

COLLIER MPO

2045

LONG RANGE TRANSPORTATION PLAN

**Draft 10-16-20**

DECEMBER 2020



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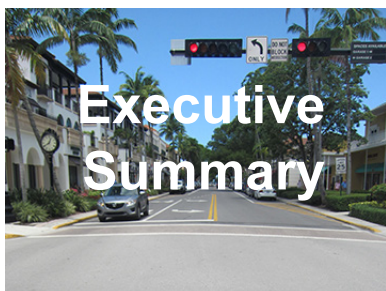
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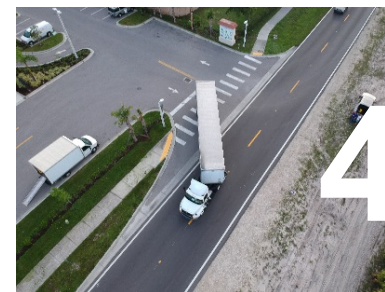
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## Abbreviations and Acronyms

AADT	Average Annual Daily Traffic	FDOT	Florida Department of Transportation
ACES	Automated, Connected, Electric and Shared-Use	FHWA	Federal Highway Administration
ACS	American Community Survey	FMTF	Freight Mobility and Trade Plan
ADA	Americans with Disabilities Act	FPN	Financial Project Number
AMPO	Association of Metropolitan Planning Organizations	FRAME	Florida's Regional Advanced Mobility Elements
ATCS	Adaptive Traffic Control System	FTA	Federal Transit Administration
AUIR	Annual Update and Inventory Report	FY	fiscal year(s)
BCC	Board of County Commission (Collier County)	HSIP	Highway Safety Improvement Program
BEBR	Bureau of Economic and Business Research	ITS	Intelligent Transportation System
BPAC	Bicycle and Pedestrian Advisory Committee	LCB	Local Coordinating Board for the Transportation Disadvantaged
BPMP	<i>Bicycle &amp; Pedestrian Master Plan</i>	LOS	level of service
BRT	bus rapid transit	L RTP	Long Range Transportation Plan
CAC	Citizens Advisory Committee	MCORES	Multi-use Corridors of Regional Economic Significance
CAT	Collier Area Transit	MOD	Mobility-On-Demand
CAV	Connected and Autonomous Vehicles	MPO	Metropolitan Planning Organization
CCGMP	Collier County Growth Management Plan	MPOAC	Metropolitan Planning Organization Advisory Council
CFR	Code of Federal Regulations	NHS	National Highway System
CIGM	Collier Interactive Growth Model	NHTSA	National Highway Traffic Safety Administration
CMC	Congestion Management Committee	NOAA	National Oceanic and Atmospheric Administration
CMP	Congestion Management Process	NPC	Naples Pathway Coalition
CMS	Congestion Management System	O&M	operations and maintenance
CR	county road	PD&E	Project Development and Environment
CRA	community redevelopment area	PE	preliminary engineering/design
CST	construction	PHU	Panther Habitat Unit
CTC	Community Transportation Coordinator	PIP	Public Involvement Plan
DTA	Density Threshold Assessment	PM	performance measure
E+C	existing plus committed	PPP	Public Participation Plan
EJ	environmental justice	ROW	right-of-way
ETDM	Efficient Transportation Decision Making	RTP	Recreational Trails Program
F.S.	Florida Statutes	SHS	State Highway System
FAA	Federal Aviation Authority	SIS	Strategic Intermodal System
FAC	freight activity center	SLR	sea level rise
FAST	Fixing America's Surface Transportation	SPR	System Performance Report
FDEP	Florida Department of Environmental Protection		

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STBG	Surface Transportation Block Grant	TSA	transit service area
TAC	Technical Advisory Committee	TSM&O	Transportation System Management and Operations
TAZ	Traffic Analysis Zone	TSPR	Transportation System Performance Report
T-BEST	Transit Boarding Estimation and Simulation Tool	ULB	Useful Life Benchmark
TCMA	Transportation Concurrency Management Area	UPWP	Unified Planning Work Programs
TDP	Transit Development Plan	USACE	U.S. Army Corps of Engineers
TIP	Transportation Improvement Program	USC	U.S. Code
TMA	Transportation Management Area	V/C	volume to capacity
TOC	Traffic Operations/Management Center	VMT	vehicle miles traveled
TOI	Transit Orientation Index	YOE	year of expenditure
TRIP	Transportation Regional Incentive Program		





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## Executive Summary

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## Executive Summary

To be provided





# Introduction

- 1-1** What Is the MPO?
- 1-2** What Is the Long Range Transportation Plan?
- 1-3** Federal and State Planning Requirements
- 1-4** Regional Transportation Planning



# Chapter 1 Introduction

## 1-1 What Is the MPO?

The Collier Metropolitan Planning Organization (MPO) was created in 1982 following Title 23 of United States Code Section 134 (23 USC §134) Metropolitan Transportation Planning federal requirements that each urbanized area with a population exceeding 50,000 establish an MPO. Federal law requires that MPOs be governed by a board composed of local elected officials, governmental transportation representatives for all modes of transportation, and appropriate state officials.

The Collier MPO is governed by a board of nine voting members and one non-voting advisor from the Florida Department of Transportation (FDOT), as shown on **Figure 1-1**.

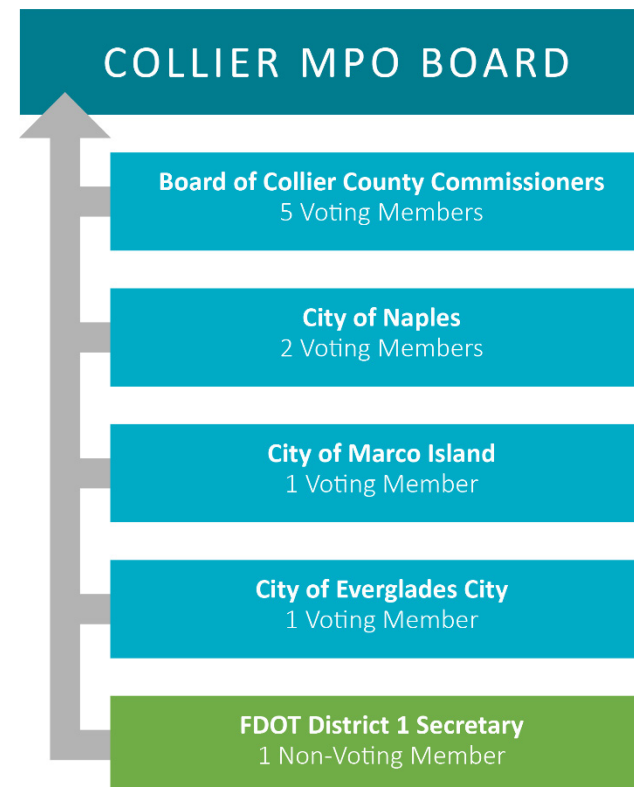
The Collier MPO's jurisdiction includes Collier County (hereafter, "the County") and the cities of Naples, Marco Island, and Everglades City (refer to **Figure 1-2**).

The MPO uses federal, state, and local funds to carry out a *Continuing*, *Cooperative*, and *Comprehensive* long-range planning process that establishes a county-wide vision for the transportation system. The Long Range Transportation Plan (LRTP) is a central part of achieving this vision.

MPOs are required to develop and update their LRTPs on a 5-year cycle to ensure that the future transportation system is efficient, fosters mobility and access for people and goods, and enhances the overall quality of life for the community.

To carry out its functions, the MPO Board is assisted by several transportation planning committees in addition to its professional staff. These committees consist of the Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC), Bicycle and Pedestrian Advisory Committee (BPAC), Congestion Management Committee (CMC), and the Local Coordinating Board for the Transportation Disadvantaged (LCB).

**Figure 1-1. Collier MPO Board**



**Figure 1-2. Collier MPO Jurisdiction**



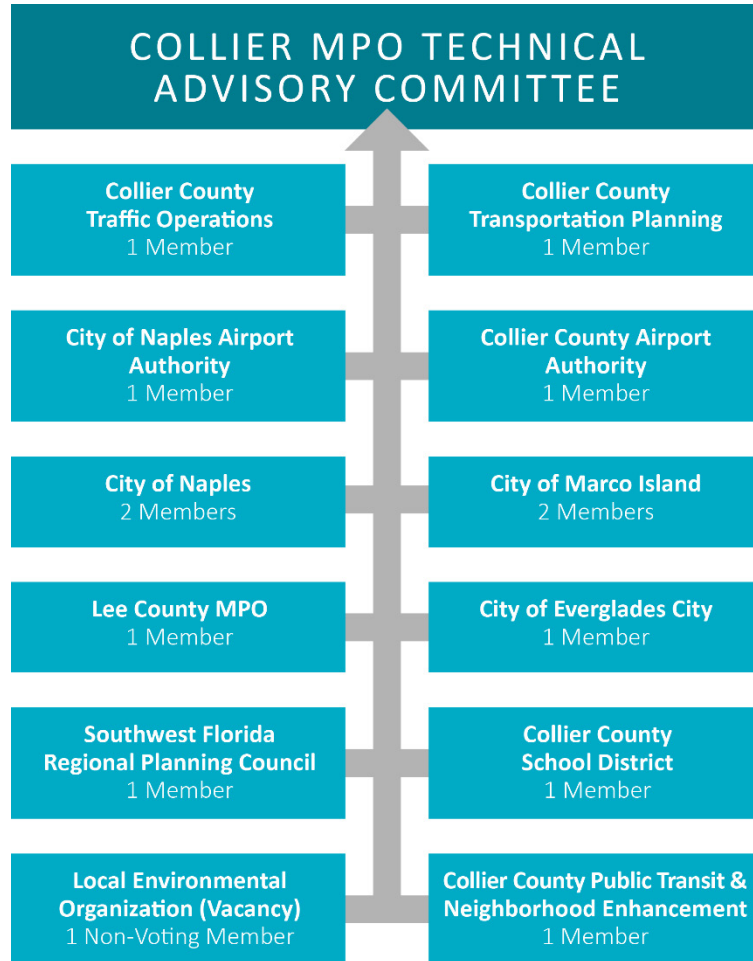
Source: Collier MPO Transportation Improvement Plan FY2021-FY2025 (Collier MPO 2020)

**Technical Advisory Committee:** The TAC consists of technically qualified representatives of agencies within the Collier County Metropolitan Planning Area. TAC members are responsible for planning, maintaining, operating, developing,

and improving the transportation system throughout the County and its associated municipalities. They review transportation plans and programs from a technical perspective. There are 13 voting members and one non-voting member (refer to **Figure 1-3**).



**Figure 1-3. Technical Advisory Committee**



**Citizens Advisory Committee:** The CAC consists of citizens representing a cross section of the geographic areas and citizens representing disabled and minority populations.

They are recruited to represent the cities of Naples, Marco Island, and Everglades City, and the county commission districts of the unincorporated areas of the County. These individuals make recommendations to the MPO Board from the citizen's perspective on proposed L RTPs, individual projects, priorities for state and federal funding, and other transportation issues. The CAC has 13 voting members, including four at-large members (refer to **Figure 1-4**).

**Figure 1-4. Citizens Advisory Committee**

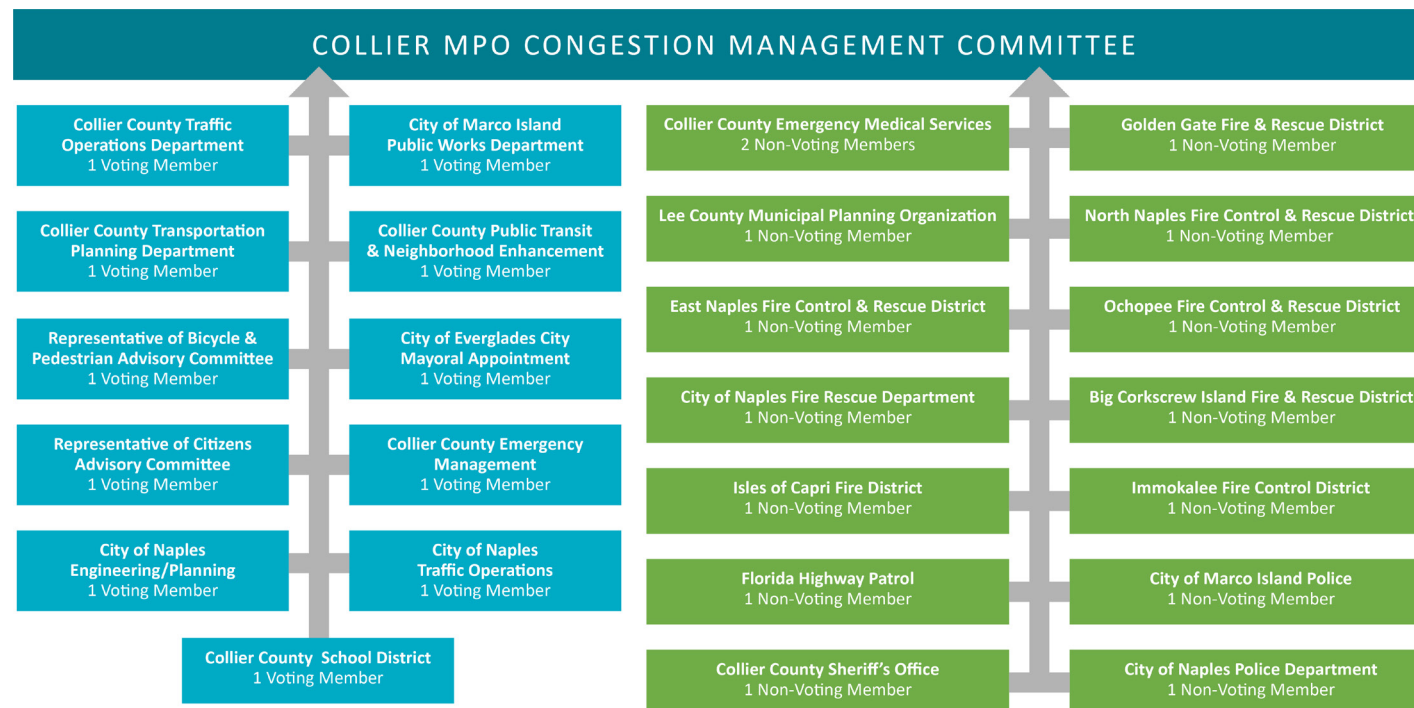


**Bicycle and Pedestrian Advisory Committee:** Formerly known as the Pathways Advisory Committee, the BPAC consists of 12 at-large voting members who represent a wide cross section of the Collier Metropolitan Area residents and neighborhoods, bicycle and pedestrian safety professionals, transit riders, local bicycle and pedestrian advocacy groups, organizations that encourage active transportation from a community health perspective, and advocates for persons with disabilities and other transportation-disadvantaged populations. The BPAC provides citizen input into the deliberations on bicycle- and pedestrian-related issues within the community and advises the MPO Board on developing a Bicycle and Pedestrian Plan. The BPAC is also involved in recommending priorities for bicycle and pedestrian projects and program implementation.

**Congestion Management Committee:** The CMC serves the MPO in an advisory capacity on technical matters relating to the MPO's Congestion Management System (CMS) and the regional Intelligent Transportation System (ITS) architecture.

The committee is responsible for creating and amending the Congestion Management Process (CMP) and for prioritizing candidate congestion management projects to be funded with federal and state funding. The CMC has 11 voting members and 15 non-voting members (refer to [Figure 1-5](#)). All members are appointed by agencies/jurisdictional departments.

**Figure 1-5. Congestion Management Committee**

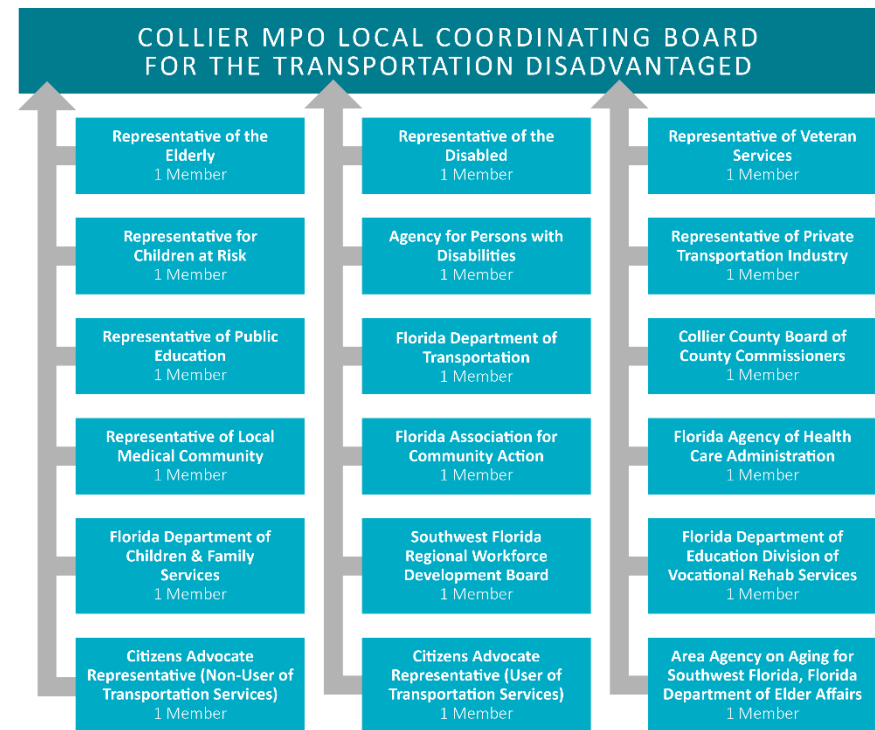


### Local Coordinating Board for the Transportation

**Disadvantaged:** The LCB helps the MPO identify local service needs and provide information, advice, and direction to the Community Transportation Coordinator (CTC) on the coordination of services to be provided to the transportation disadvantaged pursuant to Chapter 427.0157, Florida Statutes (F.S.). The LCB includes representatives from various state and local agencies as well as citizen representatives (refer to **Figure 1-6**). A Collier County elected official is appointed to serve as chairperson.

The LCB also reviews the amount and quality of transit service being provided to the County's transportation-disadvantaged population. The Collier LCB meets each quarter and holds at least one public hearing a year. The purpose of the hearings is to provide input to the LCB on unmet transportation needs or any other areas relating to local transportation disadvantaged services.

**Figure 1-6. Local Coordinating Board for the Transportation Disadvantaged**



## 1-2 What Is the Long Range Transportation Plan?

The MPO is required to complete an LRTP to receive federal funds. The LRTP must be multimodal and should include, at a minimum, highway and transit infrastructure improvements. The Collier MPO LRTP includes highway (incorporating freight) and transit modes, and by reference, non-motorized modes. The LRTP covers a broad range of issues including environmental impact, economic development, mobility, safety, security, and quality of life. Chapter 2 provides a more detailed examination of federal compliance.

To comply with federal requirements, the LRTP is produced or updated every 5 years and must maintain a minimum time horizon of 20 years. The previous 2040 LRTP update was adopted in December 11, 2015 (Tindale Oliver 2015). The Collier MPO 2045 LRTP update began in March 2019. As described in Chapter 3, the Collier MPO 2045 LRTP was developed to ensure consistency with all applicable state and federal requirements guiding the LRTP process.

The primary purpose of the 2045 LRTP update is to help citizens, businesses, and elected officials collaborate on developing a multimodal and sustainable transportation system that addresses projected growth over the next 20 years. The 2045 LRTP update serves as an instrument to identify needed improvements to the transportation network and provides a long-term investment framework that addresses current and future transportation challenges.



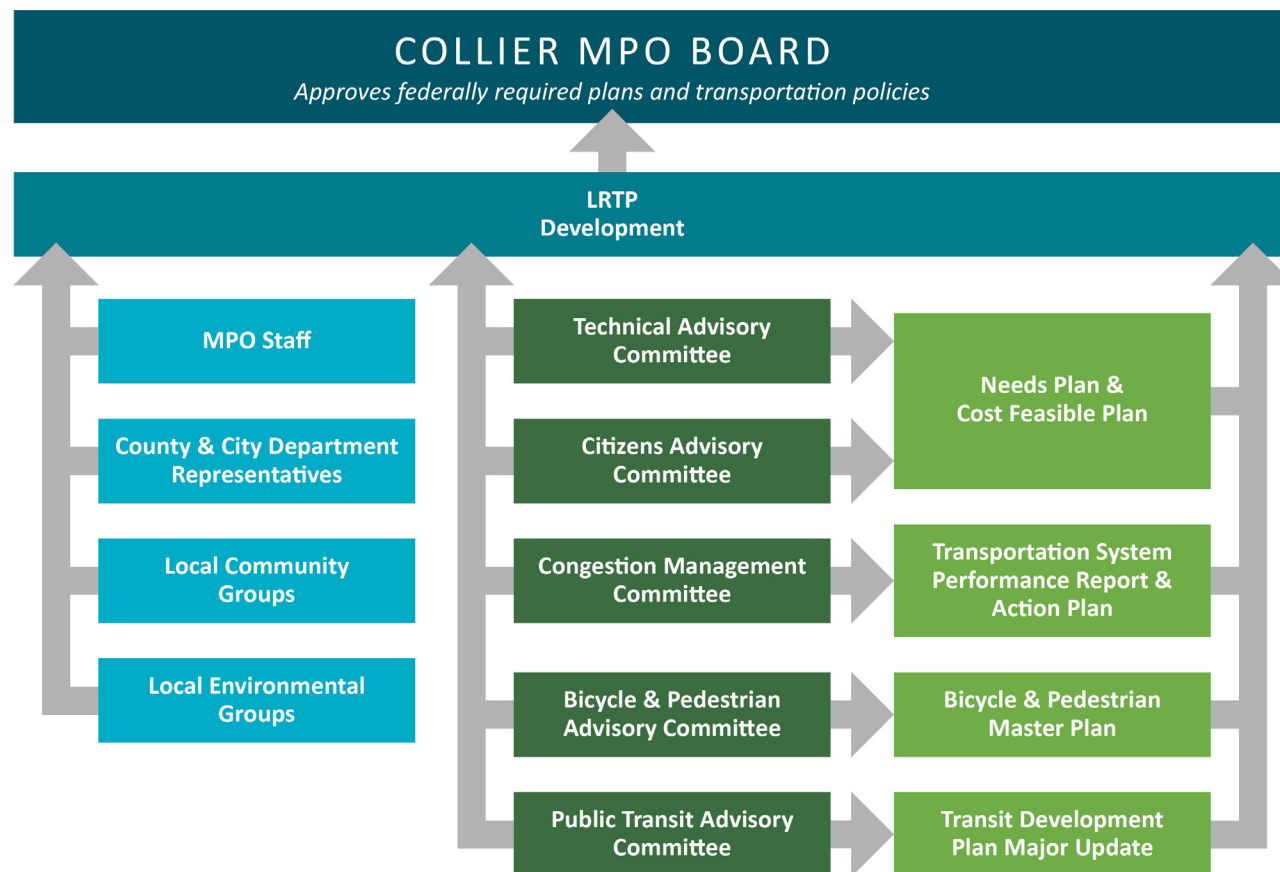
During the development of the 2045 LRTP, the MPO engaged its standing committees, particularly the TAC and CAC, who reviewed and commented on every aspect of the LRTP. Both committees held a series of monthly meetings through the summer of 2020 to assist the MPO on the Needs and Cost Feasible Plans. The CMC, BPAC, and the LCB also helped to guide the development of the LRTP by providing their expertise on the development of their committee's corresponding transportation plans.



As shown on **Figure 1-7**, the CMC contributed to the Transportation System Performance Report and Action Plan (2020), which addresses congestion; the BPAC contributed to the *Bicycle & Pedestrian Master Plan* (2019), which is incorporated into the bicycle and pedestrian section of the LRTP; and Collier County's Public Transit Advisory Committee contributed to the *Transit Development Plan Major Update* (2020), which is incorporated in the transit section of the LRTP.

Further, the MPO's informal Adviser Network (400-plus members) of community, business, and environmental groups provided essential public input through a series of small group and one-on-one interviews. Additional public input was gained by conducting outreach to traditionally underserved communities, virtual public meetings, and surveys. Because of the COVID-19 pandemic that occurred during the 2045 LRTP update, traditional meetings planned for the update were switched to virtual platforms.

**Figure 1-7. 2045 LRTP Development and Guidance**



## 1-3 Federal and State Planning Requirements

### Federal

In December 2015, the Fixing America's Surface Transportation (FAST) Act was signed into law and built on the program structure and reforms of the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law in 2012. The FAST Act includes provisions to enhance and support the improved transportation planning factors outlined in MAP-21. Under the FAST Act, two additional planning factors were added:

- *improve the resilience and reliability of the transportation system and reduce or mitigate stormwater impacts on surface transportation*
- *enhance travel and tourism*

Under the FAST Act, several planning factors are required for long-range transportation planning as shown on [Figure 1-8](#).

In addition to the FAST Act planning factors, MAP-21 included transitioning to a performance-based program, including establishing national performance goals for federal aid highway programs. The FAST Act continued this overall performance management approach, requiring state DOTs and MPOs to conduct performance-based planning by tracking performance measures and setting data-driven targets to improve those measures.

Figure 1-8. FAST Act Planning Factors



Performance-based planning ensures the most efficient investment of federal transportation funds by increasing accountability, transparency, and providing for better investment decisions that focus on key outcomes related to the following seven national goals, which include:

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System (NHS)
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment
- **Reduced Project Delivery Delays** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The FAST Act supplemented the MAP-21 legislation by establishing timelines for state DOTs and MPOs to comply with the requirements of MAP-21. State DOTs are required to establish statewide targets and MPOs have the option to support the statewide targets or adopt their own. The Collier MPO has chosen to support the statewide targets. The transition to performance-based planning is ongoing and has been addressed within the tasks identified in this LRTP.

For the County and its municipalities to be eligible for federal and state funds, the MPO must adopt and maintain a transportation plan covering at least 20 years (the LRTP), and a 5-year Transportation Improvement Program (TIP), which is a fiscally constrained, multimodal program of transportation projects within the Collier Metropolitan Planning Area. The TIP is updated each year and includes highway, bridge, bicycle and pedestrian facilities; transit; congestion management; road and bridge maintenance; transportation planning; and transportation-disadvantaged projects. Both the LRTP and the TIP are required by federal and state law.

The TIP identifies, prioritizes, and allocates funding for transportation projects. Projects in the TIP are included in the existing-plus-committed (E+C) component of the MPO's LRTP. Development of the TIP is a continuous process involving agency staff and public involvement. The adopted TIP and potential TIP project priorities must be consistent with the LRTP.

MPOs are governed by federal law (23 USC §134), with regulations included in Title 23 of the Code of Federal Regulations Part 450 (23 CFR 450). When MPOs were mandated in 1962, federal laws required metropolitan transportation plans and programs be developed through a 3-C planning process. The law intended for MPOs to serve as a forum for collaborative transportation decision-making.

Further, planning is to be conducted continually using a cooperative process with state and local officials and public transportation agencies operating within the MPO's boundaries.

Because the Collier MPO serves a population of more than 200,000, it meets the federal definition of a Transportation Management Area (TMA) and, therefore, must meet additional federal conditions including the establishment of a CMP. The CMP identifies challenges and solutions to reduce congestion and improve traffic flow along arterial roadways. The CMP is also used as a tool to help identify projects in the TIP and LRTP. As stated previously, the Collier MPO CMC is responsible for creating and amending the CMP.

The LRTP must include a financial plan to ensure that reliable and reasonable funding sources are identified to implement the LRTP. The cost of projects listed in the LRTP must balance financially with the revenues from funding sources forecasted to be reasonably available over the duration of the LRTP. Chapter 3 provides a more detailed account of federal and state financial requirements for the LRTP.

The Public Participation Plan (PPP) provides a framework to the public involvement process regarding the MPO planning-related activities. The PPP describes the MPO's strategies and techniques to inform and engage the public in transportation planning issues to maximize public involvement and effectiveness. PPPs are living documents that should be updated once every 5 years, preferably prior to the initiation of the development of a new LRTP update. In addition to the PPP, each MPO should develop an LRTP-specific PPP or Public Involvement Plan (PIP). The PIP builds off of the content and assumptions within the approved PPP but provides additional information, such as specific stakeholders to be engaged during the LRTP development, a summary of proposed

engagement activities throughout the LRTP development, and an engagement milestone schedule. A PIP was developed for the 2045 LRTP Update and is further discussed in Chapter 3.

In January 2018, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued the *Federal Strategies for Implementing Requirements for LRTP Updates for the Florida MPOs* to the FDOT and the MPOs in Florida (FHWA and FTA 2018). The guidance, commonly referred to as FHWA's Expectations Letter, outlines the agencies' expectations for the development of LRTP updates to assist MPOs in meeting the federal planning requirements. In July 2020, FDOT issued a notice that FHWA expected MPOs to also address previous FHWA Expectation Letters from December 4, 2008 (*FHWA's Strategies for Implementing Requirements for LRTP Update for the Florida MPOs*) and November 2012 (*Federal Strategies for Implementing Requirements for LRTP Update for the Florida MPOs*).

The Collier MPO 2045 LRTP update's adherence to the 2018, 2012, and 2008 FHWA's Expectations Letters is summarized in [Appendix A](#).

## State

The FDOT Office of Policy Planning develops Planning Emphasis Areas on a 2-year cycle in coordination with the development of the MPOs' respective Unified Planning Work Programs (UPWPs). The emphasis areas set planning priorities, and MPOs are encouraged to address these topics as they develop their planning programs.

The 2020 FDOT Florida Planning Emphasis Areas are:

- **Safety.** MPOs are encouraged to consider how to expand on the level of analysis and reporting required by the



performance measurement process to further study their unique safety challenges.

- **System Connectivity.** MPOs should emphasize connectivity within their boundaries to serve the unique needs of their urban and non-urban jurisdictions beyond their boundaries to emphasize continuity on those facilities that link their MPO to other metropolitan and non-urban areas, and include multimodal linkages that support connectivity for people and freight.
- **Resilience.** MPOs can address resilience within their planning processes by leveraging tools, such as the FHWA (2017) *Resilience and Transportation Planning* guide and the FDOT Quick Guide: *Incorporating Resilience in the MPO LRTP* (FDOT 2020a). MPOs should consider the additional costs associated with reducing vulnerability of the existing transportation infrastructure to help develop a more realistic and cost-effective planning document.
- **ACES (Automated/Connected/Electric/Shared-use) Vehicles.** Increased deployment of ACES vehicles with enabling policies and supportive infrastructure may lead to great improvements in safety, transportation choices, and quality of life for Floridians, visitors, and the Florida economy. Though there is a great deal of speculation and uncertainty of the potential impacts these technologies will have, MPOs are to determine how best to address the challenges and opportunities presented to them by ACES vehicles.

Additionally, with the intent to encourage and promote the safe and efficient management, operation, and development of surface transportation systems, the Florida legislature enacted Section 339.175(6)(b), F.S., which requires the LRTP

to provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Increase the safety and security of the transportation system for motorized and non-motorized users
- Increase the accessibility and mobility options available to people and for freight
- Protect and enhance the environment, promote energy conservation, and improve quality of life
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Promote efficient system management and operation
- Emphasize the preservation of the existing transportation system

In addition to adhering to these requirements, other statutory requirements set forth by the state of Florida regarding the development of a LRTP are presented in [Appendix A](#).

## 1-4 Regional Transportation Planning

The Collier County Metropolitan Area highways are part of a regional network that not only connects different parts of the County and its municipalities, but also links the County and its municipalities to neighboring counties in the region, to the state, and to the nation. As illustrated on [Figure 1-9](#), business travel between Collier County and its neighbors is significant, especially between Collier County and Lee County. From 2011 to 2015, the U.S. Census Bureau's American Community

Survey (ACS) analysis of commuting patterns reported approximately 30,400 daily inter-county auto-oriented trips between Collier and Lee counties.

**Figure 1-9. Daily Collier County Work Travel Patterns**



The Collier MPO provides for the creation of a region-wide multimodal transportation planning process in accordance with federal and state guidelines to ensure the coordination of transportation planning and policy activities in FDOT District One.

The Collier MPO performs the following regional transportation planning activities:

- Participates in the Lee County MPO and advisory committee meetings.
- Participates and coordinates in the Joint MPO Board and

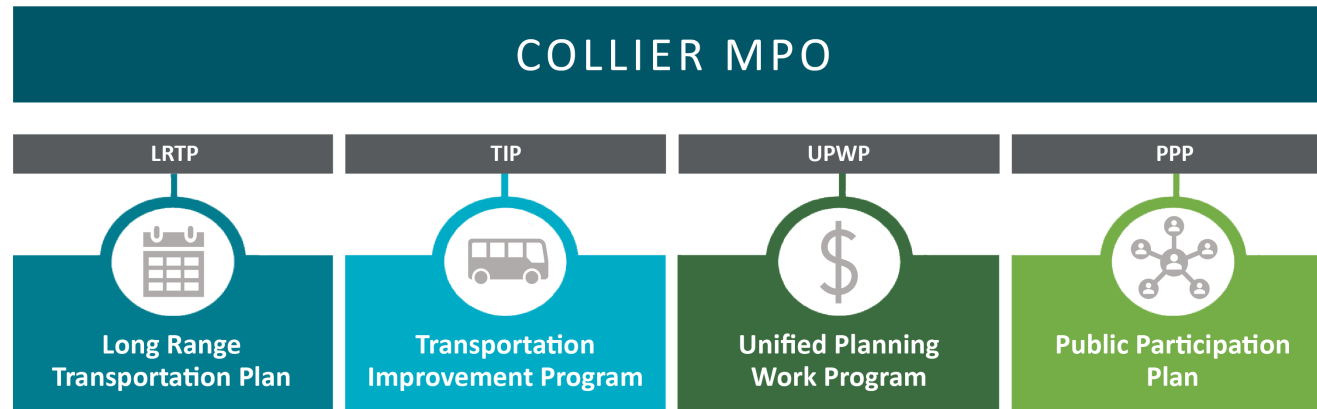
Joint Advisory Committee meetings with Lee County MPO.

- Coordinates with FDOT, Lee County MPO, other adjoining MPOs and adjoining jurisdictions, municipalities, or agencies to ensure that regional needs are being addressed and planning activities are consistent. Such coordination includes, but is not limited to, discussion of regional plans, review of the Strategic Intermodal System (SIS) plan, evaluation and ranking of Transportation Regional Incentive Program (TRIP) projects, and update of joint priorities for regional and statewide funding.
- Develops, adopts, and updates regional transportation priorities, including the Regional Transportation Network Priorities (which includes the SIS and other important cross-county connections and intermodal facilities), the TRIP projects, and Regional Enhancement Priorities.
- Participates in the (national) Association of Metropolitan Planning Organizations (AMPO), Florida Metropolitan Planning Organization Advisory Council (MPOAC), and FDOT District One Coordinated Urban Transportation Studies (CUTS), FDOT/FHWA quarterly conference calls and regional quarterly meetings.
- Analyzes state and federal laws and regulations for MPOs, committees, and local government officials to aid them in their application of regional transportation policy strategies.
- Participate in the Multi-use Corridors of Regional Economic Significance (M-CORES) Southwest-Central Florida Corridor Task Force meetings.

Further, as shown on **Figure 1-10**, the Collier MPO under state and federal laws is required produce documents that support

region-wide transportation planning which include the LRTP, TIP, UPWP, and PPP. The PPP provides a framework for public involvement in regard to all MPO planning-related activities.

**Figure 1-10.** Collier MPO Documentation Responsibilities





A group of people, including a woman, a man with a backpack, and two children, are on bicycles at a traffic light. A large white number '2' is overlaid on the image.

# 2

## Plan Process

- 2-1** Plan Process
- 2-2** County Overview
- 2-3** Forecasting Growth
- 2-4** Public Participation



## Chapter 2 Plan Process

### 2-1 Plan Process

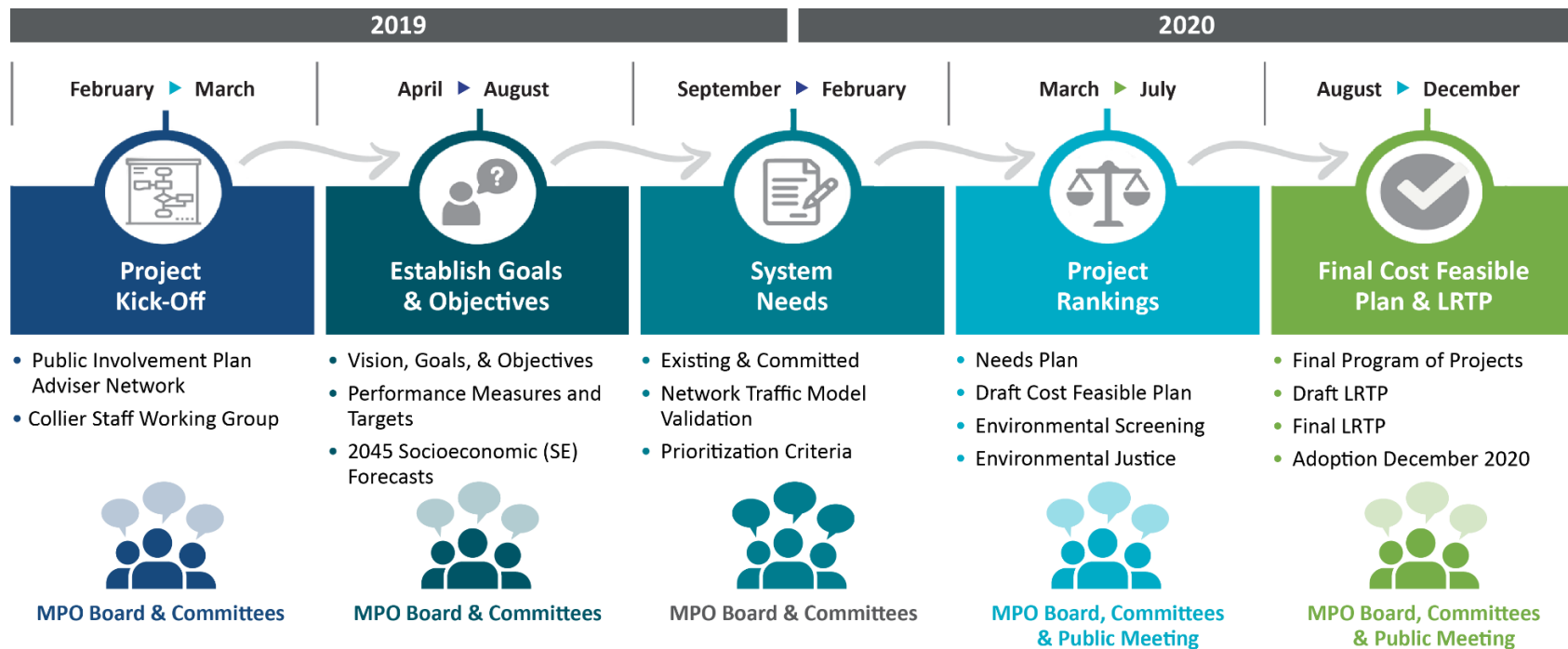
This chapter discusses the staged process to develop the Collier MPO 2045 LRTP update and describes the plan development activities resulting from public involvement. Goals and Objectives, the Needs Assessment, and the Cost Feasible Plan outlined in this chapter are described in detail in Chapters 3, 4, and 6, respectively. Updating the Collier MPO 2045 LRTP was a technical, collaborative process that included participation by the MPO Board members, virtual public workshops and public surveys, briefings to the various MPO advisory committees (described in Chapter 1), and advisory meetings with the TAC and CAC. As illustrated on [Figure 2-1](#) and [Figure 2-2](#), five key steps were involved in the LRTP development process. The MPO Board’s adoption of the Collier MPO 2045 LRTP acknowledged these five steps, with input from the public, the MPO committees, and MPO Board, resulting in a financially constrained plan of transportation improvements.

