs Service Characteristics

Improvement	Days of Service	2020 Frequency (minutes)	2045 Needs Plan Frequency (minutes)
US-41 BRT/ Route 140	Mon-Sun	15	10
Colonial Blvd BRT	Mon-Sun	-	10
MLK BRT	Mon-Sun	-	10
Blue Trolley (Route 500)	Mon-Sun	25	12
Midtown-Downtown Circulator	Mon-Sun	-	15
Beach Link (seasonal)	Mon-Sun	-	15
Route 10	Mon-Sat	80	15
Beach Tram (Route 420)	Mon-Sun	20	20
Route 20	Mon-Sat	30	20
Route 410 (410/490)	Mon-Sun	20	20
Route 30	Mon-Sat	60	30
Route 50	Mon-Sun	70	30
Route 70	Mon-Sun	65	30
Route 100	Mon-Sun	30	30
Route 110	Mon-Sun	60	30
Route 170	Mon-Sun	-	30
Route 240/600	Mon-Sun	45/90	30
Beach Link (off-season)	Mon-Sun	-	30
Route 595	Mon-Sun	60	30
Route 5	Mon-Sat	80	30
Route 15	Mon-Sun	60	30
Route 590	Mon-Sun	60	30
Lee-Collier Commuter Express on I-75	Mon-Fri	-	30
Cape Coral-Lehigh Acres Express	Mon-Fri	-	30
Route 80	Mon-Fri	97	45
Route 150	Mon-Sun	95	45
McGregor Blvd	Mon-Fri	-	45
Route 40	Mon-Sat	84	60
Route 120	Mon-Sun	80	60
Downtown Fort Myers-Airport LX	Mon-Fri	-	60
FGCU-Lehigh Connector	Mon-Fri	-	60
Summerlin Blvd	Mon-Fri	-	60
Microtransit			
Bonita Springs MOD	Mon-Sun	n/a	On-demand
Cape Coral MOD	Mon-Sun	n/a	On-demand
Estero MOD	Mon-Sun	n/a	On-demand
Lehigh Acres Mod	Mon-Sun	n/a	On-demand
North Cape Coral MOD	Mon-Sun	n/a	On-demand
North Fort Myers MOD	Mon-Sun	n/a	On-demand
Shell Point MOD	Mon-Sun	n/a	On-demand
West Cape Coral MOD	Mon-Sun	n/a	On-demand
West Lehigh Acres MOD	Mon-Sun	n/a	On-demand

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Table 4-4: 2045 Transit Needs Projects and Costs

Transit Improvement	Project Description	Project Cost (PDC)	
		Annual Operating	Total Capital*
US-41 BRT/ Route 140	New BRT service	\$2,834,096	\$55,978,000
Colonial Blvd BRT	New BRT service	\$4,251,144	\$82,513,120
MLK BRT	New BRT service	\$2,834,096	\$53,672,200
Blue Trolley (Route 500)	Continue 2030 TDP improvement	\$346,669	\$2,020,000
Autonomous Midtown–Downtown Circ.	High-frequency, driverless AV shuttle	\$900,000	-
Beach Link	Continue 2030 TDP improvement	\$864,266	\$1,010,000
Route 10	Frequency improvement	\$1,679,851	\$3,030,000
Beach Tram (Route 420)	Continue 2030 TDP improvement	\$448,753	\$1,010,000
Route 20	Frequency improvement	\$909,313	\$1,515,000
Route 410 (410/490)	Continue 2030 TDP improvement	\$864,266	\$1,010,000
Route 30	Frequency improvement	\$708,099	\$1,515,000
Route 50	Frequency improvement	\$2,192,702	\$2,525,000
Route 70	Frequency improvement	\$1,962,848	\$1,515,000
Route 100	Continue 2030 TDP improvement	\$1,406,955	\$1,515,000
Route 110	Continue 2030 TDP improvement	\$1,923,149	\$3,030,000
Route 170	Continue 2030 TDP improvement	\$1,479,641	\$2,020,000
Route 240/600	Continue 2030 TDP improvement	\$3,111,505	\$2,020,000
Route 595	Continue 2030 TDP improvement	\$1,045,193	\$1,515,000
Route 5	Frequency improvement	\$789,451	\$1,010,000
Route 15	Frequency improvement	\$1,021,304	\$1,010,000
Route 590	Frequency improvement	\$1,759,643	\$2,020,000
Lee-Collier Commuter Express on I-75	New commuter express	\$716,672	\$2,020,000
Cape Coral–Lehigh Acres Express	New commuter express	\$358,336	\$1,515,000
Route 80	Frequency improvement	\$731,950	\$1,515,000
Route 150	Frequency improvement	\$1,087,231	\$1,010,000
McGregor Blvd	New secondary/feeder route	\$909,266	\$1,010,000
Route 40	Continue 2030 TDP improvement	\$813,062	\$1,010,000
Route 120	Frequency improvement	\$589,264	\$1,010,000
Downtown Fort Myers–Airport LX	New limited express	\$832,229	\$1,010,000
FGCU–Lehigh Connector	New secondary/feeder route	\$832,229	\$1,010,000
Summerlin Blvd	New secondary/feeder route	\$454,633	\$505,000
Microtransit			
Bonita Springs MOD	New MoD zone	\$233,530	\$242,000
Cape Coral MOD	Continue 2030 TDP improvement	\$233,530	\$242,000
Esteros MOD	Continue 2030 TDP improvement	\$233,530	\$242,000
Lehigh Acres MOD	Continue 2030 TDP improvement	\$516,808	\$242,000
North Cape Coral MOD	New MOD zone	\$233,530	\$242,000
North Fort Myers MOD	Continue 2030 TDP improvement	\$233,530	\$242,000
Shell Point MOD	Continue 2030 TDP improvement	\$233,530	\$242,000
West Cape Coral	New MOD zone	\$233,530	\$242,000
West Lehigh Acres	Continue 2030 TDP improvement	\$77,521	\$242,000

*Where applicable, vehicle replacement costs not included.





4.3.9 Transit Needs Prioritization

A hybrid qualitative/quantitative methodology was used to evaluate and prioritize the transit needs. By conducting this evaluation, the MPO and LeeTran can better prioritize projects and allocate funding using an objective process. The four evaluation categories were identified, and the category weights used to rank the needs include the following:

- **Community Support (35%)** – Findings previously summarized from the extensive public outreach efforts for the LRTP and LeeTran 2021-2030 TDP were reviewed to gauge public interest.
- **Ridership Potential (20%)** – Results from demand assessments were reviewed to assess the potential demand from discretionary and traditional markets for transit.
- **Key Activity Center/Regional Connectivity (20%)** – Connectivity between key local and regional hubs was examined.
- **Funding Potential (25%)** – Potential for funding availability, often the most restrictive factor, was explored.

Alternatives Evaluation Criteria





4.4 Non-Motorized (Bicycle and Pedestrian)

Active transportation is growing throughout Southwest Florida and particularly in Lee County. Developing an active (walking and cycling) transportation system in Lee County is built on filling in the gaps and completing the existing network of sidewalk, trails, bike lanes, and paths in a manner that recognizes the unique needs of the users and function of transportation facilities.

The transportation system in a community has a strong influence on the quality of an individual’s life; transportation systems that limit choice can negatively impact one’s health by limiting opportunities for exercise, limiting access to services, increasing stress, and decreasing air quality. Creating a viable and connected active transportation network has the potential to decrease the negative health impacts of the transportation systems that are dominated by automobile-centric designs, especially for populations that are disproportionately impacted. Active transportation is defined by the Center for Disease Control and Prevention (CDC) as “any self-propelled, human-powered mode of transportation, such as walking or bicycling.” Strategies for ensuring an active transportation network include the provision of sidewalks, bicycle facilities, greenways, complete streets, and transit.



To ensure these active modes are viable forms of transportation, they must be strategically placed and designed with safety in mind. Equal in importance are good design principles that promote walkability. For example, literature suggests that walkable environments (i.e., demonstrating street connectivity, destination accessibility, and presence of active transport infrastructure) are correlated





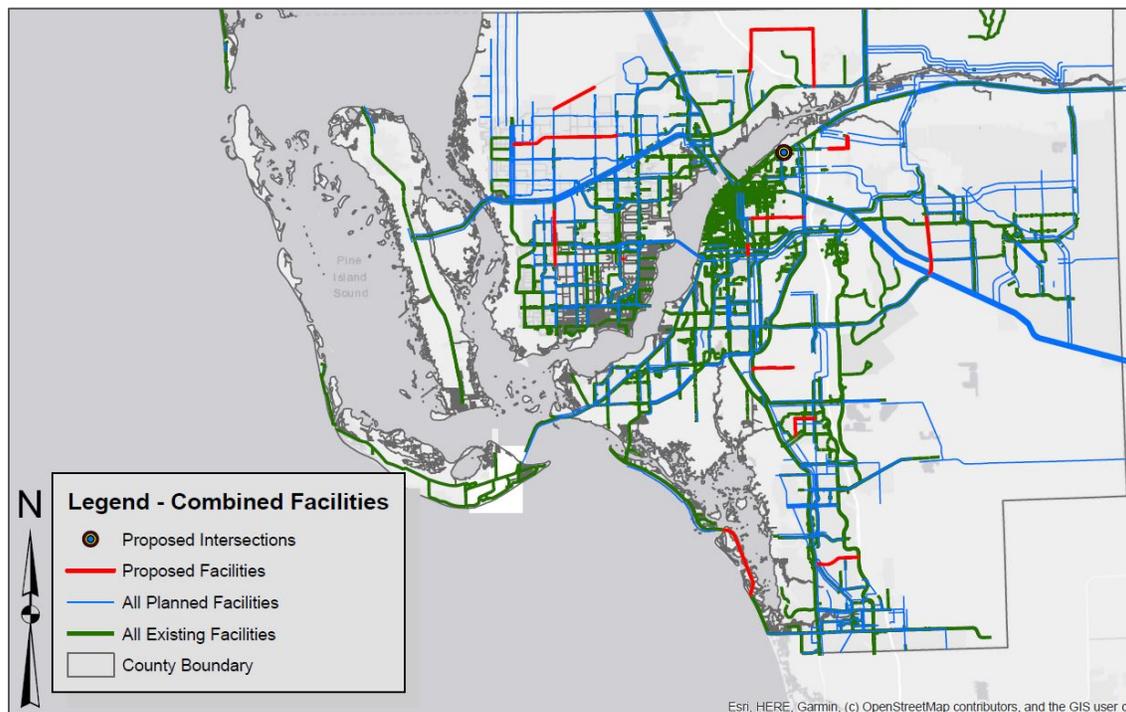
with increased physical activity in both children and adults.² Active transportation systems have the potential to maximize the community's benefits in their physical and mental health.

Improvements to pedestrian and bicycle facilities may also benefit aging populations and households without vehicles as active transportation is another low-cost option to driving, provided the individual is capable of such activity. Bicycle and pedestrian networks that are accessible, direct, and continuous are shown to be economically beneficial to neighborhoods around them and to improve safety for everyone using the roadway³.

In support of ongoing bicycle and pedestrian planning, bicycle, and pedestrian needs for the 2045 LRTP were developed through a review of priority projects, identified gaps, and local jurisdiction Bicycle and Pedestrian Master Plans and project lists. **Map 4-7** illustrates the existing, planned, and proposed bicycle and pedestrian projects.

The MPO also works with state and county agencies to bring forward a multimodal transportation system that supports its Complete Streets policy of street networks that are designed and operated to enable safe use and support mobility for all users.

Map 4-7: Bicycle and Pedestrian Needs Plan, 2020–2045



² Smith, Melody, et al. "Systematic Literature Review of Built Environment Effects on Physical Activity and Active Transport – an Update and New Findings on Health Equity." *International Journal of Behavioral Nutrition and Physical Activity*. vol 14, no. 1 (2017), doi:10.1186/s12966-017-0613-9.

³ Advocacy Advance/League of American Bicyclists. 2012. *Bicycling Means Business: The Economic Benefits of Bicycle Infrastructure*. Retrieved from http://bikewalkkcc.org/wp-content/uploads/2016/03/Bicycling_and_the_Economy-Econ_Impact_Studies_web.pdf





4.5 Environmental Mitigation

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.

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 impact over time by preservation and maintenance operations during the life of the action; and
- Compensate for environmental impacts by providing appropriate or alternate environmental resources of equivalent or greater value, on or off-site.

Table 4-5 outlines potential environmental mitigation opportunities that could be considered when addressing environmental impacts from future projects proposed by MPOs.

Table 4-5: Potential Environmental Mitigation Strategies

Resource/Impacts	Potential Mitigation Strategy
Wetlands and Water Resources	<ul style="list-style-type: none"> • Restore degraded wetlands • Create new wetland habitats • Enhance or preserve existing wetlands • Improve storm water management • Purchase credits from a mitigation bank
Forested and other natural areas	<ul style="list-style-type: none"> • Use selective cutting and clearing • Replace or restore forested areas • Preserve existing vegetation
Habitats	<ul style="list-style-type: none"> • Construct underpasses, such as culverts • Other design measures to minimize potential fragmenting of animal habitats
Streams	<ul style="list-style-type: none"> • Stream restoration • Vegetative buffer zones • Strict erosion and sedimentation control measures
Threatened or Endangered Species	<ul style="list-style-type: none"> • Preservation • Enhancement or restoration of degraded habitat • Creation of new habitats • Establish buffer areas around existing habitat





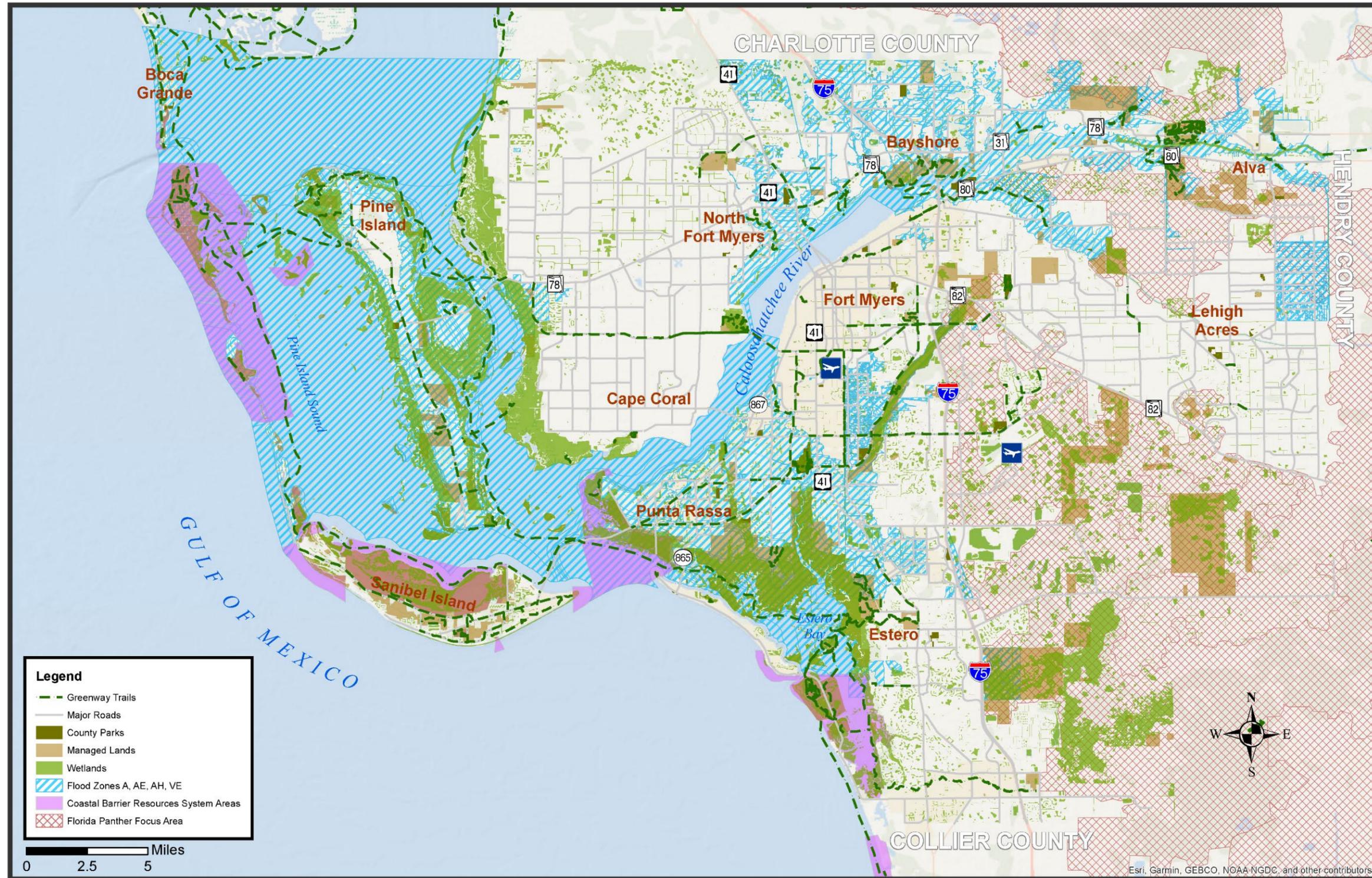
In the State of Florida, state legislation requires environmental mitigation and minimal impact through the duration of transportation projects by working with Water Management Districts (WMDs), the Florida Department of Environmental Protection (FDEP), and other cooperation between FDOT and MPOs. Environmental planning, permitting, and mitigation are directed through Title XXVII, primarily through Section 373 Florida Statutes (F.S.), thereby requiring mitigation impacts, cost associated with those impacts, and funds directed into a holding escrow account with the Florida Transportation Trust Fund. These funds are programmed by FDOT for work program use by WMDs for impacts identified in annual inventories.

Furthermore, Section 373 establishes these WMDs as the administrators of the FDOT Mitigation Program. Each plan requires a focus on land acquisition, restoration, and enhancement opportunities to offer the most feasible mitigation opportunity for the area. The program is a beneficial asset to MPOs in that it requires enhanced coordination between agencies and offers state-mandated resources for impact mitigation to transportation projects.

It is within the goals of the MPO to aid in the management and protection of critical features. There are approximately 30,000 acres of public land managed by Lee County plus additional federal and state managed lands shown in **Map 4-8**. Preparing for specific mitigation strategies can be challenging over the course of the long-range transportation plan. Unforeseen funding circumstances such as lack of funding, natural disasters such as COVID-19 and hurricanes, and permitting disputes within regulatory agencies are all common challenges to environmental mitigation. Such challenges can be mediated by ensuring guidance through public involvement, Efficient Transportation Decision Making (ETDM) processes, and the Florida Statutes. The 2045 Plan accounts for future mitigation and outlines environmental needs considerations in the Need Plan.



Map 4-8: Environmentally Sensitive Features and Areas





Chapter 5: Cost Feasible Plan

The Cost Feasible Plan was developed with input from the public and in coordination with local jurisdictions. Evaluation criteria were used to identify the projects which best addressed the LRTP goals established by the MPO.

Projected needs were reviewed against available revenues and matched up based on eligibility and jurisdictional priorities. Cumulatively, the Cost Feasible Plan includes over \$5.2 billion in year of expenditure (YOE) dollars in transportation projects for maintaining the existing transportation infrastructure, constructing new and widened roads, expanded transit services, and providing safer bicycling and walking facilities.

5.1 Funding the Plan

The MPO coordinated with FDOT, Lee County and other planning partners to identify available funding for the 2045 LRTP. The projected revenues from local, state, and federal sources for transportation can be used to fund the prioritized transportation needs. **Table 5-1** illustrates the revenues estimated to be available by funding source for the 2045 LRTP in future Year of Expenditure (YOE) revenues.

Table 5-1: Local, State and Federal Revenues for Capital Projects (YOE)

Funding Source	Total
State	\$ 888,200,000
Federal (Major Projects)	\$ 135,300,000
Federal (Bike/Ped, Transit & CMS)	\$ 125,000,000
Local	\$ 2,767,115,000
Transit (Local)	\$ 684,210,000
FDOT SIS Funding	\$ 1,950,289,000
Total	\$ 6,550,114,000

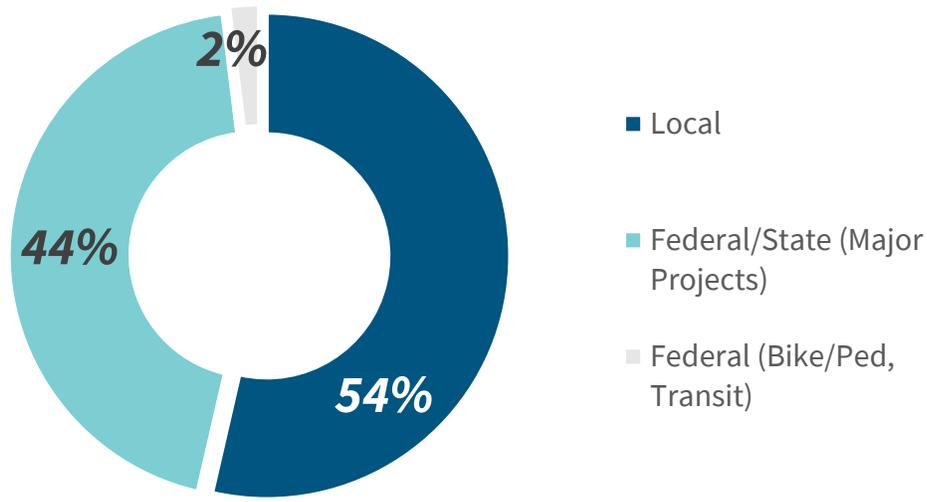
By creating a partnership between local jurisdictions and FDOT, that combines local revenues such as impact fees and other non-traditional transportation funding sources (i.e. TRIP, GIF, etc.) with FDOT Funds, the MPO, FDOT, and the local governments have the potential to fund a significant number of local and state capacity projects that support safety, growth, economic enhancements, and development. This also allows the MPO to invest more on citizen priorities like complete streets, transit, and sidewalk/bike path facilities. In Lee County, \$3.4 billion of the future transportation funds come from local sources (**Figure 5-1**).

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Figure 5-1: Sources of Available Transportation Revenue (YOE)



5.1.1 Funding Programs and Sources

The 2045 LRTP includes revenue projections from federal, State, and local sources used to develop the 2045 Cost Feasible Plan. Estimates of federal and State revenues were developed in coordination with FDOT. This revenue forecast includes estimates of available 2045 revenues for certain capacity programs for MPO planning activities. The estimated revenues can be used to fund planned capacity improvements to major elements of the transportation system (e.g., highways, transit). These metropolitan estimates are grouped into 5-year periods and one final 10-year period.

In addition to the state and federal estimates provided by FDOT, local revenue estimates were also developed in cooperation with Lee County, LeeTran and the MPO's municipal partners. **Table 5-2** presents a summary of the total projected transportation revenues anticipated to be available through 2045.





Table 5-2: Funding Programs and Sources (in \$1,000's Year of Expenditure)

Funding Programs and Sources	2021-2025	2026-2030	2031-2035	2036-2045	Total
Roadways					
Strategic Intermodal System	\$73,900	\$147,600	\$271,300	\$1,132,600	\$1,625,400
Other Roads Construction & ROW	\$173,000	\$219,400	\$240,100	\$503,200	\$1,134,700
Federal TMA	\$42,880	\$42,880	\$42,880	\$85,760	\$214,400
Local Funding	\$268,500	\$450,100	\$649,500	\$1,666,800	\$3,034,900
Developer Funded	\$60,000	\$41,000	\$0	\$0	\$101,000
TRIP Districtwide	\$21,900	\$32,700	\$36,400	\$74,600	\$165,600
Transit Revenues					
State and Federal Funding	\$87,950	\$95,070	\$218,860	\$246,590	\$648,470
Local (County, Farebox)	\$94,960	\$112,850	\$282,940	\$193,460	\$684,210
Bicycle and Pedestrian					
TALU	\$3,800	\$3,800	\$3,800	\$7,600	\$19,000
TALT Districtwide	\$17,250	\$17,250	\$17,250	\$34,500	\$86,250
Roadway Maintenance					
Local	\$311,500	\$453,600	\$504,300	\$1,803,800	\$3,073,200
FDOT Estimated Lee Portion	\$234,500	\$276,600	\$298,400	\$617,300	\$1,426,800

Federal and State Revenues

Federal funding for transportation projects is derived primarily from highway-user fees placed on the sale of motor fuels: 18.4 cents on gasoline and 24.4 cents on diesel. Additional revenues are generated through truck-related taxes. The revenue collected by the federal government is deposited into the Highway Trust Fund, where 2.86 cents is allocated to the Mass Transit Account with the remaining amount allocated to the Highway Account. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) then distribute funds from their respective accounts to each state according to a system of formula grants and discretionary allocations. Authorization for the collection of excise taxes comes from the transportation bill Fixing Americas Surface Transportation Act (FAST Act). Additional information on the collection and distribution of these revenues can be found at <https://www.fhwa.dot.gov/fastact/factsheets/htffs.cfm>.