The five stages of the plan process were built upon past planning efforts, a technical review of forecast socioeconomic growth, the financial outlook of the County, and input from County residents and elected officials.

**Figure 2-1. Collier MPO 2045 LRTP Key Process Steps**



**Figure 2-2. Plan Process**



## 2-2 County Overview

Collier County is the largest county in Florida by land area. Approximately 67 percent of the County's land area has a land use designation of Conservation, is owned primarily by the federal and state government, and is restricted from development. According to the Florida Legislature Office of Economic and Demographic Research (EDR 2020), the County had an estimated population of 376,706 in 2019. Of the 67 total counties in the state, Collier County is the 16th most populous county in Florida with 1.8 percent of the state's population.

U.S. Census population data show that Collier County population increased by 53 percent between 1990 and 2010. The state of Florida population increased by 31 percent during the same time. Between 2010 and 2019, the Florida Legislature Office of Economic and Demographic Research data show the population in the County further increased by approximately 17 percent, while the state's population increased by approximately 13 percent. As noted earlier, there are three municipalities located within Collier County: the cities of Naples and Marco Island and Everglades City.



## City of Naples

The City of Naples is the largest in population of the three municipalities within the County. As of 2018, the full-time residential population was 22,000 with a potential seasonal population of more than 33,000 in the winter months (City of Naples 2020). The City has a council-manager form of government that is comprised of a mayor and six council members, all of whom are elected City-wide on a non-partisan basis. The City's Planning Advisory Board guided a community-wide assessment of the City Vision documented in the *Vision 2020 Analysis and Recommendations* report (City of Naples 2019). Through the public outreach process during the assessment, five Vision Goals for the City were identified:

- Preserve Naples' Small Town Character and Culture
- Environmental Sensitivity
- Maintain an Extraordinary Quality of Life for Residents
- Maintain and Strengthen the Economic Health and Vitality of the City

## City of Marco Island

The City of Marco Island is located on the largest barrier island of the chain of islands off the southwest Florida coast known as the Ten Thousand Islands. According to the U.S. Census, the 2019 population estimate is almost 18,000. The City estimates the potential seasonal population as more than 40,000 in the winter months. The City has a council-manager form of government with seven council members. According to the City website, more than 1,700 vacant lots remain on the island and new homes are constructed at a rate of 200 to 300 a year (City of Marco Island 2020). The City's Future Land Use Element goal is *To enhance Marco Island's quality of life,*

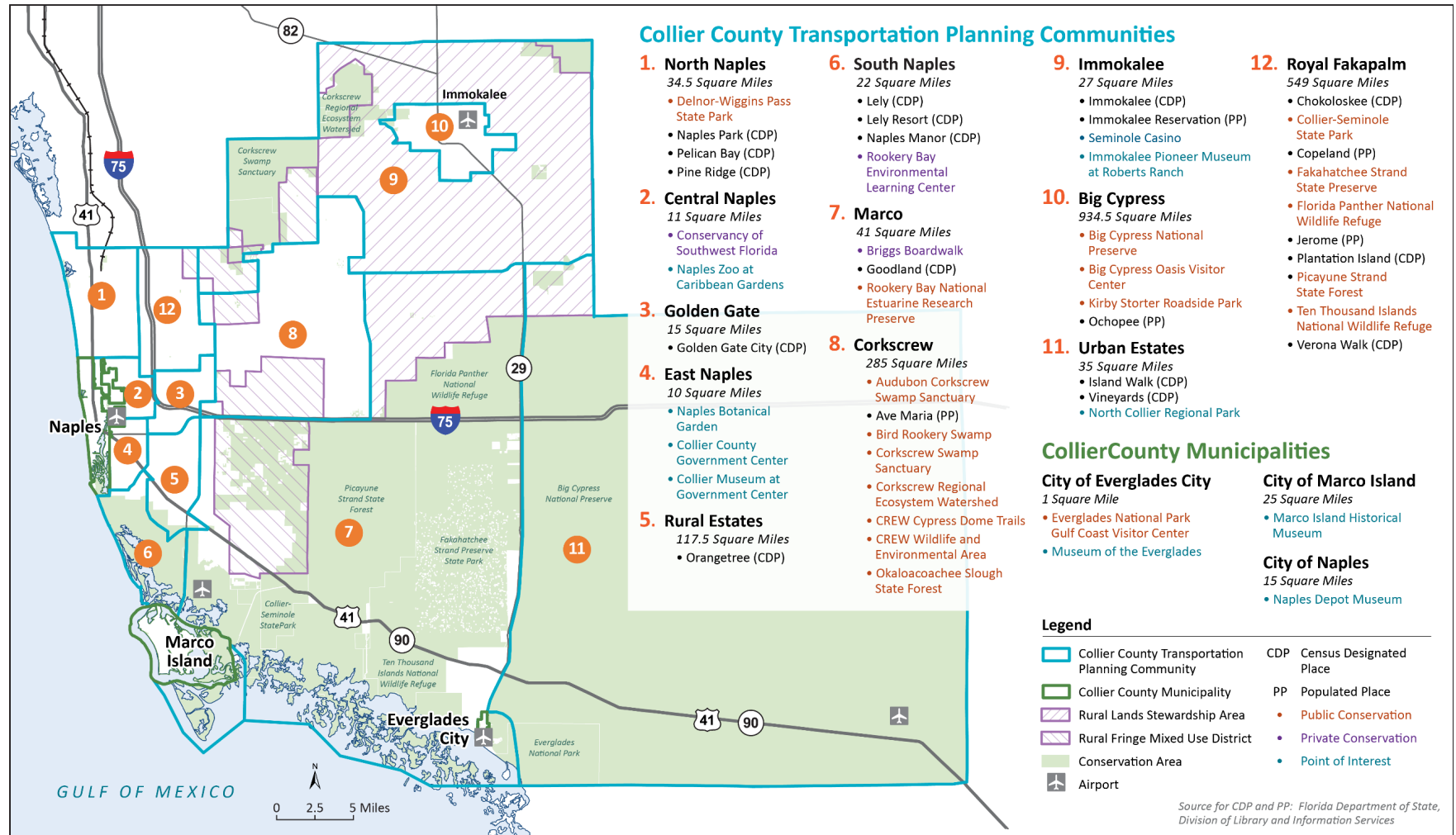
*environmental quality, and tropical small town and resort character by managing growth and assuring a stable residential community with sufficient businesses to serve the needs of residents and visitors.*

## Everglades City

Everglades City is the smallest in population and land size of the three municipalities in Collier County. According to the U.S. Census, the 2019 year-round population estimate of the City is more than 400. The City has a council-manager form of government that is comprised of a mayor and five council members, all of whom are elected City-wide on a non-partisan basis. The City is surrounded by seven national and state parks including the Everglades National Park Gulf Coast Visitor Center, which is located within the City limits. The City estimates that 1 to 1.3 million people visit annually (City of Everglades City 2019). The City has a strong ecotourism industry and seeks to preserve its small town character. In January 2019, the City was designated as an official Trail Town by Florida's Office of Greenways and Trails.

As shown on **Figure 2-3**, three municipalities and 12 planning communities lie within the County (Collier County 2020a). With the absence of a designated urban service area or an urban growth boundary, the Collier County Growth Management Plan (CCGMP) includes two primary designations within the Future Land Use Map: Urban and Rural/Agricultural. All lands within the County geography fall into one of these two categories, which help shape or control the pattern of urban development and land use controls.

**Figure 2-3. Collier County Planning Communities, Points of Interest, and Unincorporated Communities**



Source: Collier County (2020)

Eight of the planning communities have land use designations of Urban as follows:

- North Naples
- Central Naples
- East Naples
- South Naples
- Golden Gate
- Marco
- Urban Estates
- Immokalee

The remaining four are designated as Rural:

- Royal Fakapalm
- Big Cypress
- Rural Estates
- Corkscrew

While growth is expected to continue in urban planning communities, many of them are approaching build-out, causing development to spread to rural planning communities. The Urban designation promotes a diversity of urban development and a wide variety of land uses within the designation, and is configured to guide concentrated population growth and intensive land development away from areas of great sensitivity and toward areas more favorable to development.

The Rural/Agricultural designation does not prevent development, but instead limits the range of land uses within the designation. Collier County uses a zoning technique called Transfer of Development Rights, which permanently protects land with conversation value by redirecting development to a more suitable area planned to accommodate growth and development. The Collier County Future Land Use Element

(Collier County Planning and Zoning Department 2019) states that the Transfer of Development Rights are primarily applicable to the Rural Fringe Mixed Use District and Rural Lands Stewardship Area as a key component of the County's overall strategy to direct incompatible land uses away from important natural resources, including large connected wetland systems and listed species and their habitat.

## 2-3 Forecasting Growth

A major element of the Collier MPO 2045 LRTP development was to determine the travel demand within the MPO boundary. Travel demand estimation is a critical part of long range transportation planning because it helps ensure that the system will meet future needs. By quantifying the extent and locations of anticipated population and employment growth areas, the demand for travel in 2045 can be estimated using regional travel demand models. Travel demand models test various transportation improvements to determine how well they meet future demands, and use base-year and future-year socioeconomic data (associated with each LRTP update cycle). For the Collier MPO 2045 LRTP update, the base- and future-year socioeconomic data were 2015 and 2045, respectively.

### Base Year (2015) and Forecast Year (2045) Socioeconomic Data

Travel demand models are driven in part by the interaction of land use activities and socioeconomic characteristics of the transportation network. Socioeconomic data, such as population, households, employment, and schools, that are located in each Traffic Analysis Zone (TAZ), are inputs to the travel demand model. A TAZ is a small geographic unit used in travel models to create trip generation rates for all land uses within the TAZ, and thus cumulatively for the entire region.



The Collier MPO 2045 LRTP update includes 730 TAZs for Collier County, as presented in [Appendix B](#).

A primary source of socioeconomic data for the Collier MPO 2045 LRTP was Collier County's 2017 Collier Interactive Growth Model (CIGM) data. The CIGM is a population forecasting model that first predicts where and when residential growth will take place in each TAZ, then forecasts where and when supporting land uses, such as employment, shopping, and schools, will be required.

The University of Florida's Bureau of Economic and Business Research (BEBR) produces Florida's official state and local population estimates and projections. The BEBR estimates are used for distributing state revenue-sharing dollars to cities and counties in Florida, and their projections for future years are used in city and county comprehensive plans and in MPO plans. BEBR data are provided geographically at the county and city levels and, therefore, are not available by TAZ.

#### **Base Year (2015)**

Developing the base-year socioeconomic data included coordinating and refining the 2017 CIGM population data (produced for each TAZ) to match the U.S. Census Bureau American Community Survey countywide population estimate for 2015. Other 2015 socioeconomic data came from various sources, including official U.S. Census data and the CIGM, which provided data on jobs, schools, and number of hotel/motel rooms.

#### **Forecast Year (2045)**

The CCGMP requires that the County's Capital Improvement Plan be based on BEBR data mid-range (or medium) projection (Policy 4.9, Future Land Use Element). To maintain consistency between the CCGMP and the Collier MPO 2045 LRTP, the socioeconomic data for 2045 were adjusted to match the BEBR medium projection for the year 2045 before being used as the forecast data for the travel model.



*Randall Boulevard looking west toward Immokalee Road (CR 846)*

## Summary of Socioeconomic Data

**Table 2-1** summarizes and compares the 2015 and 2045 socioeconomic data. Total residential population is forecasted to increase 43 percent by 2045 at 510,237, with single-family population increasing approximately 63 percent, and multi-family population increasing 21 percent. The total number of dwelling units is expected to increase 29 percent, with single-family dwelling units increasing 47 percent and multi-family dwelling units growing 13 percent.

**Figures 2-4** and **2-5** present the Dwelling Units Growth and Commercial Square Footage Growth, respectively. The most significant increase in dwelling unit and commercial square footage are primarily located in the following areas:

- Rural Land Stewardship Area
- Rural Mixed Fringe District

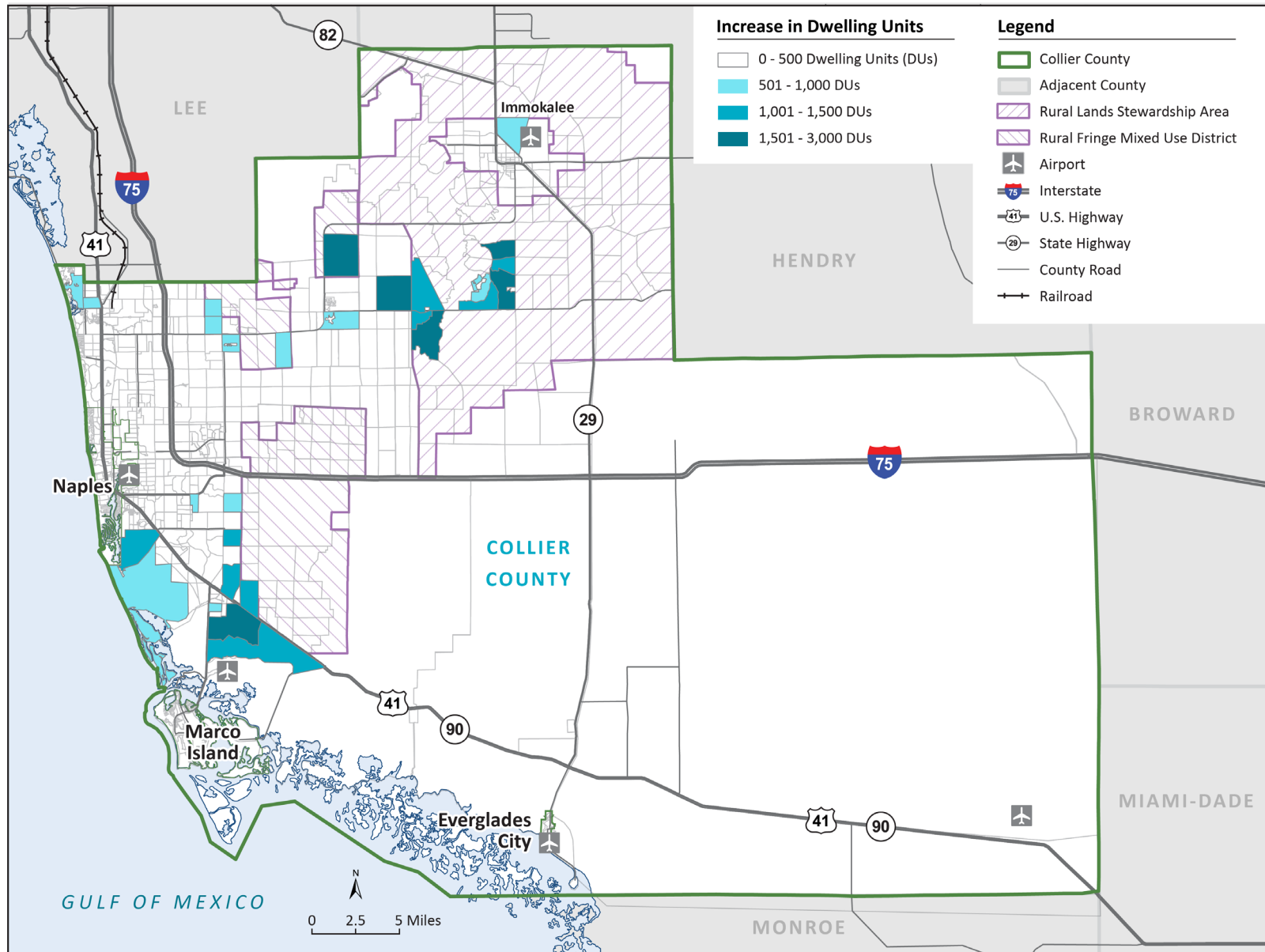
The Collier 2045 LRTP *2015 and 2045 Socio-economic Data Technical Memorandum* prepared under separate cover (Spikowski Planning Associates 2020) presents further details on the development of the socioeconomic data and forecasting. While the land use forecasting process is based upon reasonable assumptions of future land use and development, it is a forecast based upon the current understanding of where development could occur.

**Table 2-1. 2015 and 2045 Socioeconomic Data**

	2015	2045	Growth
Single-Family Dwelling Units	102,622	151,104	47%
Multi-Family Dwelling Units	115,147	130,655	13%
Total Dwelling Units	217,769	281,759	29%
Single-Family Population	184,377	300,152	63%
Multi-Family Population	173,386	210,085	21%
Total Residential Population	357,763	510,237	43%
Employees (at place of work/employment)	143,044	212,780	49%
Workers (at place of residence)	179,594	194,090	8%
Hotel/Motel Units	8,817	9,380	6%
Total School Enrollment (including colleges)	67,922	75,117	11%

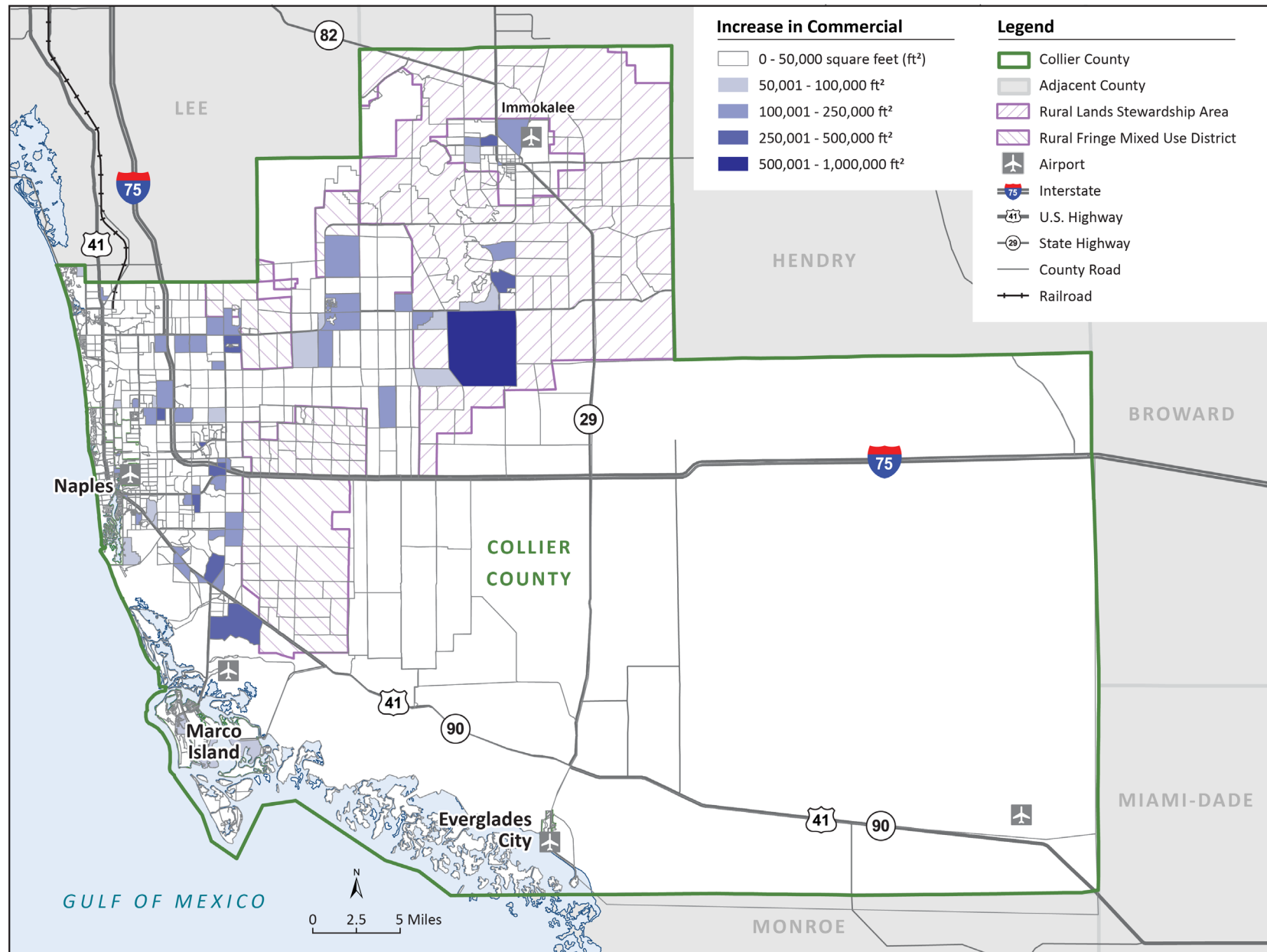
Source: Spikowski Planning Associates 2020

**Figure 2-4. Dwelling Unit Growth Areas**



Source: Spikowski Planning Associates (2015)

**Figure 2-5. Commercial Square Footage Growth Areas**



Source: Spikowski Planning Associates (2015)

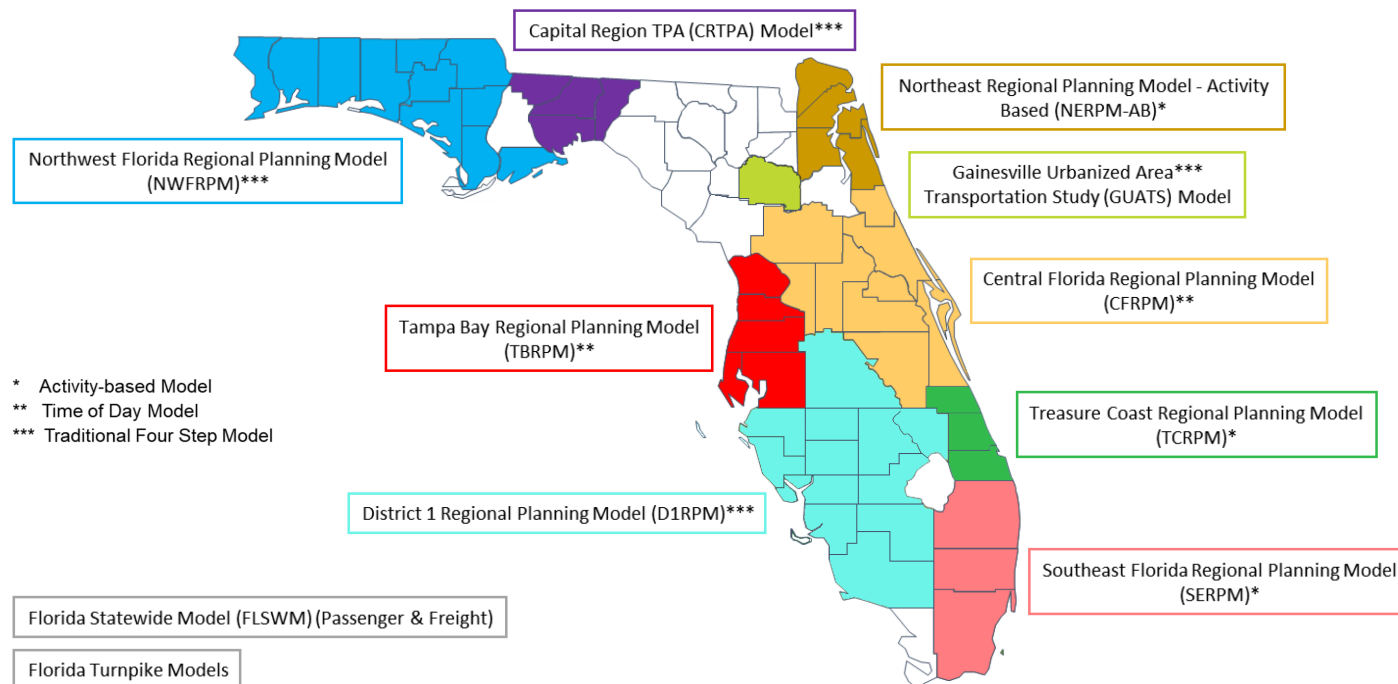


## Travel Model Development Process

FDOT requires regional and local transportation planning agencies to use an FDOT-approved travel demand model (if available) for their planning area. Travel models simulate responses people make about how to travel, given various possible network configurations and capacities of highways and transit service. **Figure 2-6** presents the approved FDOT travel demand models in Florida. Because Collier County is located within FDOT District One, the FDOT District One Regional Planning Model (D1RPM) was used for the Collier MPO 2045 LRTP update.

The D1RPM travel model was validated and calibrated for the base year 2015 using actual traffic counts and transit service for 2015, along with the actual 2015 socioeconomic data for each TAZ. The 2015 socioeconomic data was input to the D1RPM travel model and the resulting traffic assignments were compared to actual traffic counts. After the model was validated to approximate 2015 conditions, the 2045 forecast data that had been distributed to each TAZ were used as inputs to estimate travel demand and potential project performance to meet that demand in 2045. The Collier MPO provided FDOT with the socioeconomic data for 2015 and

**Figure 2-6. FDOT-Approved Travel Demand Models**



2045 as inputs for the D1RPM model, and FDOT provided all travel model runs during the Collier MPO 2045 LRTP update.

Future-year roadway configurations, or alternative scenario travel networks, were developed by modeling the Existing Plus Committed (E+C) travel network using 2045 socioeconomic data to estimate future deficiencies. The E+C network includes all new road or capacity projects that have been implemented since 2015 (existing), plus all projects that have construction funded in the 2023 FDOT 5-Year Work Program (committed). Once potential deficiencies were understood, the new projects were identified as alternative network scenarios for input to the model. In addition to advisory meetings with the TAC and CAC, FDOT and Collier MPO staff held several coordination meetings on issues related to the model development process and the use of the model for developing the Needs Plan and the Cost Feasible Plan. Five alternative network scenarios were modeled and evaluated for the Collier MPO 2045 LRTP update.

### Forecasting Methodology

Population estimates and forecasts in travel models count the number of permanent residents in a manner similar to the U.S. Census Bureau. The population input entered into the D1RPM was the “residential population,” or the number of permanent residents in single-family and multi-family dwellings (not including seasonal residents and permanent residents living in group quarters, such as nursing homes, dormitories, jails, etc.). Seasonal residents were not included in the population totals; the dwellings they occupy seasonally were tabulated, but identified as “vacant” along with dwellings that were vacant for other reasons (for example, for sale or for rent).

The 2015 American Community Survey of countywide residential population of 357,305 is less than the population from the estimated 2017 CIGM population of 367,516. Therefore, the CIGM population and housing data for 2017 were correlated to 2015 levels.

To forecast 2045 estimates, the CIGM first determines the likely amount of residential, commercial, and industrial development in each TAZ at full build-out. For the LRTP update, logistic growth curves were adjusted for certain TAZs to simulate a conservative growth rate through 2045, so that the county-wide residential population would be aligned with the BEBR medium projection for 2045. These growth-curve adjustments had no effect on the anticipated density and intensity at build-out of any TAZ based on applicable land use designations.

The 2015 employment levels were prepared by FDOT based on data from InfoUSA, a commercial provider. The CIGM employee forecasts for 2045 were the primary basis for socioeconomic data on employment for 2045, as neither InfoUSA nor any source other than the CIGM is able to provide accurate forecasts for small areas, such as TAZs. The CIGM also provided 2045 forecasts for industrial, retail, office, and public school employees.

The CIGM school enrollment data consists of the number of students attending a K–12 public school in each TAZ. School enrollment data were supplemented with charter school and private school enrollments from the Collier County School District and the Florida Department of Education, respectively. School enrollment data were further supplemented with the number of students in colleges and universities. The 2045 total school enrollment forecasts were derived similar to the population growth forecasts.

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Additional 2015 data used for the D1RPM included the U.S. Census Bureau data plus data provided directly by county and state agencies, including the number of single-family dwellings in each TAZ with two or more vehicles and the average household income in each TAZ. Because the U.S. Census does not provide separate data by TAZ, multiple adjoining TAZs were assigned the data from a single larger area, such as a Census block group or Census tract.

## 2-4 Public Participation

The major steps defined in the public participation process are consistent with the major milestones in the LRTP development process (refer to Figure 2-1). Public outreach techniques during the Collier MPO 2045 LRTP update included public meetings, newsletters, website, social media, surveys, and public service announcements. The *2045 LRTP Public Involvement Summary Report* (provided under separate cover) presents a detailed summary of the public outreach efforts and results. **Table 2-2** presents a chronology of the public participation outreach throughout the 2045 LRTP update.

The 2045 LRTP update was kicked off by presenting an overview of the LRTP process and tasks at the MPO Board and TAC/CAC meetings in May 2019. The LRTP update process began with developing the Collier MPO 2045 LRTP Public Involvement Plan (provided under separate cover), which was presented to the TAC/CAC and MPO Board on August 26 and September 13, 2019, respectively.

The PIP identifies outreach efforts and techniques that give officials, agencies, local government, interested parties, and the public an opportunity to participate in the planning process. The PIP also identifies methods to measure the effectiveness of the outreach.

Additionally, the LRTP 2045 *Goals, Objectives and Decision-Making Framework White Paper* (provided under separate cover) was also presented to the MPO Board and TAC/CAC, which included a presentation of the proposed Vision, Goals, and Objectives, and evaluation criteria of the Collier MPO 2045 LRTP update. The TAC/CAC and MPO Board comments were subsequently incorporated into the documents, and the MPO Board endorsed the PIP and the Goals, Objectives and Decision-Making Framework White Paper during their regularly scheduled meeting on October 11, 2019.

Advisory meetings with the TAC/CAC were established during the early phases of the Collier MPO 2045 LRTP update. The advisory meetings provided valuable feedback during the development of the E+C Network alternatives for network scenario planning, Needs Plan development, and the Cost Feasible Plan development. The COVID-19 pandemic occurred during the 2045 LRTP update, requiring some of the meetings to be moved to a virtual platform.

**Table 2-2. Public Participation Events**

Event Details	Group	Date
2045 LRTP Kickoff - Overview of LRTP Tasks	MPO Board	5/10/2020
	TAC/CAC	5/20/2020
Presentation of Draft Evaluation Framework White Paper and Draft PIP	TAC/CAC	8/26/2019
	MPO Board	9/13/2019
Presentation of Updates to the Evaluation Framework White Paper and PIP based on MPO input. Endorsed by MPO Board.	MPO Board	10/11/2019
Presentation of E+C Network and basic Socioeconomic Data. Board approved submittal of the E+C Network to FDOT.	TAC/CAC	10/28/2019
	MPO Board	11/8/2019
Attended the Ciclovía Immokalee event at the Immokalee Community Park to present the E+C Network and to distribute the LRTP Kick-off Survey and newsletter.	Members of the Public	11/2/2019
Presentation of the 2045 Socioeconomic Forecast Zonal Data (by Traffic Analysis Zone). TAC/CAC endorsed the zonal data. MPO Board approved submittal of the zonal data to FDOT.	TAC/CAC	11/25/2019
	MPO Board	12/13/2019
2045 External Station Volume Projections Coordination Meeting	MPO Staff and Representatives, FDOT Traffic Staff and Representatives	1/24/2020
2045 External Station Volume Projections Coordination Meeting	MPO Staff and Representatives, FDOT Traffic Staff and Representatives	2/3/2020
2045 LRTP Socioeconomic Data Coordination meeting	MPO Staff and Representatives, FDOT Traffic Staff and Representatives	3/26/2020
Traffic and Socioeconomic Data Coordination	MPO Staff and Representatives, Collier County Staff	4/9/2020
Alternative 1 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	4/15/2020
2045 LRTP Network Scenarios Coordination	MPO Staff and Representatives, Collier County Staff	5/6/2020
Alternative 1 Modeling Results and Alternative 2 Modeling Coordination	MPO Staff and Representatives, Collier County Staff, Lee County MPO Director	5/12/2020
Alternative 2 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	5/14/2020



**Table 2-2. Public Participation Events**

Event Details	Group	Date
Presentation of Alternative 1 Network Scenario modeling results and Proposed Alternative 2 Network Scenario. TAC/CAC provided input.	TAC/CAC	5/18/2020
Alternative 2 Modeling Results and Alternative 3 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	6/9/2020
Presentation of Alternative 2 Network Scenario modeling results and Proposed Alternative 3 Cost Feasible Network. TAC/CAC and MPO Board provided input.	TAC/CAC	6/10/2020
	MPO Board	6/12/2020
Needs Plan Projects List Evaluation Scoring Coordination	MPO Staff and Representatives, Collier County Staff	6/30/2020
Alternative 3 Modeling Results and Alternative 4 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	7/7/2020
Presentation of Alternative 3 Cost Feasible Network modeling results, evaluation criteria scoring, and project rankings. TAC/CAC provided input.	TAC/CAC	7/8/2020
Transit Planning and Congestion Management Coordination Meeting	MPO Staff and Representatives, Collier County Staff, FDOT Staff and Representatives, Lee County MPO Director	7/14/2020
Alternative 4 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	7/16/2020
Virtual Public Meeting Number 1. Presentation of the Draft Project Needs List and overview of the LRTP process. Panel of Collier MPO Staff, Collier County Staff, and FDOT Staff present for the question and answer session.	Members of the Public	7/29/2020
Alternative 4 Modeling Results and Alternative 5 Modeling Coordination	MPO Staff and Representatives, Collier County Staff, Lee County MPO Director	8/6/2020
Presentation of Alternative 4 Cost Feasible Network modeling results, proposed Alternative 5 Cost Feasible Network, project costs, revenue forecasts, and the 7/29/2020 virtual public meeting results. TAC/CAC provided input.	TAC/CAC	8/7/2020
2045 LRTP Revenue Projections Coordination	MPO Staff and Representatives, Collier County Staff	8/10/2020
Alternative 5 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	8/17/2020
Alternative 5 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	8/18/2020

**Table 2-2. Public Participation Events**

Event Details	Group	Date
Alternative 5 Modeling Results and Cost Feasible Plan Projects Coordination	MPO Staff and Representatives, Collier County Staff	9/9/2020
2045 LRTP Cost Feasible Plan Projects and Alternative 5 Comments Coordination Meeting	MPO Staff and Representatives, Collier County Staff, FDOT Staff and Representatives	9/11/2020
Presentation of Final Project Needs List, Draft Cost Feasible Plan, revenue forecast, project costs, project rankings, and results of public input. MPO Board provided input.	MPO Board	9/11/2020
Presentation of the Needs Plan Projects	Immokalee CRA	8/19/2020
Presentation of the Needs Plan Projects	Collier MPO LCB	9/16/2020
Virtual Public Meeting Number 2. Presentation of the Draft Cost Feasible Plan. Panel of Collier MPO Staff, Collier County Staff, and FDOT Staff present for the question and answer session.	Members of the Public	10/14/2020
Presentation of the results of public input, Draft Cost Feasible Plan, and Draft LRTP. TAC/CAC and MPO Board provided input.	TAC/CAC	10/26/2020
	MPO Board	11/13/2020
Presentation of the Final Cost Feasible Plan and Final LRTP. MPO Board approved Final LRTP for adoption.	MPO Board	12/11/2020

Public input was an important part of the LRTP development process and helped refine the community's collective goals and objectives, which in turn helped guide the entire planning process. The first public engagement activity was a Kick-Off Public Survey, which was posted on the Collier MPO website.

The initial community outreach occurred November 2, 2019, when Collier MPO representatives attended the Ciclovía Immokalee event. This event was at the Immokalee Community Park and is a free family-friendly event held monthly to promote healthy habits and physical activities for families. The LRTP Kick-Off Public Survey and Newsletter were distributed at the event and transportation network maps were displayed. In addition to completing the survey, attendees were invited to the Collier MPO Information Booth to view the E+C network and provide input on existing and future needed transportation projects.



**Local Residents View Maps at the Ciclovía Immokalee Event on November 2, 2019**

Because of the COVID-19 pandemic, the public involvement meetings were moved to a virtual platform. The first virtual public meeting was held in July 2020 using a GoToMeeting platform and presented the Draft Needs Plan. The second virtual public meeting was held using Zoom in October 2020 and presented the Draft Cost Feasible Plan. Both meetings were advertised through the Collier MPO website and the Collier County Facebook page and were further promoted using a Facebook ad 1 week prior to the events.

Virtual Public Meeting #1 included the following displays for public review on the Collier MPO website:

- LRTP Process and Schedule
- LRTP Goals and Objectives
- Draft Needs Network
- 2045 Forecasted Growth
- Bicycle and Pedestrian Master Plan
- Proposed Transit Network
- Prerecorded video presentation

Additionally, a map of the Draft Project Needs List was presented in a WikiProject Map on the Collier MPO website and made available to the public 1 week prior to the virtual public meeting. The WikiProject Map allowed viewers to select their top five projects from the needs project list and provide comments on the projects, and also included a short survey.

Virtual Public Meeting #2 included the following displays for public review on the Collier MPO website:

- 2045 Collier MPO Draft LRTP Chapters 1 through 6
- Draft Cost Feasible Plan Roadway Network Map and Table

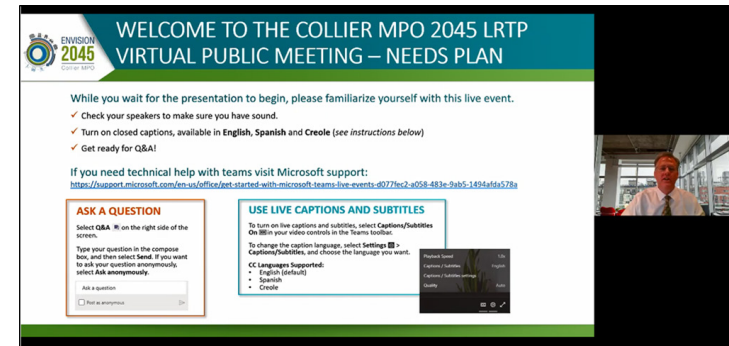
- Draft Cost Feasible Plan Roadway Network Maps by funding years
- Bicycle and Pedestrian Draft Cost Feasible Map
- Prerecorded video presentation

At the start of each virtual public meeting, participants were greeted with a pre-recorded video presentation. A panel of MPO staff and representatives, Collier County staff, and FDOT staff was available for the question-and-answer portion of the virtual meeting. Participants were asked to submit questions prior to the meeting but could also ask questions using the chat option during the meeting. A moderator presented the questions to the panel during the question-and-answer portion of the meeting. Meeting participants were asked to complete a comment form after the meeting and to complete the wiki map and survey exercise on the MPO website if they had not already done so. The comment period for the 2045 LRTP Draft Needs Assessment Plan, and the 2045 LRTP Cost Feasible Plan remained open through August 12, 2020, and October 31, 2020, respectively.

In addition to the public workshops, scheduled project updates were given to the TAC/CAC and the MPO Board. As the process reached the point of plan deliverables, technical memoranda were prepared and submitted to the TAC/CAC and MPO Board for review and comment.

Following the development of this Draft Collier MPO 2045 LRTP update document, and during the formal public comment period, copies of the document were distributed to a variety of publicly accessible locations (for example, public libraries, government center, etc.) and another virtual public meeting was conducted to solicit comments on the draft LRTP document, including the Cost Feasible Plan recommendations.

All public written comments received throughout the process were incorporated as part of the Support Documentation, and any comments received during the public comment period were specifically addressed prior to the Collier MPO's adoption hearing.



Screen Capture from Virtual Public Meeting No. 1



Screen Capture from Virtual Public Meeting No. 2





## 2045 LRTP Goals and Objectives

- 3-1** Long Range Vision for Collier County Transportation
- 3-2** 2045 LRTP Goals
- 3-3** Applying Priorities to Decision-Making



## Chapter 3 2045 LRTP Goals and Objectives

### 3-1 Long Range Vision for Collier County Transportation

The Collier MPO 2045 LRTP development process began early in 2019 by establishing the plan's vision statement, goals, and objectives. The goals and objectives help guide the LRTP process to meet the Collier MPO's vision, while considering federal, state, and regional priorities. The LRTP goals and objectives refine the Collier MPO's vision and are a critical part of the planning process because the project needs are established based on these goals and objectives.

*"The Collier MPO 2045 Long Range Transportation Plan envisions the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods while addressing current and future transportation demand, environmental sustainability, and community character."*

*Collier MPO 2045 LRTP Vision Statement*

#### Federal Planning Factors

This 2045 LRTP Update addresses federal mandates for regional transportation planning. As noted in Chapter 1, the guidance, commonly referred to as FHWA's Expectations Letter, outlines the agency's expectations for the development of LRTP updates to help MPOs meet the federal planning requirements. Based on the FAST Act provisions, the FHWA Expectations Letter notes

that MPOs are now required to address the following new planning factors:

- Improve the resiliency and reliability of the transportation system, and reduce or mitigate storm water impacts of surface transportation
- Enhance travel and tourism

Including these two new planning factors, the FAST Act requires 10 planning factors for long-range transportation planning (detailed in Chapter 1-3). **Figure 3-1** illustrates the federal planning factors.

**Figure 3-1. Federal Planning Factors**



Source: FDOT (2019c)

## Statewide and Metropolitan Planning Priorities

Florida statutes require that LRTPs include projects and strategies that will serve all modes of transportation and benefit the region as follows:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Increase the safety and security of the transportation system for motorized and non-motorized users
- Increase accessibility and mobility options available to people and for freight
- Protect and enhance the environment, promote energy conservation, and improve quality of life
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Promote efficient system management and operation
- Emphasize the preservation of the existing transportation system

The LRTP should emphasize coordination with local jurisdictions (cities of Naples, Marco Island, and Everglades City) and consistency with future land use planning and locally adopted comprehensive plans of those entities and should consider a 20-year planning horizon. The LRTP should strive for integrated land use and transportation planning that fosters sustainable development and reduces greenhouse gas emissions.

## Collier County Growth Management Plan

The Future Land Use Element of the Collier County Growth Management Plan (Collier County 2020b) (the County's comprehensive plan) was adopted in 1997 and amended in November 2019. The plan's core principles of growth include:

- Protect natural resource systems and guide development away from areas of greatest sensitivity
- Coordinate land use and public facilities to develop within Urban Designated Areas
- Manage coastal development
- Provide adequate and affordable housing
- Attain high-quality urban design
- Improve efficiency and effectiveness in the land use regulatory system
- Protect private property rights

## Collier County Community Housing Plan

The *Collier County Community Housing Plan* (Collier County 2017) has the central goal of a diverse range of attainable and affordable housing for all residents. Specific transportation recommendations from this plan include:

- Integrate bus routes with affordable housing locations: identify corridors for multi-family development, implement park-and-ride systems, and explore bus rapid transit (BRT) and express service lines
- Enhance bike lane and pedestrian systems: implement Comprehensive Pathways Plan; enhance safety for vulnerable users

- Ride-sharing options for enhanced mobility: create a ride-sharing option
- Revenue for transit and alternative mobility: establish sustainable and secure revenue streams; implement a recurring revenue source; establish uniform standards to determine the impacts on transit from new development

### 3-2 2045 LRTP Goals

The advisory committees endorsed, and the MPO Board approved in October 2019, a White Paper entitled *Goals, Objectives and Decision-Making Framework* for the 2045 LRTP. The following material is consistent with that document.

The 2045 LRTP Goals include:

- Goal #1: Ensure the Security of Transportation System for Users
- Goal #2: Protect Environmental Resources
- Goal #3: Improve System Continuity and Connectivity
- Goal #4: Reduce Roadway Congestion
- Goal #5: Promote Freight Movement
- Goal #6: Increase the Safety of the Transportation System for Users
- Goal #7: Promote Multimodal Solutions
- Goal #8: Promote the Integrated Planning of Transportation and Land Use
- Goal #9: Promote Sustainability in the Planning of Transportation and Land Use
- Goal #10: Consider Climate Change Vulnerability and Risk in Transportation

- Goal #11: Consider Connected and Autonomous Vehicles (CAV) Technology in Future

**Goals 1 through 8** and their associated objectives (summarized in the following section) originated in the Collier MPO 2040 LRTP. These goals were accepted by the Collier MPO Board on May 10, 2019. Goals 9 and 10 along with their associated objectives were added in response to new federal planning factors as well as input received from the TAC at their May 20, 2019 meeting.

**Goals 9 and 10** address sustainability and resiliency, which are becoming more important in transportation planning as extreme weather events, such as flooding, severe heat, and intense storms, threaten the long-term investments that federal, state, and local governments have made in transportation infrastructure.

The Collier MPO added **Goal 11** in response to the new FDOT requirement summarized as follows. In May 2018 the FDOT Office of Policy Planning issued *Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicle* (FDOT 2018), which notes that a key role of MPOs in supporting the state of Florida's transition to an Automated, Connected, Electric and Shared-Use future will include developing policies and prioritizing projects that encourage shared-use of vehicles.

Therefore, new FDOT requirements state that LRTPs must at a minimum:

*Assess capital investment and other measures necessary to make the most efficient use of existing transportation facilities to relieve vehicular congestion, improve safety, and maximize the mobility of people and goods. Such efforts must include, but are not limited to, consideration of infrastructure and technological improvements necessary to accommodate*



*advances in vehicle technology, such as autonomous technology and other developments. [s.339.175(7)(c)(2), F.S.]*

### Priorities: Goals, Objectives, and Evaluation Criteria

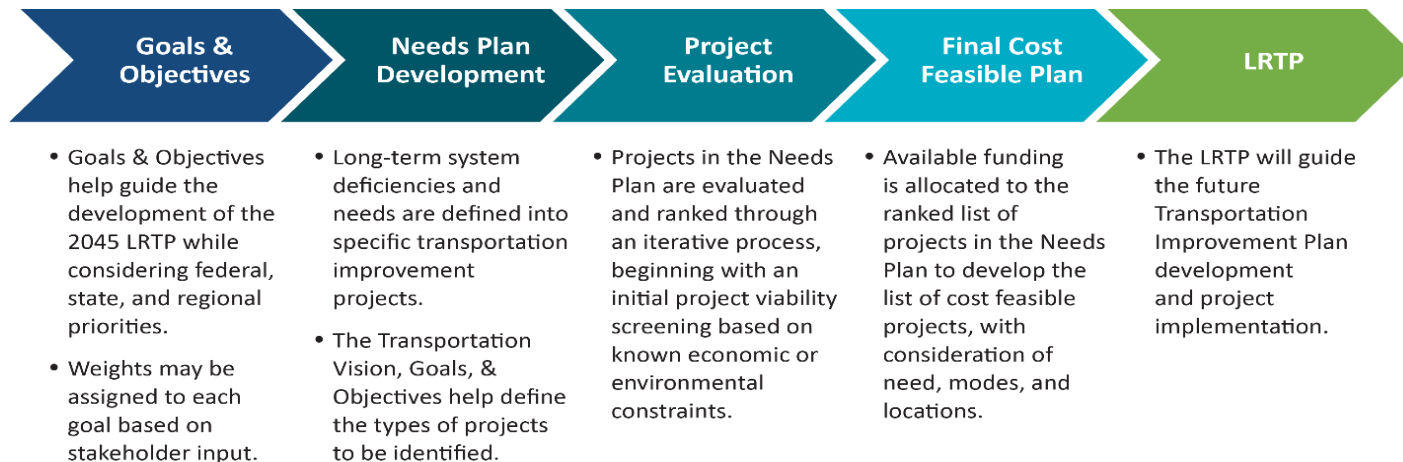
The 2045 LRTP Goals and Objectives are listed on the following pages. The goals provide a framework for realizing the LRTP vision. The objectives provide specific guidance on how to achieve each goal.

This LRTP is guided by the goals and objectives, each of which represents a specific element of how the transportation system should be managed for the next 25 years. The 11 goals are intended to maintain Collier County and its incorporated cities as livable communities and to improve the Countywide transportation system, keeping pace with growth and expected demand for transportation services in the region.

Evaluation criteria were used to evaluate and compare how well potential transportation projects met the goals and objectives. Additionally, each goal was assigned a weighting factor that placed more emphasis on certain goals that require more focus in the Collier MPO transportation system. A project evaluation criterion shows the advantages and disadvantages of the proposed projects independently as well as in relation to each other. As shown on **Figure 3-2**, this type of evaluation is ultimately used to develop the recommendations and prioritize transportation projects in the Needs Assessment and Cost Feasible Plan.

To support the performance-based process emphasized in the FAST Act, the following pages present defined goals and objectives and the evaluation criteria applied to each proposed project.

**Figure 3-2. LRTP Development Framework**



## Goal #1: Ensure the Security of Transportation System for Users



The primary security issue for Collier County residents relates to implementation of sound emergency management plans. The primary threat to the County is extreme weather events, particularly hurricanes and wildfires. As a result, emphasis has been placed on enhancing important evacuation

routes.

The total weighting factor for this goal is 8 percent.

### Objectives:

- Enhance important evacuation routes
- Maintain sound transportation components of the emergency management plan for Collier County

### Project Evaluation Criteria:

- Improves or maintains critical evacuation routes
- Provides enhanced or potential new evacuation routes where needed

## Goal #2: Protect Environmental Resources



Collier County is fortunate to have wide-ranging environmental resources including extensive wetland resources and natural wildlife areas that greatly enhance the quality of life for residents and visitors. Protection of these resources has been highly valued in the 2045 LRTP.

The total weighting factor for this goal is 12 percent.

### Objectives:

- Minimize encroachment by transportation projects on wetlands and other protected natural areas
- Minimize adverse impacts on threatened and endangered species

### Project Evaluation Criteria:

- Minimize wetland encroachments by transportation projects
- Minimize impacts to wetland flows (maintain or enhance existing flows to the extent feasible)
- Minimize the adverse impacts on threatened and endangered species

### Goal #3: Improve System Continuity and Connectivity



Continuity and connectivity make it easier for residents and visitors to access the transportation system as directly as possible. Connectivity is a priority for all modes, and the future network provides direct routes and reduces travel time.

The total weighting factor for this goal is 10 percent.

#### Objectives:

- Improve continuity and capacity of existing facilities
- Promote connectivity by creating new transportation links
- Create a network of direct routes between and within areas of development

#### Project Evaluation Criteria:

- Improves existing infrastructure deficiencies
- Improves connectivity with new transportation links to address system gaps

### Goal #4: Reduce Roadway Congestion



Congestion and accompanying delay poses a serious cost to the residents of Collier County, reducing their access to jobs, education, health care, shopping, recreation, and other activities. The 2045 LRTP emphasizes reducing congestion to help enhance the quality of life for County residents.

The total weighting factor for this goal is 18 percent.

#### Objectives:

- Reduce the number of deficient roadways (those with a high volume-to-capacity ratio) identified in the 2045 existing plus committed (E+C) network
- Reduce travel delay between residential areas and key destinations

#### Project Evaluation Criteria:

- Improves existing deficient facility or improves a new or neighboring facility intended to relieve an existing deficient facility
- Improves intersections and roadways with poor levels of service

## Goal #5: Promote Freight Movement



Efficient freight movement is directly related to the economic well-being of a community. The cost of moving freight is reflected in all consumables and in local production activities.

The total weighting factor for this goal is 6 percent.

### Objectives:

- Enhance movement on major regional freight mobility corridors or freight distribution routes
- Improve access to freight activity centers (distribution facilities or major commercial/industrial districts)

### Project Evaluation Criteria:

- Enhances operation of the facility identified as a major freight route

## Goal #6: Increase the Safety of the Transportation System for Users



Safety of the transportation system is an important factor in the MPO's planning and project development process. The investment of projects that enhance safety will lead to reduced crashes and lower crash severity for all modes of transportation.

The total weighting factor for this goal is 10 percent.

### Objectives:

- Reduce the number of fatalities, injuries, and crashes
- Ensure adequate bicycle and pedestrian facilities are incorporated into new highway and transit projects
- Implement safety-related improvements on high crash corridors

### Project Evaluation Criteria:

- Enhances safety of transportation system users
- Improves facility or intersection identified as having a high crash occurrence or a fatality
- Promotes traffic calming
- Reduces vehicular conflicts with bicyclists, pedestrians, and other vulnerable road users



## Goal #7: Promote Multimodal Solutions



The County recognizes the importance of alternative forms of transportation that promote healthful living, improve air quality, and improve residents' quality of life.

The total weighting factor for this goal is 10 percent.

### Objectives:

- Improve frequency and reliability of public transit service routes and improve access to park-and-ride lots
- Improve pedestrian and bicycle facilities
- Improve air quality
- Improve quality of life
- Promote healthy living
- Implement Complete Streets policies<sup>1</sup>

### Project Evaluation Criteria:

- Provides for trail improvements that implement the Bicycle and Pedestrian Master Plan

- Provides multimodal improvement near affordable housing, centers of employment, multi-family housing, health care, educational, recreational, or cultural centers
- Provides multimodal improvements for environmental justice communities and underserved neighborhoods, and connects these neighborhoods to centers of employment and important destinations for transit-dependent households
- Improves transit (frequency and reliability) within existing or future transit service areas (TSA) or within a community redevelopment area (CRA); improves access to park-and-ride facilities; provides for BRT
- Improves bicycle or pedestrian access to transit
- Improves safety and access for people of all ages and abilities; improves safety for people walking, biking, and using mobility devices

<sup>1</sup> <https://www.fdot.gov/roadway/csi/default.shtm>

## Goal #8: Promote the Integrated Planning of Transportation and Land Use



Transportation improvements can often result in new economic development and land use activity. In turn, decisions related to land use and economic development are often the basis for transportation system investments. The Collier MPO strives to develop projects that promote land use objectives of the County and its incorporated cities.

The total weighting factor for this goal is 10 percent.

### Objectives:

- Coordinate with local governments and partner agencies to assure transportation plans and programs support local land use plans and a sustainable transportation system
- Assure that local growth management objectives are reflected in transportation plans and programs
- Assure that transportation plans and projects promote economic sustainability for the County

### Project Evaluation Criteria:

- Improves access to regional travel (for example, interstates, airports, ports, and SIS facilities)
- Improves access to tourist destinations
- Supports targeted redevelopments or CRAs (multimodal or vehicle improvements)
- Identified in partner agency (city, transit, county, MPO, etc.) plans as a priority

- Improves vehicle or freight movement to an intermodal facility

## Goal #9: Promote Sustainability in the Planning of Transportation and Land Use



A sustainable transportation system allows for the basic access and needs of the community to be met safely. It operates fairly and efficiently, offers a choice of transportation modes, and promotes equity for all users.

The total weighting factor for this goal is 8 percent.

### Objectives:

- Improve the sustainability of communities through increased access to affordable housing and centers of employment and reduced automobile dependency
- Ensure that transportation system improvements are equitable and fair to all residents of the County
- Engage a diverse public in the development of the region's transportation system

### Project Evaluation Criteria:

- Benefits low-income areas and improves sustainability through increased housing choices and reduced automobile dependency

## Goal #10: Consider Climate Change Vulnerability and Risk in Transportation



A resilient transportation system is one that supports mobility, system preservation, and evacuation needs, and addresses social equity.

The total weighting factor for this goal is 4 percent.

### Objectives:

- Identify key climate impacts (rising sea levels, hurricanes, etc.)
- Identify sensitive assets and thresholds for impacts
- Identify, evaluate, and adopt strategies to address identified vulnerabilities
- Screen projects during planning to avoid making investments in particularly vulnerable areas

### Project Evaluation Criteria:

- Promotes transportation infrastructure resiliency in the face of climate change and sea level rise

## Goal #11: Consider Connected and Autonomous Vehicles (CAV) Technology in Future



Advances in automotive infrastructure technology through connected vehicles or self-driving cars pose some of the biggest challenges to transportation planning (for example, equity among users). The potential for disruptions to transportation systems includes changes to land uses and the

system network itself. However, because of the potential safety benefits, the Collier MPO is exploring ways to incorporate these technologies into the transportation network.

The total weighting factor for this goal is 4 percent.

### Objectives:

- Explore options for application and implementation of CAV technologies, in light of the lack of current guidance.
- Consider new guidance and developments during the LRTP process.

### Project Evaluation Criteria:

- Uses technological improvements (for example, ITS, Transit Signal Priority, etc.)

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### 3-3 Applying Priorities to Decision-Making

The 2045 LRTP development process builds upon the 2040 LRTP and input from the MPO Board, advisory committees, planning partners, and public input (surveys) to establish the long-range vision statement for the MPO's transportation system in 2045. The goals and objectives of the transportation plan are established to help realize this vision. The goals and objectives of the LRTP ultimately guide the entire LRTP development process by creating a decision-making framework through which projects can be evaluated and ranked to define and document project priorities.

### Evaluation Criteria for Project Selection

Like the goals and objectives, the 2045 LRTP evaluation criteria (refer to [Table 3-1](#)) build upon the evaluation criteria established in the 2040 plan. Evaluation criteria are used to evaluate and then compare how well potential transportation projects meet the goals and objectives. Each criterion is assigned a weighting factor that places more emphasis on those criteria that require more focus in the Collier MPO transportation system. Ultimately, this type of evaluation is used to develop the recommendations and prioritize transportation projects.

The evaluation criteria and performance measures listed in Table 3-1 demonstrate the scoring methodology for project evaluation and selection, creating an actionable way for the vision, goals, and objectives to shape project selection.



**Table 3-1. 2045 LRTP Evaluation Criteria and Performance Measures**

Goal	Evaluation Criteria	Performance Measures	Weighting (out of 100)
<b>1. Ensure the Security of Transportation System for Users</b> Total Weighting Factor: 8%	1A - Improves or maintains critical evacuation routes	Yes = 5; No = 0	4
	1B - Provides enhanced or potential new evacuation routes where needed	Does the roadway connect to an existing evacuation route or does it have potential to be a new evacuation route (for example, major extension or new project that connects to a Strategic Intermodal System?)  Yes = 5; No = 0	4
<b>2. Protect Environmental Resources</b> Total Weighting Factor: 12%	2A - Minimize wetland encroachments by transportation projects	How many acres of wetland encroachment based on National Wetlands Inventory?  No impact = 0; 0–5 acres = -1; 6–10 acres = -2; 11–15 = -3; 15–20 = -4; 21 or more = -5 (max)	4
	2B - Minimize impacts to wetland flows (maintain or enhance existing flows to the extent feasible)	Proximity to protected natural areas (0.5 miles) Within 0.5 miles of Conservation Areas/Preserves lands?  Yes = -1 No = 0	4
	2C - Minimize the adverse impacts on threatened and endangered species	Amount of habitat encroachment based on primary panther habitat?  No impact = 0 0–10 acres = -1 11–20 acres = -2 21–30 = -3 31–40 = -4 40 or more = -5 (max)	4

**Table 3-1. 2045 LRTP Evaluation Criteria and Performance Measures**

Goal	Evaluation Criteria	Performance Measures	Weighting (out of 100)
<b>3. Improve System Continuity and Connectivity</b> Total Weighting Factor: 10%	3A - Improves existing infrastructure deficiencies	Does the project improve mobility in an existing roadway facility (for example, widening, intersection improvements, etc.)? Yes = 5; No = 0	5
	3B - Improves connectivity with new transportation links to address system gaps	Does the project improve connectivity with a new facility including projects that are extensions that connect to future or existing facilities? Yes = 5; No = 0	5
<b>4. Reduce Roadway Congestion</b> Total Weighting Factor: 18%	4A - Improves existing deficient facility or improves a new or neighboring facility intended to relieve an existing deficient facility	Does the project increase capacity or provide relief to a parallel facility (for example, new facilities, bridges over canals, etc.)? Yes = 5; No = 0	9
	4B - Improves intersections and roadways with poor levels of service	Does capacity ratio decrease when compared to the 2045 E+C Alternative? Yes = 5; No = 0	9
<b>5. Promote Freight Movement</b> Total Weighting Factor: 6%	5 - Enhances operation of the facility identified as a major freight route	Is the roadway on a regional freight mobility corridor, freight distribution route, or connects to a freight activity center as outlined in the 2040 LRTP? Yes = 5; No = 0	6
<b>6. Increase the Safety of Transportation System Users</b> Total Weighting Factor: 10%	6A - Enhances safety of transportation system users	Does project implement a recommendation from a safety plan (for example, safe routes to school, protected bike lanes, etc.)? Yes = 5; No = 0	2
	6B - Improves facility or intersection identified as having a high crash occurrence or a fatality	High crash location or segment? Yes = 5; No = 0	4
	6C – Promotes traffic calming	Does the project improve safety by calming traffic (for example, gateway treatments, roundabouts, reduced width and turning	2

**Table 3-1. 2045 LRTP Evaluation Criteria and Performance Measures**

Goal	Evaluation Criteria	Performance Measures	Weighting (out of 100)
		radii)? Are vehicular speeds appropriate to context and facility type? Yes = 5; No = 0	
	6D - Reduces vehicular conflicts with bicyclists, pedestrians, and other vulnerable road users	High crash location or segment for bicycle and pedestrian conflicts? Yes = 5; No = 0	2
<b>7. Promote Multimodal Solutions</b> Total Weighting Factor: 10%	7A - Provides for trail improvements that implement the Bicycle and Pedestrian Master Plan	New or improved trail/greenways = 5 No new or improved trail = 0	2
	7B - Provides multimodal improvement near affordable housing, centers of employment, multi-family housing, health care, educational, recreational, or cultural centers	Improvement within 0.25 miles = 5 No improvement within 0.25 mile = 0	2
	7C - Provides multimodal improvements for environmental justice communities and underserved neighborhoods, and connects these neighborhoods to centers of employment and important destinations for transit-dependent households	Improvement within 0.25 miles = 5 No improvement within 0.25 miles = 0	2
	7D - Improves transit (frequency and reliability) within existing or future TSAs or within a CRA; improves access to park-and-ride facilities; provides for BRT	Project along an existing or planned bus route within an existing or future TSA = 5 Project along an existing or planned bus route inside a CRA = 5 Improves access to park-and-ride facility = 5 Provides for BRT = 5	1

**Table 3-1. 2045 LRTP Evaluation Criteria and Performance Measures**

Goal	Evaluation Criteria	Performance Measures	Weighting (out of 100)
		No improvement = 0	
	7E - Improves bicycle or pedestrian access to transit	Improve Access = 5; No improvement = 0	2
	7F – Improves safety and access for people of all ages and abilities; improves safety for people walking, biking, and using mobility devices	Improvement = 5 No improvement = 0	1
<b>8. Promote the Integrated Planning of Transportation and Land Use</b> Total Weighting Factor: 10%	8A - Improves access to regional travel (for example, interstates, airports, ports, and SIS facilities)	Improves access = 5 Does not improve access = 0	4
	8B - Improves access to tourist destinations	Improves access = 5 Does not improve access = 0	2
	8C - Supports targeted redevelopments or CRAs (multimodal or vehicle improvements)	Yes = 5 No = 0	2
	8D - Identified in partner agency (city, transit, county, MPO, etc.) as a priority	Connections to other municipalities or counties? Yes = 5 No = 0	1
	8E - Improves vehicle or freight movement to an intermodal facility	Does the project improve vehicle or freight movement to intermodal facilities (for example, airport, bus transfer station, freight center, park and ride, etc.)? Yes = 5 No = 0	1



**Table 3-1. 2045 LRTP Evaluation Criteria and Performance Measures**

Goal	Evaluation Criteria	Performance Measures	Weighting (out of 100)
<b>9. Promote Sustainability in the Planning of Transportation and Land Use</b> Total Weighting Factor: 8%	9A - Benefits low-income areas and improves sustainability through increased housing choices and reduced automobile dependency	Does the project bring better mobility to a low-income areas and CRAs (for example, bike/ped improvements along a bus route or stop, etc.)? Project in target area=5 Project not in target area=0	8
<b>10. Consider Climate Change Vulnerability and Risk in Transportation Decision-Making</b> Total Weighting Factor: 4%	10A - Promotes transportation infrastructure resiliency in the face of climate change and sea level rise	Within 0.25 miles of NOAA 1 ft Sea Level Rise Flooding Area =5 Within 0.25 miles of NOAA 1 ft Sea Level Rise Low Lying Area = 3 Not in high risk area = 0	4
<b>11. Consider Connected and Autonomous Vehicles (CAV) Technology in the Future</b> Total Weighting Factor: 4%	11A - Utilizes technological improvements (ITS, Transit Signal Priority, etc.)	Yes = 5 No = 0	4



# 4

## 2045 Needs Plan

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- 4-1** Needs Plan Overview
- 4-2** Roadway Needs
- 4-3** Bicycle and Pedestrian Needs
- 4-4** Transit Needs
- 4-5** Air Transportation Needs

## Chapter 4 2045 Needs Plan

### 4-1 Needs Plan Overview

The 2045 LRTP Needs Plan identifies the multimodal transportation projects needed to address existing and future transportation network deficiencies within the MPO's jurisdiction without considering funding limitations. Developing the Needs Plan is the starting point for understanding and prioritizing the region's overall transportation needs. However, once the applicable transportation revenues available to the Collier MPO are applied to the Needs Plan, the number of projects that can be constructed to address the needs becomes significantly reduced. Projects in the Needs Plan are evaluated by scoring each project using defined goals and objectives, and the evaluation criteria described in Chapter 3. The projects that rank the highest are focused on when selecting which projects to include in the Cost Feasible Plan. This process is explained further in the Cost Feasible Plan section of this document.

While the projects shown as transportation needs are not fiscally constrained, associated policy and environmental constraints exist. The following policy constraints are noted in the Collier County Growth Management Plan Transportation Element (Collier County Planning and Zoning Department 2017) amended June 13, 2017:

- All future roadway capacity improvements shall include provisions for both bicycles and pedestrians.
- County facilities are to be maintained at a level of service (LOS) standard "D" or "E" as measured on a peak hour basis; LOS calculations are to be based on traffic experienced for 10 months of the year with peak seasonal and tourist months of February and March omitted.
- County roadways are constrained to a maximum of six lanes or when intensive land use development is immediately adjacent to roads. Roadways identified as constrained shall be subject to growth restrictions to not further degrade their LOS.
- The County will provide for the protection and acquisition of existing and future right-of-way (ROW). Sufficient ROW shall be acquired to facilitate arterial and collector roads as appropriate to meet the needs of the LRTP or other adopted transportation studies, plans or programs, appropriate turn lanes, medians, bicycle and pedestrian facilities, drainage canals, a shoulder sufficient for pull offs, and landscaping areas.
- The County is considering the viability of a Thoroughfare Corridor Protection Plan ordinance to preserve ROW for corridors or projects listed in the LRTP. This policy includes adoption of Corridor Preservation Maps and Tables and Critical Intersection Maps and Tables; and limits land uses within the corridors to direct incompatible land uses away from environmentally sensitive resources.
- Reduce vehicle miles traveled (VMT) and greenhouse gas emissions by providing for the safe movement of nonmotorized vehicles in new construction and reconstruction of roadways.

- Establish an integrated and connected road network to provide multiple, viable alternative travel modes or routes for common trips within the Northwest Transportation Concurrency Management Area (TCMA) and the East Central TCMA. Maintain 85 percent of the roadways within the TCMA at or above the County LOS standard.
- Transportation projects are to be pursued in a manner consistent with the findings of the County Annual Update and Inventory Report (AUIR).
- Encourage safe and efficient mobility for people traveling in rural areas that is compatible with the character of the County's rural areas. Examine the maintenance and operational needs of the rural roadway system, addressing the mobility needs of rural residents to include availability of roads for rural-to-urban travel, travel within the rural area, and for emergency evacuation purposes.
- Improve transit services for the transportation-disadvantaged in rural areas.
- Encourage the efficient use of transit services now and, in the future, consider intergovernmental efforts to coordinate public transit service between Naples and Bonita Springs in Lee County.

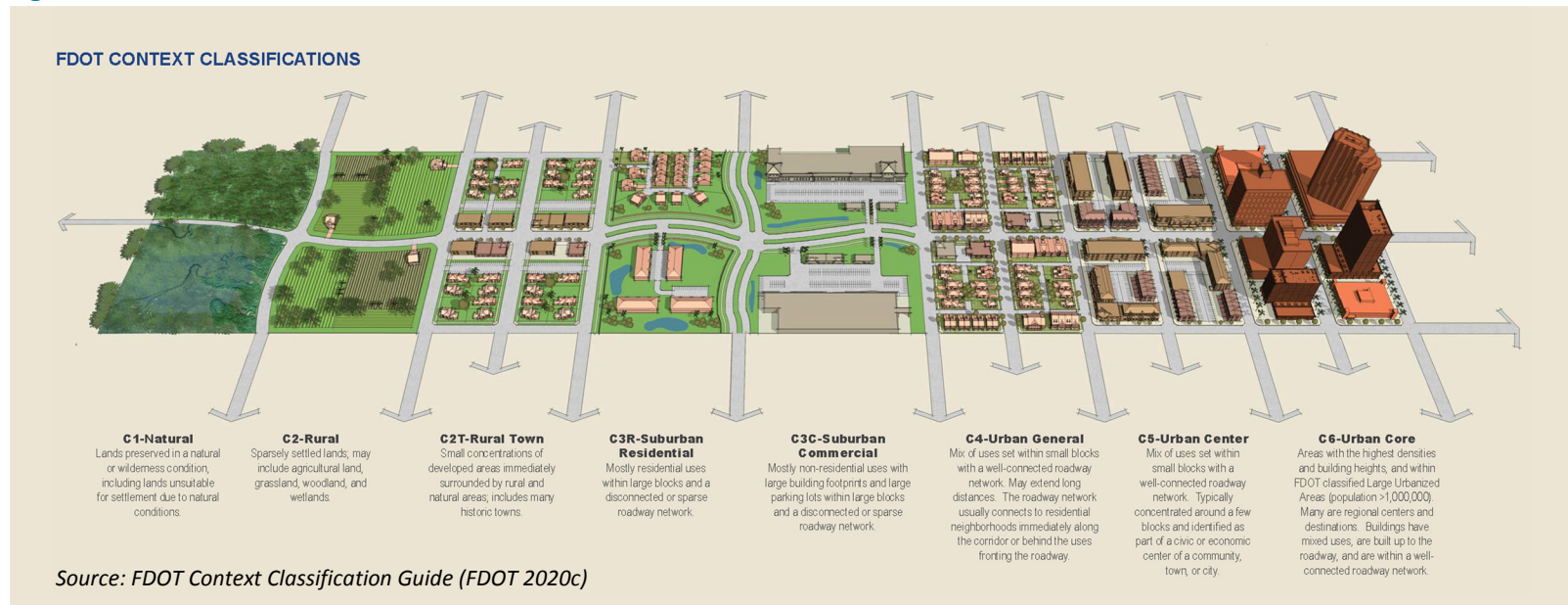
In September 2014, FDOT adopted the Statewide Complete Streets Policy (Topic No. 000-625-017-a). Additionally, the City of Naples and the Collier County Board of County Commissioners (BCC) approved Complete Streets Resolutions in November 2015 and January 2019, respectively. Complete Streets serve the transportation needs of users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers. A transportation system based on Complete Streets principles can help to promote safety, quality of life, and economic development.

Complete Streets are context-sensitive, and the approach provides transportation system design that considers local land development patterns. Roadways are to be planned and designed to support the safety, comfort, and mobility of all users based on the unique context of each roadway. The FDOT context classification system broadly identifies the various built environments existing in Florida. Identifying the context classification is a preliminary step in planning and design, as different context classifications will have different design criteria.

The context classification of each roadway must be considered, along with its transportation characteristics and the built form to understand who uses or could use it, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user. As shown on [Figure 4-1](#), FDOT defined eight context classifications that identify various built environments in Florida.



**Figure 4-1. FDOT Context Classifications**



The following policy constraints are noted in the *City of Naples Comprehensive Plan Transportation Element* (City of Naples 2010) amended October 20, 2010:

- Evaluate proposed street improvements in Naples that may potentially increase through traffic volumes to protect residential neighborhoods.
- Maintain LOS C as a goal for the arterials and all major collectors, except for Fifth Avenue South between U.S. 41 and Gulf Shore Boulevard.
- Naples shall not permit construction of vehicle road overpasses or flyovers in favor of feasible alternative planning solutions that will improve the long-term traffic circulation patterns in the City.
- Evaluate programs to modify peak hour travel demand and reduce the number of VMT per capita.
- Assist the Southwest Florida Land Preservation Trust in acquiring necessary easements and funding for the design and construction of a greenway bicycle/pedestrian pathway.
- Maintain or reduce hurricane evacuation times.
- Enhance the safety, connectivity, and mobility of existing and future pedestrian and bicycle pathways.
- Continue to coordinate with the Collier MPO to evaluate the potential for developing an efficient public transportation system and mechanisms to reduce the reliance on private motor vehicles.

- Establish a transportation mobility program to identify and implement strategies to reduce greenhouse gas emissions. Focus on programs, policies, and code adoptions that have a net impact of reduced travel delays, reduced vehicular trips, reduced vehicle trip length, and measures to improve the efficiency of travel.

Additionally, on November 7, 2014, the City of Naples adopted a resolution to support the Southwest Florida Blue Zones Project. The Southwest Florida Blue Zones Project works with community leaders to inspire positive sustainable changes to policy and the built-environment to improve the well-being among the community. Such infrastructure as sidewalks and bike lanes improve the ability of community members to move naturally, connect socially, and access healthy food.

The following policy constraints are noted in the *City of Marco Island Comprehensive Plan* (City of Marco Island 2000) Transportation Element amended December 7, 2009:

- Maintain designated LOS for arterial, collector, and local roads on Marco Island. Marco Island’s adopted LOS reflect generalized maximum daily volumes as derived from peak hour traffic conditions:
  - Arterials: LOS D (except County Road [CR] 951 from the Jolley Bridge to CR 92—LOS C)
  - Collectors: LOS D
  - Local Roads: LOS D

Finally, environmental constraints include conservation lands in the northeastern and southeastern parts of the County, wetlands, threatened and endangered species habitat, and primary and secondary canal systems throughout the County.

The 2045 Needs Plan incorporates all transportation modes, including roadway needs for motorists and freight, transit,

bicycle, and walking or using a mobility device. The following sections detail the County needs for projects related to these transportation modes as well as technologies, such as ITS and CAV. This chapter breaks down the 2045 Needs Plan by Roadway Needs, Bicycle and Pedestrian Needs, and Transit Needs.

## 4-2 Roadway Needs

The initial approach to developing the list of roadway project needs included a review of the following plans:

- *Collier MPO 2040 Long Range Transportation Plan*, Amended May 25, 2018, and September 9, 2016
- *Collier MPO Transportation Improvement Program FY 2021 – FY 2025* (Adopted June 12, 2020)
- *Collier MPO Transportation System Performance Report & Action Plan Draft Baseline Report* (2020)
- *Collier MPO Transportation System Performance Report & Action Plan Draft Action Plan* (2020)
- *Collier MPO Congestion Management Process 2017 Update*
- *Collier 2040 LRTP Freight Congestion Considerations Technical Memorandum*
- *Collier MPO 2040 Long Range Transit Element*, November 2015
- *Collier MPO Local Road Safety Plan*, 2020
- *Collier MPO Transit Development Plan Major Update*, 2020
- *Collier Area Transit (CAT) Transit Development Plan FY 2019 Annual Progress Report*

- *Collier MPO Park and Ride Study, 2020*
- *Collier County Annual Update & Inventory Report/Capital Improvement Element Schedule Update on Public Facilities, November 2019*
- *Collier County Community Housing Plan, October 24, 2017*
- *National Oceanic and Atmospheric Administration Sea Level Rise Viewer*
- *Adaptation of Coastal Urban and Natural Ecosystems (ACUNE) (pending)*
- *Collier County Transportation Capital Improvement Program, 2019*
- *Collier County Airport Authority Immokalee Regional Airport, Airport Layout Plan Update, August 2017*
- *City of Naples Airport Authority, Naples Airport Master Plan, February 29, 2020*
- *FDOT Five Year Work Program 2021 – 2025 (Adopted July 1, 2020)*
- *FDOT Strategic Intermodal System 2029 – 2045 Long Range Cost Feasible Plan*
- *FDOT Strategic Intermodal System Funding Strategy First Five Year Plan Multi-Modal FY 2020/2021 through FY 2024/2025*
- *FDOT Strategic Intermodal System Funding Strategy Second Five Year Plan Multi-Modal FY 2025/2026 through FY 2029/2030*

- *FDOT Freight Mobility and Trade Plan, April 2020*
- *FDOT Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles, September 2018*
- *University of South Florida Center for Urban Transportation Research (CUTR) Autonomous Vehicle (AV) and Alternative Fuel Vehicle (AFV) Florida Market Penetration Rate and VMT Assessment Study, October 2019.*
- *U.S. Department of Transportation Preparing for the Future of Transportation: Automated Vehicles 3.0, October 2018*

Additional approaches to developing the Needs Plan included collaboration with regional partners including the Lee County MPO for consistency between long-range plans and the District 1 travel model, coordination with the Collier County Transportation Traffic and Planning Divisions, scenario planning analysis, travel demand modeling, tribal coordination, and soliciting and incorporating public input. Further, several coordination meetings with the TAC and CAC were held during the development of the Needs Plan.

### Existing Plus Committed Projects

As described in Chapter 2, the initial list of project needs was developed by first modeling the E+C travel network. The E+C network includes all new road or capacity projects that have been implemented since 2015 (existing), plus all projects that have construction funded through Fiscal Year 2023. The E+C characterizes the transportation network expected to be in place by the year 2023 (constructed or funded for construction). **Figure 4-2** and **Table 4-1** present the E+C roadway projects in graphic and tabular formats, respectively.

FDOT modeled the E+C travel network using the D1RPM travel demand model and the 2045 socioeconomic data discussed in Chapter 2. The modeling result helped identify deficiencies in the roadway network and showed which roadway segments were expected to be congested in 2045 if no further improvements were made to the surrounding network.

Congestion was measured using the ratio of the forecasted traffic volume in Average Annual Daily Traffic (AADT) to the capacity of the roadway segment (at LOS D), referred to as the volume to capacity (V/C) ratio. A roadway is considered over capacity if the V/C ratio greater than 1.0.

**Figure 4-3** presents the anticipated roadway congestion in 2045 if no improvements to the network are made beyond the E+C projects. The roadway facilities predicted to experience high ( $V/C = 1.15$  to  $1.5$ ) and significant ( $V/C > 1.5$ ) levels of congestion in 2045 are listed in the following text.