Projections of Federal and State revenues for use in MPO LRTPs are generated by FDOT. Through enhanced federal, State, and MPO cooperation and guidance provided by the Metropolitan Planning Organization Advisory Council (MPOAC), FDOT has provided a long-range revenue estimate through 2045. At a statewide level, these forecasts are allocated to the seven FDOT Districts. FDOT District 1 has further subdivided the forecast of annual Federal and State revenue projections by MPO for use in the 2045 LRTP. **Appendix E** provides the methodology used for developing the Federal and State revenues used in developing the 2045 LRTP.

It's important to note that revenues available for activities managed by FDOT – maintenance, bridge repair/rehabilitation, safety, and operations – are dedicated at the District level sufficient to meet the statewide objectives and policies associated with each program. Additionally, revenue estimates for





support of aviation and seaport development are among the categories of state managed programs. Similar to the District Managed programs, revenue forecasts for these modal programs are set aside separate from the revenues available to the MPO for development of the LRTP.

Local Revenues

Historically, fuel taxes have represented a major portion of Lee County’s local transportation revenues. Currently, Lee County charges 12 cents of Local Option Fuel Taxes (LOFT) in addition to the three cents of State Fuel Tax for local use and dedicates approximately 50 percent of fuel tax revenues to transportation capacity expansion.

In addition to fuel taxes, Lee County established a roadways capital funding program called Growth Increment Funding (GIF). This funding strategy was first used in the County’s Capital Improvement Program in the 2016/2017 fiscal year. As a high growth county, the GIF funds allocated to transportation come from increases generated by ad valorem property taxes that results from increased taxable values resulting from growth and development. As traditional funding sources like fuel taxes, impact fees and toll revenues decline, the GIF revenues are based on property values rather than travel or traffic related factors.

Future projections of local revenues were based on continued growth in Lee County as discussed in **Chapter 3** and assume a continued commitment to funding maintenance and operations activities consistent with current allocations.

5.2 Cost Feasible Transit Projects

This section presents the Lee County 2045 Long Range Transit Element (LRTE) Cost Feasible Transit Plan, developed based on the evaluation and prioritization of the transit improvements identified in the 2045 transit needs and an estimate of revenues reasonably expected to be available in the next 25 years. Further details on the development of the Cost Feasible transit projects, revenue assumptions, and costs can be found in the separately bound Transit Technical Report.

The prioritization of transit improvements using the project evaluation process assisted in determining the implementation schedule for improvements expected to be funded. Operating and capital revenues projected based on various assumptions were compared with operating and capital costs to develop this financially constrained transit plan for the next 25 years, as summarized below and shown in **Map 5-1**.

Premium Transit Services

- **US-41 BRT** – Part semi-exclusive lane, part mixed-traffic BRT service along the US 41 corridor between downtown Fort Myers and Daniels Parkway at 10-minute weekday service frequency.

High-Frequency Core Network

- **15-minute or better service frequency** on Beach Link, Blue Trolley, Cape Coral Express, and Midtown-Downtown Circulator.
- **20-minute service frequency** on Beach Tram and routes 20 and 410.
- **30-minute service frequency** on routes 10, 15, 30, 50, 70, 100, 170, 240/600, 590, and 595.

2045 Transportation Plan





Commuter Express Services

- **Cape Coral- Lehigh Express** – An extension of the express service included in the LeeTran 2021-2030 TDP that connects Lehigh Acres to North Fort Myers.
- **Lee County to Collier County on I-75** – Regional commuter express service from Lee County to Collier County on I-75 (on general-purpose or future Managed Lanes).

Secondary/Feeder Network

- **Secondary/feeder network**, including routes 40, 80, 120, and 150 will continue to operate at their set frequencies from the LeeTran 2021-2030 TDP.

Microtransit

- **MOD Zones** – Assumes continuation of the Cape Coral, Estero, Lehigh Acres, North Fort Myers, and Shell Point MOD zones, as implemented by LeeTran 2021-2030 TDP.

Table 5-3 show the costs and revenues 2045 Cost Feasible Transit Plan, and **Table 5-4** shows the implementation years and service characteristics of the 2045 Cost Feasible Transit Plan. In addition, **Table 5-5** shows the 2045 Cost Feasible Plan implementation schedule, project costs, and unfunded needs.

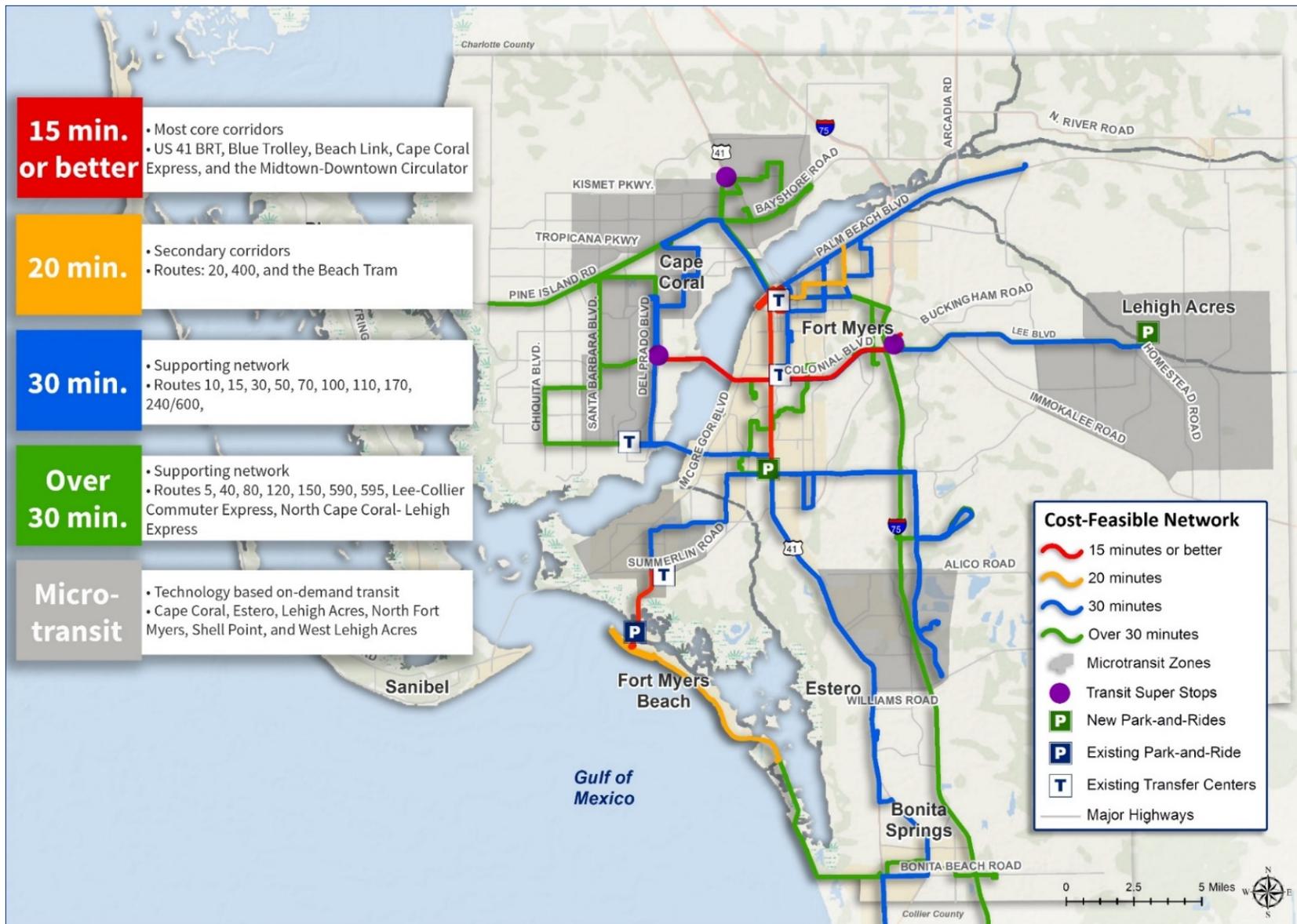
It is important to emphasize that this plan does not preclude the opportunity to delay or expedite any projects or implement any additional projects identified previously in the Needs Plan. If priorities change or funding assumptions do not materialize, some of these projects may become unfunded. If more funding than assumed becomes available, the remaining unfunded transit improvements in the 2045 transit needs should be prioritized for potential implementation within the 25-year time frame.

Table 5-3: Transit Cost Feasible Plan – Costs/Revenues Summary (in millions)

Costs/Revenues	2021–2025	2026–2030	2031–2040	2041–2045	Total (YOE)
Operating Cost	\$139.35	\$182.52	\$449.92	\$268.98	\$1,040.78
Capital Cost	\$35.27	\$33.41	\$72.88	\$150.35	\$291.90
Total Cost	\$174.62	\$215.93	\$522.80	\$419.33	\$1,332.68
Total Revenues	\$182.91	\$207.92	\$501.81	\$440.05	\$1,332.68
Fares	\$22.52	\$29.32	\$73.84	\$45.22	\$170.90
Local	\$72.44	\$83.53	\$209.10	\$148.24	\$513.31
State	\$23.98	\$34.53	\$66.57	\$64.04	\$189.12
Federal	\$63.97	\$60.54	\$152.29	\$182.55	\$459.35



Map 5-1: 2045 Cost-Feasible Transit Plan



2045 Transportation Plan





Table 5-4: 2045 Cost Feasible Implementation Plan by Route Frequency

Improvement	2045 Cost Feasible Plan		
	Implementation Year	Days of Service	Frequency (min.)
US-41 BRT/Route 140	2043	Mon-Sun	10
Blue Trolley (Route 500)	2022	Mon-Sun	12
Cape Coral Express	2043	Mon-Fri	15
Midtown-Downtown Circulator	2043	Mon-Sun	15
Beach Link (seasonal)	2022	Mon-Sun	15
Route 20	2040	Mon-Sat	20
Beach Tram (Route 420)	2022	Mon-Sun	20
Route 410 (410/490)	2022	Mon-Sun	20
Route 10	2028	Mon-Sat	30
Route 50	2028	Mon-Sun	30
Route 70	2028	Mon-Sun	30
Route 15	2034	Mon-Sun	30
Route 30	2028	Mon-Sat	30
Route 110	2028	Mon-Sun	30
Route 240/600	2025	Mon-Sun	30
Route 100	2028	Mon-Sun	30
Route 170	2028	Mon-Sun	30
Beach Link (off-season)	2022	Mon-Sun	30
Route 595	2028	Mon-Sun	45
Route 80	2022	Mon-Fri	45
Route 150	2028	Mon-Sun	60
Route 40	2022	Mon-Sat	60
Route 5	2022	Mon-Sat	60
Route 120	2022	Mon-Sun	60
Route 590	2022	Mon-Sun	60
Lee-Collier Commuter Express on I-75	2035	Mon-Fri	60
Cape Coral-Lehigh Express	2035	Mon-Fri	60
Microtransit Services			
Cape Coral MoD	2023	Mon-Sun	On-demand
Estero MoD	2024	Mon-Sun	On-demand
Lehigh Acres MoD	2022	Mon-Sun	On-demand
North Fort Myers MoD	2023	Mon-Sun	On-demand
Shell Point MoD	2025	Mon-Sun	On-demand
West Lehigh Acres	2025	Mon-Sun	On-demand

2045 Transportation Plan





Table 5-5: 2045 Transit Cost Feasible Implementation Plan

LRTE Improvements	Implementation Year	Annual Operating Cost (2020\$)	Total Capital Cost (2020\$)
Implement LeeTran 2021-2030 TDP			
Evolve Network	2021-2030	\$29,156,789 ¹	\$52,425,838
Add Premium Transit Services			
US 41 BRT	2043	\$2,834,096	\$56,307,000
Colonial BRT	Unfunded	\$4,251,144	\$75,286,120
MLK BRT	Unfunded	\$2,834,096	\$50,222,200
Improve Frequency to 30-minute or Better			
Route 15 ²	2034	\$510,652	\$505,000
Route 20 ²	2040	\$303,104	\$505,000
Route 5	Unfunded	\$394,725	\$505,000
Route 10	Unfunded	\$839,925	\$2,020,000
Route 150	Unfunded	\$543,615	\$505,000
Route 590	Unfunded	\$879,822	\$1,010,000
Add New Services			
Lee-Collier Commuter Express on I-75	2035	\$716,672	\$2,020,000
North Cape Coral-Lehigh Commuter Express ³	2035	\$358,336	\$505,000
Cape Coral Express	2043	\$1,146,675	\$1,515,000
Midtown-Downtown Circulator	2043	\$1,206,676	\$1,010,000
Autonomous Midtown-Downtown Circulator ⁴	Unfunded	\$1,000,000	-
Downtown Fort Myers- Airport LX	Unfunded	\$832,229	\$1,010,000
FGCU-Lehigh Connector	Unfunded	\$832,229	\$1,010,000
Summerlin Road	Unfunded	\$454,633	\$505,000
McGregor Blvd	Unfunded	\$909,266	\$1,010,000
Add New MOD Services			
Bonita Springs MOD	Unfunded	\$233,530	\$220,000
North Cape Coral MOD	Unfunded	\$233,530	\$220,000
West Cape Coral MOD	Unfunded	\$233,530	\$220,000

Note:

1. The average annual operating cost to implement the TDP (in 2020\$).
2. Shows incremental costs only.
3. Shows Incremental cost to expand the North Fort Myers to Lehigh Commuter Express service already included in LeeTran 2021-2030 TDP.
4. Assumes purchasing AV services from a provider. Therefore, no capital costs are assumed.