**2045 Facilities with High Degree of Congestion  
( $V/C = 1.15$  to  $1.5$ )**

- US 41 north of Immokalee Road
- Immokalee Road east of Airport Road N
- Immokalee Road east of I-75
- Immokalee Road west of I-75
- Immokalee Road east of Collier Boulevard to Randall Boulevard
- Immokalee Road north of Stockade Road
- Immokalee Road from SR 29 to Camp Keas Road
- Randall Boulevard east of 8th Street NE

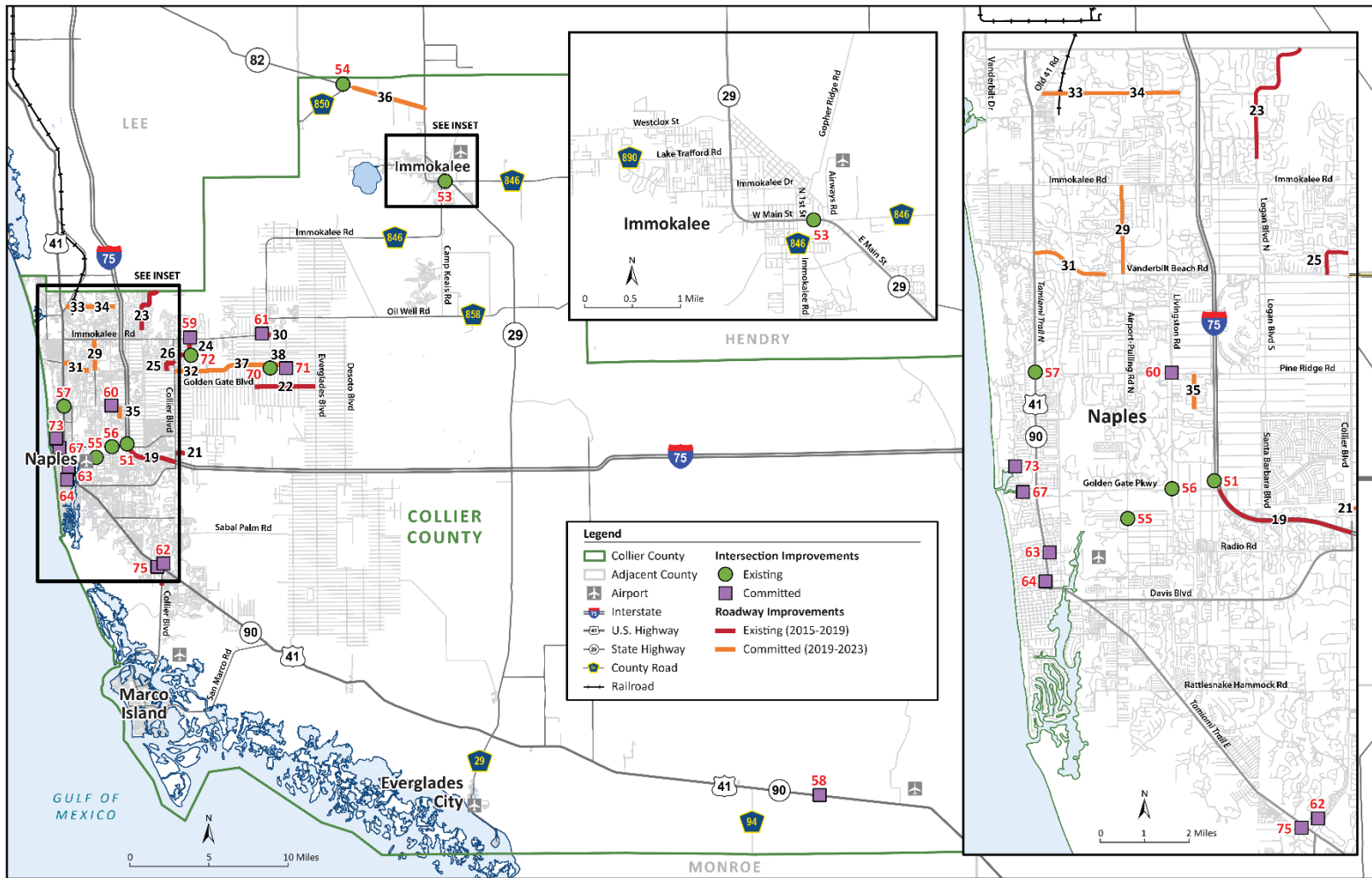
- Oil Well Road between Everglades Boulevard and Oil Well Grade Road
- SR 29 north of Westclox Road
- Everglades Boulevard north of Oil Well Road
- Pine Ridge Road east of Livingston Road
- Old 41 Road east of US 41/Tamiami Trail to Lee County
- Vanderbilt Beach Road west of US 41
- Intersection at Collier Boulevard and Golden Gate Parkway
- Collier Boulevard north of Golden Gate Parkway
- Santa Barbara Boulevard north of Rattlesnake Hammock Road
- Park Shore Drive west of Clayton Road
- I-75 north of Immokalee Road
- Intersection at I-75 and Immokalee Road
- Intersection at I-75 and Pine Ridge Road
- Intersection at I-75 and Golden Gate Parkway

**2045 Facilities with a Significant Degree of Congestion  
( $V/C > 1.5$ )**

- Collier Boulevard north of Pine Ridge Road
- Golden Gate Boulevard from east of 16th Street SE to Everglades Boulevard
- SR 29 (N 15th Street) at the intersection of Westclox Road



**Figure 4-2. 2045 Existing Plus Committed (E+C) Project Map**



**Table 4-1. 2045 Existing Plus Committed (E+C) Projects**

Map ID	Roadway	From	To	Improvement	Agency or Municipality	Included in 2021-2025 TIP?
<b>Existing (2015–2019)</b>						
19	I-75	North of SR 951	Golden Gate Pkwy	Widen from Four to Six Lanes	FDOT FPN: 406313-4	N/A
20	SR 951	Manatee Road	North of Tower Rd	Widen from Two to Four Lanes	FDOT FPN: 435111-2	N/A
21	City Gate Blvd. Extension	White Lake Blvd.	East of Brennan Dr	New Four-Lane Facility	Collier County	N/A
22	Golden Gate Blvd.	Wilson Blvd.	Everglades Blvd.	Widen from Two to Four Lanes	Collier County	N/A
23	Logan Blvd.	North of Immokalee Rd.	Lee County Line	New Two-Lane Facility	Collier County	N/A
24	Massey St./Woodcrest Dr.	Calusa Pines Dr.	Immokalee Rd.	New Two-Lane Facility	Collier County	N/A
25	Pristine Dr.	Wolfe Rd.	Vanderbilt Beach Rd	New Two-Lane Facility	Collier County	N/A
26	Tree Farm Rd.	Davila St	Massey St	New Two-Lane Facility	Collier County	N/A
51	I-75	Golden Gate Parkway SB Off Ramp	-	Interchange Improvements	FDOT FPN: 429907-1	N/A
53	SR 29	Jefferson Avenue	9th Street	Add Turn Lanes	FDOT FPN: 431390-2	N/A
54	SR 82	Corkscrew Road	-	Add Turn Lanes	FDOT FPN: 433175-1	N/A
55	Airport Pulling Rd.	North Horseshoe Dr.	-	Intersection Improvements	Collier County	N/A
56	Golden Gate Pkwy.	Livingston Rd.	-	Intersection Improvements	Collier County	N/A
57	Pine Ridge Rd.	US 41	-	Intersection Improvements	Collier County	N/A
70	8th Street Bridge			New Bridge	Collier County	N/A
79	Vanderbilt Beach Rd.	Gulf Pavilion Dr.	US 41 (SR 90) (Tamiami Trail E)	Constrained to Four Lanes	Collier County	N/A

**Table 4-1. 2045 Existing Plus Committed (E+C) Projects**

Map ID	Roadway	From	To	Improvement	Agency or Municipality	Included in 2021-2025 TIP?
<b>Committed (2019–2023)</b>						
29	Airport Pulling Rd. <sup>a</sup>	Vanderbilt Beach Rd.	Immokalee Rd.	Widen from Four to Six Lanes	Collier County	Yes
30	Randall Blvd.	Immokalee Rd.	8th St.	Widen from Two to Four Lanes	Collier County	Yes
32	Vanderbilt Beach Rd. Extension <sup>a</sup>	Collier Blvd.	Curry Canal	Widen from Two to Six Lanes	Collier County	Yes
33	Veterans Memorial Blvd.	Old US 41	Secoya Reserve Cir	New Four-Lane Facility	Collier County	Yes
34	Veterans Memorial Blvd.	Secoya Reserve Cir	Strand Blvd.	Widen from Two to Four Lanes	Collier County	Yes
35	Whippoorwill Lane	Pine Ridge Rd.	Stratford Ln.	Widen from Two to Four Lanes	Collier County	Yes
36	SR 82	Gator Slough Lane	SR 29	Widen from Two to Four Lanes	FDOT FPN: 430849-1	Yes
37	Vanderbilt Beach Rd. Extension <sup>a</sup>	Curry Canal	Wilson Blvd.	New Four-Lane Facility	Collier County	Yes
38	Vanderbilt Beach Rd. Extension <sup>a</sup>	Wilson Blvd.	16th St.	New Two-Lane Facility Expandable to Four Lanes	Collier County	Yes
58	US 41	Oasis Visitor Center	-	Add Left-Turn Lane	FDOT FPN: 441975-1	Yes
59	Immokalee Rd.	Woodcrest Dr.	-	Intersection Improvements	Collier County	Yes
60	Pine Ridge Rd. <sup>a</sup>	Livingston Rd.	-	Intersection Improvements	Collier County	Yes
61	Randall Blvd. <sup>a</sup>	Immokalee Rd.	-	Intersection Improvements	Collier County	Yes
62	Triangle Blvd. <sup>a</sup>	Celeste Dr.	-	Roundabout Implementation	Collier County	Yes

**Table 4-1. 2045 Existing Plus Committed (E+C) Projects**

Map ID	Roadway	From	To	Improvement	Agency or Municipality	Included in 2021-2025 TIP?
63	10th St.	5th Ave North	-	Roundabout Implementation	City of Naples	Yes
64	3rd Ave. South	8th St. South	-	Roundabout Implementation	City of Naples	Yes
67	Mooring Line Dr.	Crayton Rd.	-	Roundabout Implementation	City of Naples	Yes
71	16th Street Bridge	16th St.	16th St.	New Bridge	Collier County	Yes
73	Crayton Rd.	Harbour Dr.	-	Roundabout Implementation	City of Naples	Yes
75	Price St. <sup>a</sup>	Waterford Dr.	-	Roundabout Implementation	Collier County	Yes
100	Wilson Blvd.	Golden Gate Blvd.	Immokalee Rd.	Widen from Two to Four Lanes	Collier County	Yes
101	I-75	Pine Ridge Rd.		Interchange Improvement	FDOT FPN: 445296-2	Yes
102	Corkscrew Rd. N.	Wildcat Dr.	E. of Wildcat Dr.	Widen and Resurface	Collier County	Yes
103	Pine Ridge Rd.	Livingston Rd.		Major Intersection Improvement	Collier County	Yes
104	Santa Barbara Blvd.	Green Blvd.		Minor Intersection Improvement	Collier County	Yes

Sources: FDOT Collier County Five Year Work Program FY 2019-2023, Collier County AUIR Five Year Work Program FY 2019-2023, Collier County One-Cent Sales Surtax Website

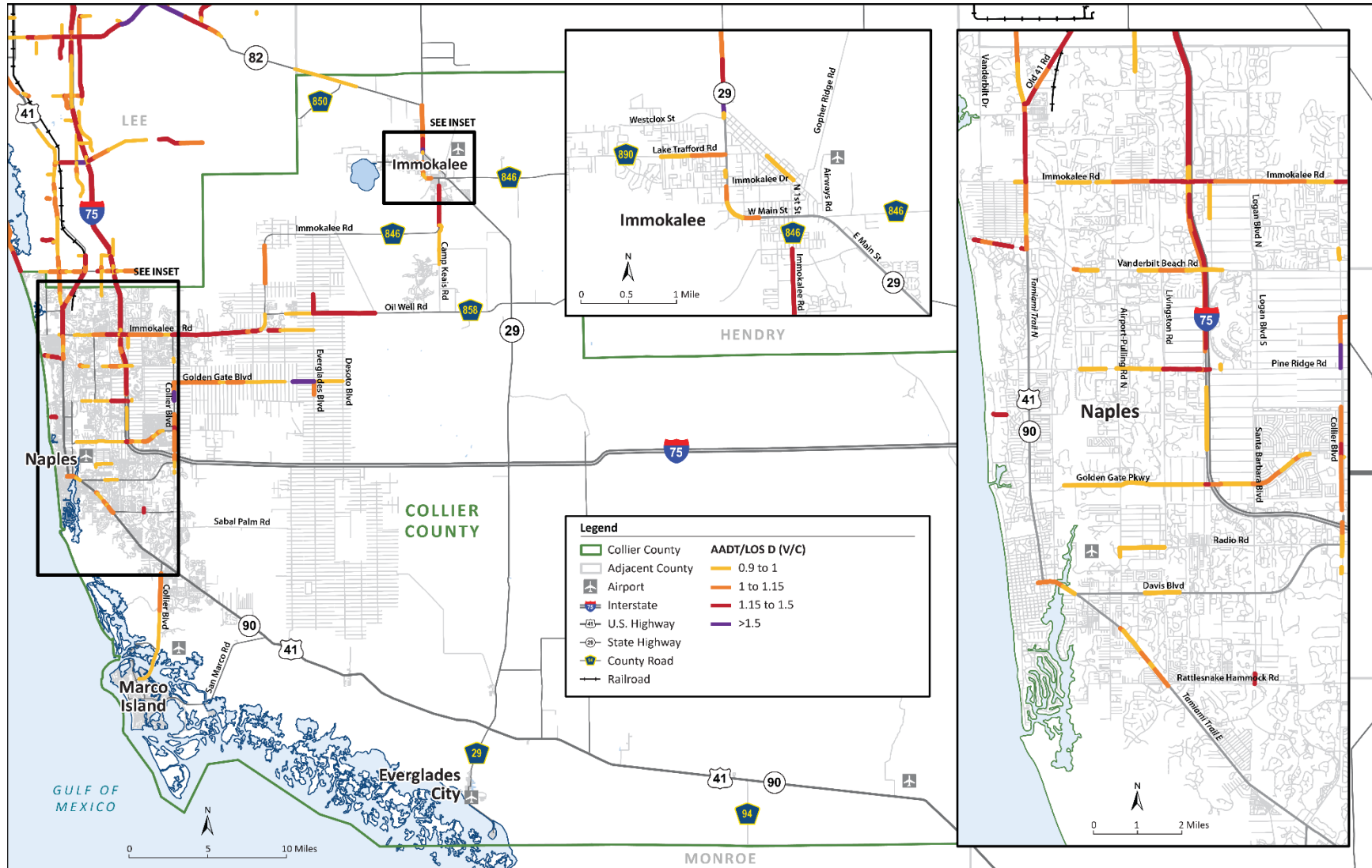
<sup>a</sup> Collier One-Cent Sales Surtax Transportation Project

Note:

FPN = Financial Project Number



**Figure 4-3. 2045 E+C Travel Network Congestion Map**



## Other Roadway Needs Considerations

Once the initial list of roadway projects needs was developed based on the E+C roadway deficiency modeling, other roadway-related needs data were evaluated to develop a more comprehensive project needs list. Considerations included review of existing planning studies, freight needs, and congestion management strategies, which included safety issues and Transportation Systems Management and Operations (TSM&O).

### Existing Planning Studies

The MPO reviewed the existing County planning studies described below to identify potential projects eligible for the roadway Needs Plan. These studies were recently completed or are currently underway.

#### *Randall Boulevard/Oil Well Road Study Area*

The County completed a corridor study to evaluate potential roadway network improvements near Randall Boulevard and Oil Well Road. The study evaluated several corridor alternatives to enhance traffic operations and safety conditions based on current and future travel demands. On May 14, 2019, the Collier BCC voted to approve the staff recommendation to expand Randall Boulevard (between 8th Street and Everglades Boulevard) to six lanes, Randall Boulevard (between Everglades Boulevard and Desoto Boulevard) to four lanes, and Everglades Boulevard (between Oil Well Road and Randall Boulevard) to four lanes.

#### *CR 951 Congestion Relief Study*

This study is intended to identify an alternative travel route to the existing CR 951 (Collier Boulevard) corridor because of forecasted high congestion levels by 2045. The preliminary study area extends east of CR 951 from City Gate Boulevard North at its northern limit to Benfield Road on its eastern limit

and to US 41 at its southern limits. Potential alternative solutions include multiple travel routes, improvements to CR 951, a no-build option, and evaluation of other alternative planning strategies to alleviate future congestion on CR 951.

#### *Immokalee Road Corridor Congestion Study*

The Immokalee Road (CR 846) Corridor Congestion Study is evaluating the future levels of congestion along the Immokalee Road Corridor between Livingston Road and Logan Boulevard. Potential improvements will be considered at the main intersections along the corridor which include:

- Conventional “At-Grade” Improvements (widening)
- Continuous Flow Intersections
- Jug Handle
- Single Point Urban Interchange
- Restricted Crossing U-Turn
- Diverging Diamond Interchange at I-75

The study is expected to be completed in the spring of 2021.

#### *East of CR 951 Bridge Reevaluation Study*

In August 2008, the County conducted the East of CR 951 Infrastructure and Services Horizon Study to evaluate missing bridge connections based on system-wide infrastructure needs that considered transportation circulation, access management, schools, parks, law enforcement, emergency services, fire, libraries, storm water management, and public utilities. The study’s stakeholders identified 12 preferred canal crossing locations and ranked the bridges based on criteria related to mobility, service efficiency, and emergency response. The new bridges would be strategically located throughout the Golden Gate Estates area to reduce trip lengths and travel demand on already congested collector roadways and to provide the greatest opportunity to reduce response time for first responders. In 2018, County voters approved a 1-cent

infrastructure surtax that included specifically earmarked funding for constructing the new bridges.

In 2019, the County completed construction of a new bridge on 8th Street with funding from FDOT. The County has also programmed construction of a new bridge on 16th Street in the Five Year Work Program with funds from the infrastructure surtax proceeds. The surtax funds will be available to construct the remaining 10 bridges within the next 7 years.

The remaining 10 bridges are the subject of the 2020 East of CR 951 Bridge Reevaluation Study, which is being performed to reconfirm the validity of the remaining 10 recommended bridge locations before moving the remaining bridge projects into production. **Table 4-2** presents the bridge locations.

**Table 4-2. East of CR 951 Bridge Reevaluation Study Bridges**

Map ID <sup>a</sup>	New Bridge Projects
81	47th Ave. NE (between Immokalee Rd. & Everglades Blvd.)
82	Wilson Blvd. N (south of 33rd Ave NE)
83	18th Ave. NE (between Wilson Ave & 8th St. NE)
84	18th Ave. NE (between 8th St. NE & 16th St. NE)
85	North End of 13th St. NW (north of Golden Gate Blvd.)
86	16th St. SE (south of Golden Gate Blvd.)
87	10th Ave. SE (between Everglades Blvd. and Desoto Blvd.)
88	Wilson Blvd. S (south of Golden Gate Blvd.)
89	62nd Ave. NE (between Everglades Blvd. and 40th St. NE)
115	23rd St. SW (south of Golden Gate Blvd.)

<sup>a</sup> Refer to Figure 4-9

## Freight

The Collier Freight Network is defined in the Collier MPO 2040 LRTP Freight Congestion Considerations Technical

Memorandum (Renaissance Planning 2015) as including limited-access facilities, regional freight mobility corridors, and freight distribution routes.

Collier County's freight transportation network system consists of numerous freight mobility corridors and freight distribution routes that support the state and regional economy. Rail access to the County is limited to a 1-mile section of the Seminole Gulf Railway in the far northwest corner of the County. In addition to providing traditional rail freight transportation, the rail line supplies regional trucking and logistical services, as well as warehousing and distribution from its distribution center located in North Fort Myers.

Review of truck traffic volumes in the FDOT Florida Traffic Online site (FDOT 2020g) reveals that volumes are greatest along the portion of I-75 north of Immokalee Road where trucks comprise more than 8 percent of total AADT. Truck traffic volumes show that this section has daily truck volumes exceeding 8,500 per day. The portion of I-75 between Pine Ridge Road and north of Immokalee Road has truck volumes exceeding 7,500 per day and trucks make up between 8 to 10 percent of the total AADT. Along SR 29 south of I-75, truck volumes make up 26 percent of the total AADT. However, the total traffic volumes along this segment are low compared to other areas in the County.

## Limited-Access Facilities

I-75 is the only limited-access facility within the County and is a major element of the Florida SIS. It serves as the primary transportation facility connecting Collier County with its immediate neighboring counties, the rest of Florida, and the National Highway System. It also serves as a major commuter corridor.

### *Regional Freight Mobility Corridors*

The regional freight mobility corridors function as connectors between limited-access facilities and regional freight activity centers.

Within the County, the regional freight mobility corridors consist of:

- SR 29 (I-75 to Hendry County Line)
- SR 82 (SR 29 to Hendry County Line)
- SR 84/Davis Boulevard (US 41 to I-75)
- US 41 (SR 84/Davis Boulevard to Lee County Line)

### *Freight Distribution Routes*

Freight distribution routes serve to distribute truck traffic to local delivery areas. These include state roadways and other local roadways designated in local truck route ordinances at the county and municipal levels. The freight distribution routes within the County consist of:

- SR 29 (US 41 to I-75)
- CR 951/Collier Boulevard (Marco Island to US 41)
- CR 951/Collier Boulevard (US 41 to CR 846/Immokalee Road)

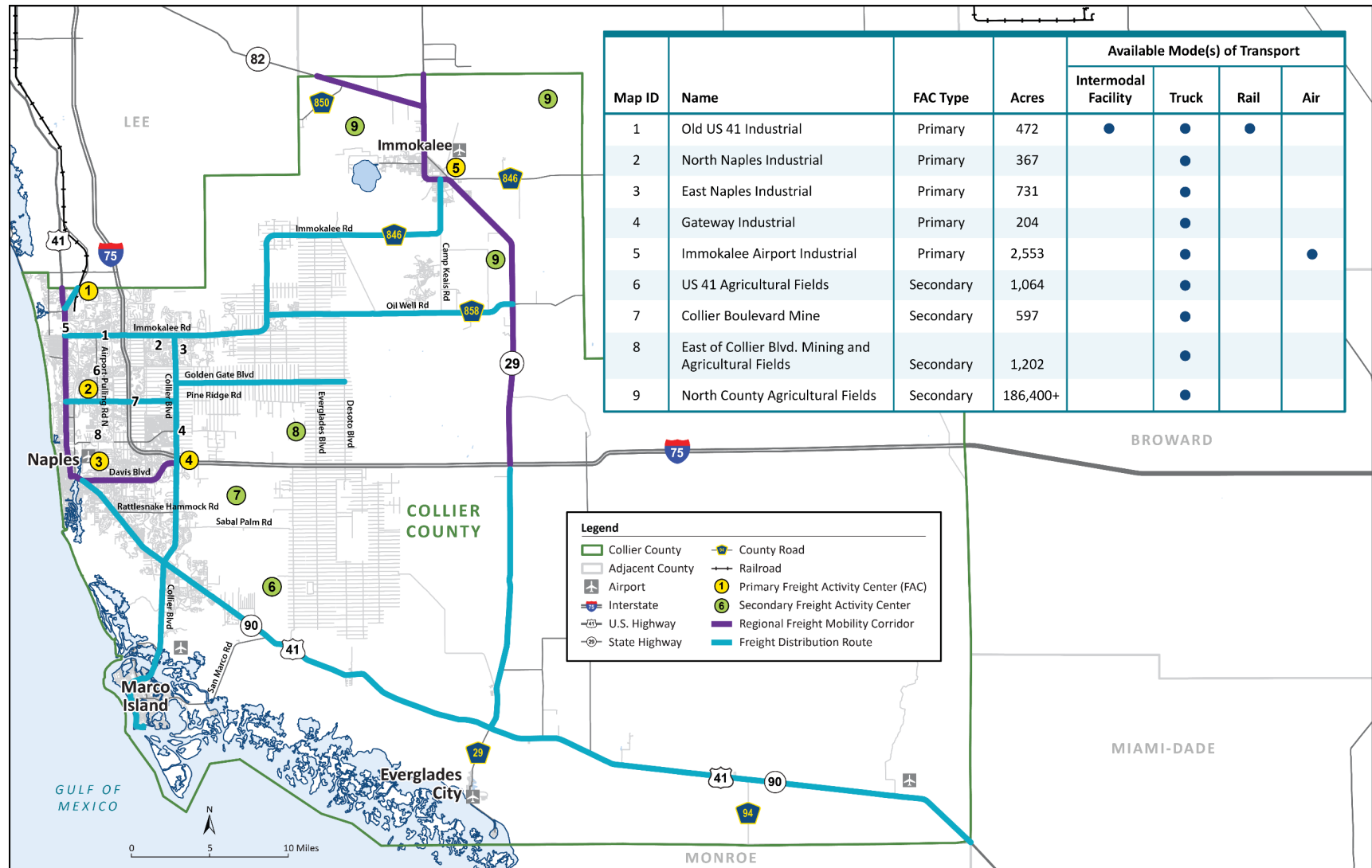
- CR 858/Oil Well Road (CR 846/Immokalee Road to SR 29)
- CR 846/Immokalee Road (US 41 to SR 29)
- Golden Gate Boulevard (CR 951/Collier Boulevard to DeSoto Boulevard)
- CR 896/Pine Ridge Road (US 41 to CR 951/Collier Boulevard)
- US 41 (SR 84/Davis Boulevard to Dade County Line)
- Old US 41 (US 41 to Lee County Line)

### *Freight Activity Centers*

The northwestern portion of the County has been identified in the FDOT *Freight Mobility and Trade Plan* (FDOT 2020b) as a low to medium freight activity hotspot within Florida. These hotspots distribute or attract large amounts of freight activities and have a significant impact on Florida's transportation system and economy. There are two types of freight activity centers (FACs) located in the County: primary and secondary (refer to **Figure 4-4**). Primary FACs are large industrial and manufacturing areas that send or receive freight in large quantities or for further distribution to the consumer market. Secondary FACs include significant mining and agricultural operations, which sometimes have intermittent or seasonal demands. There are five primary and four secondary FACs within the County.



**Figure 4-4. Freight Network and Activity Centers**



While the Old US 41 Industrial area has limited rail service, it is the only FAC in the County with the potential for intermodal rail activities and should be preserved for future freight-related development as economic conditions warrant. Additionally, a 60-acre zone in and around the Immokalee Airport is designated as a Foreign Trade Zone (Collier County 2020b). With convenient access to SIS facilities including SR 29, SR 82, and I-75, the Immokalee Airport is well-suited for existing and future intermodal air-cargo/truck activities.

### **Congestion Management**

The Collier MPO is federally mandated to implement a Congestion Management Process (FHWA 2020). A CMP is developed to improve traffic flow and safety conditions. As discussed in Chapter 1, the Collier MPO CMC is responsible for creating and amending the CMP and for prioritizing candidate congestion management projects to be funded with federal and state funding. As presented on [Figure 4-5](#), the CMP is a detailed eight-step process that an urban area follows to improve the performance of its transportation system by reducing the negative impacts of traffic congestion.

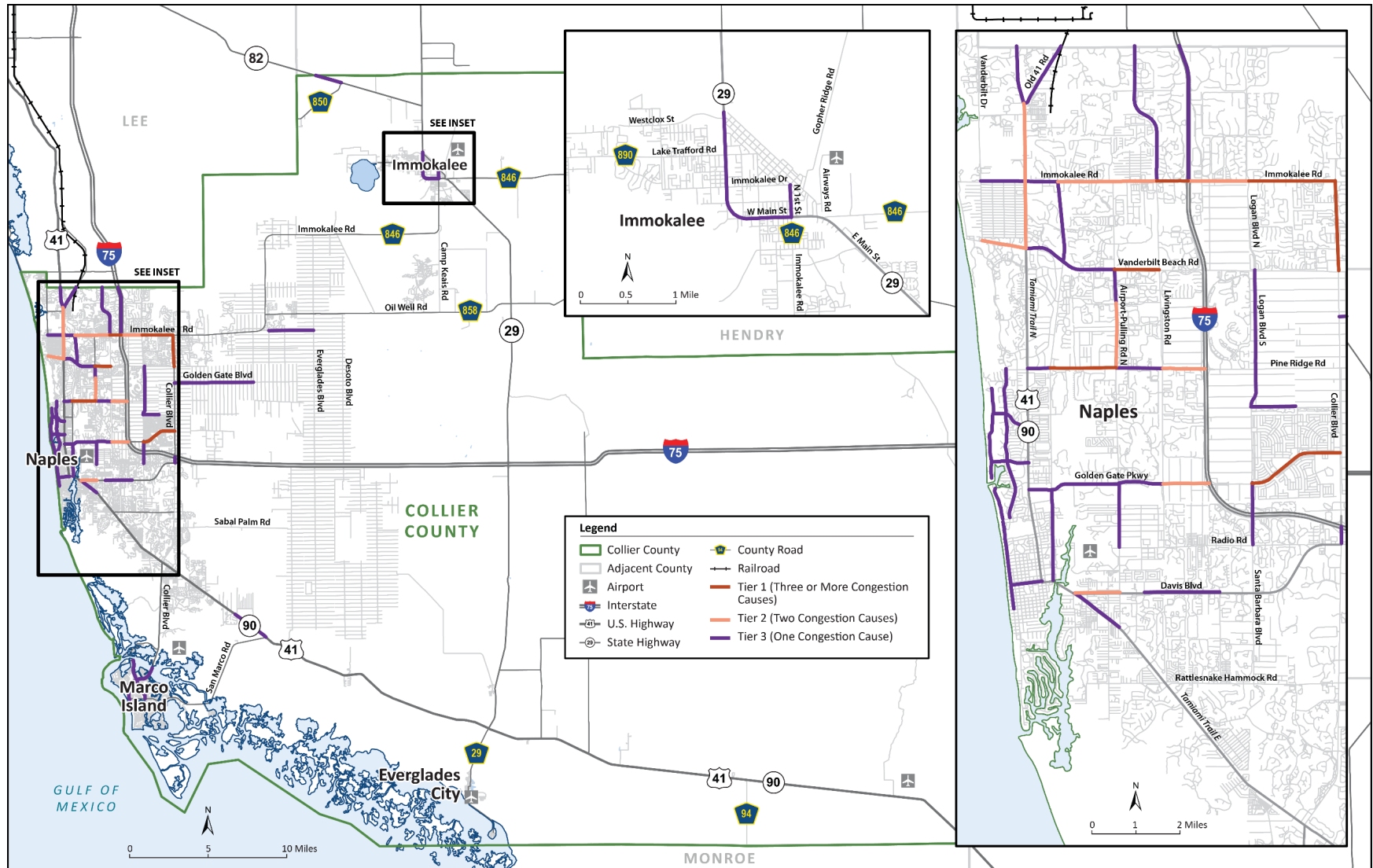
The Collier MPO *Transportation System Performance Report (TSPR)* and *Action Plan Baseline Condition Report* (Tindale Oliver 2020a) provides an evaluation of existing and future congestion issues in the County and associated municipalities. [Figure 4-6](#) presents congestion hot spot locations in the County that were assessed for congestion management strategies in the TSPR. The hot spot locations were sorted into three tiers to identify which of the hot spot locations had the most causes of congestion. Tier 1 represents road segments

influenced by three or more congestion causes, Tier 2 represents road segments influenced by two congestion causes, and Tier 3 in represents road segments influenced by one congestion cause. Sources of congestion included school congestion, safety, V/C ratio, speed, and public comments.

**Figure 4-5. Congestion Management  
Process Eight-Step Framework**



**Figure 4-6. TSPR Congestion Hot Spot Locations**



### Safety Issues

The Collier MPO *TSPR and Action Plan Baseline Condition Report*, along with the Collier MPO *Local Road Safety Plan* companion study, further identified the top intersection and roadway segment crash locations that were based on an analysis of the top 20 highest frequency and 20 highest rate locations of crashes between 2014 and 2018. **Table 4-3** presents the top roadway segments crash locations. In the 2020 CMP update process, new CMP strategies were identified and added to the existing strategies list based on the analysis conducted in the *TSPR Baseline Condition Report*, which identified causes and locations of congested corridors, and the *TSPR and Action Plan, Action Plan* (Tindale Oliver 2020b), which analyzed and identified congestion mitigation strategies for the specific corridors. A major addition to these congestion mitigation strategies involved safety strategies that included:

- Signage and pavement markings (e.g., special emphasis crosswalks, yield/stop for pedestrian signs, advanced street signs)

- Visibility and sightline improvements
- New and upgraded street lighting
- Traffic control devices (for example, left-turn signals, variable message signs, pedestrian hybrid beacons)
- New and upgraded existing bicycle and pedestrian crossings

The mapping analysis of crash data from 2014 to 2018 for the LRTP update is presented in **Appendix C**. The map presents total crash locations between 2014 to 2018, as well as crash locations where a fatality by vehicle, including a pedestrian, or bicyclist occurred.





**Table 4-3. TSPR Top Road Segment Crash Locations (2014–2018)**

On Street	From Street	To Street	Total Crashes	Length (miles)	AADT	Crash Rate <sup>a</sup>	Top 20 Crash Frequency <sup>b</sup> or Rate Location
Golden Gate Pkwy	Santa Barbara Blvd.	Collier Blvd.	559	2.21	27,496	5.048	Both
I 75	Broward County Line	SR 29	470	29.13	22,000	0.402	Frequency
Airport Rd.	Pine Ridge Rd.	Orange Blossom Dr.	455	1.45	34,686	4.943	Both
Tamiami Trail East	Airport Rd.	Rattlesnake Hammock Rd.	453	1.69	47,814	3.074	Frequency
Airport Rd.	Radio Rd.	Golden Gate Pkwy.	405	1.43	44,008	3.534	Both
Immokalee Rd.	I 75	Logan Blvd.	402	1.37	38,245	4.210	Both
Tamiami Trail North	Immokalee Rd.	Vanderbilt Beach Rd.	396	1.51	35,925	4.005	Both
Golden Gate Blvd.	Collier Blvd.	Wilson Blvd.	381	5.03	25,481	1.630	Frequency
I 75	SR 29	SR 951	366	21.23	24,970	0.378	Frequency
Immokalee Rd.	Livingston Rd.	I 75	355	0.71	46,874	5.886	Both
Pine Ridge Rd.	Livingston Rd.	I 75	351	0.95	52,322	3.869	Both
I 75	Pine Ridge Rd.	Immokalee Rd.	331	4.27	35,295	1.203	Frequency
Immokalee Rd	Logan Blvd.	Collier Blvd.	331	1.94	89,362	1.048	Frequency
Golden Gate Pkwy.	Livingston Rd.	I 75	293	2.05	42,756	1.835	Frequency
Davis Blvd.	Lakewood Blvd.	County Barn Rd.	291	1.68	28,243	3.359	Frequency
Airport Rd	Golden Gate Pkwy.	Pine Ridge Rd.	290	2.59	46,556	1.316	Frequency
Tamiami Trail East	Rattlesnake Hammock Rd.	Treetops Dr.	280	2.45	37,428	1.674	Frequency
I 75	Immokalee Rd.	Lee County Line	278	3.06	99,582	0.501	Frequency

**Table 4-3. TSPR Top Road Segment Crash Locations (2014–2018)**

On Street	From Street	To Street	Total Crashes	Length (miles)	AADT	Crash Rate <sup>a</sup>	Top 20 Crash Frequency <sup>b</sup> or Rate Location
Immokalee Rd.	Collier Blvd.	Wilson Blvd.	271	5.10	29,259	0.995	Frequency
Tamiami Trail North	12th Ave N	Goodlette Rd. S	269	1.66	51,500	1.727	Frequency
Radio Rd.	Livingston Rd.	Santa Barbara Blvd.	250	1.99	18,398	3.742	Rate
Santa Barbara Blvd.	Golden Gate Pkwy.	Green Blvd.	215	1.71	20,314	3.391	Rate
Airport Rd.	Davis Blvd.	North Rd.	198	0.52	43,551	4.819	Rate
Collier Blvd.	Golden Gate Pkwy.	Green Blvd.	177	1.04	27,271	3.420	Rate
Pine Ridge Rd.	Goodlette-Frank Road	Shirley St.	165	0.67	36,418	3.733	Rate
Immokalee Rd.	Stockade Rd.	SR 29	157	1.52	6,949	8.155	Rate
Lake Trafford Rd.	Carson Rd.	SR 29	93	1.00	8,650	5.874	Rate
Immokalee Drive	N 29th St.	Charlotte St.	91	1.97	6,200	4.074	Rate

<sup>a</sup> Crash rate expressed as the number of crashes per 100 million vehicle miles of travel (AADT x Length) for the 5-year reporting period.

<sup>b</sup> Frequency is defined as the number of crashes occurring within a specific jurisdiction, on a roadway segment, or at an intersection.

### *Transportation System Management and Operations*

The combination of technology and operational strategies is called TSM&O. These multimodal strategies are designed to maximize the efficiency, safety and use of existing and planned transportation infrastructure. TSM&O include Transportation System Management (TSM) approaches and ITS technologies that are noted in the Collier MPO *Congestion Management Process 2017 Update* (Adopted October 13, 2017) (Collier MPO 2017) as effective strategies to mitigate congestion. TSM strategies are a low-cost but effective way to reduce congestion particularly for:

- Intersection and signal improvements
- Special events management strategies
- Incident management

ITS projects are effective in maximizing a transportation system's efficiency. Based on the Collier MPO *CMP 2017 Update*, candidate ITS projects in Collier County include:

- Those which are consistent with FDOT's current ITS Regional Architecture
- Updates to existing equipment and software deployed in the region
- Improved incident management
- Enhancements to City of Naples, Collier County Traffic Operations/Management Centers (TOCs), including studies and implementing their recommendations
- Improved use of social media and public information technologies

Further, the 2017 CMP Update noted the following ITS performance measures:

- Maintaining concurrency with FDOT Regional ITS Architecture and technological advances in TOC equipment and operations
- Increased number of signalized intersections connected to ITS
- Improved Travel Time Reliability

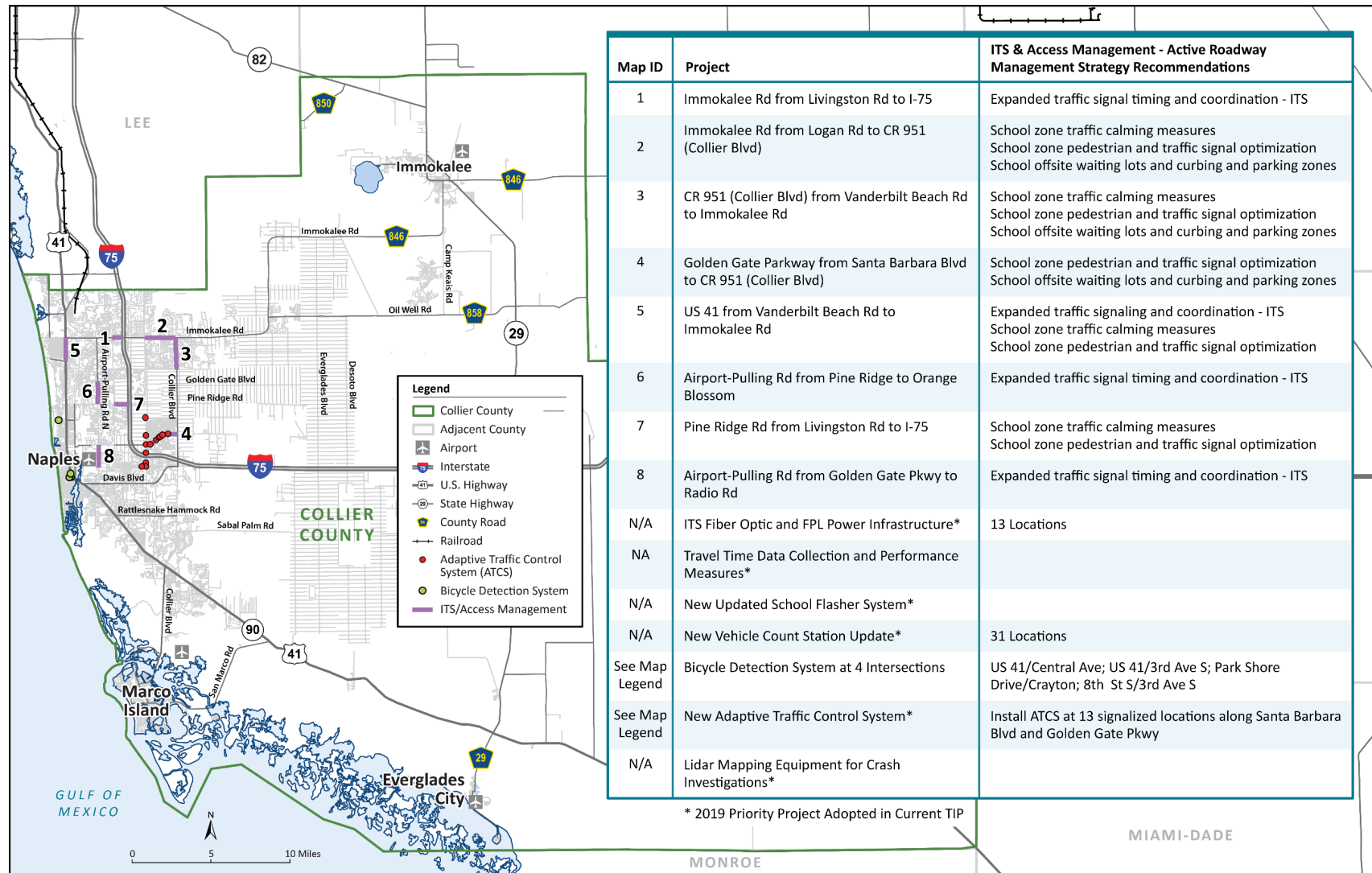
Within Collier MPO's jurisdiction, both the City of Naples and Collier County manage TOCs in close coordination with each other and with FDOT to remain in full compliance with the FDOT Statewide ITS architecture.