2045 Transportation Plan





5.3 Non-Motorized (Bicycle and Pedestrian)

Bicycle and Pedestrian projects included in the Cost Feasible Plan were selected from the projects in the 2040 Cost Feasible Plan, MPO bicycle/pedestrian priorities, and the high priority projects from each of the local jurisdiction bicycle pedestrian plans (or project lists). The Bicycle and Pedestrian Cost Feasible Project list is shown in **Table 5-6**. The City of Fort Myers Bicycle Pedestrian Master Plan is currently underway and **Table 5-6** will be amended to reflect priority projects identified in the Master Plan. Furthermore, the project list does not include the regional SUN Trail projects as state grant applications and other grant funding will be pursued to fund these gaps. The revenue allocated for the Cost Feasible Plan bicycle and pedestrian projects include the Transportation Alternatives (TALU) funds designated for these projects. Additionally, the MPO has set aside \$2.5 million a year in federal TMA funds for bicycle and pedestrian projects as indicated in **Table 5-16**.



Table 5-6: Bicycle Pedestrian Cost Feasible Project List

Jurisdiction	Roadway	Project Limits	Length	Facility	Phase	Cost	Notes
Fort Myers Beach	Estero Blvd	Phase 2	N/A	Replace SW Pavers	CST	\$469,322	
Fort Myers Beach	Estero Blvd	Phase 3	N/A	Replace SW Pavers	CST	\$413,194	
Bonita Springs	US 41	Bonita Beach Rd to Pelican Colony Blvd	4.30	Shared Use Path	PE + CST	\$4,793,873	
Bonita Springs	West Terry Street	Pine Avenue to Old US 41	0.25	Shared Use Path	CST	\$471,870	
Bonita Springs	Pauling/Pine Street	Pauling St: Pine Ave to Old US 41	0.22	Shared Use Path	CST	\$123,786	
Bonita Springs	Bonita Drive	Old US 41 to Streetsboro Lane	1.00	Shared Use Path	CST	\$370,021	
Bonita Springs	Cochran Street	Cochran: Pine Ave to Old US 41	0.20	Shared Use Path	CST	\$180,705	
Bonita Springs	East Terry Street	Imperial Pkwy to Lyles Road	0.17	Shared Use Path	CST	\$529,697	
Bonita Springs	East Terry Street	Lyles Road to Palm Bay Court	0.19	Shared Use Path	CST	\$783,482	
Bonita Springs	East Terry Street	Palm Bay Court to I-75	0.23	Shared Use Path	CST	\$822,547	
Cape Coral	Skyline Blvd	Cape Coral Pkwy to El Dorado Pkwy	0.93	Shared Use Path	CST	\$533,912	
Cape Coral	Gator Circle	De Navarra to Ramsey	1.04	Sidewalk	CST	\$392,782	
Cape Coral	Gator Circle/Averill	Averill to De Navarra	0.82	Sidewalk	CST	\$449,385	
Cape Coral	SW 10th Street	Chiquita Blvd to Skyline Blvd	0.97	Sidewalk	CST	\$561,600	
Cape Coral	Gator Circle	Ramsey to NE 37th Terrace	1.10	Sidewalk	CST	\$412,620	
Cape Coral	Gator Circle	NE 37th Terrace to Averill	1.43	Sidewalk	CST	\$529,661	
MPO	US 41	Magnolia Landing to Charlotte Co/L	1.08	Sidewalk	PE + CST	\$1,860,000	
MPO	US 41	Caloosahatchee Bridge	1.00	Sidewalk	PE	\$3,750,000	CST Funding other sources
Lee County	Pine Island Road	Stringfellow Rd to Veterans Blvd	5.47	Shared Use Path	CST	\$4,595,894	
Lee County	Alabama Rd	SR 82 to Paddock Street	2.20	Sidewalk	PE + CST	\$1,728,000	
MPO	SW Pine Island	Veterans Pkwy to Santa Barbara Blvd	4.28	Shared Use Path	PE + CST	\$4,135,450	
Lee County	Summerlin Road	Pine Ridge Rd to Winkler Rd	2.48	Shared Use Path	PE + CST	\$2,396,250	
Bonita Springs	E Terry St	Morton Ave to Bonita Grande Drive	0.80	Shared Use Path	PE + CST	\$773,000	
Lee County	McGregor Blvd (SR 867)	Sanibel Causeway to McGregor Blvd	1.90	Shared Use Path	PE + CST	\$1,835,800	
Lee County	North River Rd	SR 31 to Hendry County Lane	11.90	Shared Use Path	PE + CST	\$11,500,000	
Lee County	Treeline Ave	Colonial Blvd to Pelican Preserve Blvd	0.64	Shared Use Path	PE + CST	\$617,600	
Estero	Williams Road	Kings Road to Three Oaks Parkway	1.10	Sidewalk	PE + CST	\$864,000	
Estero	Corkscrew Road	Koreshan St. Park to US 41	0.50	SUP & Sidewalk	PE + CST	\$942,000	
Lee County	Gladiolus Drive	Maida Lane to US 41	0.68	Sidewalk	PE + CST	\$534,100	
Lee County	Daniels Parkway	Commerce Drive to SR 82	2.50	Shared Use Path	PE + CST	\$2,415,000	
Lee County	Joel Blvd.	Ocean Park Drive to Tuckahoe Road	0.75	Shared Use Path	PE + CST	\$724,300	
Fort Myers Beach	First/Crescent/Third & Fifth Streets	First Street to Estero Blvd		Sidewalks	PE + CST	\$223,200	
Cape Coral	Hancock Bridge Pkwy	Ne 15th Place to City Limits	1.20	Sidewalk	PE + CST	\$942,500	
Cape Coral	Garden Blvd	DeNavarra Pkwy to Del Prado Blvd.	0.70	Sidewalk	PE + CST	\$549,800	
Cape Coral	Andalusia Blvd.	Diplomat Pkwy. To End (north)	2.10	Sidewalk	PE + CST	\$1,649,400	
Cape Coral	SE 8th Street	Santa Barbara Blvd to Cultural Park Blvd	1.00	Sidewalk	PE + CST	\$785,500	
Cape Coral	SE 24th Avenue	Viscaya Pkwy to SE 15th Terrace	1.60	Sidewalk	PE + CST	\$1,256,700	
Cape Coral	Pondella Road	NE Pine Island Road to Hibiscus Drive	0.90	Sidewalk	PE + CST	\$636,200	
Fort Myers Projects							TBD from Master Plan
Update/Expand Wayfinding Plan and Implement Buffered Bike Lanes			3.00	Bike Lane	PE + CST	\$250,000	
Bike Ped Safety Action Plan Countermeasures				TBD		\$2,000,000	

Total Available Revenues **\$60,303,151**
\$65,200,000





5.4 Cost Feasible Roadway Projects

5.4.1 Project Cost Assumptions

Planning-level cost estimates were developed for each roadway widening and intersection modification project using the FDOT District 1 Costing Tool Version 2.0 unless specific cost estimates had been developed through a Design or Engineering study.

Inflation Factors

Unit Cost estimates based on the FDOT District 1 Costing Tool are listed in FY 2019 dollars. Since the passage of SAFETEA-LU was signed into law in August 2005, MPOs have been required to develop a cost feasible LRTP using inflation rates provided by FDOT to reflect the future YOE dollars. Inflation factors are listed in **Table 5-7** by project phase and the corresponding time period that were used to convert project costs from 2019 dollars to the future YOE costs presented later in this chapter.

Table 5-7: Inflation Factors

Time Period	Product Support Factor	Urban Right-of-Way Factor	Suburban and Rural Right-of-Way Factor	Construction Factor
2024-2025	1.189	1.045	1.045	1.256
2026-2030	1.250	1.189	1.160	1.341
2031-2035	1.414	1.512	1.345	1.577
2036-2045	1.600	2.196	1.684	1.855

Roadway Costs

Where there were not more detailed cost estimates available from the local jurisdictions or FDOT, roadway construction unit costs were derived from the standard roadway typical sections and based on a per centerline mile basis as provided in Version 2.0 of the Costing Tool with Version 3.1 Costing Data. Costs for intersection, roundabout and interchange projects were also developed for the Costing Tool when local, more detailed data, was not available and are included as a per intersection cost.

Cost estimates for the Project Development and Environmental (PD&E) and Preliminary Engineering (PE) phases were calculated based on a percentage of overall construction cost at five and 15 percent, respectively. In addition to construction, PD&E, and PE costs, right-of-way costs were also considered in the overall project cost estimates. Right-of-way costs were estimated based on choosing a range from high to low on a per acre basis for each area type (urban, suburban, and rural). The unit costs for this were also provided by FDOT District One.

5.4.2 Roadway Projects

The evaluation criteria detailed in **Chapter 4** were used to rank transportation projects identified in the Needs Plan **Table 4-1**. The result of this prioritization and evaluation of the roadway needs compared with the availability of revenues resulted in the 2045 Cost Feasible Projects displayed in **Map 5-2**. Included in the Cost Feasible Plan are

- Reconstruction of 9 bridges
- 6 major intersection/interchange improvements





- Construction of 11 new roadway corridors
- 29 roadway widening projects

Using the D1RPM Travel Demand Model, six alternative transportation networks were evaluated in developing the Cost Feasible list of projects. This analysis included testing the effect of included future connected and automated vehicles (CAV). The testing of CAV was based on the 2018 FDOT *Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and shared-Use Vehicles (ACES)*. **Appendix F** includes the modeling results and a summary of the CAV technology testing.

Table 5-8 through **Table 5-15** on the following pages provide a detail listing of each project listed in the Cost Feasible Plan by jurisdiction. **Table 5-16** highlights the federal transportation revenues that are allocated for future transit, traffic operations, and bicycle/pedestrian infrastructure improvements.



Table 5-8: Cost Feasible Projects: Lee County Funded Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
Big Carlos Bridge Replacement	N/A	N/A	Bridge	CST	\$47,810	\$0	\$0	\$0	\$47,810	\$47,810
Cape Coral Bridge Replacement	N/A	N/A	Bridge	PE	\$9,000	\$0	\$0	\$0	\$9,000	\$9,000
Cape Coral Bridge Replacement	N/A	N/A	Bridge	CST		\$128,000	\$0	\$0	\$128,000	\$99,100
New Pass, Little Carlos and Big Hickory Bridges	N/A	N/A	Bridges	PE	\$4,266	\$0	\$0	\$0	\$4,266	\$4,266
New Pass, Little Carlos and Big Hickory Bridges	N/A	N/A	Bridge	CST		\$59,000	\$0	\$0	\$59,000	\$46,716
Orange River Bridge Replacement	N/A	N/A	Bridge	PE/CST		\$0	\$3,820	\$0	\$3,820	\$2,420
Alva Bridge Replacement	N/A	N/A	Bridge	PE/CST		\$0	\$28,210	\$0	\$28,210	\$17,889
Harbor Drive Bridge Replacement	N/A	N/A	Bridge	PE/CST		\$0	\$3,220	\$0	\$3,220	\$2,044
Stringfellow Bridge Replacement	N/A	N/A	Bridge	PE/CST		\$0	\$2,760	\$0	\$2,760	\$1,751
Hancock Creek Bridge Replacement	N/A	N/A	Bridge	PE/CST		\$0	\$6,180	\$0	\$6,180	\$3,919
Alico Road/Connector	Airport Haul Road	SR 82	Widen 2L to 4L/New 2L	PE/ROW	\$7,240	\$0	\$0	\$0	\$5,070	\$3,250
Alico Road/Connector	Airport Haul Road	SR 82	Widen 2L to 4L/New 2L	CST		\$124,000	\$0	\$0	\$124,000	\$96,881
Airport Haul Road Ext	Alico Road	Corkscrew Road	New 2L	PE		\$0	\$12,500	\$0	\$12,500	\$8,800
Airport Haul Road Ext	Alico Road	Corkscrew Road	New 2L	ROW		\$0	\$0	\$32,940	\$32,940	\$15,000
Airport Haul Road Ext	Alico Road	Corkscrew Road	New 2L	CST		\$0	\$0	\$109,920	\$109,920	\$59,260
Bonita Beach Road	US 41	Old US 41	4L to 6L	ROW/CST		\$0	\$33,900	\$0	\$33,900	\$25,700
Burnt Store Road	SR 78	Tropicana Pkwy	Widen 2L to 4L	CST	\$18,000	\$0	\$0	\$0	\$0	
Burnt Store Road	Van Buren Parkway	Janis Road	Widen 2L to 4L	CST	\$0	\$0	\$12,535	\$0	\$12,535	\$7,950
Burnt Store Road	Janis Road	Durden Parkway	Widen 2L to 4L	CST	\$0	\$0	\$14,700	\$0	\$14,700	\$9,300
Burnt Store Road	Durden Parkway	Charlotte Co/Line	Widen 2L to 4L	CST	\$0	\$0	\$15,900	\$0	\$15,900	\$10,100
Corkscrew Road	Ben Hill Griffin Parkway	Alico Road	Widen 2L to 4L	CST	\$41,385	\$0	\$0	\$0	\$41,385	\$41,385

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction



Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
Buckingham Road	Orange River	Palm Beach Blvd	Widen 2L to 4L	PE		\$0	\$7,420	\$0	\$7,420	\$5,250
Buckingham Road	Orange River	Palm Beach Blvd	Widen 2L to 4L	ROW		\$0	\$15,120	\$0	\$15,120	\$10,000
Buckingham Road	Orange River	Palm Beach Blvd	Widen 2L to 4L	CST		\$0	\$0	\$64,930	\$64,930	\$35,000
Corkscrew Road	Three Oaks Pkwy	I-75	Widen 4L to 6L	PE		\$1,010	\$0	\$0	\$1,010	\$810
Corkscrew Road	Three Oaks Pkwy	I-75	Widen 4L to 6L	ROW		\$0	\$3,020	\$0	\$3,020	\$2,000
Corkscrew Road	Three Oaks Pkwy	I-75	Widen 4L to 6L	CST		\$0	\$7,100	\$0	\$7,100	\$4,500
Crystal Drive	US 41	Metro Parkway	Reconstruct/3L	PE/ROW/CST		\$0	\$16,160	\$0	\$16,160	\$10,250
Crystal Drive Extension	Plantation Road	Six Mile Cypress Pkwy	New 2L	PE/ROW/CST		\$0	\$12,730	\$0	\$12,730	\$8,075
Homestead Road	Milwaukee Boulevard	Sunrise Boulevard	Widen 2L to 4L	PE		\$2,810	\$0	\$0	\$2,810	\$2,250
Homestead Road	Milwaukee Boulevard	Sunrise Boulevard	Widen 2L to 4L	ROW		\$0	\$6,050	\$0	\$6,050	\$4,000
Homestead Road	Milwaukee Boulevard	Sunrise Boulevard	Widen 2L to 4L	CST		\$0	\$23,660	\$0	\$23,660	\$15,030
Homestead Road	Milwaukee Boulevard	SR 82	Widen 2L to 4L	PE		\$0	\$5,520	\$0	\$5,520	\$3,900
Homestead Road	Milwaukee Boulevard	SR 82	Widen 2L to 4L	ROW		\$0	\$9,830	\$0	\$9,830	\$6,500
Homestead Road	Milwaukee Boulevard	SR 82	Widen 2L to 4L	CST		\$0	\$0	\$48,230	\$48,230	\$26,000
Littleton Road	Corbett Road	US 41	Widen 2L to 3L	CST	\$12,000	\$0	\$0	\$0	\$12,000	\$12,000
Daniels Parkway	Gateway Boulevard	SR 82	Widen 4L to 6L	PE		\$0	\$4,960	\$0	\$4,960	\$4,960
Daniels Parkway	Gateway Boulevard	SR 82	Widen 4L to 6L	CST		\$0	\$0	\$61,360	\$61,360	\$33,080
Ortiz Avenue	Dr Martin Luther King Jr Blvd	Luckett Road & Luckett to I-75	Widen 2L to 4L	PE	\$1,450	\$0	\$0	\$0	\$1,450	\$1,450
Ortiz Avenue	Dr Martin Luther King Jr Blvd	Luckett Road & Luckett to I-75	Widen 2L to 4L	CST		\$25,200	\$0	\$0	\$25,570	\$19,400
Ortiz Avenue	Luckett Road	Palm Beach Blvd	Widen 2L to 4L	CST		\$0	\$26,590	\$0	\$26,590	\$16,860
Ortiz Avenue	Colonial Boulevard	Dr Martin Luther King Jr Blvd	Widen 2L to 4L	CST	\$20,025	\$0	\$0	\$0	\$20,025	\$20,025
Three Oaks Extension North	North of Alico Road	Daniels Parkway	New 4L	CST	\$73,550	\$0	\$0	\$0	\$73,550	\$73,550
Veterans Parkway		at Santa Barbara Boulevard	Intersection	PE		\$0	\$5,480	\$0	\$5,480	\$3,970
Veterans Parkway		at Santa Barbara Boulevard	Intersection	CST		\$0	\$39,730	\$0	\$39,730	\$26,480
Colonial Boulevard	McGregor Boulevard	US 41	Major Intersections/TBD	CST		\$0	\$70,100	\$0	\$70,100	\$44,450
Major Intersection Improvements			Operational & Safety Improvements	PE/ROW/CST			\$40,000	\$100,000	\$140,000	\$74,600
40th Street Extension	East end of 4th Street	Alabama Road	New 2L	PE		\$0	\$440	\$0	\$440	\$320
40th Street Extension	East end of 4th Street	Alabama Road	New 2L	ROW		\$0	\$0	\$4,850	\$4,850	\$2,070
40th Street Extension	East end of 4th Street	Alabama Road	New 2L	CST		\$0	\$0	\$4,050	\$4,050	\$2,120

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction

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Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
Corkscrew Road	US 41	Three Oaks Parkway	4L to 6L	PE		\$0	\$3,260	\$0	\$3,260	\$2,300
Corkscrew Road	US 41	Three Oaks Parkway	4L to 6L	ROW		\$0	\$0	\$1,060	\$1,060	\$500
Corkscrew Road	US 41	Three Oaks Parkway	4L to 6L	CST		\$0	\$0	\$28,490	\$28,490	\$15,360
Sunshine Blvd	SR 82	Lee Blvd	2L to 4L	PE		\$0	\$8,950	\$0	\$8,950	\$6,330
Sunshine Blvd	SR 82	Lee Blvd	2L to 4L	CST		\$0	\$0	\$78,230	\$78,230	\$42,170
Luckett Road	East of I-75	Buckingham Road	New 4L	PE		\$0	\$0	\$12,771	\$12,771	\$6,230
Luckett Road	East of I-75	Buckingham Road	New 4L	ROW		\$0	\$0	\$61,828	\$61,828	\$30,160
Luckett Road	East of I-75	Buckingham Road	New 4L	CST		\$0	\$0	\$85,178	\$85,178	\$41,550
Luckett Road	Buckingham Road	Gunnery Road	Widen 2L to 4L	PE		\$0	\$0	\$6,478	\$6,478	\$3,160
Luckett Road	Buckingham Road	Gunnery Road	Widen 2L to 4L	ROW		\$0	\$0	\$17,500	\$17,500	\$8,540
Luckett Road	Buckingham Road	Gunnery Road	Widen 2L to 4L	CST		\$0	\$0	\$43,130	\$43,130	\$21,040
Luckett Road	Gunnery Road	Sunshine Boulevard	New 4L	PE		\$0	\$0	\$8,670	\$8,670	\$4,230
Luckett Road	Gunnery Road	Sunshine Boulevard	New 4L	ROW		\$0	\$0	\$41,960	\$41,960	\$20,470
Luckett Road	Gunnery Road	Sunshine Boulevard	New 4L	CST		\$0	\$0	\$57,800	\$57,800	\$28,200
Total Cost:					\$234,726	\$340,020	\$413,255	\$869,375	\$1,837,576	\$1,194,821
Revenues:					\$234,726	\$341,500	\$457,800	\$1,062,960	\$2,096,986	

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction



Table 5-9: Cost Feasible Projects: State/Other Arterial/ Federal SU Funded Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)	Funding Sources
Countywide Signal System Updates, Final Phase			ITS	PE		\$1,500	\$0	\$0	\$1,500	\$1,200	SU, SA, DDR
Countywide Signal System Updates, Final Phase			ITS	CST		\$10,730	\$0	\$0	\$10,730	\$8,000	SU, SA, DDR
Metro Parkway	South of Daniels Parkway	Winkler Avenue	Widen 4L to 6L/CFI	ROW	\$18,070	\$0	\$0	\$0	\$18,070	\$18,070	DDR, DS,DIH
Metro Parkway	South of Colonial Blvd	Winkler Avenue	Widen 4L to 6L/CFI	CST		\$49,620	0	\$0	\$49,620	\$37,700	OA
Metro Parkway	South of Daniels Parkway	North of Daniels Parkway	CFI	CST		\$27,620	0	\$0	\$27,620	\$20,900	OA
Metro Parkway	North of Daniels Parkway	South of Colonial Blvd.	Widen 4L to 6L	CST		\$37,820	0	\$0	\$37,820	\$28,650	OA
Big Carlos Bridge Replacement Repayment			Reconstruct Bridge	CST	\$8,500	\$16,500	\$0	\$0	\$25,000	\$21,000	SU/SA
San Carlos Boulevard	Estero Blvd	Summerlin Road	Intersection Improvements	CST	\$5,990	\$0	\$0	\$0	\$5,990	\$5,990	SU/TALU
Old US 41	Collier County Line	Bonita Beach Road	Add Lanes & Reconstruct	PE		\$2,640	\$0	\$0	\$2,640	\$2,110	SU
Old US 41	Collier County Line	Bonita Beach Road	Add Lanes & Reconstruct	ROW		\$5,800	\$0	\$0	\$5,800	\$4,880	SU
Old US 41	Collier County Line	Bonita Beach Road	Add Lanes & Reconstruct	CST		\$0	\$22,170	\$0	\$22,170	\$14,300	SU
US 41 at Six Mile Cypress			Intersection Improvements	PE		\$4,690	\$0	\$0	\$4,690	\$3,553	OA
US 41 at Six Mile Cypress			Intersection Improvements	ROW		\$0	\$7,560	\$0	\$7,560	\$4,880	OA
US 41 at Six Mile Cypress			Intersection Improvements	CST		\$0	\$39,430	\$0	\$39,430	\$29,870	OA
SR78	W. of Santa Barbara	24th Avenue	Widen 4L to 6L	PD&E		\$0	\$3,090	\$0	\$3,090	\$2,190	OA
SR 78	W. of Santa Barbara	24th Avenue	Widen 4L to 6L	PE		\$0	\$9,270	\$0	\$9,270	\$6,000	OA
SR 78	W. of Santa Barbara	24th Avenue	Widen 4L to 6L	CST		\$0	\$0	\$81,080	\$81,080	\$43,710	OA
SR 78	I-75	SR 31	Widen 2L to 4L	PE		\$3,080	\$0	\$0	\$3,080	\$2,330	OA
SR 78	I-75	SR 31	Widen 2L to 4L	ROW		\$0	\$6,770	\$0	\$6,770	\$4,370	OA
SR 78	I-75	SR 31	Widen 2L to 4L	CST		\$0	\$25,860	\$0	\$25,860	\$16,700	OA
SR 78	Old US 41	Slater Road	Widen 4L to 6L	PD&E		\$0	\$1,920	\$0	\$1,920	\$1,360	OA
SR 78	Old US 41	Slater Road	Widen 4L to 6L	PE		\$0	\$0	\$8,360	\$8,360	\$4,080	OA
SR 78	Old US 41	Slater Road	Widen 4L to 6L	CST		\$0	\$0	\$50,400	\$50,400	\$27,200	OA