The 2020 CMP update identified several roadway facilities as candidates for ITS and active roadway management strategies.

**Figure 4-7** summarizes the projects and associated recommendations along with projects adopted in the FY 2021–FY 2025 TIP (refer to **Appendix D**).

While these projects are part of the roadway needs, the LRTP-level modeling software (D1RPM) is not sensitive enough to determine if congestion is relieved through implementation of these strategies. Evaluation and prioritization of these projects is conducted by the MPO CMC using Strategy Evaluation Criteria that are used to screen project submittals for consistency with CMP goals, strategies, and congestion hotspots identified in the TSPR *Baseline Condition Report* (refer to Figure 4-6).

**Figure 4-7. 2019 and 2020 CMP ITS/Active Roadway Management Projects**





Both the Congestion Management Process and the bicycle/pedestrian planning process strongly consider crash data as an important component of the project identification and selection process. As improvements are made to these facilities, special attention is placed on identifying solutions that enhance safety for motorists, pedestrians, and bicyclists. Traffic crashes are highly correlated with intersection locations, and consideration of operational and ITS improvements to major and minor intersections will address many of the high crash locations. Input from the LRTP into those continuing processes provides valuable guidance in the identification of safety-related improvements.

### Ranking the Roadway Needs

Once a comprehensive list of the roadway project needs was developed, they were evaluated by scoring each project using defined goals and objectives, and the evaluation criteria described in Chapter 3. The evaluation provided a score for each project that was used to rank the needs projects from highest to lowest. During the process, adjustments were made to the rankings as more testing was done, or as information about projects schedules and commitments became known. Several projects were removed from the needs list and moved to the E+C category based on agency expectations that projects would be completed before the 2023–2045 planning timeframe. Projects were deleted if modeling indicated that they would not be beneficial.

The following subsections provide further details on the evaluation criteria scoring presented in Chapter 3. Additionally, it describes other considerations when evaluating the projects including natural environment impacts and mitigation strategies, risks to the transportation system due to

climate change, and future technology impacts to the transportation system including CAV.

### Environmental Considerations



Transportation projects can significantly impact many aspects of the natural environment including wildlife and their habitats, wetlands, and groundwater resources. Where impacts cannot be completely avoided, impacts minimization, mitigation or conservation efforts are

required. The Collier MPO is committed to principles of environmental stewardship and carefully examines potential impacts and mitigation efforts for each project under consideration. Environmental mitigation for transportation projects in the Collier Metropolitan Area is completed through a partnership between the Collier MPO, its member jurisdictions, FDOT, state and federal environmental resource and regulatory agencies, and environmental preservation organizations.

Environmental mitigation is the process of addressing damage to the environment caused by transportation projects or programs. The process of mitigation is best accomplished through enhancement, restoration, creation, or preservation projects that help offset unavoidable environmental impacts. These activities are directed through Section 373, F.S., which establishes the requirements for mitigation planning as well as the requirements for permitting, mitigation banking, and mitigation requirements for habitat impacts. Impacts to habitat can be mitigated through a variety of options, which include mitigation banks and mitigation through the Water Management District(s) and the Florida Department of Environmental Protection (FDEP).

**Table 4-4** lists environmental mitigation strategies that are considered when addressing environmental impacts from future projects.

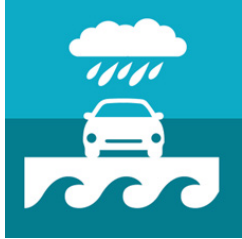
**Table 4-4. Mitigation Strategies**

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

As part of the ranking process, an evaluation of the potential impacts to wildlife, habitat, and wetlands was conducted for each project in the needs network. The U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory database and their panther habitat maps served as a source to estimate the amount of environmental impacts for each project. Impacts to habitat and wetlands were reflected by giving a negative score for each impact, ranging from -1 (least negative impact) to -5 (most negative impact). Projects were scored based on their degree of impact to panther habitat and wetland impacts. The Collier MPO 2045 LRTP Update *Project Cost Development Methodology Technical Memorandum* (provided under separate cover) details how panther habitat and wetland impacts were estimated as well as the costs associated with potential mitigation.

In addition to the process outlined in the Florida Statutes and implemented by the MPO and its partner agencies, the FDOT Efficient Transportation Decision Making (ETDM) process is used to seek input on individual qualifying long-range transportation projects allowing for more specific commentary. This ensures that mitigation opportunities are identified, considered, and available as the LRTP is developed and projects are advanced. The ETDM screening process was applied to all qualifying projects identified in the 2045 LRTP Cost Feasible Plan, which further provided opportunity to engage on any sociocultural impacts as well.

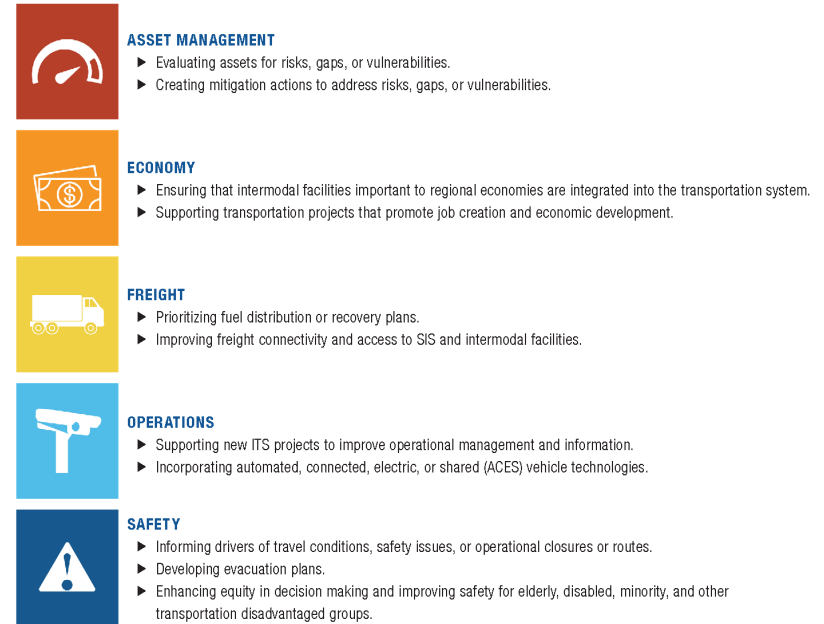
### Climate Change Vulnerability and Risks



Southwest Florida contains the largest area of tidally influenced public lands in the Gulf of Mexico and the fastest growing urban landscape in Florida. Both the human and natural components of the ecosystem are under increasing risk because of the threats of a growing

human population, sea level rise (SLR), and tropical cyclones. While all MPOs in Florida will be challenged with extreme change in weather events, each MPO's challenge is unique. Changing conditions can include increased inland flooding, SLR, increased frequency of severe storms with high winds and greater rainfall, increased duration of droughts and rapidly spreading fires, and economic recessions. These conditions will lead to more rapid degradation and decreased functional operability (or lifespan) of transportation facilities. The Collier MPO along with its partnering agencies are considering the unique challenges they face to better plan for ways to protect and preserve their infrastructure. Federal Regulation 23 CFR 450.306(b)(9) requires MPOs, in cooperation with the state and public transportation operators, to "improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation" in the long-range transportation planning process. Planning for resilience involves considering objectives and strategies in other planning areas, as shown on **Figure 4-8**.

**Figure 4-8. Resiliency Planning Considerations**



*Source: FDOT 2020a*

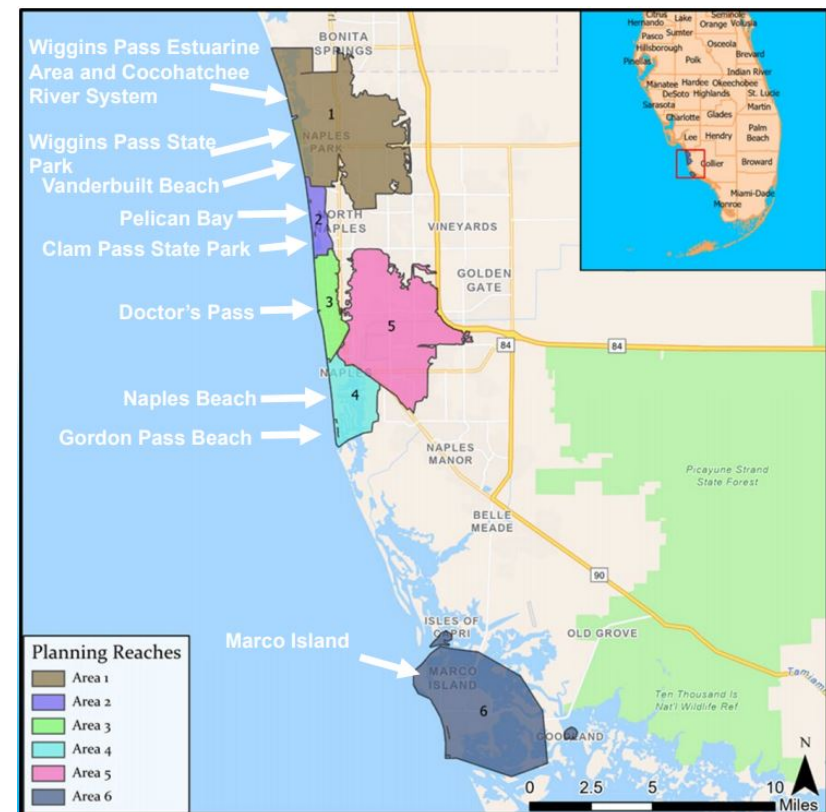
To better understand planning needs and potential actions to mitigate SLR, the County, City of Naples, City of Marco Island, and City of Everglades teamed with Florida Gulf Coast University and the University of Florida to sponsor a grant application from the National Centers for Coastal Ocean Science [a subsidiary of National Oceanic and Atmospheric Administration (NOAA)] for a 3-year study and modeling exercise related to the impacts of SLR and storm surge on Collier County. The Board approved a Resolution of Support for the project on September 13, 2016, and the NOAA grant was awarded. The ACUNE project (NOAA 2020b) began in June 2017 to develop a decision-support tool to aid resource managers, municipalities, and agencies in Collier County with decisions related to the preservation and restoration of

mangrove, marsh, and beach habitats; water management; and coastal planning, zoning, and land acquisition. However, the study was delayed because of the COVID-19 pandemic. A future LRTP update will include the results of the study and adjustments to the needs or cost feasible projects will be made as necessary.

The U.S. Army Corps of Engineers (USACE) Collier County Coastal Storm Risk Management Feasibility Study (USACE 2020), which began in October 2018 and is expected to be complete by September 2021, is developing, analyzing, and evaluating coastal storm risk management alternatives for the North Collier County (including Naples) and Marco Island study areas (covering both Gulf-facing shorelines and inland bay areas). The study divided the County into 6 primary planning reaches based on hydrologic boundaries and existing County project limits (reference [Figure 4-9](#)). The study references NOAA's prediction that SLR in the study area averages approximately 2.8 millimeters each year, and further estimates that SLR could be 0.14 feet to 0.78 feet (or 9.4 inches) between 2028 and 2077. The draft report was released on July 31, 2020, and presented a tentative resilience plan called a Tentatively Selected Plan that includes structural and nonstructural measures to reduce coastal storm risk and damage to the coastal areas of the County. Structural measures include six surge-barrier systems (miter and/or sluice gates), three tide gates (sluice gates), and three floodwalls, as well as approximately 9.5 miles of beach and dune fill. Nonstructural measures include acquisition and elevation of residential structures and floodproofing of commercial structures and critical infrastructure. The total

project cost is estimated at \$4.8 billion and would take 50 years to complete.

**Figure 4-9. USACE Collier County Coastal Storm Risk Management Feasibility Study Planning Reaches**



Source: USACE 2020

For the purposes of the Collier MPO 2045 LRTP update, the NOAA Sea Level Rise Viewer (version 3.0.0)<sup>1</sup> tool was used to evaluate potential climate impacts to the Collier Metropolitan Area transportation network. The viewer provides a pre-

<sup>1</sup> <https://coast.noaa.gov/slr/#/layer/slr>

liminary look at SLR and coastal flooding impacts. The tool is for screening-level evaluations and uses best-available, nationally consistent data sets and analyses. The SLR viewer can be used at several scales to help estimate impacts and prioritize actions for different scenarios. While the data and maps provided by the tool illustrate the scale of potential flooding, the exact location of SLR and flooding is an estimate.

One area already experiencing the impacts of SLR is Goodland Drive (CR 92A) between Goodland and the City of Marco Island. Because of its low elevation, the existing roadway is frequently flooded during peak tides and storms, cutting off access to Goodland and damaging the pavement. Current mitigation strategies employed by the County include road raising and the addition of cross-drain pipes to allow tidal and storm flows to more easily pass from one side of the road to the other.

For the Collier MPO 2045 LRTP update, an intermediate high scenario was used to estimate SLR by 2045. [Appendix C](#) provides a map of potential SLR and coastal flooding by 2045. Projects that promote transportation infrastructure resiliency in the face of climate change and SLR were given a score of 5 if they were within 0.25 miles of potential 2045 flooding area and a score of 3 if they within 0.25 miles of a potential low lying area.

The *Collier MPO 2045 LRTP Transportation Network's Vulnerability to Climate Change White Paper* (provided under separate cover) presents further details on climate change vulnerability and risk, estimation of SLR impacts, and possible mitigation strategies.

### *Future Technology Considerations*



The FDOT *Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use (ACES) Vehicles* (FDOT 2018a) notes that Florida MPOs are dealing with an unprecedented amount of potential change as they plan for their

transportation needs between now and 2045. Within their next planning horizon, MPOs need to decide how best to address the increasing deployment of ACES vehicles and complementary technologies.

The Society of Automotive Engineers developed framework for Levels of Automation as well as definitions for terms related to driving automation systems. Automation Levels range from Level 0 to Level 5. Level 1 through Level 3 require a human driver, but have some varying degree of automation, such as adaptive cruise control or lane assist. Levels 4 and 5 do not require a human driver and are fully automated.

Because emerging technologies have the potential to completely transform conventional transportation practices, it is important to understand the potential benefits and drawbacks of the various technologies. The key benefit to these emerging technologies is the potential to improve safety by reducing injuries and fatalities resulting from human error and distractions. However, ACES technologies also introduce a great deal of unknowns, such as costs, social inequities, and new planning requirements that make navigating policy difficult. [Table 4-5](#) presents potential positive and negative effects from these emerging technologies as noted in the FDOT ACES Guidance.



**Table 4-5. Potential Positive and Negative Effects Resulting from ACES Technologies**

Technology	Potential Negative Effect(s)	Potential Positive Effect(s)
Automated Vehicles	<ul style="list-style-type: none"> <li>• Potential increase in VMT from empty vehicles</li> <li>• Changes in land use or urban form</li> </ul>	<ul style="list-style-type: none"> <li>• Increased mobility for children, elderly or the disabled at potentially lower costs</li> <li>• Reduced parking demand</li> <li>• Changes in land use or urban form</li> </ul>
Connected Vehicles	<ul style="list-style-type: none"> <li>• Potential hacking of a transportation network</li> </ul>	<ul style="list-style-type: none"> <li>• Potential increase in roadway capacities</li> <li>• New safety features</li> <li>• Improved congestion management</li> </ul>
Electric Vehicles	<ul style="list-style-type: none"> <li>• Decrease in transportation funding sources from reduction in motor fuel tax revenues</li> </ul>	<ul style="list-style-type: none"> <li>• Potential reduction in air emissions (depending on energy sources used to generate electricity)</li> </ul>
Shared-Use Vehicles	<ul style="list-style-type: none"> <li>• Complete Street design challenges because of competition for limited curb space in urban areas</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for mobility hubs and new funding sources</li> </ul>

The Florida Connected Vehicle Initiative includes multiple planning, design/implementation, and operational connected vehicle projects throughout the state (FDOT 2019d). While there are currently no projects or initiatives in Collier County, there is one project in neighboring Lee County: US 41 Florida's Regional Advanced Mobility Elements (FRAME). The project is in the initial phases. The overall goal is to improve efficient operations of the traffic signals along the corridor, thereby improving mobility as well as provide information for connected vehicles. The project covers approximately 30 miles and 71 traffic signals and includes the following initiatives:

- Traffic signal controllers/cabinets upgrades
- Connected Vehicle Road Side Units deployment
- Pedestrian detection using LIDAR<sup>2</sup> detectors
- Deployment of Automated Traffic Signal Performance Measures

The 2045 LRTP includes multiple intersection projects along US 41 including at Immokalee Road, Goodlette-Frank Road, Collier Boulevard, Pine Ridge Road, and Golden Gate Parkway. Additionally, project no. 60 includes a study along a constrained portion of US 41 from Immokalee Road to Old US 41. All of these projects will benefit from lessons learned during the design and implementation of the FDOT-funded project to the north.

For the Collier MPO 2045 LRTP update, one CAV planning scenario was modeled by FDOT. As noted in FDOT's *Implementation of CAV into the D1RPM in Development of 2045 LRTP Updates White Paper* (FDOT 2020h), vehicles with Level 3 automation may represent 30 to 60 percent of the vehicle fleet by 2035 (refer to [Figure 4-10](#)). The FDOT D1RPM

<sup>2</sup> Light Detection and Ranging

Model Network included special-use lanes and ramps on I-75 in Lee and Collier counties. The CAV planning scenario assumed 35 percent of the vehicles on the MPO network were CAV and vehicle trips were separated into CAV and non-CAV trips. CAV trips were coded with special-use lanes that were used exclusively by CAV. The CAV scenario model output resulted in minor capacity improvements to the overall network in the Collier County area.

Projects that consider CAV technology in the future and included technologies, such as ITS, Transit Signal Priority, etc.,

were given a score of 5. If they did not include technological improvements, they were scored 0.

The *Collier MPO 2045 LRTP ACES White Paper* (provided under separate cover) presents further details on the future of CAV.

## 2045 Roadway Needs Results

Figure 4-11 and Table 4-6 identify the 2045 roadway needs projects which total to more than \$2.4 billion. The evaluation matrix for the ranking of the needs is presented in Appendix E.

**Figure 4-10. SAE Automation Levels**

Source: U.S. DOT (2018)

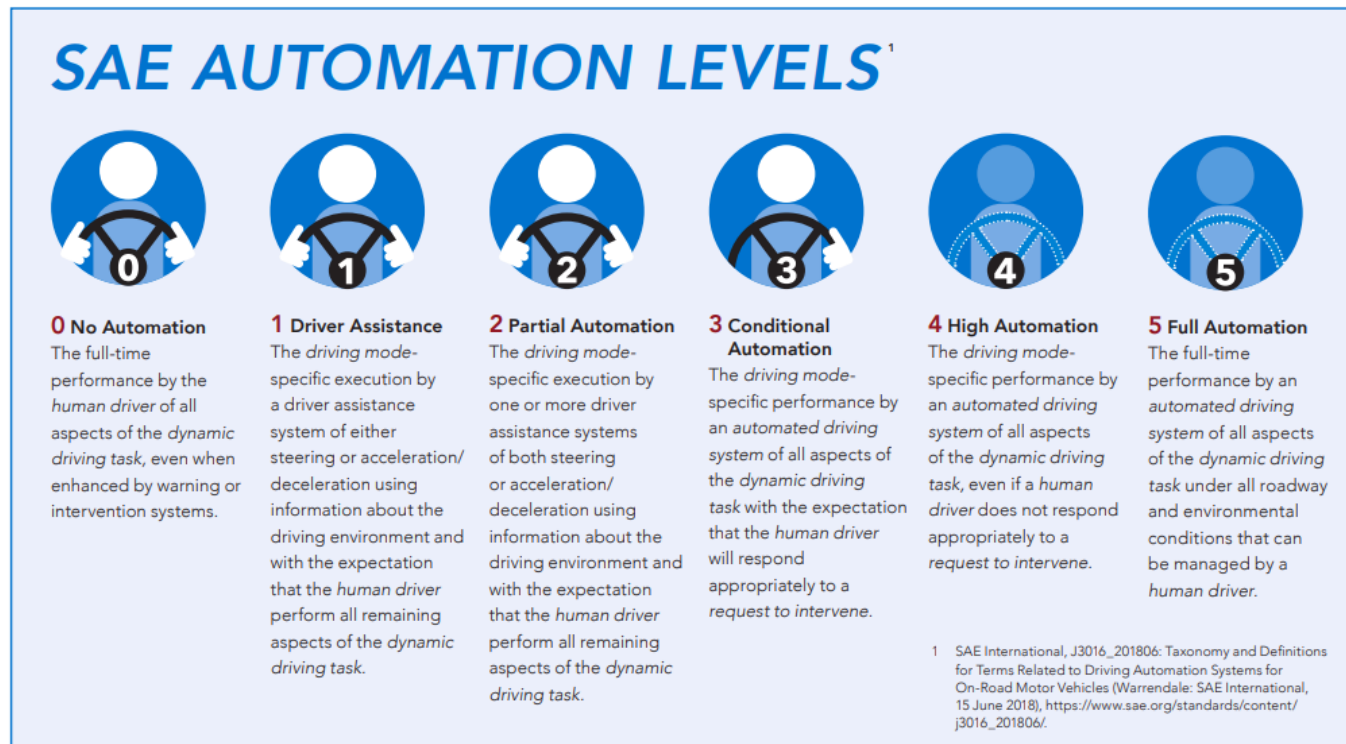
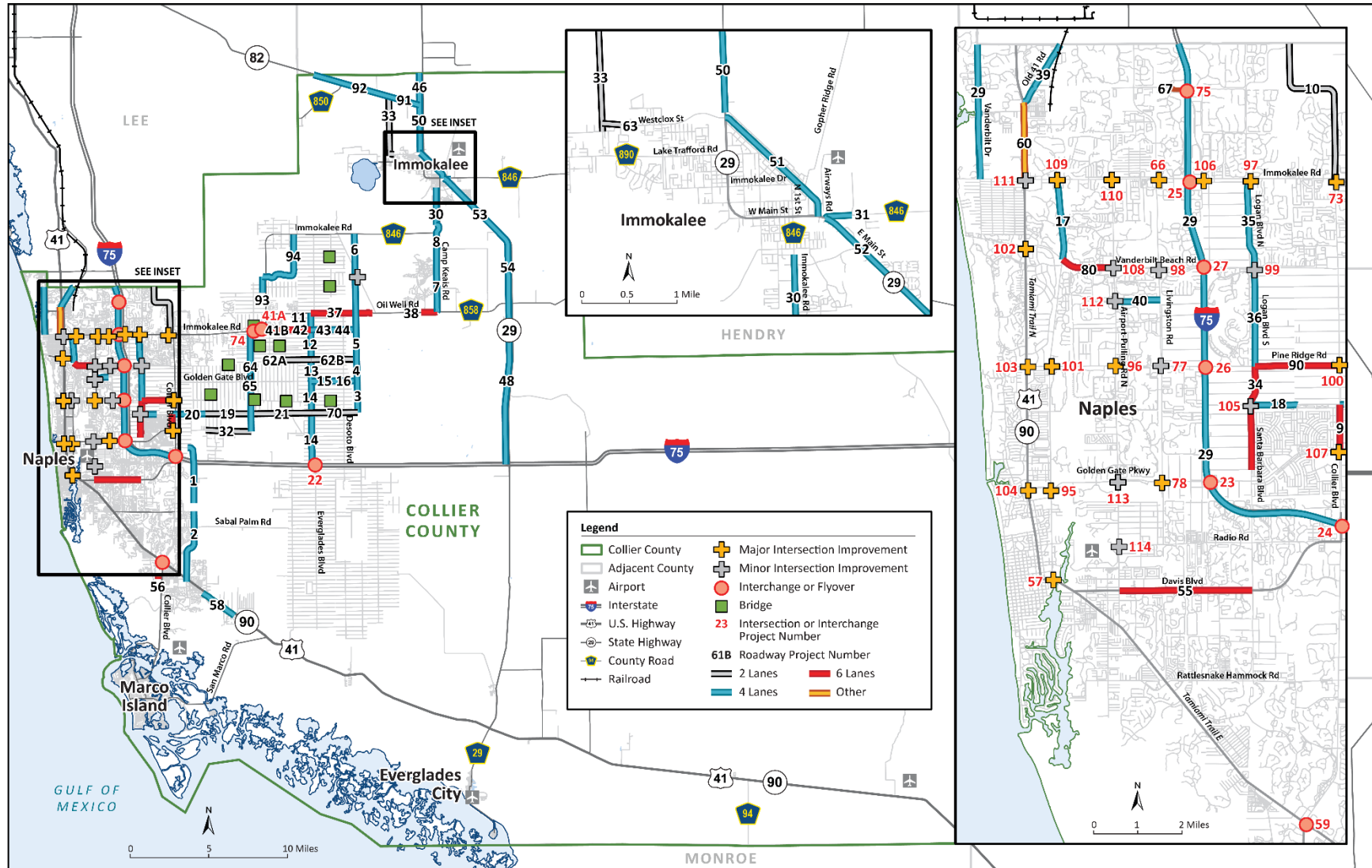


Figure 4-11. 2045 Needs Plan Project Map



**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
1	51	Benfield Rd. Extension	The Lords Way	City Gate Blvd. N	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
2	41	Benfield Rd.	US 41 (SR 90) (Tamiami Trail E)	Rattlesnake Hammock Extension	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
3	72	Big Cypress Pkwy.	Green Blvd.	Golden Gate Blvd.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
4	70	Big Cypress Pkwy.	Golden Gate Blvd.	Vanderbilt Beach Road Ext.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
5	71	Big Cypress Pkwy.	Vanderbilt Beach Rd. Extension	Oil Well Rd.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
6	82	Big Cypress Pkwy.	Oil Well Rd.	Immokalee Rd.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
7	62	Camp Keais Rd.	Pope John Paul Blvd.	Oil Well Rd.	Roadway Capacity	Widen from Two to Four Lanes
8	80	Camp Keais Rd.	Immokalee Rd.	Pope John Paul Blvd.	Roadway Capacity	Widen from Two to Four Lanes
9	1	Collier Blvd. (CR 951)	Golden Gate Main Canal	Green Blvd.	Roadway Capacity	Widen from Four to Six Lanes
10	21	CR 951 Extension	Collier Blvd. (CR 951) (northern terminus)	Lee/Collier County Line	Roadway Capacity	New 2-Lane Road
11	34	Everglades Blvd.	Randall Blvd.	South of Oil Well Road	Roadway Capacity	Widen from Two to Four Lanes

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
12	35	Everglades Blvd.	Vanderbilt Beach Rd. Extension	Randall Blvd.	Roadway Capacity	Widen from Two to Four Lanes
13	54	Everglades Blvd.	Golden Gate Blvd.	Vanderbilt Beach Rd. Extension	Roadway Capacity	Widen from Two to Four Lanes
14	63	Everglades Blvd.	I-75 (SR-93)	Golden Gate Blvd.	Roadway Capacity	Widen from Two to Four Lanes
15	37	Golden Gate Blvd.	Everglades Blvd.	Desoto Blvd.	Roadway Capacity	Widen from Two to Four Lanes
16	58	Golden Gate Blvd. Extension	Desoto Blvd.	Big Cypress Pkwy.	Roadway Capacity	New Four-Lane Road
17	31	Goodlette-Frank Rd.	Vanderbilt Beach Rd.	Immokalee Rd.	Roadway Capacity	Widen from Two to Four Lanes
18	66	Green Blvd.	Santa Barbara Blvd./ Logan Blvd.	Sunshine Blvd.	Roadway Capacity	Widen from Two to Four Lanes
19	27	Green Boulevard Extension (16th Ave. SW)	23rd St. SW	Wilson Blvd. Extension	Roadway Capacity	New Two-Lane (Future Study Area)
20	33	Green Boulevard Extension (16th Ave. SW)	Collier Blvd. (CR 951)	23rd St. SW	Roadway Capacity	New Four-Lane (Future Study Area)
21	42	Green Boulevard Extension (16th Ave. SW)	Wilson Blvd. Ext	Everglades Blvd.	Roadway Capacity	New Two-Lane Road
22	60	I-75 (SR-93) Interchange	Everglades Blvd.		Interchange	New Interchange



**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
23	8	I-75 (SR-93) Interchange (modified)	Golden Gate Pkwy.		Interchange	Interchange Improvement
24	2	I-75 (SR-93) Interchange (modified)	Collier Blvd. (CR 951)		Interchange	Interchange Improvement
25	22	I-75 (SR-93) Interchange (modified)	Immokalee Rd.		Interchange	Interchange improvement (DDI proposed)
27	40	I-75 (SR-93) Interchange (new)	Vanderbilt Beach Rd.		Interchange	New Interchange - Partial (to/from the north)
29	5	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd. (CR 951)	Collier/Lee County Line	Roadway Capacity	New Ten-Lane Express (Toll) Lanes
30	7	Immokalee Rd. (CR 846)	Camp Keais Rd.	Carver St.	Roadway Capacity	Widen from Two to Four Lanes
31	23	CR 846 E	SR 29	Airpark Blvd.	Roadway Capacity	Widen from Two to Four Lanes
32	81	Keane Ave.	Inez Rd.	Wilson Blvd. Extension	Roadway Capacity	New Two-Lane Road (Future Study Area)
33	50	Little League Rd. Extension	SR 82	Westclox St.	Roadway Capacity	New Two-Lane Road
34	65	Logan Blvd.	Green Blvd.	Pine Ridge Rd.	Roadway Capacity	Widen from Four to Six Lanes
35	52	Logan Blvd.	Vanderbilt Beach Rd.	Immokalee Rd.	Roadway Capacity	Widen from Two to Four Lanes
36	67	Logan Blvd.	Pine Ridge Rd.	Vanderbilt Beach Rd.	Roadway Capacity	Widen from Two to Four Lanes

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
37	38	Oil Well Road/CR 858	Everglades Blvd.	Oil Well Grade Rd.	Roadway Capacity	Widen from Two to Six Lanes
38	46	Oil Well Road/CR 858	Ave Maria Entrance	Camp Keais Rd.	Roadway Capacity	Widen from Two to Six Lanes
39	10	Old US 41	US 41 (Tamiami Trail E)	Lee/Collier County Line	Roadway Capacity	Widen from Two to Four Lanes
40	45	Orange Blossom Drive	Airport Pulling Rd.	Livingston Rd.	Roadway Capacity	Widen from Two to Four Lanes
41A	19	Randall Blvd. Intersection (flyover)	Immokalee Rd.		Interchange	Ultimate Intersection Improvement: Overpass
41B	36	Randall Blvd.	Immokalee Rd.	8th St. NE	Roadway Capacity	Widen from Two to Six Lanes
42	39	Randall Blvd.	8th St. NE	Everglades Blvd.	Roadway Capacity	Widen from Two to Six Lanes
43	59	Randall Blvd.	Everglades Blvd.	Desoto Blvd.	Roadway Capacity	Widen from Two to Four Lanes
44	61	Randall Blvd.	Desoto Blvd.	Big Cypress Pkwy.	Roadway Capacity	New Four-Lane Road
45	44	Santa Barbara Blvd.	Painted Leaf Ln.	Green Blvd.	Roadway Capacity	Widen from Four to Six Lanes
46	56	SR 29	SR 82	Collier/Hendry Line	Roadway Capacity	Widen from Two to Four Lanes
48	49	SR 29	I-75 (SR 93)	Oil Well Rd.	Roadway Capacity	Widen from Two to Four Lanes

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
50	24	SR 29	New Market Road North/Westclox Street	North of SR 82	Roadway Capacity	Widen from Two to Four Lanes
51	13	SR 29/New Market Rd. W (New Road)	CR 846 E	New Market Rd. N	Roadway Capacity	New Four-Lane Road
52	3	SR 29	Agriculture Way	CR 846 E	Roadway Capacity	Widen from Two to Four Lanes
53	15	SR 29	Sunniland Nursery Rd.	Agriculture Way	Roadway Capacity	Widen from Two to Four Lanes
54	16	SR 29	Oil Well Rd.	Sunniland Nursery Rd.	Roadway Capacity	Widen from Two to Four Lanes
55	6	SR 84 (Davis Blvd.)	Airport Pulling Rd.	Santa Barbara Blvd.	Roadway Capacity	Widen from Four to Six Lanes
56	9	Collier Blvd. (SR 951)	South of Manatee Rd.	North of Tower Rd.	Roadway Capacity	Widen from Four to Six Lanes
57	4	US 41 (SR 90) (Tamiami Trail E) intersection	Goodlette-Frank Rd.		Major Intersection Improvement	Major Intersection Improvement
58	12	US 41 (SR 90) (Tamiami Trail E)	Greenway Rd.	6 L Farm Rd	Roadway Capacity	Widen from Two to Four Lanes
59	11	US 41 (SR 90) (Tamiami Trail E) intersection	Collier Blvd. (SR 951)		Major Intersection Improvement	Major Intersection Improvement
60	14	US 41 (SR 90) (Tamiami Trail E)	Immokalee Rd.	Old US 41	Corridor Study	Further Study Required

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
62A	73	Vanderbilt Beach Rd. Extension	16th St.	Everglades Blvd.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
62B	73	Vanderbilt Beach Rd. Extension	Everglades Blvd.	Big Cypress Pkwy.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
63	53	Westclox Street Extension	Little League Rd.	West of Carson Rd.	Roadway Capacity	New Two-Lane Road
65	32	Wilson Blvd.	Keane Ave.	Golden Gate Blvd.	Roadway Capacity	New Two-Lane Road (Expandable to Four Lanes)
66	17	Immokalee Rd. (Intersection)	Livingston Rd.		Major Intersection Improvement	Major Intersection Improvement
67	57	Veterans Memorial Blvd. Extension	Strand Blvd.	I-75	Roadway Capacity	New Four-Lane Road
68	83	Big Cypress Pkwy. Intersection (new)	Oil Well Grade Rd.		Minor Intersection Improvement	New At-Grade Intersection
70	68	Green Blvd. Extension	Everglades Blvd.	Big Cypress Pkwy.	Roadway Capacity	New Two-Lane Road
73	20	Immokalee Rd. (CR 846) Intersection	Collier Blvd. (CR 951)		Major Intersection Improvement	Major Intersection Improvement
74	28	Immokalee Rd. (CR 846) Intersection	Wilson Blvd.		Major Intersection Improvement	Major Intersection Improvement
75	55	I-75 (SR-93) Interchange (new)	Veterans Memorial Blvd.		Interchange	New Partial Interchange

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
76	43	Vanderbilt Dr.	Immokalee Rd.	Woods Edge Pkwy.	Roadway Capacity	Widen from Two to Four Lanes
78	29	Golden Gate Pkwy. Intersection	Livingston Rd.		Major Intersection Improvement	Major Intersection Improvement
81	74	Bridge @ 47th Ave NE	West of Everglades Blvd.		New Bridge Project	New Bridge over Canal
82	75	Bridge @ Wilson Blvd.	South of 33rd Avenue NE		New Bridge Project	New Bridge over Canal
83	69	Bridge @ 18th Ave. NE	Between Wilson Blvd. N and 8th St. NE		New Bridge Project	New Bridge over Canal
84	76	Bridge @ 18th Ave NE	Between 8th St. NE and 16th St. NE		New Bridge Project	New Bridge over Canal
85	64	Bridge @ 13th St. NW	North Terminus at Vanderbilt Beach Rd. Extension		New Bridge Project	New Bridge over Canal
86	77	Bridge @ 16th St. SE	South Terminus		New Bridge Project	New Bridge over Canal
87	77	Bridge @ Location TBD - between 10th Ave. SE and 20th Ave. SE	East of Everglades Blvd.		New Bridge Project	New Bridge over Canal
88	48	Bridge @Wilson Blvd. S	South Terminus		New Bridge Project	New Bridge over Canal
89	79	Bridge @ 62nd Ave NE	West of 40th St NE		New Bridge Project	New Bridge over Canal



**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
115	N/A	Bridge @ 23rd St. SW	South of Golden Gate Blvd.		New Bridge Project	New Bridge over Canal
90	26	Pine Ridge Rd.	Logan Blvd.	Collier Blvd.	Roadway Capacity	Widen from Four to Six Lanes
92	N/A	SR 82	Hendry County Line	Gator Slough Ln.	Roadway Capacity	Widen from Two to Four Lanes
93	32	Immokalee Rd.	Shady Hollow Blvd. E	Rural Village Rd. (new)	Roadway Capacity	Widen from Two Four Lanes
94	57	Rural Village Rd. (new)	Immokalee Rd.	Immokalee Rd.	Roadway Capacity	New Four-Lane Road
95	N/A	Golden Gate Pkwy. (Intersection)	Goodlette-Frank Rd.		Major Intersection Improvement	Major Intersection Improvement
96	N/A	Pine Ridge Rd. (Intersection)	Airport Pulling Rd.		Minor Intersection Improvement	Minor intersection improvements
97	N/A	Immokalee Rd. (Intersection)	Logan Blvd.		Major Intersection Improvement	Major Intersection Improvement
98	N/A	Vanderbilt Beach Rd. (Intersection)	Livingston Rd.		Minor Intersection Improvement	Minor intersection improvements
99	N/A	Vanderbilt Beach Rd. (Intersection)	Logan Blvd.		Minor Intersection Improvement	Minor intersection improvements

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
100	N/A	Collier Blvd. (Intersection)	Pine Ridge Rd.		Major Intersection Improvement	Major Intersection Improvement
101	N/A	Pine Ridge Rd. (Intersection)	Goodlette-Frank Rd.		Minor Intersection Improvement	Minor intersection improvements
102	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Vanderbilt Beach Rd.		Major Intersection Improvement	Major Intersection Improvement
103	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Pine Ridge Rd.		Major Intersection Improvement	Major Intersection Improvement
104	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Golden Gate Pkwy.		Major Intersection Improvement	Major Intersection Improvement
107	N/A	Golden Gate Pkwy.	Collier Blvd.		Major Intersection Improvement	Major Intersection Improvement
108	N/A	Vanderbilt Beach Rd.	Airport Pulling Rd.		Minor Intersection Improvement	Intersection Innovation/Improvements
109	N/A	Immokalee Rd.	Goodlette-Frank Rd.		Major Intersection Improvement	Intersection Innovation/Improvements
110	N/A	Immokalee Rd.	Airport Pulling Rd.		Major Intersection Improvement	Intersection Innovation/Improvements

**Table 4-6. 2045 Needs Plan List of Projects**

Map ID	Needs Ranking	Project	From	To	Type of Project	Description
111	N/A	US 41	Immokalee Rd.		Minor Intersection Improvement	Intersection Innovation/Improvements
112	N/A	Airport Pulling Rd.	Orange Blossom Dr.		Minor Intersection Improvement	Intersection Innovation/Improvements
113	N/A	Airport Pulling Rd.	Golden Gate Pkwy.		Minor Intersection Improvement	Intersection Innovation/Improvements
114	N/A	Airport Pulling Rd.	Radio Rd.		Minor Intersection Improvement	Intersection Innovation/Improvements

## 4-3 Bicycle and Pedestrian Needs

Pathways that consist of pedestrian and bicycle facilities are an important part of the County's transportation network. They facilitate access to public transportation and provide alternative mobility choices. In 2019, the Collier MPO and BPAC developed a *Bicycle/Pedestrian Master Plan* (BPMP) that addresses pedestrian and bicycle needs (Collier MPO 2019). The BPMP is incorporated in the LRTP by reference.