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)	Funding Sources
Fowler Street	Metro/Fowler Cross over	Dr Martin Luther King Jr Blvd	Reconstruction	PD&E/PE/ROW/CST		\$5,500	\$28,700	\$0	\$34,200	\$22,670	OA
Burnt Store Road	Van Buren Parkway	Charlotte County Line	Widen 2L to 4L	PE		\$8,090	\$0	\$0	\$8,090	\$6,130	SU
Burnt Store Road	Van Buren Parkway	Charlotte County Line	Widen 2L to 4L	ROW		\$15,680	\$0	\$0	\$15,680	\$13,514	SU
Burnt Store Road	Van Buren Parkway	Janis Road	Widen 2L to 4L	CST		\$0	\$12,535	\$0	\$12,535	\$7,950	SU, LF
Burnt Store Road	Janis Road	Durden Parkway	Widen 2L to 4L	CST		\$0	\$14,700	\$0	\$14,700	\$9,300	SU, LF
Burnt Store Road	Durden Parkway	Charlotte Co/Line	Widen 2L to 4L	CST		\$0	\$15,900	\$0	\$15,900	\$10,100	SU, LF
SR 31	SR 80	SR 78	Widen 2L to 6L	ROW		\$0	\$23,780	\$0	\$23,780	\$16,400	OA
SR 31	SR 80	SR 78	Widen 2L to 6L	CST		\$0	\$0	\$164,000	\$164,000	\$80,000	OA
Cape Coral Evacuation Study			Access	Planning	\$300	\$0	\$0	\$0	\$300	\$300	SU, LF
US 41/Bonita Beach Road	Intersection		Intersection	PE		\$3,190	\$0	\$0	3,190	2,400	OA
US 41/Bonita Beach Road	Intersection		Intersection	ROW		\$5,940	\$0	\$0	5,940	4,500	OA, LF, SU
US 41/Bonita Beach Road	Intersection		Intersection	CST		\$0	\$26,800	\$0	26800	17,300	OA, LF, SU
US 41/SR 78	Intersection		Intersection	PE		\$750	\$0	\$0	750	570	OA
US 41/SR 78	Intersection		Intersection	CST		\$8,050	\$0	\$0	8050	6,100	OA
ACES Technology Support				Capital		\$5,000	\$9,000	\$50,000	\$64,000	\$33,900	OA, SU
Transit Operations Congestion Management				OPS							OA
Major Intersections/Interchanges			Operational & Safety Improvements	P/R/CST		\$10,000	\$10,000	\$150,000	\$170,000	\$88,300	OA, SU
Total Cost:					\$32,860	\$222,200	\$257,485	\$503,840	\$1,016,385	\$628,477	
Revenues:					\$32,860	\$226,600	\$258,020	\$538,910	\$1,056,390		

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-Way; CST: Construction

Funding Sources - SU: Federal Surface Transportation Program Urban Area funds >200,00; SA: Federal Surface Transportation Program any area; OA: State Other Arterial funding; DDR: State District Dedicated Revenue; LF: Local Funding; DIH: State District In-house

Other - ACES: Automated, Connected, Electric & Shared Vehicle Technology



Table 5-10: Cost Feasible Projects: City of Bonita Springs Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
US 41 at Bonita Beach Road			Intersection	PE		\$1,980	\$0	\$0	\$1,980	\$1,500
US 41 at Bonita Beach Road			Intersection	ROW		\$5,000	\$0	\$0	\$5,000	\$3,800
US 41 at Bonita Beach Road			Intersection	CST		\$0	\$11,200	\$0	\$11,200	\$7,200
Bonita Beach Road	Old US 41	US 41	Reconstruction	CST		\$0	\$42,930	\$0	\$42,930	\$27,700
Sandy Lane Extension	Strike Lane	Pelican Colony	New 2L	PE		\$0	\$3,400	\$0	\$3,400	\$1,650
Sandy Lane Extension	Strike Lane	Pelican Colony	New 2L	ROW		\$0	\$0	\$22,730	\$22,730	\$10,660
Sandy Lane Extension	Strike Lane	Pelican Colony	New 2L	CST		\$0	\$0	\$29,710	\$29,710	\$11,090
Total Cost:						\$6,980	\$57,530	\$52,440	\$116,950	\$63,600
Revenues:						\$39,270	\$58,090	\$200,861	\$298,221	

Table 5-11: Cost Feasible Projects: City of Cape Coral Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
Diplomat Parkway	Burnt Store Road	US 41	4L to 4L Limited Access	PE		\$0	\$7,104		\$7,104	\$4,580
Diplomat Parkway	Burnt Store Road	US 41	4L to 4L Limited Access	ROW		\$0	\$10,840		\$10,840	\$7,000
Diplomat Parkway	Burnt Store Road	US 41	4L to 4L Limited Access	CST		\$0	\$0	\$77,380	\$77,380	\$37,750
Chiquita Boulevard	Cape Coral Parkway	Pine Island Road	Widen 4L to 6L	PE		\$0		\$14,880	\$14,880	\$7,250
Chiquita Boulevard	Cape Coral Parkway	Pine Island Road	Widen 4L to 6L	ROW		\$0	\$0	\$43,920	\$43,920	\$21,400
Chiquita Boulevard	Cape Coral Parkway	Pine Island Road	Widen 4L to 6L	CST		\$0	\$0	\$129,850	\$129,850	\$63,300
NE 24th Avenue	Pondella Road	NE 28th Street	Widen 2L to 4L	PE		\$5,490	\$0	\$0	\$5,490	\$4,160
NE 24th Avenue	Pondella Road	NE 28th Street	Widen 2L to 4L	ROW		\$23,070	\$0	\$0	\$23,070	\$17,500
NE 24th Avenue	Pondella Road	NE 28th Street	Widen 2L to 4L	CST		\$0	\$46,190	\$0	\$46,190	\$29,800
NE 24th Avenue	NE 28th Street	Del Prado Boulevard	New 4L	PE		\$2,770	\$0	\$0	\$2,770	\$2,100
NE 24th Avenue	NE 28th Street	Del Prado Boulevard	New 4L	ROW		\$9,000	\$10,500	\$0	\$19,500	\$13,600
NE 24th Avenue	NE 28th Street	Del Prado Boulevard	New 4L	CST		\$0	\$20,700	\$0	\$20,700	\$13,400
Total Cost:						\$40,330	\$95,334	\$266,030	\$401,694	\$221,840
Revenues:						\$42,689	\$97,000	\$298,590	\$438,279	

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction



Table 5-12: Cost Feasible Projects: City of Fort Myers Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2031-2040	Total Cost (YOE)	Total Cost (PDC)
Edison Ave Extension	Arcadia Street	Ortiz Avenue	New 2L	PE/ROW/CST	\$8,800	\$0	\$0	\$0	\$8,800	\$8,800
1st Street & 2nd Streets	Fowler Street	Palm Beach Blvd	Reconstruct to 2-way	PE/CST	\$11,211	\$0	\$0	\$0	\$11,211	\$11,211
Midtown Streetscape Improvements			Reconstruction	CST	\$11,000	\$0	\$0	\$0	\$11,000	\$11,000
Challenger Blvd Extension	Colonial Blvd	Winkler Avenue	New 2L	PE/ROW/CST		\$8,600	\$0	\$0	\$8,600	\$6,550
Hanson Street	US 41	Fowler Street	Widen 2L to 4L	PE		\$1,320	\$0	\$0	\$1,320	\$1,050
Hanson Street	US 41	Fowler Street	Widen 2L to 4L	ROW		\$0	\$8,720	\$0	\$8,720	\$5,770
Hanson Street	US 41	Fowler Street	Widen 2L to 4L	CST		\$0	\$11,080	\$0	\$11,080	\$7,030
Total Cost:					\$31,011	\$9,920	\$19,800	\$0	\$60,731	\$51,411
Revenues:					\$31,011	\$17,091	\$22,167	\$65,459	\$104,717	

Table 5-13: Cost Feasible Projects: Village of Estero Road Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
Williams Road	US 41	Via Coconut Road	Widen 2L to 4L	CST	\$2,786	\$0	\$0	\$0	\$2,786	\$2,786
Total Cost:					\$2,786	\$0	\$0	\$0	\$2,786	\$2,786
Revenues:					\$2,786	\$9,595	\$14,426	\$38,917	\$62,938	

Table 5-14: Cost Feasible Projects - Private Funding (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
SR 31	SR 78	Charlotte County Line	Widen 2L to 4L	PE/CST	\$60,000	\$0	0	\$0	\$60,000	\$60,000
East West	Ben Hill Griffin Pkwy	Alico Road	New 2L	PE/ROW/CST		\$41,000	\$0	\$0	\$41,000	\$31,070
Total Cost:					\$60,000	\$41,000	\$0	\$0	\$101,000	\$91,070
Revenues:					\$60,000	41,000	\$0	\$0	\$101,000	

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction

Table 5-15: Cost Feasible Projects: Strategic Intermodal System Projects (\$1,000)

Road Name	From	To	Improvement	Phase	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost (YOE)	Total Cost (PDC)
I-75	at Daniels Parkway		Interchange	PD&E	\$2,828	\$0	\$0	\$0	\$2,828	\$2,828
I-75	at Daniels Parkway		Interchange	DSB	\$19,332	\$0	\$0	\$0	\$19,332	\$19,332
I-75	at Colonial Boulevard		Interchange	CST	\$51,756	\$0	\$0	\$0	\$51,756	\$51,756
I-75	Collier County Line	SR 78	Managed lanes	PE	\$0	\$136,800	\$0	\$0	\$136,800	\$103,600
I-75	Collier County Line	SR 78	Managed lanes	ROW	\$0	\$0	\$271,300	\$0	\$271,300	\$175,030
I-75	Collier County Line	SR 78	Managed lanes	CST	\$0	\$0	\$0	\$1,125,900	\$1,125,900	\$549,200
SR 31	SR 80	SR 78	Widen 2L to 4L	PE	\$0	\$9,350	\$0	\$0	\$9,350	\$7,100
SR 80	SR 31	Buckingham Road	Widen 4L to 6L	PD&E	\$0	\$1,500	\$0	\$0	\$1,500	\$1,140
SR 80	SR 31	Buckingham Road	Widen 4L to 6L	PE	\$0	\$0	\$0	\$4,500	\$4,500	\$2,195
SR 82	Alabama	Homestead Road	Widen 4L to 6L	PE	\$0	\$0	\$0	\$2,189	\$2,189	\$1,068
Total Cost:					\$73,916	\$147,650	\$271,300	\$1,132,589	\$1,625,455	\$913,249
Revenues:					\$73,916	\$147,650	\$271,300	\$1,132,589	\$1,625,455	

Project Phases - PD&E: Project Development and Environment; PE: Project Engineering and Design; ROW: Right-of-way Acquisition; CST: Project Construction

Table 5-16: Cost Feasible Projects: Federal TMA Urban Area Allocation Projects - Box funds (\$1,000)

Project Name	2021-2025	2026-2030	2031-2035	2036-2045	Total Cost
Traffic Operations Center Op.	\$ 230	\$ 230	\$ 230	\$ 460	\$ 1,165
Traffic Operations Projects	\$ 4,770	\$ 4,770	\$ 4,770	\$ 9,540	\$ 23,850
Bus Replacements	\$ 7,500	\$ 7,500	\$ 7,500	\$ 15,000	\$ 37,500
Bicycle Pedestrian Projects	\$ 12,500	\$ 12,500	\$ 12,500	\$ 25,000	\$ 62,500
Total Cost	\$ 25,000	\$ 25,000	\$ 25,000	\$ 50,000	\$125,015



5.5 TSM&O/Congestion Management Projects

Lee County’s Transportation Systems Management and Operations (TSM&O) Plan evaluated the county’s multimodal transportation system to identify and prioritize projects and strategies to improve the safety and mobility of the system. Many TSM&O strategies are also designed to take advantage of technology innovations and can be used to provide alternatives when funds are limited as near-term/mid-term improvements leading up to a traditional capacity project. The Cost Feasible Plan has allocated \$25 million to congestion management projects and strategies identified in the TSM&O Plan.