The BPMP establishes policies for including bicycle and pedestrian facilities along all collector and arterial roads, formalizes the applicability of the Design Guidelines, adopts FDOT's Complete Streets policy, identifies high priority Complete Streets Corridors, and establishes MPO priorities for funding improvements. The policies also commit MPO staff to reporting to the MPO Board on performance measures and targets on an annual basis.

### Vision, Goals, and Objectives

The BPMP's Vision, Goals, Objectives, and Strategies were developed with input from the MPO's advisory committees, the BPMP stakeholders group, Collier MPO staff, and the consultant, and were vetted by the MPO Board. The Vision combines an emphasis on safety with creating a network for the community to use and enjoy:

"To provide a safe and comprehensive bicycle and pedestrian network that promotes and encourages community use and enjoyment."

Goals and Strategies were developed by reviewing local, state, and national best practices and goals in similar plans including the Collier MPO 2012 *Comprehensive Pathways Plan* (RWA, Inc. 2012). The 2019 BPMP is similar to the 2012 *Comprehensive Pathways Plan* but places greater emphasis on

safety, equity, and community health. The goals became the basis for the development of strategies, policies, and project prioritization criteria and are as follows:

- **Safety.** Increase safety for people who walk and bicycle in the County.
- **Connectivity.** Create a network of efficient, convenient bicycle and pedestrian facilities in the County.
- **Equity/Livability.** Increase transportation choice and community livability through development of an integrated multimodal system.
- **Health.** Increase total miles of bicycle and pedestrian facilities and encourage local governments to incorporate Complete Streets principles in road planning, design, and operations.
- **Economy.** Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.
- **Environment.** Protect the environment by promoting walking and bicycling for transportation to reduce congestion, reduce the need for costly expansion of road and highway systems, and reduce our nation's dependence on foreign energy sources.

To address the issue of equity in terms of providing equal access to bicycle and pedestrian facilities countywide, the MPO's previous identification of Environmental Justice (EJ) communities was updated. The EJ criteria used for the BPMP were minority status, poverty, no access to a vehicle, and limited ability to speak English. EJ community areas were defined as areas where the criteria were 10 percent greater than the County average. The areas were ranked "Low", "Medium", "High", or "Very High" based on how many EJ

factors overlapped within them. **Appendix C** presents the EJ Community Area map.

## Identification of Network Needs

The BPMP developed bicycle and pedestrian priorities by first identifying gaps and needs on collector and arterial roads in the region using the following six-step identification process:

1. **Plans Review** – Review of local plans and documents that address bicycle and pedestrian issues and opportunities. Locally adopted plans and formal studies are incorporated by reference into the BPMP so that the projects identified within them are eligible for MPO funding. Examples include the *City of Naples Downtown Circulation and Connectivity Plan*, the *Marco Island Bike Path Master Plan*, and two plans currently in process: the Everglades City Bicycle and Pedestrian Master Plan and the City of Naples Pedestrian and Bicycle Master Plan update.
2. **Inventories** – The Collier MPO entered into an agreement with the Naples Pathway Coalition (NPC) during the development of the BPMP to develop a joint bicycle facilities map in partnership with NPC and the City of Naples Community Services Department. Additionally, the Collier MPO's 2017 bicycle and pedestrian facilities inventory maps were reviewed and commented on by local agencies, stakeholders, and the community through an extensive public outreach effort, resulting in multiple revisions of the map. The joint map was completed and published in November 2018. Going forward, NPC agreed to serve as the recipient of comments regarding the joint map's accuracy, and the Collier MPO agreed to maintain and update the associated geographic information system (GIS) files on an as-needed basis.
3. **Public Input** - The Collier MPO posted an interactive map on its website that generated nearly 400 comments. Comments were used to develop an overlay map for project review.
4. **Crash and Environmental Justice Community Data** – An analysis of crash data indicated concentrated bicycle and pedestrian crashes near land uses related to tourism and services or in relation to EJ community areas. The combination of these two factors—bicycle and pedestrian crash clusters and EJ communities—proved to be a useful marker for the needs of low-income, minority, and immigrant populations.
5. **Network Configuration** - Collier MPO staff worked closely with the MPO advisory committees and agency staff and considered public comment in the process of articulating design and planning policies related to roadways.
6. **Gap and Needs Analysis** - Using GIS data, the needs analysis included overlaying the collected data, public input, and draft policies to identify missing links and segment deficiencies in the bicycle/pedestrian network. Throughout the process, monthly updates on the needs were provided to the advisory committees and stakeholders beginning in the fall 2018, which led to further refinement of the prioritization criteria, network gaps, facility needs, and priority projects.



The needs analysis identified 74 miles of roadway lacking any type of bicycle or pedestrian facility and 150 miles of roadway lacking sufficient bicycle facilities. **Table 4-7** lists the bicycle and pedestrian network gaps and facility needs. **Appendix C** includes a map from the BPMP showing bicycle and pedestrian facility gaps overlapped with public comments.

### Prioritized Bicycle and Pedestrian Facilities

Once the needs were identified, the BPMP's goals and objectives served as the prioritization criteria to develop a list

of prioritized bicycle and pedestrian facilities. The Needs Analysis in the Plan is comprehensive and inclusive of many attributes. For example, **Table 4-8** identifies road segments that are prioritized for Complete Streets – Safety Corridor Studies resulting from an analysis of high crash locations on arterial and collector roads overlapping with EJ communities and transit corridors. **Table 4-9** lists the bicycle and pedestrian priorities based on technical need (gap analysis) and public comments. The segments identified totaled 66 miles.

**Table 4-7. Network Gaps/Facility Needs**

Source: Collier MPO BPMP

Type of Gap in Bicycle Network	Mileage of Missing Facilities			
	All Gaps on Collector & Arterial Roadways	Gaps Meeting Equity Criterion <sup>a</sup>	Gaps Meeting Safety Criterion	Gaps Meeting Equity and Safety Criteria
No facility	73.9	22.9	2.4	0.0
Insufficient facility	150.3	44.5	13.1	5.8
Paved shoulder <sup>b</sup>	85.3	26.0	1.7	1.3
Connector sidewalk <sup>b</sup>	65.0	18.5	11.4	4.5
Total miles	224.2	67.4	15.5	5.8

<sup>a</sup> Equity criterion established as block groups receiving a medium, high, or very high ranking from the Composite Equity Analysis.

<sup>b</sup> Paved shoulder/ connector sidewalk are sub-categories of Insufficient Facility total.

**Table 4-8. Complete Streets – Safety Corridor Studies**

Source: Collier MPO BPMP

Rank	Road Name	From	To	Project Description
1	US-41 Tamiami Trail	Commercial Dr./ Palm St.	Guilford Rd.	Review, adopt and implement FDOT Road Safety Audit recommendations
	Airport Rd.	US-41 Tamiami Trail	Estey Ave.	
2	Airport Rd.	Estey Ave.	Golden Gate Pkwy.	Corridor Study
3	US41 Tamiami Trail	Commercial Dr./ Palm St.	9th Ave.	Corridor Study
4	Goodlette-Frank Rd.	US-41 Tamiami Trail	Golden Gate Pkwy.	Corridor Study
5	Davis Blvd.	US-41 Tamiami Trail	Airport Rd.	Corridor Study
6	Golden Gate Pkwy.	Santa Barbara Blvd.	Collier Blvd.	Corridor Study



**Table 4-9. Prioritized Bicycle and Pedestrian Facilities***Source: Collier MPO BPMP*

Road	From	To	Distance	Agency	Facility Type
111th Ave. N	Vanderbilt Dr.	Tamiami Trl. N	1.0	Collier County	Bike Lane/Path
Airport Rd. N	Pine Ridge Rd.	Immokalee Rd.	4.2	Collier County	Bike Lane/Path
Airport Rd. N	S Horseshoe Dr.	Pinewoods Cir.	2.5	Collier County	Bike Lane/Path
Airport Rd. S	Seagrape Ave.	Davis Blvd.	0.5	Collier County	Bike Lane/Path
Airport Rd. S	Davis Blvd.	Tamiami Trl. E	0.8	Collier County	Safety
Bluebill Ave.	Bluebill Ave.	Vanderbilt Dr.	0.4	Collier County	Bike Lane/Path
Bonita Beach Rd.	Vanderbilt Dr.		1.7	Collier County	Bike Lane/Path
Castaways St.	Saturn Ct.	Amazon Ct.	0.2	Marco Island	Marco Master Plan
Collier Blvd.	17th Ave. SW	City Gate Blvd. N	2.0	Collier County	Bike Lane/Path
Collier Blvd.	N End Jolley Bridge	Fiddlers Creek Pkwy.	3.6	Collier County	Bike Lane/Path
Copeland Ave. S	Broadway	Oyster Bar Ln.	0.7	Everglades City	Pathway
Davis Blvd.	Tamiami Trl.	Airport Rd. S	1.0	Collier County	Bike Lane/Path
Everglades Blvd.	Oil Well Rd.	58TH AVE NE	3.1	Collier County	Sidewalk
Golden Gate Pkwy.	9th St. N	Estuary Blvd.	1.6	Naples	Bike Lane/Path
Greenbrier St.	Manor Ter.	Saturn Ct.	0.2	Marco Island	Marco Master Plan
Immokalee Rd.	Tamiami Trl.	Northbrooke Dr.	4.0	Collier County	Bike Lane/Path
Logan Blvd. N	Logan Blvd.	Vanderbilt Beach Rd.	1.1	Collier County	Bike Lane/Path
Logan Blvd. S	Logan Blvd.	Green Blvd.	2.0	Collier County	Bike Lane/Path
Oil Well Rd.	Everglades Blvd. N	Oil Well Grade Rd.	3.9	Collier County	Bike Lane/Path
Oil Well Rd.	Ave Maria Blvd.	SR 29	5.7	Collier County	Bike Lane/Path
Old US 41 N	Tamiami Trl.	Performance Way	1.5	Collier County	Pathway
Peru St.		Seagrape Dr.	0.1	Marco Island	Marco Master Plan
Pine Ridge Rd.	Tamiami Trl.	Logan Blvd. S	5.1	Collier County	Bike Lane/Path
Randall Blvd.	Randall Blvd.	Approach Blvd.	1.5	Collier County	Bike Lane/Path
Rattlesnake H Rd.	Valley Stream Dr.	Collier Blvd.	3.5	Collier County	Bike Lane/Path
San Marco Rd.	Goodland Dr.	Tamiami Trl. E	6.5	Collier County	Pathway
Santa Barbara Blvd.	Green Blvd.	17th Ave. SW	0.2	Collier County	Bike Lane/Path
Saturn Ct.	Castaways St.	Greenbrier St.	0.1	Marco Island	Marco Master Plan
Seagrape Dr.	Peru St.	Swallow Ave.	0.7	Marco Island	Marco Master Plan
Tamiami Trl. E	Greenway Rd.	Six LS Farm Rd.	2.5	Collier County	Pathway
Vanderbilt Beach Rd.	Gulfshore Dr.	Vanderbilt Dr.	0.4	Collier County	Bike Lane/Path
Wiggins Pass Rd.	Vanderbilt Dr.	Tamiami Trl. N	1.0	Collier County	Bike Lane/Path
Wilson Blvd. N	Golden Gate Blvd	24th Ave. NE	3.0	Collier County	Pathway
<b>Total Miles</b>			<b>66.3</b>		

## Shared-Use Nonmotorized (SUN) Trail Alignments and Spine Pathway Corridors

Managed by the FDEP Office of Greenways and Trails, the SUN Trail program funds non-motorized, paved, shared-use trails that are part of the Florida Greenways and Trails System Priority Trail. **Appendix C** includes the SUN Trail Alignments and Spine Pathway Corridors map, which shows the two SUN Trail alignments and other interconnected spine pathway corridors within Collier County that form an integrated, high-priority pathway network.

The BPMP identified the following as priority projects to complete the SUN Trail (FDOT 2016) and Spine Trail network. Further details on each project is provided in the BPMP.

- SUN Trail Alignments
- FPL Easement/Livingston/Rich King Greenway Alignment
- Gordon River Greenway Connections
- Golden Gate Canal Greenway (Proposed)
- Golden Gate Parkway between Santa Barbara and Collier Boulevards
- SR 29 and SR 82

## Existing Plus Proposed Facilities

Additional needs analysis included examining the 2040 LRTP roadway projects, as roadway enhancement projects provide an excellent opportunity to cost-effectively expand the bicycle and pedestrian network. **Appendix C** includes the Existing Plus Proposed Facilities map, which provides a visual summary of the project priorities for major roadways and the combined SUN Trail/Spine Trail network.

## Local and Residential Roads

Since the 2040 LRTP update, the Collier MPO completed the Golden Gate City Walkable Community Study to develop a prioritized list of sidewalk and pedestrian amenity projects that would promote and enhance walkability, bicycle use, transit use, and social equity throughout the community. Projects were scored based on proximity to crashes, schools, commercial destinations, parks, and transit, and public input. Projects were then ranked in tiers based on their current condition and greatest value to the public:

- Tier 1 Projects were given the highest priority based on their benefit to the community
- Tier 2 Projects are instrumental in completing a continuous sidewalk network throughout the community.
- Tier 3 Projects will enhance overall walkability within the community

The results of the study demonstrated a significant need for sidewalk infrastructure in Golden Gate City. The Collier MPO has completed a total of four Walkable Community Studies, including Immokalee, Bayshore and Naples Manor in addition to Golden Gate City. A fifth study completed for Naples Park was never officially approved by the MPO because of unresolved differences of opinion within the community.

## Local Agency Priorities on Local Roads

Adopted local agency plans are incorporated into the BPMP by reference. Key priorities are summarized as follows.

### Naples

The *Naples Downtown Circulation and Connectivity Plan* identifies bicycle and pedestrian improvements to the Gordon River Bridge (5th Avenue S) as a priority for the region as it is

the hub of the SUN Trail and Spine Corridor Network. The project design calls for narrowing the existing travel lanes, eliminating the shoulder, and moving the existing barrier to provide a 14-foot-wide shared-use path on each side of the bridge.

#### **Everglades City**

Everglades City identified four sidewalks projects (along Copeland Avenue, Datura Street, Broadway, and Collier Avenue) as part of their priority needs in response to the MPO's call for projects in 2017. A second call for projects issued in 2018 resulted in the identification of segments of Copeland, Hibiscus, and Broadway as priority needs for sidewalks or bike lanes.

#### **Immokalee Urban Area**

The Immokalee Walkable Community Study served as the basis for a \$13 million TIGER Grant application, which the County was awarded in 2018. The BPMP identifies SR 29 and SR 82 as critical components of the Spine Trail Network for Collier County. Additionally, the Immokalee CRA requested to extend bicycle and pedestrian facilities along Lake Trafford Road to the lake as part of the Spine Trail priority.

#### **Marco Island**

Top priorities from Marco Island's 2019 *Bike Path Master Plan* include:

- Collier Boulevard – alternate bike lanes (Landmark extension)
- Bald Eagle Drive – bike lanes (Collier to San Marco)

Future updates to the Marco Island *Bike Path Master Plan* are automatically incorporated by reference into the BPMP.

## **4-4 Transit Needs**

This section summarizes the needs and improvements identified in the Collier County *Ten-Year Transit Development Plan* (TDP) (Tindale Oliver 2020c), which is incorporated by reference into this LRTP and was developed by CAT in coordination with the Collier MPO. Transit needs information identified in this document was used to assess transit needs for the County and its municipalities in the next 20 years.

### **Goals and Objectives**

CAT has established seven goals to help fulfill their vision and mission for the County and its municipalities. These goals guide the transit needs and improvement development process.

- Goal 1: Operate reliable, convenient, and cost-effective mobility services that safely and efficiently meet the mobility needs of Collier County's workers, residents and visitors.
- Goal 2: Increase the resiliency of Collier County, protecting our man-made and natural resources, by providing attractive and convenient mobility alternatives that will reduce adverse carbon and environmental impacts within our communities.
- Goal 3: Build meaningful partnerships that increase awareness and education of and about mobility options and increase the viability of mobility services to promote livability and enhance economic and social well-being.
- Goal 4: Coordinate the development and provision of mobility services with local, regional, state planning efforts and through public and private partnerships.



- Goal 5: Use technologies and innovations in service delivery to improve productivity, efficiency, reliability, and cost-effectiveness of mobility services and operations.
- Goal 6: Monitor and improve mobility service quality and service standards.
- Goal 7: Maximize the use of all funding sources available, including through partnerships with businesses, employers, and other institutions to increase and improve access to mobility services and mobility for workers, residents, visitors.

## Development of Transit Needs

The development of transit needs was guided by a review of existing plans and studies, baseline conditions, existing transit performance, public input, regional coordination, and the development of a transit demand analysis, which includes market assessments and transit modeling to identify gaps in the system.

### Existing Plans and Studies

The initial process for developing the list of transit needs included a review of local, regional, state, and federal planning documents, as noted in the TDP.

### Public Outreach

Public outreach occurred throughout the development of the TDP to ensure that public input guided the development of needs and potential improvements. Collier community members, elected officials, and other stakeholders were all invited to engage with the TDP planning team through surveys made available on CAT bus routes, online public surveys, stakeholder interviews, discussion workshops, public transit

advisory committee, project group meetings, and public workshops.

### Existing Transit Evaluation

The existing transit evaluation process consisted of three elements – identifying existing transit service in the County and its municipalities, comparing CAT transit performance against similarly sized peer transit agencies, and developing a trend analysis that summarizes the results from the peer review analysis.

#### Existing Transit Service

CAT operates a fleet of 29 buses that provide service on 19 fixed-route bus lines to the public 7 days per week from 3:55 a.m. to 8:48 p.m. CAT also provides complementary paratransit service through CAT Connect for people with a qualifying disability that are not otherwise able to access the fixed-route buses. CAT operates out of the County-owned Radio Road Transit facility. This facility offers connections for pedestrians, bicyclists, drop-off passengers, and nearby park-and-ride passengers at its Intermodal Transfer Station .

#### Peer and Trend Analysis

The peer comparison and trend analysis examine CAT transit system performance and compared services to peer agencies. The peer comparison and trend analysis provided a starting point for understanding CAT's transit system operating environment over time when compared to other similarly sized transit systems. Key trends between 2013 and 2018 included:

- CAT increased vehicle miles, revenue miles, vehicle hours and route miles, and vehicle miles per capita. CAT was above the peer average for passenger miles, vehicle miles, revenue miles, and route miles.

- Passenger trips and passenger miles declined , as did passenger trips per capita, passenger trips per revenue mile, and passenger trips per revenue hour. CAT was 19 percent below the peer average for passenger trips and 20 percent above the peer average for passenger miles.
- Total operating expenses increased 6 percent. CAT operating expense per passenger mile and operating expense per revenue mile was below the peer average.
- The share of operating expenses funded by passenger fares decreased 34 percent, which was near the peer average.

### **Transit Demand Analysis**

The transit demand analysis for MPO boundary area included an evaluation from two different customer types, described below. The discretionary market refers to people who may choose to ride transit but who have other mobility options. Previous studies have shown most CAT riders are not discretionary riders. The analysis was based primarily on population and employment density to identify these markets. While much of the area falls under the "Low" category, the density threshold assessment indicated that there are employment-based areas that have "High" or "Very High" transit-investment potential east of Naples Airport, north of Pine Ridge Road, and along the Tamiami Trail. Household unit-based areas with "High" transit-investment potential are located along Naples Beach, south of Pine Ridge Road, and in Immokalee east of Sunshine Boulevard.

### **Traditional Market Assessment**

As part of the transit market assessment, socioeconomic and demographic characteristics were studied among people that are more likely to use transit because they have limited mobility options and depend on public transit for most transportation. Demographic factors including population density, older adults, youth, and households below the federal poverty level helped identify where people are likely to rely on transit the most. CAT serves areas with traditional transit markets, such as north of downtown Naples and near Lee County. Areas in Immokalee also have strong traditional transit markets.

### **Ridership Projections**

Transit demand and mobility needs were evaluated for the CAT fixed-route system using the Federal Transit Administration's ridership forecasting tool T-BEST. The model was based on the assumption that population and employment, travel demand, technology, and transit routes are the same as today. **Table 4-10** provides the ridership forecast by route in the years 2021 and 2030. The model projected a 17-percent increase in transit ridership for all routes by 2030, particularly for Routes 21, 27, and 121. The transit plan suggests the highest ridership increases are possible by expanding service in areas with high population density and growth.

**Table 4-10. Ridership and Growth Rates with No Improvements, 2021–2030<sup>a</sup>**

Route	2021 Average Annual Ridership	2030 Average Annual Ridership	2021–2030 Absolute Change	2021–2030 Average Growth Rate
11	108,083	123,855	15,772	14.6%
12	82,923	96,211	13,288	16.0%
13	73,580	91,681	18,101	24.6%
14	55,388	65,657	10,269	18.5%
15	103,042	107,980	4,938	4.8%
16	50,253	52,259	2,006	4.0%
17	39,922	44,056	4,134	10.4%
18	27,661	31,555	3,894	14.1%
19	66,732	77,813	11,081	16.6%
20	9,091	9,180	89	1.0%
21	12,812	21,449	8,637	67.4%
22	54,895	64,340	9,445	17.2%
23	27,698	33,854	6,156	22.2%
24	51,055	58,822	7,767	15.2%
25	17,308	20,897	3,589	20.7%
26	6,044	6,547	503	8.3%
27	33,319	47,517	14,198	42.6%
28	26,719	34,023	7,304	27.3%
121	25,280	35,710	10,430	41.3%
<b>Totals</b>	<b>871,805</b>	<b>1,023,406</b>	<b>151,601</b>	<b>17.4%</b>

<sup>a</sup> Based on T-BEST modelSource: Collier County *Ten-Year Transit Development Plan*

## Gap Overview

The gap analysis compares existing service coverage to transit market analysis results. The goal was to identify gaps in public transit where travel demand is high but where transit service is less than predicted demand, and where transit stops may have barriers.

The gap analysis from the TDP revealed that the areas that have potential for being underserved are located west and east of US 41 but south of Bonita Beach Road. Other major areas that are underserved include North Naples, Immokalee, Collier Boulevard between Rattlesnake Hammock Road and Radio Road, and areas east of Goodlette-Frank Road.

## Transit Needs Results

The evaluation baseline conditions, existing transit performance, public input, regional coordination, and transit demand and gap analysis helped identify a set of transit needs for the County and its municipalities.

Once the transit needs were identified, a quantitative-qualitative methodology was developed to evaluate and prioritize the transit needs. Prioritization was based on weighing the benefits of each service improvement against the others. Three evaluation categories were identified for determining the criteria for evaluation: public outreach, transit markets, and productivity and efficiency. **Table 4-11** presents the criteria, measure of effectiveness, and weighting used to rank the needs.

**Table 4-11. Transit Needs Evaluation Measures**

Category	Criteria	Measure of Effectiveness	Relative Weighting	Overall Category Weight
Public Outreach	Public Input	Level of interest in specific alternatives (Very High, High, Moderate, Low)	40%	40%
Transit Markets	Traditional Market	Percent serving poverty	15%	30%
	Proximity to Employment Market	Percent of countywide employment market served	15%	
Productivity and Efficiency	Productivity	Trips per hour (T-BEST-generated trips and revenue hours of service)	15%	30%
	Cost Efficiency	Cost per trip (including new trips)	15%	
Total			100%	100%

Source: Collier MPO TDP, 2020

**Table 4-12** lists the transit needs based on the TDP and socioeconomic data expected through 2045. Table 4-12 also presents the ranking (where available) for the transit needs identified. **Figure 4-12** illustrates the transit network service needs, which includes extending service, realigning routes, and providing new service. The needs listed are organized by type of improvement: route network, route frequency, span of service, and new service. There is a need to extend current bus routes to reach more riders, realign routes to create more efficient service, increase how often buses provide service, and provide new service to unserved areas. More details on route descriptions and benefits are provided in the TDP.

**Table 4-12. 2045 Transit Needs Summary**

Route Location	Rank	Improvement Description
<b>Proposed Realignment Changes</b>		
Route 22	1	Realign to streamline circulation in Immokalee, reduce duplication with Route 23, reduce the need for transfers between Routes 22 and 23, and extend service east along Main Street and to the various packing houses that employ approximately 20,000 employees.
Route 23	1	Realign to provide direct connections to the westernmost residential cluster on Lake Trafford Road, the County Health Department, several packing houses along New Harvest Road, and the easternmost residential cluster on Farm Workers Way.
Route 11	2	Minor extension of the north to connect to the Walmart on Tamiami Trail and Immokalee Rd. Or consider connecting to the LinC at the Walmart.
Routes 17/ and 18	4	<ul style="list-style-type: none"> <li>• Realign to combine the two routes along the portion from Government Center along Tamiami Trail to Rattlesnake Hammock Road to Collier Blvd. to the Super Walmart at Tamiami Trail.</li> <li>• Remove service along Tamiami Trail</li> </ul>
Routes 19 and /28	6	Realign by eliminating unproductive segments of Route 19 and combining the service hours into Route 28 with increased frequency.
Route 12	7	Minor extension west into Walmart and other shopping plazas at the intersection of Tamiami Trail and Immokalee Rd.
Route 13 and 14	4 and 3	Realign from a one-way pair to two bidirectional routes, with one operating along 9th Street/Tamiami Trail and the other along Goodlette-Frank Rd.
Route 20 and 26	9	Combine Routes 20 and 26 to improve frequency and streamline service.
Route 21 (Marco Island Express)	11	Provide express service to the Walmart Supercenter on Collier Blvd. and Tamiami Trail and potentially to the Government Center.
Route 25 (NS and EW)	8 and 13	<ul style="list-style-type: none"> <li>• Extend the North-South alignment north to Immokalee Rd.</li> <li>• East-West alignment would remain the same.</li> </ul>
Route 27 (NS and EW)	15 and 12	<ul style="list-style-type: none"> <li>• Extend the North-South alignment south along Collier Boulevard to Tamiami Trail.</li> <li>• Extend the East-West alignment east to provide service along Immokalee Rd. to the Publix shopping center at Immokalee Rd. and Oil Well Rd.</li> </ul>



**Table 4-12. 2045 Transit Needs Summary**

Route Location	Rank	Improvement Description
<b>Proposed Frequency Changes</b>		
Route 19/28		Reduce headway time from 165 minutes to 60 minutes.
Route 23		Reduce headway from 60 minutes to 40 minutes
Route 121	1	Add two morning and two evening trips during peak periods, while coordinating with employee shift times at major employment locations.
Route 11	3	Reduce headway time from 30-minutes to 20-minutes.
Route 12	3	Reduce headway time from 25- to 90-minutes to 30-minute peak headway and a 60-minute off-peak headway.
Route 13	6	Reduce headway time from 40 minutes to 30 minutes.
Route 14	6	Reduce headway time from 60 minutes 30 minutes.
Route 24	6	Reduce headway time from 85 minutes to 60 minutes.
Route 15 and 16	2 and 5	Reduce headway time from 90 minutes to 45 minutes.
<b>Proposed Span Improvements</b>		
Route 11, 13, 14, 17/18, 19/28, 24	1, 1, 1, 6, 4, 4	Extend service to 10:00 p.m.
<b>Proposed New Service Routes</b>		
Island Trolley		Would travel along Collier Blvd. on Marco Island as a fixed-route and connect to the realigned Route 21 Marco Island Express route. Would be a hop-on/hop-off type, fare-free service using two vehicles with 30-minute headways.
New UF/IFAS and Lehigh Acres Route		Would connect Immokalee to the University of Florida/IFAS satellite campus and Lehigh Acres. Further study is recommended due to the roadway constraints for transit vehicles entering/exiting UF/IFAS campus.
I-75 Premium Express	9	Would operate like an express commuter service beginning at the Government Center and end at the Florida Gulf Coast Town Center. The route would require one vehicle to provide 90-minute headway service from 6 a.m. to 8 p.m.

**Table 4-12. 2045 Transit Needs Summary**

Route Location	Rank	Improvement Description
Bayshore Shuttle		Would operate as a fixed-route electric shuttle with free hop-on/hop-off service. The route would require one vehicle to provide 15-minute headway service from Weeks Ave. to the Naples Botanical Garden from 11:00 a.m. to 9:00 p.m.
Downtown Autonomous Circulator		Would address the parking shortage in downtown and would begin on S. 4th Ave. from S. 9th St. to S. 3rd St. and go south along S. 3rd St. to S. 13th Ave.
Naples Pier Electric Shuttle		The downtown autonomous circulator would alleviate parking demand in downtown. It would begin at Naples Pier and run along Broad Avenue with a stop at Crayton Cove, before going north along S. 8th St. to S. 6th Ave.
Mobility-On-Demand		Uses on-demand information, real-time data, and predictive analytics that provides travelers the best transportation choice for their needs. Service can be requested via a mobile app, website, or by calling CAT. Helps solve the 'first/last mile' problem associated with limited access to transit. Four MOD Zones identified: Golden Gate, North Naples, Naples Zone, and Marco Island.
Vanpooling (Everglades City)		Indicated by FDOT District 1 as a workable solution for rural communities, such as Everglades City. The proposed program could connect commuters from Everglades City to the Government Center.
<b>Capital Infrastructure</b>		
Regionwide Technology		The technology needs outlined in the TDP's Situation Appraisal includes implementing or upgrading transit scheduling and dispatching software, installing automatic passenger count and vehicle announcement systems for fixed-route vehicles, updating fare collection systems, and enhancing on-board safety measures.
Bus Stop Infrastructure		Improve benches, shelters, bicycle storage facilities, and other infrastructure at bus stops to enhance the rider experience and potentially attract new riders.
Improve ADA Accessibility		Improve bus stop safety and ADA accessibility throughout the entire system for all riders.
Replace and Add New Vehicles		Continue to replace existing fleet and add new vehicles in order to provide new service.
Park-and-Ride Lots		Improve transit access through the development of park-and-ride lots.

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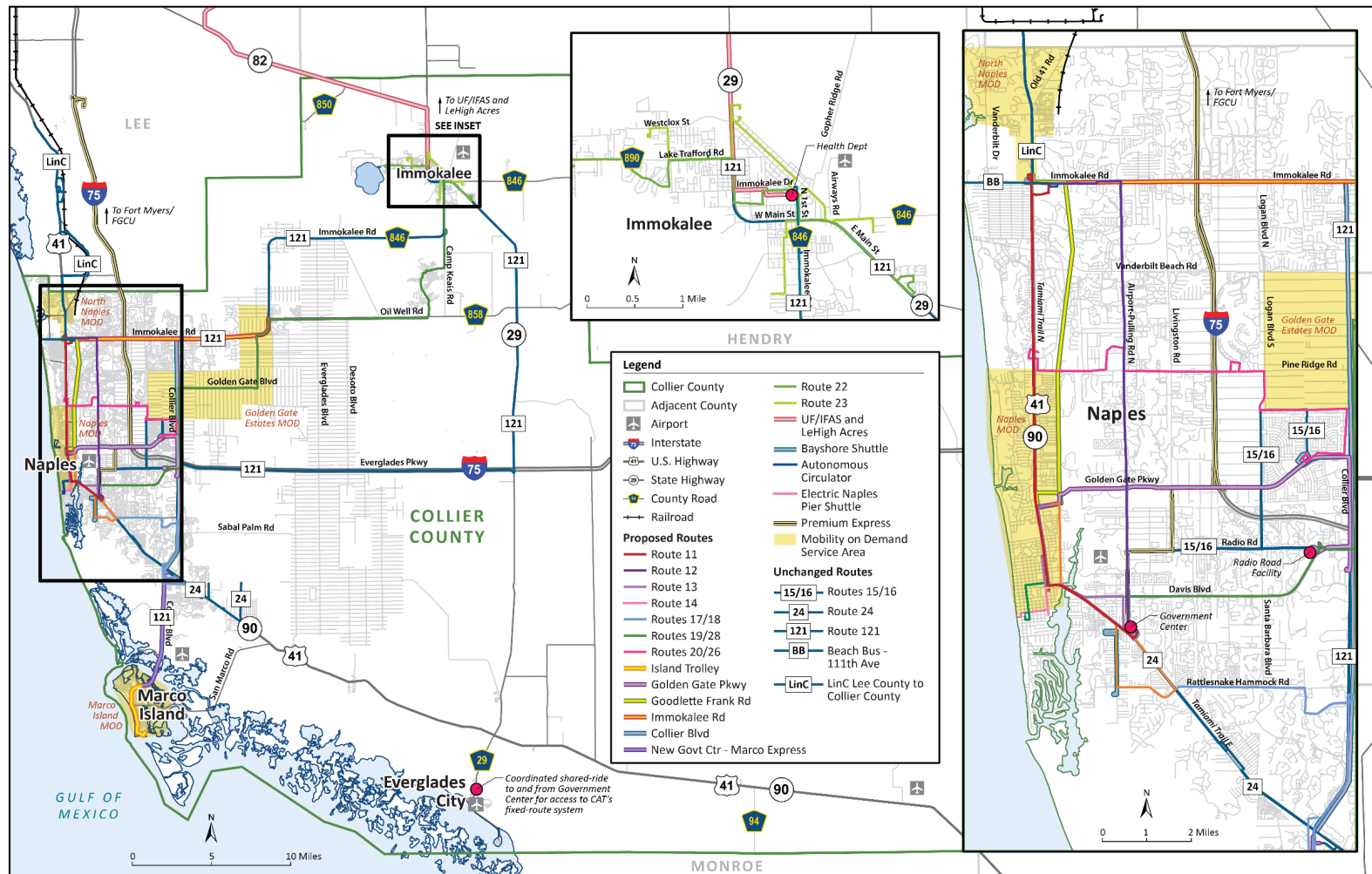
Other improvements and policy recommendations for transit service needs include:

- Pursue public-private partnerships local hotels in Marco Island to support Route 21, the proposed new service - Island Trolley and MOD.
- Brand buses on the beach and those associated with proposed MOD services.
- Conduct a comprehensive analysis of the existing CAT network, routes, and further study proposed new service.
- Create a transfer hub along the urbanized area of Immokalee Road to provide passenger transfers, vehicle staging, and driver relief.
- Establish a coordinating committee with the region's local planning departments to review transportation needs and

ensure funding and strategies are in place for implementation.

- Establish transit service policies to adopt in Collier County's land development regulations.
- Modify the Land Development Code and Development Review processes to include recommendations from the transit impact study by coordinating with Collier County and local municipalities.
- Begin coordination with LeeTran to explore a seamless fare system between LeeTran and CAT.
- Further study a new CAT and LeeTran route that connects Immokalee to the University of Florida/IFAS satellite campus and Lehigh Acres. The study will include roadway constraints, determining final alignment, endpoint, and stop locations.

Figure 4-12. Transit Network Service Needs



## 4-5 Air Transportation Needs

Within the Collier MPO jurisdiction are four publicly owned airports:

- Naples Municipal Airport
- Immokalee Regional Airport
- Marco Island Executive Airport
- Everglades Airpark

The Collier County Airport Authority, which is a branch of the local government overseen by the Collier County BCC, oversees the development and management of the airports in Immokalee, Marco Island, and Everglades City. The City of Naples Airport Authority is charged with the operation, development, and improvements of the Naples Airport. The closest international airport to the Collier County area is the Southwest Florida International Airport, which is located to the north in Fort Myers in Lee County.

### Naples Airport

Naples Airport is located in the City of Naples and is bounded by Corporate Flight Drive to the north, North Road to the south, Airport Pulling Road to the east, and the Gordon River to the west. Public access to the airport is at the intersection of Radio Road and Airport Pulling Road. In Fiscal Year 2019, there were 112,800 takeoffs and landings. The airport typically houses 308 aircraft, which significantly increases during the seasonal months (Naples Airport Authority 2020). There is no regularly scheduled passenger service at this airport. However, it maintains a Title 14 CFR, Part 139 Airport Operating Certificate to accommodate both scheduled and unscheduled operations. According to the *Naples Airport Master Plan* (ESA 2020), in 2017 the airport operated at

56 percent capacity and is forecasted to operate at 84 percent capacity by 2038. The airport master plan includes capital improvements through 2039. There are no plans to expand the airport. The roadway project needs include intersection improvements at Airport Pulling Road and Radio Road to accommodate future airport operations.

### Immokalee Regional Airport

The Immokalee Regional Airport is situated on 1,333 acres and is bordered by Immokalee Road to the south and Airway Road to the west. Airpark Boulevard provides public access to the airport. As discussed earlier, this airport has been designated for a 60-acre Foreign Trade Zone, which includes portions of the Florida Tradeport Industrial Park. The industrial park covers 400 acres and is accessed by Airpark Boulevard. The airport also includes the Immokalee Regional Raceway (International Hot Rod Association Drag Strip) and is used for aerial firefighting and crop dusting operations. The *Immokalee Regional Airport, Airport Layout Plan Update* (Collier County Airport Authority 2017) notes that the airport operations are expected to grow through 2037 requiring some airfield improvements. The roadway project needs include widening Immokalee Road from SR 29 to Airpark Boulevard to accommodate future airport operations.

### Marco Island Executive Airport

The Marco Island Executive airport is located 12 miles south of downtown Naples and has one runway that measures 5,000 feet. The airport can accommodate smaller general aviation aircraft as well as business jets.



## Everglades Airpark

The Everglades Airpark is situated on 29 acres and is located immediately southwest of the Big Cypress National Preserve and is surrounded on three sides by the waters of the Everglades National Park. The Fakahatchee Strand State Preserve and Collier Seminole Park are to the north. The airpark primarily supports recreational flying, environmental patrol, and flight training. It includes one 2,400-foot-long runway and is considered Collier County's Eco-tourism Airport.

## Dade-Collier Training and Transition Airport

Located just west of the Collier and Miami-Dade County line, the Dade-Collier Training and Transition Airport (TNT) provides a precision-instrument landing and training facility in South Florida for commercial pilots, private training, and small military operations. Originally named the Everglades Jetport,



the airport includes one 10,499-foot-long runway and is operated by the Miami-Dade Aviation Department. The airport is situated within a 24,960-acre property and has approximately 900 acres of developed and operational land. The remaining area is managed and operated by the Florida Game and Freshwater Fish Commission.





# 5

## Financial Resources

- 5-1** Overview
- 5-2** Roadway and Transit Revenue Projections
- 5-3** Roadway and Transit Federal/ State Funding
- 5-4** Local Revenue Projections and Sources
- 5-5** Bicycle and Pedestrian Funding Sources



## Chapter 5 Financial Resources

The Collier 2045 LRTP financial plan establishes the basis for determining how many Needs Assessment projects can be included in the Cost Feasible Plan. The financial plan recognizes all revenues by source that can reasonably be expected to be available during the planning period. The available revenues and planning-level cost estimates are applied to each project from the Needs Assessment to develop the Cost Feasible Plan.

### 5-1 Overview

Ensuring that the financial resources will be available to fund the multimodal transportation projects by 2045 is an important element of the Collier MPO 2045 LRTP. The premise of the long-range revenue forecast is rooted in federal regulation originally required by the Intermodal Surface Transportation Efficiency Act of 1991. All transportation acts since that time have continued the requirement for a financial plan. Consistent with the most recent requirements of 23 USC §134, the revenues identified for this LRTP update are

reasonably expected to be available to implement the adopted 2045 LRTP. This chapter summarizes transportation revenues available to fund multimodal transportation projects within the County and its municipalities through 2045. This chapter further documents the assumptions used to develop the future revenues.

In accordance with federal statutes, FDOT in coordination with the Florida Metropolitan Planning Organization Advisory Council (MPOAC)<sup>1</sup> provides long-range revenue forecasts to assist Florida MPOs. These forecasts help MPOs comply with federal requirements for developing cost feasible transportation plans and demonstrate a coordinated planning effort for transportation facilities and services in Florida.

As shown on **Figure 5-1**, financial planning for statewide and metropolitan transportation plans is typically required for three periods: long range (20 or more years), intermediate range (10 to 15 years), and short range (5 years). As noted in the FDOT *Revenue Forecasting Guidebook* (FDOT 2018b), long-range revenue and program forecasts are general in nature to encourage a variety of approaches and technologies to meet the goals and objectives.

**Figure 5-1. Planning Periods Summary (Revenue Bands)**

Collier 2045 Long Range Transportation Plan				
Funding Document	TIP	LRTP Cost Feasible Plan		
Time Period	Present–2025	2026–2030 (5 Years)	2031–2035 (5 Years)	2036–2045 (10 Years)

<sup>1</sup> <https://www.mpoac.org/>

The revenues and ultimately the cost feasible project costs in this LRTP update are shown in year of expenditure (YOE) dollars to reflect inflation. Federal guidance [23 CFR 450.324(F)(11)] notes that revenue and cost estimates must use an inflation rate to reflect the YOE dollars. The YOE represents the value of money at the time it will be collected. The YOE dollars is based on reasonable financial principles and information, and is developed in cooperation between the MPO, state, and public transportation operator(s).

The Collier MPO 2045 LRTP *Revenue Projections Technical Memorandum* (provided under separate cover) describes each revenue source, revenue forecasting assumptions, and the methodology for developing statewide estimates of federal and state revenues.

## 5-2 Roadway and Transit Revenue Projections

Revenue projections include federal, state, and county sources. The County and its municipalities have historically funded transportation projects using local sources, such as fuel taxes, impact fees, and general fund transfers (ad valorem) in addition to federal and state revenues. Except for general fund transfers (which are projected to only support operations and maintenance [O&M]), it is assumed that the County and its municipalities will continue to use these revenue sources to fund transportation projects from 2026 through 2045. **Table 5-1** summarizes the total projected revenues in YOE dollars that are anticipated to be available for the 2045 LRTP.

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<sup>2</sup> MAP-21 is the Moving Ahead for Progress in the 21st Century Act, which was signed into law on July 6, 2012, by President Obama.

## 5-3 Roadway and Transit Federal/State Funding

Projections of federal and state roadway and transit revenues for use in LRTPs are developed by FDOT.

FDOT's 2045 *Revenue Forecast for the Collier MPO* provides federal and state funds for the Collier MPO to use in developing its forecasted revenues. These revenues are for capacity and non-capacity programs consistent with statewide priorities. **Table 5-2** highlights these revenue amounts in YOE format as required by MAP-21.<sup>2</sup> The following provides a brief description of each revenue source.

- **Transportation Management Area:** Additional federal funds are distributed to an urban area that has a population greater than 200,000 (known as a TMA), as designated by the U.S. Census Bureau following the 2010 Census.
- **Transportation Alternatives Program:** Created as a new funding program under current federal transportation legislation (MAP-21), the Transportation Alternatives Program combines three previous programs—Transportation Enhancements, Safe Routes to School, and Recreational Trails Program.
- **Strategic Intermodal System:** The SIS capacity program provides funds for construction, improvements, and associated ROW acquisition on the State Highway System (SHS) roadways that are designated as part of SIS.

**Table 5-1. 2045 LRTP Revenue Projections**

Jurisdiction	Funding Source	Total 2026–2045 (YOE)
<b>Revenues Dedicated to Transit Operations</b>		
Federal	Transit Operations	\$57,776,800
State	Transit Operations	\$39,783,600
Local	Transit Operations	\$168,249,200
Fares	Transit Operations	\$44,689,600
Local	Transportation Disadvantaged	\$24,409,800
	<b>Subtotal for Transit Operations</b>	<b>\$334,909,000</b>
<b>Revenues Dedicated to Transit Capital Projects</b>		
Federal	Transit Capital	\$105,439,000
Federal & State	Transit Capital	\$3,089,000
State	Transit Capital	\$0
Local	Transit Capital	\$21,925,000
	<b>Subtotal for Transit Capital Projects</b>	<b>\$130,453,000</b>
<b>Total Transit Revenues</b>		<b>\$465,362,000</b>
<b>Revenues Dedicated to Operations and Maintenance (Roadway)</b>		
County	General Fund (Ad Valorem)	\$240,000,000
County	Fuel Tax	\$180,254,000
<b>Total Operations and Maintenance (Roadway)</b>		<b>\$420,254,000</b>
<b>Revenues Remaining for Collier MPO 2045 LRTP Projects (Roadway)</b>		
Federal	Transportation Alternatives Program	\$6,760,000
Federal	Transportation Management Area	\$100,360,000
State	Strategic Intermodal System	\$337,404,000
State	Other Arterial and Construction (includes ROW)	\$443,200,000
	Other Arterial PD&E and Design	\$97,504,000
	Transportation Impact Fees	\$346,275,700
County	Fuel Tax	\$195,275,300
<b>Total for Collier MPO 2045 LRTP Projects (Roadway)</b>		<b>\$1,526,779,000</b>



**Table 5-2. Federal and State Revenue Projections (YOE)**

Jurisdiction	Funding Source	2026–2030	2031–2035	2036–2045	Total 2026–2045
Federal	Transportation Alternatives (Urban Area)	\$1,690,000	\$1,690,000	\$3,380,000	\$6,760,000
Federal	Transportation Management Area	\$25,090,000	\$25,090,000	\$50,180,000	\$100,360,000
State and Federal	Other Arterial/Construction & ROW	\$100,620,000	\$110,540,000	\$232,040,000	\$443,200,000
State	Transportation Regional Incentive Program	\$3,924,000	\$4,368,000	\$8,952,000	\$17,244,000
State and Federal	Transit	\$46,240,000	\$50,640,000	\$105,500,000	\$202,380,000
<b>Total Revenues</b>		\$177,564,000	\$192,328,000	\$400,052,000	\$769,944,000
Jurisdiction	Funding Source	2026–2030	2031–2045	Total 2026–2045	
Federal	Strategic Intermodal System	\$38,622,000	\$298,782,000	\$337,404,000	

- Other Arterial Construction/ROW:** This capacity program provides funds for construction, improvements, and associated ROW acquisition on SHS roadways that are not designated as part of SIS.
- Transportation Regional Incentive Program:** TRIP was established as part of the state’s major growth management legislation enacted with Senate Bill 360. The program is intended to encourage regional planning by providing matching funds for improvements to regionally significant transportation facilities identified and prioritized by regional partners.
- Federal and State Transit Revenues:** Estimates of federal and state transit revenues are based on information provided in the FDOT Revenue Forecasting Guidebook.

## 5-4 Local Revenue Projections and Sources

In addition to federal and state funding, local revenue sources help build and maintain the transportation network within the County and its municipalities.

By creating a partnership between local jurisdictions and FDOT that combines local revenues such as impact fees and other non-traditional transportation funding sources (for example, TRIP, sales tax initiatives, and others) 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 initiatives, transit, and sidewalk/bike path facilities.

The following text briefly describes each County funding element.

- **Transportation Impact Fees:** Transportation impact fees provide revenue for financing the addition and expansion of roadway facilities needed to accommodate specific new growth and development.
- **Fuel Taxes:** Fuel taxes represent a major portion of Collier County's local transportation revenues. Fuel tax revenue is dedicated to both transportation capacity expansion and maintenance and operations. Fuel taxes collected by the cities within the County were not considered during the LRTP.
- **General Fund/Ad Valorem:** In the past, the County has used General Fund revenues to help fund capacity expansion and debt service, but with recent constraints placed on this fund, fuel taxes have been shifted into that role. While taxable values help stabilize the revenues, the

County will continue to assign General Fund revenues to non-capacity roadway improvements.

- **Sales Tax:** A 2018 1-cent infrastructure sales surtax that is assigned to a variety of projects including transportation infrastructure.

## 5-5 Bicycle and Pedestrian Funding Sources

Similar to roadway and transit funding sources, there are multiple funding sources for bicycle and pedestrian projects. The primary funding sources available for bicycle and pedestrian projects presented in the BPMP are through federal programs, as discussed in the following text.

- **National Highway Performance Program:** These funds were established under MAP-21 and provide support for projects or program projects that are on an eligible facility or an eligible activity that supports national performance goals. Bicycle and pedestrian improvements associated with a National Highway System facility are eligible.
- **Surface Transportation Block Grant (STBG) Program:** The STBG Program provides the most flexible funding among all federal-aid transportation programs. Specifically, the STBG-Transportation Alternatives provides funding for programs and projects defined as transportation alternatives.
- **Highway Safety Improvement Program (HSIP):** This program provides funds to reduce traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands and can be used for pedestrian and bicycle safety improvements. States may obligate funds under HSIP to carry out any

highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trails.

- **Recreational Trails Program:** This federally funded competitive grant program provides financial assistance to city, county, state, or federal governments; organizations approved by the state; or state- and federally recognized Indian tribal governments, for the development of recreational trails, trailheads, and trailside facilities.
- **Federal Transit Administration Funds:** Some FTA funds may be used to fund the design, construction, and maintenance of pedestrian and bicycle projects that enhance or are related to public transportation facilities.
- **National Highway Traffic Safety Administration (NHTSA) Funds:** NHTSA provides funding to states for implementing priority area programs and activities to improve traffic safety and reduce crashes, serious injuries, and fatalities. Emphasis areas under the pedestrian and bicycle safety program include:
  - Increasing awareness and understanding of safety issues and compliance with traffic laws
  - Development and use of a systematic approach to identify locations and behaviors prone to bicycle and pedestrian crashes and implementing multidisciplinary countermeasures
  - Creating urban and rural built environments that support and encourage safe walking and biking

- **SUN Trail Network Funds:** SUN Trail funds are managed by the FDEP Office of Greenways and Trails. The Southwest Coast Connector Trail Alignment noted in the Needs Plan (Chapter 4) is eligible to receive SUN Trail funding.

Not all funding for bicycle and pedestrian projects is done through traditional funding programs. Alternative funding sources include the following:

- The Collier MPO has jurisdictional authority over land use and zoning and can, therefore, work with developers to address gaps in bicycle and pedestrian infrastructure and make connections as new homes, communities, and shopping areas are constructed.
- The MPO can form partnerships with other agencies to implement projects.
- Bicycle and pedestrian improvements can be incorporated into roadway construction projects or funded independently. For example, Collier County typically funds transportation improvements that incorporate bicycle and pedestrian facilities using local funds on County-owned roads.
- The County and its municipalities can apply for funding related to state and federal grant programs, Safe Routes to Schools Programs, NHTSA, and the Better Utilizing Investments to Leverage Development Transportation Discretionary Grant program (formerly the Transportation Investment Generating Economy Recovery Grant program).


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## 5-6 Airport Funding

While all the airports are owned and operated by a municipality within the Collier Metropolitan Area, the federal government requires airports to operate with little outside assistance, and therefore receive minimum direct taxpayer support. The primary funding mechanisms for airports include federal grants through the Federal Aviation Authority's (FAA) Airport Improvement Program, Passenger Facility Charge local user fee, and tenant rents and fees (ACI-NA 2020). The following text details funding sources for the major airports within the Collier Metropolitan Area.

Based on the *Naples Airport Master Plan* (ESA 2020), a financial analysis was conducted to assess what projects in its proposed development program could be funded in the short-term planning period (FY 2020 through FY 2024). The analysis identified revenues from airport operations (\$37.5 million), FAA Entitlement (\$0.81 million) and Discretionary (\$0.5 million) Grants, and FDOT Grants (\$1.64 million).



An aerial photograph of a suburban neighborhood. A large, calm lake occupies the left and center of the frame, with several small islands and peninsulas. Houses with red-tiled roofs and manicled lawns are scattered along the shoreline. A paved road curves through the foreground, with a few cars visible. The sky is overcast with soft, grey clouds.

# 6

## Cost Feasible Plan

- 6-1** Roadway Cost Feasible Projects
- 6-2** Bicycle and Pedestrian Projects
- 6-3** Transit Cost Feasible Projects
- 6-4** Freight Network Projects
- 6-5** Airport Transportation Projects



## Chapter 6 Cost Feasible Plan

This chapter summarizes the development of the 2045 LRTP Cost Feasible Plan, which identifies the multimodal transportation projects that can be funded through 2045 based on the estimated revenues presented in Chapter 5.

### 6-1 Roadway Cost Feasible Projects

Development of the cost feasible roadway projects began by estimating the costs associated with each project in the roadway needs. As detailed in the Collier MPO 2045 LRTP Update *Project Cost Development Methodology Technical Memorandum*, planning-level costs were developed for each project phase including Project Development and Environment (PD&E) Study, preliminary engineering/design (PE), ROW, construction (CST), and environmental mitigation. The project phase costs were developed using the FDOT 2045 LRTP Cost Estimation Tool and recent roadway project costs within the County. The cost components were applied to individual roadway projects from the Needs Plan to develop the roadway cost feasible projects for the LRTP. Once the projects were prioritized, the FDOT present-day cost inflation factors were applied to develop YOE costs for each project.

#### Roadway Projects Prioritization

As noted in Chapter 2, five alternative network scenarios were modeled using the D1RPM travel model. The first two network scenarios were not financially constrained and helped refine and develop the list of project needs. Alternative Network Scenarios 3 through 5 were modeled using an iterative process on a financially constrained list of projects to test travel demand and congestion throughout the network. These results of each network scenario test were shared with both the County and TAC/CAC during advisory meetings for input

on projects to be included in the next model run. The Collier MPO 2045 LRTP Update *Scenario Network Modeling Technical Memorandum* presents more details on the results of each network scenario modeled (provided under separate cover).

Projects were also prioritized based on the project ranking in the Needs Plan, traffic modeling results, County input, and public input. Using the WikiMapping online interactive tool, the public selected their top five projects from the roadway needs and cost feasible projects and provided comments. Further details on this public outreach is presented in Chapter 2-4.

The Collier MPO TIP and FDOT Work Program are updated annually and extend to 2025. The cost feasible projects presented in herein are consistent with the TIP and FDOT Work Program. Should funding for a project phase be identified sooner than anticipated in this LRTP, an amendment of this LRTP is required to reflect the consistency with the updated TIP.

The roadway projects selected for inclusion in the Cost Feasible Plan are illustrated in the following maps and tables. As noted in Chapter 5, financial planning for statewide and metropolitan transportation plans is typically required for three periods: short range, intermediate range, and long range. Therefore, the cost feasible projects are presented in three multi-year planning periods: Fiscal Years (FY) 2026 to 2030, FY2031 to FY2035, and FY2036 to FY2045. **Table 6-1** presents the SIS roadway cost feasible projects by planning year and project phase. **Figure 6-1** presents a map of the projects and a distribution of the costs by phase. **Table 6-2** presents the FDOT Other Roads Projects and Local Roadway Projects by planning year and project phase. **Figures 6-2, 6-3, and 6-4** presents these projects by planning years including the distribution of costs by phase. **Table 6-3** presents the partially funded projects within the FDOT Other Roads Projects and Local Roadway Projects, and **Figure 6-5** presents a map of these projects for the entire planning period (FY2026 to FY2045).

Table 6-1. Collier MPO 2045 LRTP SIS Cost Feasible Plan Projects

Draft 9/21/2020 (in millions \$)

Map ID	Facility (FPID No.)	Limits From	Limits To	Description	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2020–2025			Plan Period 2: 2026–2030			Plan Period 3: 2031–2035			Plan Period 4: 2036–2045			Total Cost 2026–2045
						PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	
92	SR 82 [4308481]	Hendry Co.Line	Gator Slough Lane	Widen from 2-Lanes to 4-Lanes	\$44.73	0.07	\$2.12	\$42.54			\$2.80							\$2.80
50	SR 29 [4175406]	New Market Road North	North of SR-82	Widen from 2-Lanes to 4-Lanes (with center turn lane)	\$1.47	0.38	1.09				29.94							\$29.94
51	SR 29/New Market Rd W - New Road [4175405]	Immokalee Rd (CR 846)	New Market Rd N	New 4-Lane Road	\$6.74	0.06	\$6.68			\$5.88							\$49.91	\$55.78
52	SR 29 [4175404]	Agriculture Way	CR 846 E	Widen from 2-Lanes to 4-Lanes	\$0.27	0.27							\$5.63				\$23.32	\$28.95
29	I-75 (SR-93) Managed (Toll) Lanes [FPID 4425192]	E of Collier Blvd (SR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes (10-lanes)	\$0.03	0.03						63.25				145.43		\$208.67
48	SR 29 [4344901]	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	\$0.03	0.03						4.33						\$4.33
53	SR 29 (SEGMENT D) [4175403]	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lanes to 4-Lanes	\$0.50	0.5							\$2.38					\$2.38
54	SR 29 (SEGMENT E) [4175402]	Oil Well Rd	Sunniland Nursery Rd	Widen from 2-Lanes to 4-Lanes	\$8.33	8.33							\$4.55					\$4.55
46	SR 29 [4178784]	SR 82	Hendry C/L	Widen from 2-Lanes to 4-Lanes	\$1.37	0.07	\$1.30											\$0.00
				Totals	\$63.47	\$9.74	\$11.19	\$42.54	\$0.00	\$5.88	\$32.74	\$67.58	\$12.55	\$0.00	\$0.00	\$145.43	\$73.22	\$337.40
						\$63.47			\$38.62			\$80.13			\$218.65			
PRE-ENG	PRE-ENG includes PD&E and Design																	
PDC	Present Day Cost																	
ROW	Right-of-Way																	
CST	Construction																	
YOE	Year of Expenditure																	

**Figure 6-1. Collier MPO 2045 LRTP SIS Cost Feasible Plan Projects**

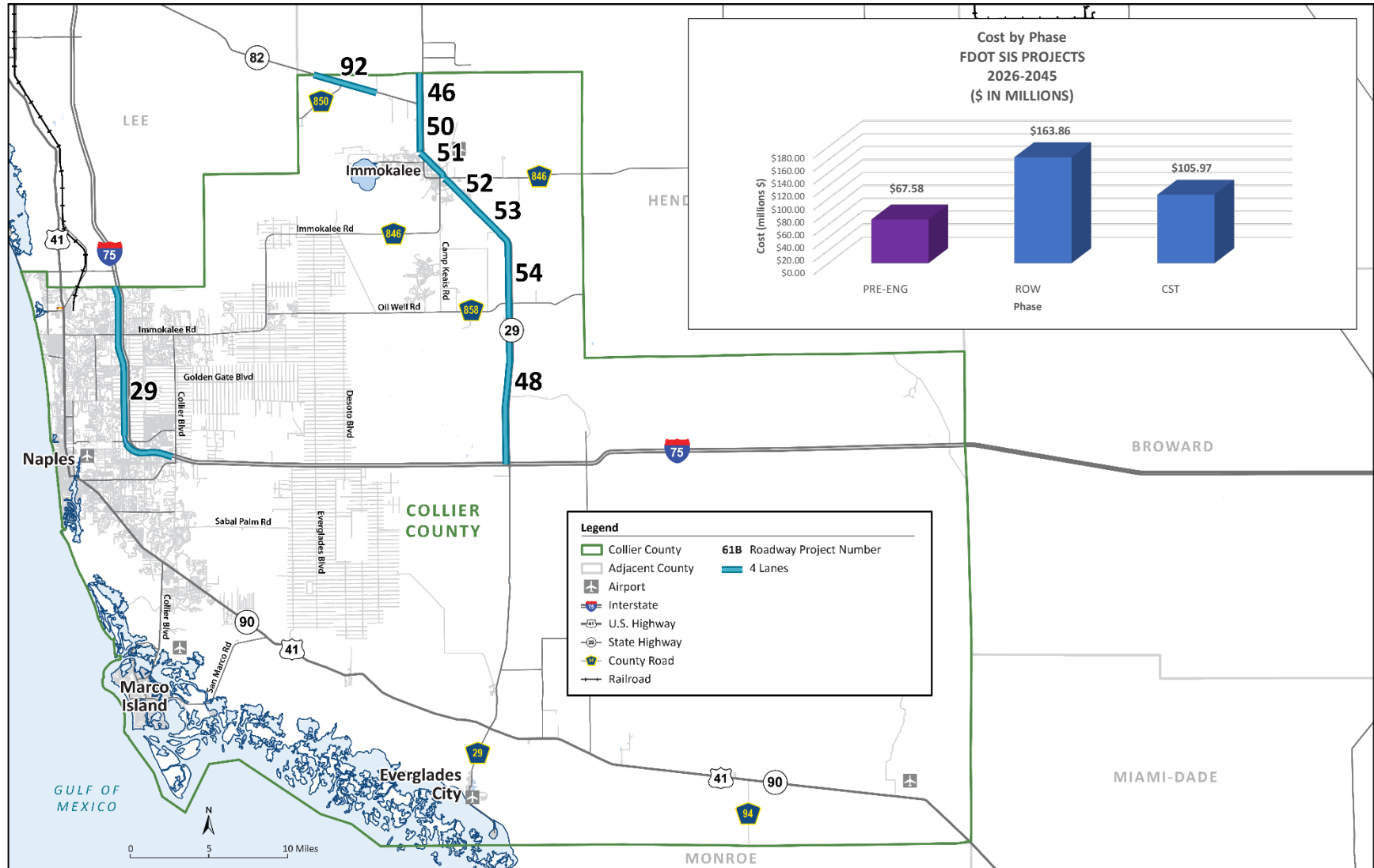


Table 6-2. Collier MPO 2045 LRTP Cost Feasible Plan Projects – FDOT Other Roads Projects and Local Roadway Projects

Draft 9/21/2020 (in millions \$)

Map ID	Facility	Limits from	Limits to	Description	Total Project Cost (PDC 2019 \$)	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2020–2025			Plan Period 2: 2026–2030			Plan Period 3: 2031–2035			Plan Period 4: 2036–2045			Total Cost 2026–2045 (YOE \$ without SIS)	Total SIS Costs	County	OA PRE-ENG	OA ROW and CST	Funding Source
							PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST						
PLAN PERIOD 2 CONSTRUCTION FUNDED PROJECTS																								
12	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	\$32.80					\$5.59	\$2.38	\$35.31							\$43.27		\$43.27			County
37	Oil Well Road / CR 858[60144]	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	\$36.78	\$1.81	\$0.91		\$0.90	\$6.73		\$42.11							\$48.83		\$48.83			County
66	Immokalee Rd Intersection	Livingston Rd		Major Intersection Improvement	\$24.50							\$26.82							\$26.82		\$26.82			County
78	Golden Gate Parkway (Intersection)	Livingston Rd		Major Intersection Improvement	\$24.50					\$5.63		\$26.82							\$32.45		\$32.45			County
23	I-75 (SR-93) Interchange (new)	Golden Gate Pkwy		Interchange Improvement	\$9.59					\$0.58		\$12.24							\$12.81			\$0.58	\$12.24	OA
25	I-75	Immokalee Rd		Interchange Improvement (DDI)	\$9.59					\$0.58		\$12.24							\$12.81			\$0.58	\$12.24	OA
58	US 41 (SR 90) (Tamiami Trail E)	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4 Lanes	\$43.13					\$3.91	\$17.84	\$33.53							\$55.27			\$3.91	\$51.36	OA
111	US 41	Immokalee Rd		Intersection Innovation/Improve	\$17.50					\$3.13		\$20.12							\$23.24			\$3.13	\$20.12	OA
PLAN PERIOD 3 CONSTRUCTION FUNDED PROJECTS																								
36	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	\$22.23					\$3.40				\$3.16	\$27.47				\$34.03		\$34.03			County
42	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	\$47.07					\$7.29					\$65.04				\$72.32		\$72.32			County
90	Pine Ridge Rd	Logan Blvd	Collier Blvd	Widen from 4-Lanes to 6-Lanes	\$21.72					\$1.99	\$3.56				\$25.00				\$30.54		\$30.54			County
39	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	\$22.59					\$3.85	\$1.70				\$30.06				\$35.61			\$3.85	\$31.76	OA
57	US 41 (SR 90) (Tamiami Trail E) Intersection	Goodlette-Frank Rd		Major Intersection Improvement	\$13.00					\$0.63	\$2.97				\$15.77				\$19.37			\$0.63	\$18.74	OA
59	US 41	Collier Blvd		Major Intersection Improvement	\$17.25					\$2.81					\$23.66				\$26.47			\$2.81	\$23.66	OA
60	US 41 (SR 90) (Tamiami Trail E)	Immokalee Rd	Old US 41	Further Study Required	\$17.25					\$0.46			\$2.00		\$23.66				\$26.12			\$2.46	\$23.66	OA
PLAN PERIOD 4 CONSTRUCTION FUNDED PROJECTS																								
11	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	\$16.42											\$3.39	\$2.22	\$24.65	\$30.26		\$30.26			County
31	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	\$3.90											\$0.77	\$0.55	\$5.88	\$7.20		\$7.20			County
63	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	\$3.01								\$0.51				\$0.55	\$4.45	\$5.51		\$5.51			County
65	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-	\$36.15								\$8.82				\$6.15	\$50.29	\$65.26		\$65.26			County
97	Immokalee Road (Intersection)	Logan Blvd		Major Intersection Improvement	\$11.50											\$2.40		\$18.55	\$20.95		\$20.95			County
99	Vanderbilt Beach Road (Intersection)	Logan Blvd		Minor Intersection Improvement	\$11.50								\$2.12					\$18.55	\$20.67		\$20.67			County
101	Pine Ridge Rd	Goodlette-Frank Rd		Minor Intersection Improvement	\$5.75											\$1.20		\$9.28	\$10.48		\$10.48			County
C1	Connector Roadway from I-75 Interchange (New)	Golden Gate Blvd	Vanderbilt Beach Rd	4-Lane Connector Roadway from New	\$17.63					\$0.44			\$2.80	\$1.66				\$26.34	\$31.24			\$3.24	\$28.00	OA
C2	Connector Roadway from I-75 Interchange (New)	I-75 (SR-93)	Golden Gate Blvd	4-Lane Connector Roadway from New	\$80.59					\$2.00			\$13.28	\$7.41				\$120.02	\$142.70			\$15.28	\$127.43	OA
22	I-75 (SR-93) Interchange (new)	Vicinity of Everglades Blvd		New Interchange	\$42.26					\$3.76			\$5.30	\$8.32				\$55.65	\$73.03			\$9.07	\$63.97	OA

PRE-ENG includes PD&E and Design

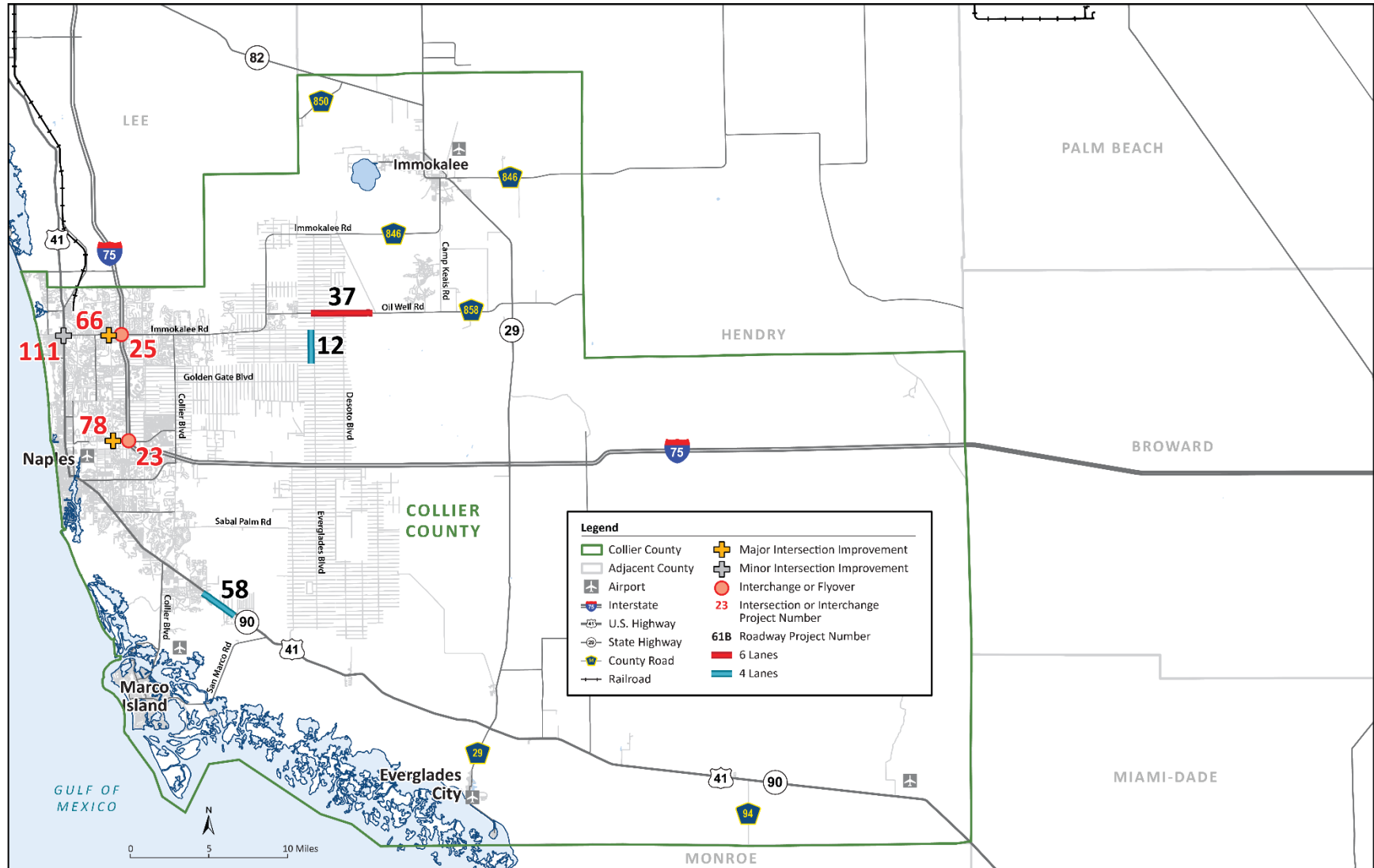
Present Day Cost

Right-of-Way

Construction

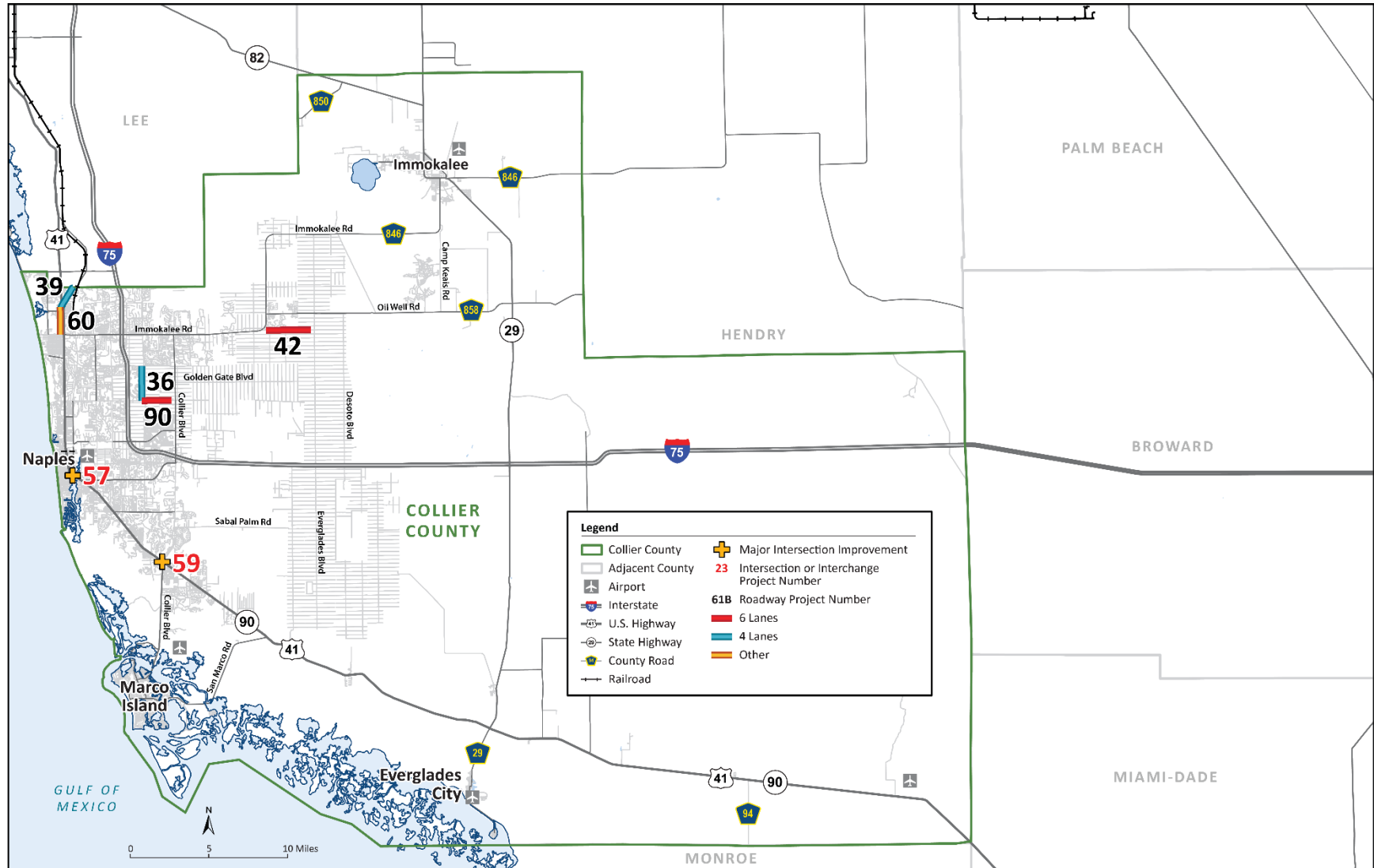
YOE Year of Expenditure

**Figure 6-2. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map (FY2026–FY2030)**





**Figure 6-3. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map (FY2031–FY2035)**



**Figure 6-4. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map (FY2036–FY2045)**

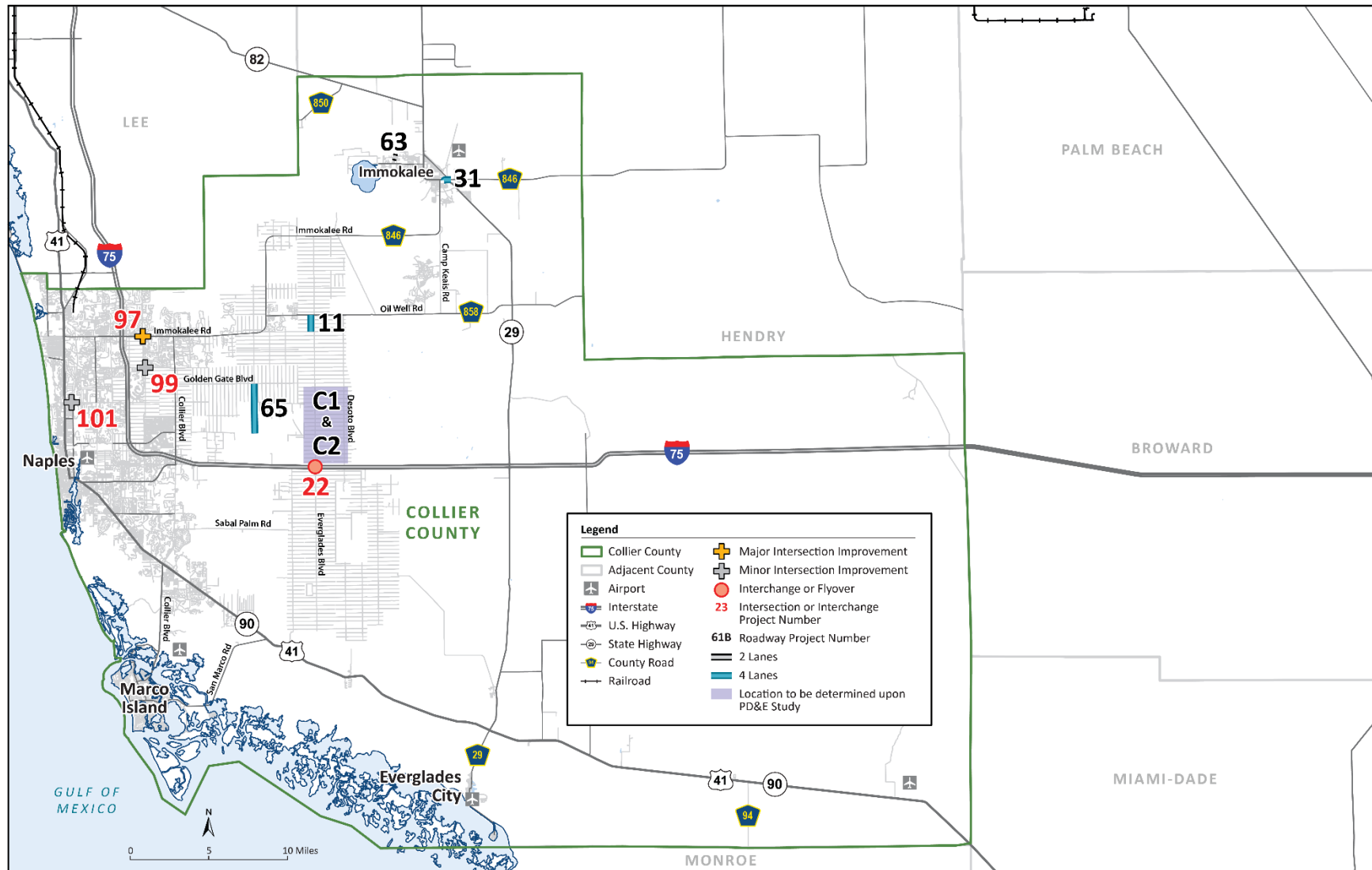


Table 6-3. Collier MPO 2045 LRTP Cost Feasible Plan Projects – Partially Funded Projects (FY2026–FY2045)