TSM&O strategies and projects were categorized into four types of strategies based on the transportation needs and best fit for priority corridors within Lee County. The four types of strategies include:

- **Capacity and operation** – systems to monitor traffic flow and roadway conditions, and provide strategies such as traffic monitoring, traffic information/warning, signal control/metering, and congestion mitigation to improve the flow of traffic on the corridor or region/surrounding area.
- **Transit** – systems to provide transit traveler information, transit signal priority, electronic fare payment, and other transit communication and management systems.
- **Safety** – systems to detect and verify incidents, along with coordinated agency response to the incidents. It also provides emergency call taking, public safety dispatch, and emergency center operations.
- **Connected and Autonomous (CAV)** – systems that synergize with the above strategies and take advantage of emerging technologies to create better communication between vehicles and infrastructure, as well as to help autonomous vehicles travel more efficiently.

The TSM&O Master Plan includes additional supporting document on the development of locations and strategies evaluated for the 2045 LRTP.

Emerging Technology and Technology Strategies

It is anticipated that transportation technology will continue to experience rapid changes in the near future. The Lee County MPO can stay up to date by continuing to foster partnership opportunities with private and public stakeholders alike. One of its largest partners is the FDOT, who is proactively preparing projects that include Connected Vehicle (CV) and Autonomous Vehicle (AV) applications for freeways and arterial corridors, as well as traffic signal operational technologies that provide Automated Traffic Signal Performance Measures (ATSPMs). One of the key infrastructure requirements for CV and AV applications are Roadside Units (RSUs), which transmit and receive traffic information to vehicles. On Board Units (OBUs) are required to engage RSUs to acquire information such as time, speed, and location. Coordination with local private industries such as local rental car companies, freight providers, and other fleet owners could also prepare Lee County MPO for future CV/AV applications, specifically for communications with potential implementation of OBUs to provide needed connectivity when equipping these fleets.





The United States Department of Transportation’s National Intelligent Transportation System (ITS) Reference Architecture provides an Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) set of layered perspectives to understand ITS architecture. ARC-IT can be described with four main Viewpoints (Enterprise, Functional, Physical, and Communication) and a fifth perspective of ITS service packages. These service packages focus on services or groups of services to describe parts of the ITS environment. While the services packages are not an exhaustive list of services, they give a thorough understanding of services available and being developed within the ITS industry.

5.6 Transportation Security

Lee County’s transportation system is vulnerable to natural disasters such as hurricanes, tropical storms, flooding, fires, and tornadoes. On September 10, 2017, Hurricane Irma arrived in Lee County and had both immediate and long-lasting impacts on the community. The County has taken a multifaceted approach to mitigate future storm impacts including emergency management coordination, increased training and preparedness messaging, and post disaster response. Lee County Natural Resources and the Lee County Department of Transportation both have worked since Hurricane Irma to clear drainage areas that were impacted by the storm as well as conducted preemptive clearing and flood mitigation around the county.

Transportation security is an important element for Lee County’s transportation system. Planning for transportation security focuses resources on preventing, managing, and responding to man-made threats and natural disasters. Plans that address hazard mitigation plans and resiliency at a county and regional level can provide guidance on how the MPO can build on existing transportation mitigation and security efforts in the area. These plans and reports include:

- **Lee County Joint Unified Local Mitigation Strategy (2017)** – This plan promotes mitigation initiatives to improve resilience to hazards posing a threat to communities within Lee County.
- **Lee County Comprehensive Emergency Management Plan** – This plan explains the processes, procedures, and tools put in place to prevent, prepare for, respond to, recover from, and mitigate against hazards in the region.
- **Southwest Florida Regional Evacuation Study (2010)** – This report updates the region’s evacuation population estimates, evacuation clearance times and public shelter demand. The study covers Charlotte, Collier, Glades, Hendry, Lee, and Sarasota Counties and their municipalities.

As a part of the LRTP process, elements of transportation security, hazard mitigation, and safety were integrated into the project prioritization and evaluation process. Resiliency, highlighted in **Chapter 3**, was also incorporated into the development of the LRTP.



Map 5-3: Lee County Evacuation Zones, Routes and Emergency Public Shelters

2021 Evacuation Zones and Public Shelters

EMERGENCY PUBLIC SHELTERS

Bonita Springs

1. Bonita Springs YMCA – 27200 Kent Rd

Cape Coral

2. Island Coast High School – 2125 DeNavarra Pkwy

Estero

3. Estero Recreation Center – 9200 Corkscrew Palm Blvd
4. Hertz Arena – 11000 Everblades Pkwy

Fort Myers

5. Dunbar High School – 3800 Edison Ave
6. South Fort Myers High School – 14020 Plantation Blvd
7. Treeline Elementary School - 10900 Treeline Ave

Lehigh Acres

8. East Lee County High School – 715 Thomas-Sherwin Ave
9. Harns Marsh Elementary School – 1800 Unice Ave N
10. Harns Marsh Middle School – 1820 Unice Ave N
11. Mirror Lakes Elementary School – 525 Charwood Ave
12. Tortuga Preserve Elementary School - 1711 Gunnerly Rd
13. Varsity Lakes Middle School – 801 Gunnerly Rd
14. Veterans Park Recreation Center – 49 Homestead Rd

North Fort Myers

15. North Fort Myers Academy of the Arts – 1856 Arts Way
16. North Fort Myers Recreation Center – 2000 N Recreation Park Way

San Carlos

17. Alico Arena – 12181 FGCU Lake Pkwy

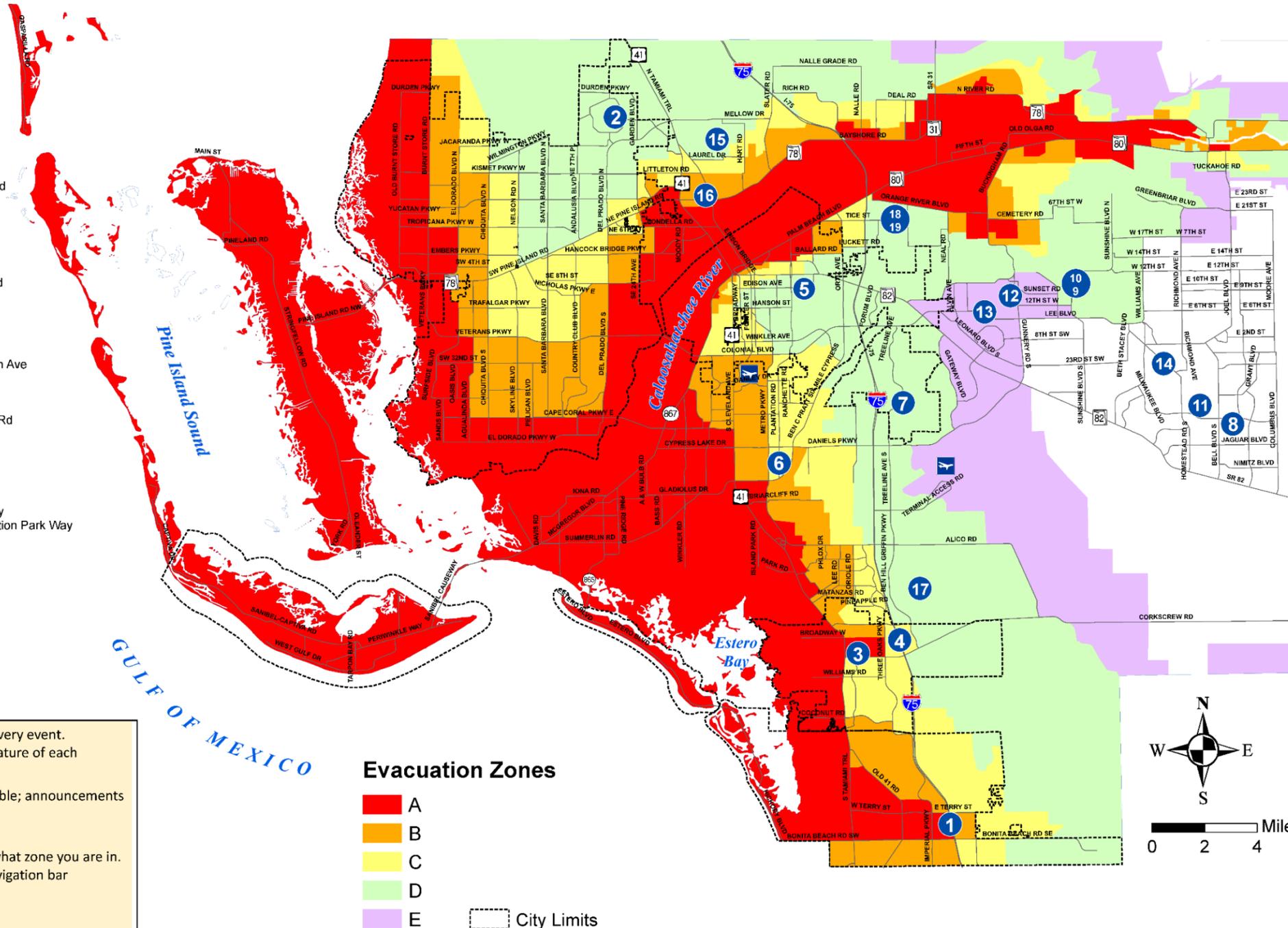
Tice

18. Manatee Elementary School – 5301 Tice St
19. Oak Hammock Middle School – 5321 Tice St

****Be Advised:** **NOT** all shelters will be open for every event. The opening of shelters is dependent upon the nature of each specific event.

Please Note: Pet-friendly sheltering will be available; announcements will be made at the time.

Know Your Evacuation Zone:
Visit our website www.LeeEOC.com to find out what zone you are in.
1. Click on "Know My Evacuation Zone" in the navigation bar
2. Click the Find My Evacuation Zone link
3. Enter your address in the search bar





5.7 Performance Evaluation

On May 27, 2016, FHWA and FTA issued the Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning Final Rule, which modified 23 CFR Part 450 and 49 CFR Part 613. Through revisions to the CFR, this rule detailed how state DOTs and MPOs must implement a suite of related transportation planning and transportation performance management provisions of MAP-21 and the FAST Act.

This performance-based program includes establishing national performance goals for Federal-aid highway programs and incorporating performance goals, measures, and targets into the process of identifying needed improvements and project selection at the MPO level. Performance measures are being implemented to improve the investment efficiency of Federal transportation funds, refocus investments on national transportation goals, increase the accountability and transparency of the Federal-aid highway program, and improve decision-making through performance-based planning and programming.

Additionally, evaluation of the 2045 Cost Feasible LRTP also includes a review of the potential impacts to Environmental Justice Communities and a look at current system-wide conditions.

5.7.1 Federally Required Performance Measures

The MPO is required to coordinate with state and public transportation providers to establish targets and performance-based measures to assess their multimodal transportation system. The Lee County MPO has documented these federally required performance measures in the MPO's System Performance Report which is attached as **Appendix B**.

Consistent with federally-required asset management planning, Florida Department of Transportation (FDOT) prioritizes safety and roadway preservation; two of the federally required performance measures. To meet established goals and objectives in these areas, FDOT District 1 provides adequate funding in its long range revenue forecast in these important areas before allocating funds to capacity programs. FDOT has included sufficient funding in its 2045 Revenue Forecast to meet the following statewide objectives and policies:¹

- **Resurfacing program:** Ensure that 80% of state highway system pavement meets Department standards;
- **Bridge program:** Ensure that 90% of FDOT-maintained bridges meet Department standards while keeping all FDOT-maintained bridges open to the public safe;
- **Operations and maintenance program:** Achieve 100% of acceptable maintenance condition standard on the state highway system.

FDOT has reserved funds in its 2045 Revenue Forecast to carry out its responsibilities and achieve its objectives for the non-capacity programs on the state highway system in each district and

¹ FDOT Office of Policy Planning, 2045 Revenue Forecast Lee County MPO, July 2018.

FDOT Established targets for the federally required pavement and bridge conditions under the Performance Measure Rule 2 include:

- 60% or more of the interstate pavement in good condition
- 40% or more of the non-interstate national highway system pavement in good condition
- 50% or more of the national highway system bridges in good condition, by deck area





metropolitan area. For the 2045 Revenue forecast, FDOT provided an estimate by District for the Resurfacing, Bridge and Operations & Maintenance Programs. For District 1, this totals \$11.7 billion between FYs 2021-2045.

5.7.2 2045 Travel Demand Model Performance Measures

The D1RPM analysis included the testing of alternative networks. For each alternative that was tested, a series of performance measures were summarized. **Table 5-17** includes a listing of the measures that were calculated for the existing conditions and the 2045 Cost Feasible network. As a result of the investment made in the 2045 LRTP for expanding the transportation infrastructure, the lane miles of roadways are expected to increase by nearly 12%. However, consistent with the expectations of population growth discussed in Chapter 2, travel is expected to grow by more than 70%. The result of this increase in travel demand comes with it the expectation that congestion, measured as the vehicle hours of travel, is also expected to increase. Other strategies included in the 2045 Cost Feasible Plan for alternative modes of travel, congestion management, and safety are expected to help in hot spot locations to address existing and future travel needs.

Table 5-17: D1RPM Performance Measures

Performance Measure	Existing Conditions	2045 Cost Feasible
Roadway Lane Miles	3,273	3,665
Vehicle Miles Traveled	14,310,500	24,396,899
Vehicle Hours of Travel	376,686	688,398

5.7.3 Sociocultural Effects and Environmental Justice

An analysis of the transportation investments in the 2045 LRTP that improved access within and adjacent to the Environmental justice areas was done to quantify the benefits of providing better access. These investments include transit and bicycle/pedestrian projects, as these areas also coincide with the lowest vehicle ownership areas where there are greater needs for other multi-modal options to access work, medical, education and shopping services. The total investment for these projects in the cost feasible plan is estimated to be \$1.62 billion over the life of the plan, this equates to 25% of the total funding in the Cost Feasible Plan. These estimates do not include bridge and roadway maintenance for existing or future projects or other non-location-specific projects.

5.7.4 Current System-Wide Performance

Finally, FDOT reports and tracks non-federally required mobility performance measures for all the MPOs in Florida to facilitate a more in-depth assessment on the performance of the multimodal transportation network. Ten performance measures are published in the MPO Mobility Profile that cover the spectrum of mobility dimensions and multiple modes. Six measures are published biennially, and four measures are published annually. Lee County MPO performance based on these ten performance measures is shown in **Table 5-18**. The Lee County MPO Mobility Profile provided by FDOT includes a review of these measures and recent trends along with a comparison of performance with other MPO's within the State.



Table 5-18: FDOT Supplied MPO Mobility Performance Measure Analysis (Lee MPO Boundary)

Lee MPO Boundary	Annual Measures ² (2018)					
Networks/Measures	Daily vehicle miles traveled (Millions)	Daily truck miles traveled (Thousands)	On-Time Arrival (Vehicle) ³	Planning Time Index ³	Daily vehicle hours of delay (Thousands)	Percent miles heavily congested
National Highway System	7.3	604.3			3.5	2%
State Highway System	7.3	631.6			3.9	4%
Strategic Intermodal System ⁴	4.1	465.4	67%	1.49	1.3	7%
Freeways	3.1	366.4	87%	1.31	0.2	<1%
Interstates	3.1	366.4	87%	1.31	0.2	<1%
Non-freeways (SHS)	4.2	265.2			3.7	5%

Lee MPO Boundary	Rotating Measures ⁵ (2020)			
Networks/Measures	Person miles traveled (Millions)	On-Time Arrival (Truck) ²	Average Travel Speed	Percent Travel Meeting LOS Criteria ³
National Highway System	10.8		50	>99%
State Highway System	10.8		49	97%
Strategic Intermodal System ³	6.0	67%	62	97%
Freeways	4.6	82%	68	>99%
Interstates	4.6	82%	68	>99%
Non-freeways (SHS)	6.2		36	95%

² These six Annual Measures are reported each year.

³ Measures C, D, H, and J are captured in the peak hour, which is from 5 to 6 pm.

⁴ SIS On-Time Arrival and Planning Time Index exclude freeways.

⁵ These four Rotating Measures change every other year. Odd year measures consist of 1) Percent Sidewalk Coverage, 2) Percent Bicycle Lane Coverage, and 3) Average Job Accessibility within a 30-minute car trip and 4) within a 30-minute transit trip.

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Chapter 6: Implementing the Plan

The 2045 LRTP represents a significant step towards addressing the transportation needs of the region and sets the countywide long-term transportation policy and investment framework. Over the next five years, the MPO and its planning partners will work together to implement and advance the transportation policy and projects identified in the LRTP. An essential component of this is integrating the priority projects identified in the LRTP into the MPO's Five-Year Transportation Improvement Program (TIP) to allocate funding for implementation and construction of these projects.

Successful implementation will rely on the support and continued partnership of Lee County, Bonita Springs, Cape Coral, Fort Myers, Sanibel, Fort Myers Beach, Estero, LeeTran, Lee County Port Authority, FDOT District 1, neighboring MPO's, and the public. Key partnership opportunities for implementing the vision of the 2045 LRTP include the following activities and projects:

- **Local Partnerships** – Work closely with the County and local government's comprehensive planners to consider the impacts of proposed and new developments and providing supportive transportation infrastructure.
- **Pine Island Project Development and Environment (PD&E) Study** – Coordinate with FDOT on the PD&E study for a shared use path connecting Pine Island to Cape Coral to improve the safety and mobility of all cyclists and pedestrians.
- **I-75 Southwest Connect (South Corridor)** – Coordinate with FDOT on developing a managed Lanes Study to address operational deficiencies of the interstate within both Collier and Lee Counties and accommodate future travel demand.
- **Bicycle and Pedestrian Master Plans** – Work with local jurisdictions to update the LRTP to incorporate priority projects as local Bicycle and Pedestrian Master Plans planning processes are completed and adopted.
- **Mobility on Demand and New Transit Technology** – Coordinate with LeeTran during implementation of transit projects prioritized by the public including premium transit along US 41, mobility on demand zones, and microtransit.
- **Rail Trail Feasibility Study** – Continue partnerships with FDOT, SUN Trail Program, and local jurisdictions to determine the viability of the conversion of the Seminole Gulf Railway (SGL) between Alico Rd. and Bonita Beach Rd. into 12 miles of multi-use trail.
- **Cape Coral Evacuation Study** – Continue to pursue study as identified and funded in the TIP (\$150,000). The study was first proposed in 2015 as part of the discussions regarding the timing for the development of the I-75/Del Prado Interchange. The study will substantiate the need for a new access to the City of Cape Coral for evacuation purposes during an emergency event.
- **M-CORES** – As plans are finalized for the Southwest-Central Florida Connector, the MPO should focus on the priority of connecting east-to-west with I-75 along SR 80. As a heavily traveled freight route, future demand and needs for SR 80 could be significantly different as the M-CORES program continues to be developed.
- **Technology**: As transportation technology continues to advance, the MPO should continue to become informed on the potential benefits of Connected and Autonomous Vehicles.

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Understanding the types of technology improvements will aid the MPO in directing funding for priority projects. Electric vehicles and ridesharing options are all important new ways to not only encourage transportation safety, but environmental protection as well. Lee County can look to these emerging technologies as implementable tools for the transportation network and should monitor for new case studies to gauge feasible implementation into the County.

- **Future Connections to Lehigh Acres:** Included in the Roadway Needs is a future extension of Sunshine Blvd north to SR 80. During the LRTP adoption, MPO Board Members discussed the need to provide for future connections with Lehigh Acres and concerns raised previously by citizens regarding those proposals. Going forward, the MPO should coordinate with residents and the community on preferences and priority for extending Sunshine Blvd north, Connecting E/W with Lockett Road or other considerations.

6.1 Future Revenue Monitoring

The COVID-19 pandemic has had a significant negative impact on traditional transportation revenue sources. The MPO, in partnership with FDOT, should continue to monitor decreased revenue projections and the impact that has on project delivery. At a federal level, Congress has made additional funds available to help offset the impacts of the pandemic with the Coronavirus Response and Relief Supplemental Appropriations Act, 2021. This emergency funding has been made available for roadway maintenance, operations, and personnel. The Cape Coral Urbanized Area is projected to receive about \$3.2 million in aid with budget revenue offsets.

6.2 LRTP Amendment Process

In addition to the five-year update cycle for revising the assumptions and cost feasibility of the LRTP, the MPO has the ability to process amendments to the 2045 LRTP. Consistent with the Federal Regulations (23 CFR 450.104), guidance provided by FDOT and the MPO’s Public Participation Plan, there are two ways in which the LRTP can be updated.

- An **administrative modification** is a minor revision to the LRTP that includes minor changes to project/project phase costs, minor changes to funding sources of previously included projects, and minor changes to project/project phase initiation dates. An administrative modification is a revision that does not require public review and comment, or a re-demonstration of fiscal constraint.
- An **amendment** means a revision to the LRTP that involves a major change to a project including:
 - the addition or deletion of a project,
 - a major change in project cost, project phase initiation dates,
 - a major change in design concept or design scope.

Changes to projects that are included only for illustrative purposes do not require an amendment. An amendment is a revision that requires public review and comment and a re-demonstration of fiscal constraint.





6.3 The Future of Lee County

With the adoption of the 2045 LRTP, Lee County has developed a vision for the community by supporting equity in opportunity through transportation, land use, and other infrastructure to all members of Lee County. The Transportation Plan ensures the feasible investment within the community to address resources, prioritize needs, adjust project sizes, and create an overall balanced multimodal transportation network.

The Plan serves as an important guide to the MPO, County, and nearby communities and municipalities as a guide for the continued planning and programming of transportation activities. It serves as a flexible document, capable of adjusting to the ever-changing environment of the County and Southwest Florida region, but maintains itself as an enforceable guide to County leaders. This document is an important tool for improving Lee County’s transportation system and for providing mobility options for citizens and visitors to Lee County and the region.

6.3.1 Comprehensive Policies, the Land Development Code, and Complete Streets

Based on analysis conducted during the 2040 LRTP update and responses from the community it was revealed that Lee County citizens are looking for more (compact) urban land use development. Land use policies are guided by the Comprehensive Plan policies and can be shifted and changed as Lee County’s land use needs change. Potential changes in the Comprehensive Plan and Land Development Code that can be implemented and enforced include:

- Transit-Oriented Design
- Complete Streets Policies
- Utilize Form-Based Codes for urban design
- Corridor design guidelines
- Maintain and mediate current infrastructure
- Update and enforce Growth Boundaries

Complete Streets, likewise, is a policy designed to accommodate all transportation users, from electric scooters to freight. With Complete Streets, Lee County can modify existing streets to address the safety concerns identified within the Transportation plan. Policy opportunities identified within the Comprehensive Plan and Land Development Code may intrinsically promote Complete Streets through preservation and designs that support multimodal transportation.

6.3.2 Capital Improvement Programming and Funding Strategies

It is critical that local governments, the MPO, and other partners maintain and build capital investment through planning and programming in the Capital Improvement Program (CIP). Financing the CIP and other transportation needs projects was a major point of discussion in the development of the Transportation Plan. Primarily, current revenue and funding do not meet the transportation needs of the fast-growing Lee County. Thus, new revenues may be considered to advance or expand the list of cost feasible projects that can be completed.





6.3.3 Health in all Policies

With the emergence of the COVID-19 pandemic, Health in all Policies (HiAP) is applicable now more than ever. HiAP is a collaborative policy framework developed by leading national administrations - including the CDC and NIH - to improve communities' health through effective policymaking.

Using HiAP as a guide, Lee County should continue reviewing and researching implementable ways to encourage healthy communities and ensure not only the physical safety as it pertains to transportation, but the health of the community as a whole.

Health in all Policies' Goals



Source: <https://www.cdc.gov/policy/hiap/index.html>