Draft 9/21/2020 (in millions \$)

Map ID	Facility	Limits from	Limits to	Description	Total Project Cost (PDC 2019 \$)	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2020–2025			Plan Period 2: 2026–2030			Plan Period 3: 2031–2035			Plan Period 4: 2036–2045			Total Cost 2026–2045 (YOE \$ without SIS)	Total SIS Costs	County	OA PRE-ENG	OA ROW and CST	Funding Source
							PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST						
PARTIALLY FUNDED PROJECTS																								
1	Benfield Rd (New) [60129]	The Lords Way	City Gate Blvd N	New 2-Lane Road (Expandable to 4-	\$37.31	\$11.00	\$0.00	\$4.00	\$7.00		\$4.00			\$5.00			\$18.00	\$27.00		\$27.00				County
5	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-	\$37.31										\$7.70	\$4.04		\$11.74		\$11.74				County
33	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	\$40.99										\$8.48	\$7.33		\$15.81		\$15.81				County
62B	Vanderbilt Beach Road Ext	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road (Expandable to 4	\$41.17										\$8.38	\$16.07		\$24.46		\$24.46				County
93	Immokalee Rd	43rd Ave/Shady Hollow Blvd E	North of 47th Ave NE	Widen from 2-Lanes to 4-Lanes	\$9.79										\$2.26	\$0.48		\$2.74		\$2.74				County
94	Rural Village Blvd	Immokalee Rd	Immokalee Rd	New 4-Lane Road	\$23.41										\$5.84	\$2.96		\$8.80		\$8.80				County
98	Vanderbilt Beach Road (Intersection)	Livingston Rd		Minor Intersection Improvement	\$21.50										\$2.40			\$2.40		\$2.40				County
41A	Randall Blvd Intersection (flyover) [60147]	Immokalee Rd		Ultimate Intersection	\$35.66	\$9.75	\$0.95		\$8.80						\$9.46			\$9.46			\$9.46	\$0.00		OA
55	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 4-Lanes to 6-Lanes	\$40.26							\$0.94			\$9.01		\$30.04	\$39.99			\$9.95	\$30.04		OA
74	Immokalee Rd (CR 846) Intersection	Wilson Blvd		Major Intersection Improvement	\$17.25										\$6.60			\$6.60			\$6.60	\$0.00		OA
102	US 41 (SR 90) (Tamiami Trail E) Intersection	Vanderbilt Beach Rd		Major Intersection Improvement	\$2.50										\$4.90			\$4.90			\$4.90	\$0.00		OA
103	US 41 (SR 90) (Tamiami Trail E) Intersection	Pine Ridge Rd		Major Intersection Improvement	\$2.50										\$4.90			\$4.90			\$4.90	\$0.00		OA
104	US 41 (SR 90) (Tamiami Trail E) Intersection	Golden Gate Pkwy		Major Intersection Improvement	\$3.50	\$0.50	\$0.27	\$0.23							\$4.40			\$4.40			\$4.40	\$0.00		OA
					\$901.36	\$23.06	\$2.13	\$4.23	\$16.70	\$52.75	\$32.44	\$209.17	\$35.78	\$25.55	\$210.65	\$82.08	\$40.36	\$381.70	\$1,070.48	\$0.00	\$541.55	\$85.72	\$443.20	
										\$294.36			\$271.97			\$504.14								

Notes:

Partially funded for construction

PRE-ENG includes PD&E and Design

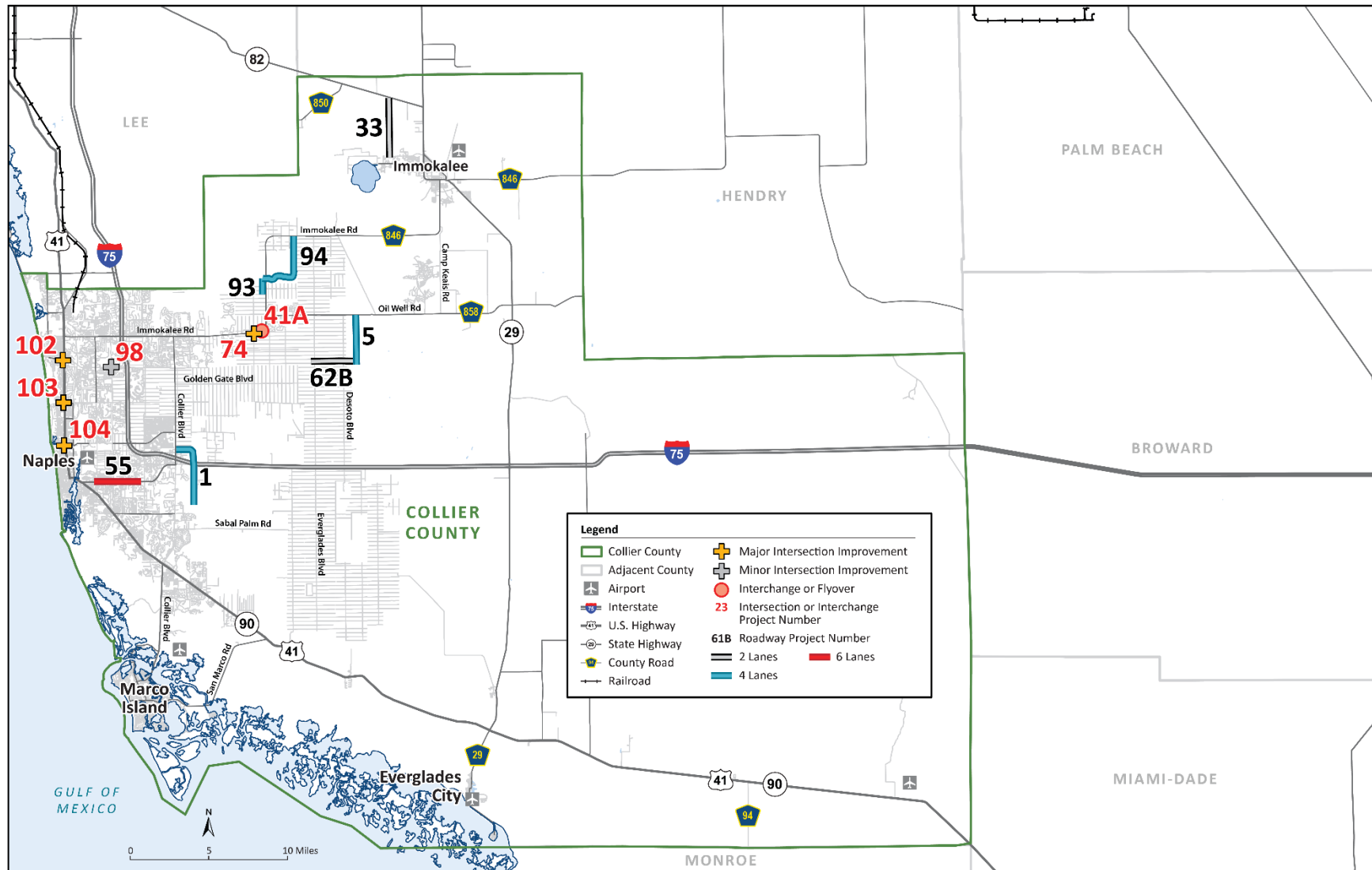
Present Day Cost

Right-of-Way

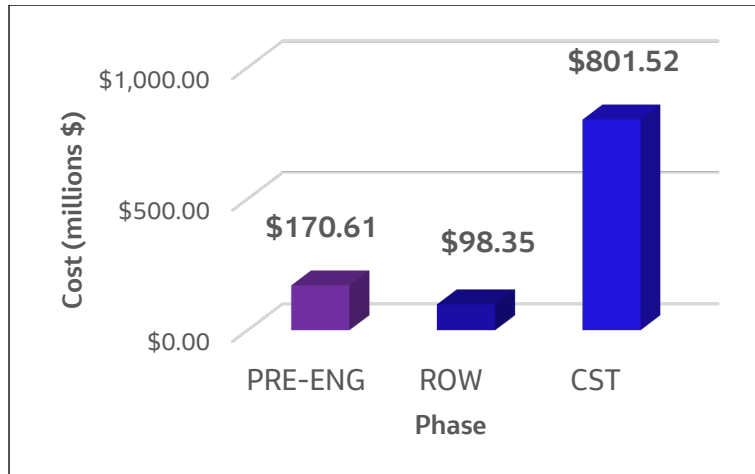
Construction

YOE Year of Expenditure

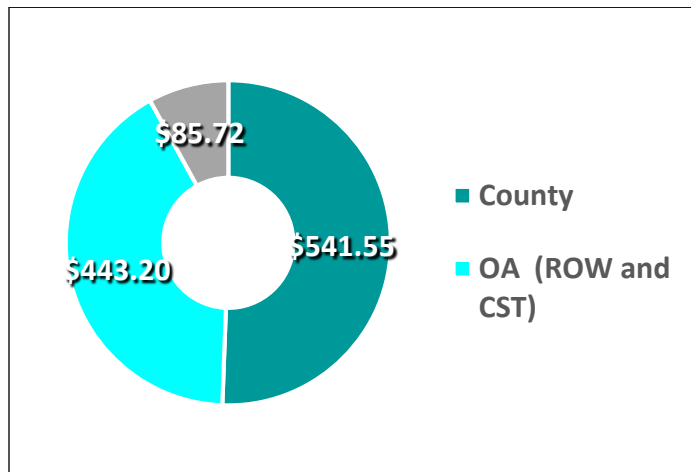
**Figure 6-5. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map – Partially Funded (FY2026–FY2045)**



Figures 6-6 and 6-7 present the total costs by project phase and funding source, respectively, for the FDOT Other Roads and Local Roads cost feasible projects for this 2045 LRTP update.



**Figure 6-6. Total Costs by Project Phase for FDOT Other Roads and Local Roads Funded Projects 2026–2045** (YOE \$ in millions)



**Figure 6-7. Total Costs by Funding Source 2026–2045** (YOE \$ in millions)

## Funding of Other Roadway Needs

### East of CR 951 Bridges

As noted in Chapter 4, there are 10 proposed canal crossing bridges that are the subject of the 2020 East of CR 951 Bridge Reevaluation Study. A 1-cent infrastructure surtax with specific funding earmarked for constructing these new bridges will be available within the next 7 years. A total of \$20.8 million in TMA (or SU) Funds is dedicated for bridge projects in the 2045 LRTP update:

- Planning Period 2026 to 2030: \$5.24 million for CST
- Planning Period 2031 to 2035: \$5.20 million for CST
- Planning Period 2036 to 2045: \$10.36 million for CST

### Congestion Management Projects

Congestion management and ITS projects are generally short-term and immediate action projects. Therefore, their role in the LRTP process is modest and are more thoroughly addressed in the congestion management process. The current TIP includes several improvements to the traffic management center, arterial monitoring cameras, and other traffic equipment improvements that address safety, active roadway management, and bicycle and pedestrian facilities. **Table 6-4** presents congestion management projects funded for construction in the 2021-2025 TIP.

The Collier MPO identified congestion management priorities resulting from the TSPR and the Local Road Safety Plan (Tindale Oliver 2020d). **Tables 6-5** and **6-6** present infrastructure and non-infrastructure multimodal strategies, respectively, that contribute to the MPO's project selection process.



**Table 6-4. Congestion Management Projects Funded in TIP**

ITS Projects	Funded Amount	TIP/CIP Year
Bicycle Detection – City of Naples (refer to Figure 4-7 in Chapter 4)	\$66,429	CST 2024/25
ITS Fiber Optic and FPL Power Infrastructure at 13 locations	\$272,725	CST 2024/25
Travel Time Data Collection and Performance Measures	\$700,000	CST 2020/21
New Updated School Flasher System	\$353,250	CST 2024/25
New Vehicle Count Station Update (refer to Figure 4-7 in Chapter 4)	\$311,562	CST 2023/24
New ATCS at 13 signalized locations along Santa Barbara Boulevard and Golden Gate Parkway (refer to Figure 4-7 in Chapter 4)	\$893,000	PE 2023/24 CST 2024/25

Source: Collier MPO 2020 Transportation System Performance Report & Action Plan

Future congestion management projects will be prioritized through the MPO's congestion management process. A total of \$41.46 million in TMA (or SU) Funds is dedicated for future congestion management projects in the 2045 LRTP update:

- Planning Period 2026 to 2030: \$10.42 million for CST
- Planning Period 2031 to 2035: \$10.39 million for CST
- Planning Period 2036 to 2045: \$20.65 million for CST

## Maintenance

Maintenance of the state roadways within the County and its associated municipalities is not included in this LRTP update. As noted in the FDOT's 2045 *Revenue Forecast for the Collier MPO*, FDOT has included sufficient funding to meet the following statewide objectives and policies:

- Resurfacing program: Ensure that 80 percent of state highway system pavement meets FDOT standards
- Bridge program: Ensure that 90 percent of FDOT-maintained bridges meet Department standards while keeping all FDOT-maintained bridges open to the public safe
- Operations and maintenance program: Achieve 100 percent of acceptable maintenance condition standard on the SHS
- Product Support: Reserve funds for product support required to construct improvements (funded with the forecast's capacity funds) in each FDOT district and metropolitan area
- Administration: Administer the state transportation program

Maintenance of County and its associated municipality's roadways is funded primarily through fuel taxes and General Fund revenues. The maintenance programs primarily address routine maintenance operations that are preventive or corrective in nature and that address safety concerns.

**Table 6-5. Infrastructure Strategies Matrix**

Infrastructure Strategies	Non-Motorized	Intersection	Lane Departure	Same Direction
Speed Management	X	X	X	X
Alternative Intersections (ICE Process)	X	X		X
Intersection Design Best Practices for Pedestrians	X			
Median Restrictions/Access Management		X		X
Right Turn Lanes	?			X
Signal Coordination	?			X
Rural Road Strategies Including:				
• Paved shoulder	X		X	
• Safety Edge			X	
• Curve geometry, delineation, and warning			X	
• Bridge/culvert widening/attenuation			X	
• Guard Rail/ditch regrading/tree clearing			X	
• Isolated intersection conspicuity/geometry		X		
Shared Use Pathways, Sidewalk Improvements	X			
Mid-Block Crossings & Median Refuge	X			
Intersection Lighting Enhancements	X	X	X	
Autonomous vehicles (longer term)	TBD	X	X	X

Source: Collier MPO Local Road Safety Plan (Tindale Oliver 2020d)

Notes:

X = Applicable Strategy

? = Possible Contra-indications

**Table 6-6. Non-Infrastructure Strategies Matrix**

Infrastructure Strategies	Intersection	Lane Departure	Non-Motorized	Rear End/ Sideswipe
Traffic Enforcement				
Targeted Speed Enforcement	X	X	X	X
Red Light Running Enforcement	X		X	
Automated Enforcement	X			?
Pedestrian Safety Enforcement			X	
Bike Light and Retroreflective Material Give-Away			X	
Young Driver Education	X	X	X	X
WalkWise/BikeSmart or Similar Campaign			X	
Continuing Education	X	X	X	X
Safety Issue Reporting	X	X	X	X
Vision Zero Policy	X	X	X	X

Source: Collier MPO Local Road Safety Plan (Tindale Oliver 2020d)

## Unfunded Roadway Needs

While the projects included in the roadway Cost Feasible Plan will address many of the congestion, safety, and capacity issues forecasted for 2045, financial resources are limited. Therefore, a number of unfunded projects in the 2045 roadway Needs Plan are not addressed in this Cost Feasible Plan. **Table 6-7** summarizes projects included in the roadway Needs Plan that are unfunded in this 2045 LRTP update.

## 6-2 Bicycle and Pedestrian Projects

The BPMP noted in Chapter 4 is a systems plan that focuses on identifying the needs and a policy framework for prioritization and implementation of bicycle and pedestrian projects. Further, it provides maximum flexibility in bringing projects forward for funding and offers design guidelines based on best practices that implementing agencies may use as guidance. Therefore, implementation of these projects is more thoroughly addressed through the individual agencies and the MPO bicycle and pedestrian advisory process.

The BPMP provided planning-level project costs for the bicycle and pedestrian projects presented in Chapter 4. These costs did not include costs for ROW or drainage. An engineering cost estimate would be required for submission of a project for prioritization consideration.

**Table 6-8** lists the costs associated with priority projects presented in Chapter 4 (Table 4-9) and the figure in Appendix C (Existing + Proposed). These costs are by order of magnitude and are for constructing different combinations of bicycle and pedestrian facilities on the road segments associated with the bicycle and pedestrian priority projects. It is anticipated that this process will be continued throughout the period of the long-range transportation plan, with an annual updating of priorities for inclusion in the TIP by the BPAC.

A total of \$41.46 million in TMA/TA (or SU/TALU) Funds is dedicated for future pedestrian and bicycle projects in the 2045 LRTP update:

- Planning Period 2026 to 2030 - \$10.42 Million for CST
- Planning Period 2031 to 2035 - \$10.39 Million for CST
- Planning Period 2036 to 2045 - \$20.65 Million for CST

**Table 6-7. Collier County 2045 LRTP - Unfunded Needs Projects**

Map ID	Project	From	To	Project Description
2	Benfield Rd.	US 41 (SR 90) (Tamiami Trail E)	Rattlesnake-Hammock Extension	New 2-Lane Road (Expandable to 4-Lanes)
3	Big Cypress Parkway	North of I-75	Golden Gate Blvd.	New 2-Lane Road (Expandable to 4-Lanes)
4	Big Cypress Parkway	Golden Gate Blvd.	Vanderbilt Beach Road Extension	New 2-Lane Road (Expandable to 4-Lanes)
6	Big Cypress Parkway	Oil Well Rd.	Immokalee Rd.	New 2-Lane Road (Expandable to 4-Lanes)
7	Camp Keais Rd.	Pope John Paul Blvd.	Oil Well Road	Widen from 2 Lanes to 4 Lanes
8	Camp Keais Rd.	Immokalee Rd.	Pope John Paul Blvd.	Widen from 2 Lanes to 4 Lanes
10	CR 951 Extension	Collier Blvd. (CR 951) (northern terminus)	Lee/Collier County Line	New 2-Lane Road
13	Everglades Blvd.	Golden Gate Blvd.	Vanderbilt Beach Rd Extension	Widen from 2 Lanes to 4 Lanes
14	Everglades Blvd.	I-75 (SR-93)	Golden Gate Blvd.	Widen from 2 Lanes to 4 Lanes
15	Golden Gate Blvd.	Everglades Blvd.	Desoto Blvd.	Widen from 2 Lanes to 4 Lanes
16	Golden Gate Blvd. Extension	Desoto Blvd.	Big Cypress Parkway	New 4-Lane Road
18	Green Blvd.	Santa Barbara/Logan Blvd.	Sunshine Blvd.	Widen from 2 Lanes to 4 Lanes
19	Green Boulevard Extension (16th Ave SW)	23rd St. SW	Wilson Blvd. Extension (Corridor Study)	New 2-Lane (Future Study Area)
20	Green Boulevard Extension (16th Ave SW)	CR 951	23rd St. SW (Corridor Study)	New 4-Lane (Future Study Area)
21	Green Boulevard Extension (16th Ave SW)	Wilson Blvd. Ext	Everglades Blvd. (Corridor Study)	New 2-Lane Road
27	I-75 (SR-93) Interchange (new)	Vanderbilt Beach Rd.		New Interchange - Partial (to/from the North)
30	Immokalee Rd. (CR 846)	Camp Keais Rd.	Carver St.	Widen from 2 Lanes to 4 Lanes
32	Keane Ave.	Inez Rd.	Wilson Blvd. Extension	New 2-Lane Road (Future Study Area)
34	Logan Blvd.	Green Blvd.	Pine Ridge Rd.	Widen from 4 Lanes to 6 Lanes
35	Logan Blvd.	Vanderbilt Beach Rd.	Immokalee Rd.	Widen from 2 Lanes to 4 Lanes
38	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Rd.	Widen from 2 Lanes to 6 Lanes



**Table 6-7. Collier County 2045 LRTP - Unfunded Needs Projects**

Map ID	Project	From	To	Project Description
40	Orange Blossom Dr.	Airport Pulling Rd.	Livingston Rd.	Widen from 2 Lanes to 4 Lanes
43	Randall Blvd.	Everglades Blvd.	Desoto Blvd.	Widen from 2 Lanes to 4 Lanes
44	Randall Blvd.	Desoto Blvd.	Big Cypress Parkway	New 4-Lane Road
45	Santa Barbara Blvd.	Painted Leaf Ln.	Green Blvd.	Widen from 4 Lanes to 6 Lanes
67	Veterans Memorial Blvd. Extension	Strand Blvd.	I-75	New 4-Lane Road
68	Big Cypress Parkway Intersection (new)	Oil Well Grade Rd.		New At-Grade Intersection
70	Green Blvd. Extension	Everglades Blvd.	Big Cypress Parkway	New 2-Lane Road
73	Immokalee Rd. (CR 846) Intersection	Collier Blvd. (CR 951)		Major Intersection Improvement
75	I-75 (SR-93) Interchange (new)	Veterans Memorial Blvd.		New Partial Interchange
76	Vanderbilt Dr.	Immokalee Rd.	Woods Edge Parkway	Widen from 2 Lanes to 4 Lanes
95	Golden Gate Parkway (Intersection)	Goodlette Rd		Major Intersection Improvement
96	Pine Ridge Road (Intersection)	Airport Pulling Rd.		Major Intersection Improvement
100	Collier Boulevard (Intersection)	Pine Ridge Rd.		Major Intersection Improvement
107	Golden Gate Pkwy.	Collier Blvd.		Major Intersection Improvement
108	Vanderbilt Beach Rd.	Airport Pulling Rd.		Intersection Innovation/Improvements
109	Immokalee Rd.	Goodlette-Frank Rd.		Intersection Innovation/Improvements
110	Immokalee Rd.	Airport Pulling Rd.		Intersection Innovation/Improvements
112	Airport Pulling Rd.	Orange Blossom		Intersection Innovation/Improvements
113	Airport Pulling Rd.	Golden Gate Pkwy.		Intersection Innovation/Improvements
114	Airport Pulling Rd.	Radio Rd.		Intersection Innovation/Improvements

**Table 6-8. Costs of Priority Bicycle and Pedestrian Projects by Mileage Totals**

Component	Mileage	Cost Per Mile	Total Cost
Shared use paths and bike lanes on both sides of roadway	122	\$1,104,000	\$135 million
Bicycle lanes on both sides; shared use path on one side, sidewalk on the other	122	\$972,000	\$119 million
Bicycle lanes and sidewalks on both sides of roadway	122	\$840,000	\$103 million
Bicycle lanes on both sides; shared use path on one side	122	\$818,000	\$100 million
Bike lanes on both sides, sidewalk on one side	122	\$686,000	\$84 million

Source: Collier MPO 2020 Bicycle and Pedestrian Master Plan

### 6-3 Transit Cost Feasible Projects

Similar to the development of roadway cost feasible projects, the cost feasible transit projects were developed by estimating the costs associated with each project in the transit needs.

#### Transit Cost Assumptions

Numerous cost assumptions were made to forecast transit costs for 2021 through 2045. Costs include annual service and technology/capital improvements that are programmed for implementation within the plan period. The following

subsections summarize assumptions for capital and operating costs noted in the TDP.

#### Operating Cost Assumptions

Operating cost assumptions are based on a variety of factors, including service performance data from CAT and information from the recent Collier MPO TDP. These assumptions are summarized as follows:

- Annual operating costs for fixed-route and paratransit services are based on the most recent validated National Transit Database data.
- An annual inflation rate of 1.8 percent was used for all operating cost projections based on the average Consumer Price Index historical data from 2009-2019.
- Some funds (for example, FTA Section 5307 funds) increase above the inflation rate of 1.8 percent and are commensurate with the increase in operating costs for new services.
- Annual operating costs for future service enhancements are based on the projected annual service hours and cost per revenue hour of \$82.32 for fixed-route service and \$63.91 for paratransit service (both in 2018 dollars).
- Implementing the new route alignments represents increased levels of service in such improvements as Route 14, 19/28, and Route 23 with no additional costs.
- Express routes and MOD would not require complementary Americans with Disabilities Act (ADA) paratransit services if implemented.

## Capital Cost Assumptions

Service assumptions were also developed to estimate the costs for capital needs described in Chapter 4 and are summarized as follows:

- Replacement of vehicles within the existing fleet that have reached the end of their useful life and vehicles to implement new service.
- Vehicles are assumed to cost \$495,000 for fixed-route bus and \$71,217 for paratransit vehicles. A total of 21 fixed-route vehicles and 58 paratransit vehicles will need to be purchased between 2020 and 2030.
- An annual growth rate of 1.8 percent was used for capital cost projections.

- A 20-percent spare ratio was factored into the vehicle replacement and expansion schedule.
- A useful life for bus and paratransit vehicle replacement is 12 years and 7 years, respectively.
- Bus shelter expenses were assumed to be the same funding levels obtained from the FY2021 Collier County Government Requested Budget with an annual inflation rate of 1.8 percent.
- Technology costs were obtained from the draft budget for FY2020 Federal Transit Authority Section 5307 and 5339 Program of Projects Draft budget.

Based on the funding availability and prioritized results, the transit cost feasible projects are summarized in [Table 6-9](#) and illustrated in [Figure 6-8](#).

**Table 6-9. 2045 Transit Cost Feasible Summary**

Route Location	TDP 2021–2030		LRTP 2031–2045	
	Funded	Operating/Capital Cost (YOE)	Funded	Operating/Capital Cost (YOE)
<b>Proposed Realignment Changes</b>				
Route 11 – Extend to Walmart Shopping Center	X	\$0/\$0		
Route 12 – Extend to Walmart Shopping Center	X	\$0/\$0		
Route 13 and 14 – Realign from one-way pair to two bidirectional routes	X	\$0/\$0		
Routes 17 and 18 – Combine portion of the two routes along and remove service along Tamiami Trail	X	\$0/\$0		
Routes 19 and 28 – Realign unproductive segments and combine service hours with Route 28 for increased frequency	X	\$0/\$0		

**Table 6-9. 2045 Transit Cost Feasible Summary**

Route Location	TDP 2021–2030		LRTP 2031–2045	
	Funded	Operating/Capital Cost (YOE)	Funded	Operating/Capital Cost (YOE)
Route 20 and 26 – Combine to improve frequency and streamline service.	X	\$0/\$0		
Route 21 (Marco Island Express) – Provide express service to the Walmart Supercenter on Collier Blvd. and Tamiami Trail	X	\$0/\$0		
Route 22 – Realign to streamline circulation in Immokalee and extend service to high employment centers	X	\$0/\$0		
Route 23 – Realign to provide direct connections to residential cluster on Lake Trafford Road, and Farm Workers Way	X	\$0/\$0		
Route 25 EW – No service change	X	\$0/\$0		
Route 25 NS – Extend to Immokalee Road				
Route 27 NS – Extend service south				
Route 27 EW – Extend service east				
<b>Proposed Frequency Changes</b>				
Route 11 – 30 min to 20 min			X	\$17,215,415/\$0
Route 12 – 25/90 min to 30 min and 60 min at off-peak			X	\$7,460,013/\$0
Route 13 – 40 min to 30 min				
Route 14 – 60 min to 30 min				
Route 15 and 16 – 90 min to 45 min				
Route 19/28 – 165 min to 60 min				

**Table 6-9. 2045 Transit Cost Feasible Summary**

Route Location	TDP 2021–2030		LRTP 2031–2045	
	Funded	Operating/Capital Cost (YOE)	Funded	Operating/Capital Cost (YOE)
Route 23 – 60 min to 40 min	X	\$3,805,909/\$503,771		
Route 24- 85 min to 60 min	X	\$2,045,921/\$503,771		
Route 121 – Add two morning and evening trips during peak periods	X (Partial – one AM and one PM)	\$1,632,384/\$503,771		
<b>Proposed Span Improvements</b>				
Route 11, 13, 14, 17/18, 1 – Extend to 10 p.m.	X	\$1,808,329/\$0		
Route 19/28, Route 24 – Extend to 10 p.m.				
<b>Proposed New Service Routes</b>				
New Island Trolley				
New UF/IFAS and Lehigh Acres Route				
New Bayshore Shuttle				
New Downtown Autonomous Circulator				
New Naples Pier Electric Shuttle				
Mobility-On-Demand				
Express Premium Route to Lee County				
<b>Capital Infrastructure</b>				
Regionwide Technology	X (Partial)	\$0/\$2,720,920		
Security – driver protection barriers	X	\$0/\$153,080		

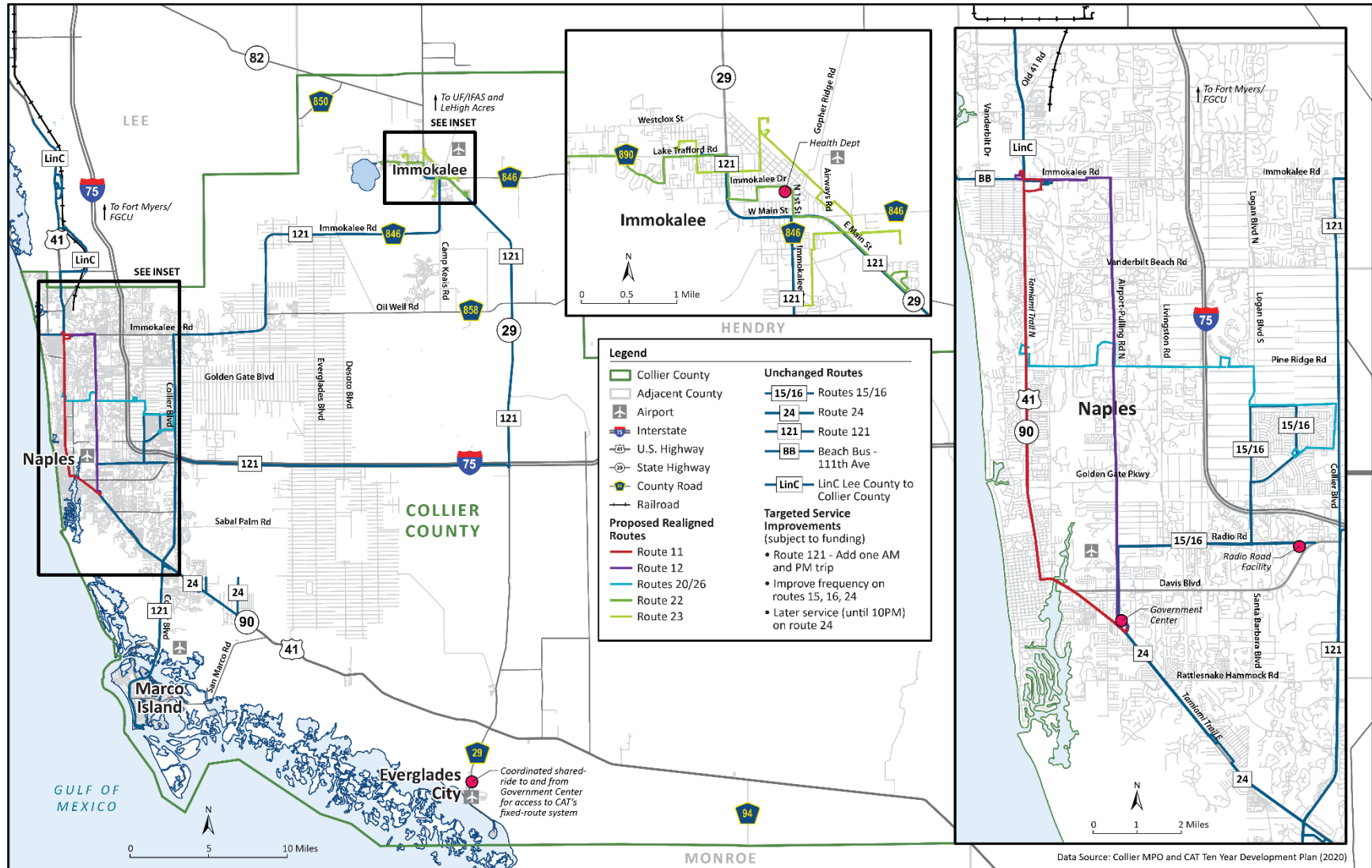


**Table 6-9. 2045 Transit Cost Feasible Summary**

Route Location	TDP 2021–2030		LRTP 2031–2045	
	Funded	Operating/Capital Cost (YOE)	Funded	Operating/Capital Cost (YOE)
Bus Shelters				
Shelter Rehabilitations				
Technical Studies	X	\$0/\$100,000		
Improve ADA Accessibility				
Replace and Add New Vehicles				
Park-and-Ride Lots (pending study)				
CAT Bus and Maintenance Building <sup>a</sup>	X	\$0/\$11,275,000		

<sup>a</sup> FY 2020/21 through FY 2024/25 TIP Amendment – FTA Grant Award (5339B Funding)

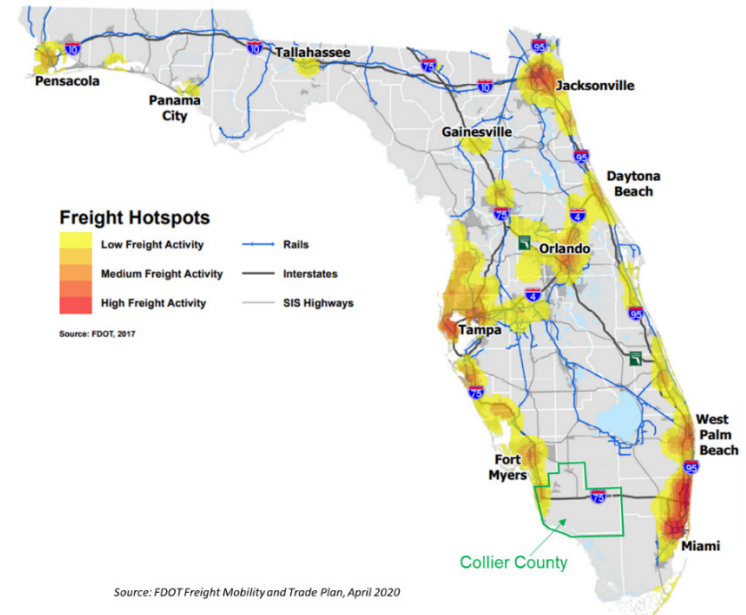
**Figure 6-8. 2045 Transit Cost Feasible Plan Projects Map**



## 6-4 Freight Network Projects

FDOT updated its Freight Mobility and Trade Plan (FMTP) in April 2020.<sup>1</sup> The FMTP is a comprehensive plan that identifies freight transportation facilities critical to the state's economic growth and guides multimodal freight investments in the state. The FMTP identified freight hotspots as presented in **Figure 6-9**. Collier County has low to medium freight activity along the I-75 corridor. According to the data from the FMTP, there are two Freight Intensive Areas in the County: East Naples Industrial area and the Immokalee Airport Industrial area. A Freight Intensive Area is a cluster or group of freight facilities that generates, distributes, or attracts large amounts of freight activities and has a significant impact on Florida's transportation system and economy. Out of 70 Freight Intensive Areas within the state, the East Naples and Immokalee Airport areas ranked 42nd and 43rd, respectively, by total freight parcel floor area.

The FMTP *Technical Memorandum 6, Project Prioritization and Selection* (FDOT 2020b) presents the methodology and the freight project selection and prioritization process. Noted on the list of prioritized projects in the FMTP as a low priority were the I-75 at CR 846 (Immokalee Road) and I-75 at Pine Ridge Road interchange modification projects. All projects listed in Table 6-1, 2045 SIS Cost Feasible Projects, are part of the Regional Freight Mobility Corridors within the Collier MPO boundary (refer to Figure 4-4 in Chapter 4). A total of 20 of the cost feasible projects identified in this 2045 LRTP Update are on the freight network within Collier MPO boundary.



**Figure 6-9. Freight Hotspot Locations**

## 6-5 Airport Transportation Projects

As noted in Chapter 4, two off-airport transportation projects were identified in the roadway Needs Plan to improve access to Naples Airport and Immokalee Regional Airport. Project no. 31, Immokalee Road from Airpark Boulevard to SR 29, has been identified as cost feasible for construction in FY2036 to FY2045. The project includes widening Immokalee Road from two to four lanes and will improve traffic operations and access to the industrial warehouses within the property of the Immokalee Regional Airport. Approximately \$7.2 million has been dedicated to this off-airport roadway project in the Cost Feasible Plan using County funds.

<sup>1</sup> <https://www.fdot.gov/rail/plandev/freight-mobility-and-trade-plan>

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Naples Airport estimates their development costs for airport operations at \$56.8 million for short term (2020–2024),

\$67 million for intermediate (2025–2029), and \$83 million for long term (2030–2039) expenses, for a total of \$206.9 million.





# Implementation

- 7-1 Implementation Framework
- 7-2 2045 LRTP Performance Measures and Targets
- 7-3 Planning Programs



## Chapter 7 Implementation

The Collier MPO is responsible for implementing the investments and strategies included in this LRTP. This chapter describes how the MPO will implement the LRTP investments in coordination with federal, state, and local partners. Major planning partners for the Collier MPO 2045 LRTP update include the Collier MPO Board and committees; Collier County, the cities of Naples, Marco Island, and Everglades City; FDOT; MPO Adviser Network; local tribal governments; and Lee County (through the Lee County MPO Interlocal Agreement).

### 7-1 Implementation Framework

The LRTP reflects and guides Collier MPO's commitment to ensuring the priority projects, programs, and policies are carried out successfully, while complying with transportation planning and requirements as described in federal authorizing legislation. As noted in Chapter 1, the FAST Act requires a *Continuing*, *Cooperative*, and *Comprehensive* long-range planning process. As part of this process, FHWA and FTA jointly issued a Planning Rule<sup>1</sup> requiring MPOs to establish targets for federally developed performance measures to evaluate the regional transportation system presented in their LRTPs. Performance-based planning ensures the most efficient investment of transportation funds by increasing accountability, providing transparency, and linking investment decisions to key outcomes related to the seven national goals outlined in Chapter 1.

Under this framework, the three FHWA performance measures (PMs) rules and the FTA transit asset management

and transit safety rules established various performance measures to assess roadway safety (PM1), pavement and bridge condition (PM2), system performance and freight movement (PM3), transit asset management, and transit safety. The Planning Rule and the PM rules also specify how MPOs should set targets, report performance, and integrate performance management into their LRTP and TIP.

**Table 7-1** presents the federal performance measures and the targets adopted by the Collier MPO Board.

### System Performance Report

FHWA requires that MPOs prepare a System Performance Report (SPR) every 5 years and include the report with the LRTP. The SPR includes performance measures required for all MPOs across the country, which allows for clear and consistent comparisons across planning areas. In response, FDOT developed an SPR template for each Florida MPO. The SPR evaluates the condition and performance of the transportation system with respect to required performance targets, and reports on progress achieved in meeting the targets in comparison with baseline data and previous reports.

The SPR includes five categories of system performance. These measures are focused largely on the highway and major roadway network receiving the majority of federal transportation funding. These categories include:

- Highway Safety
- Bridge and Pavement
- System Performance
- Transit Asset Management
- Transit Safety (planning only)

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<sup>1</sup> The Final Rule modified 23 CFR Part 450 and 49 CFR Part 613.

**Table 7-1. Collier MPO Adopted Performance Measures and Targets**

	Measure	Target
Safety (PM1)	Fatalities	0
	Serious Injurious	0
	Fatality Rate	0
	Injury Rate	0
	Nonmotorized Fatalities & Serious Injuries	0
Pavement (PM2)	Condition of NHS Interstate Pavements	≥60% in <i>good</i> condition in 4 years
		<5% in <i>poor</i> condition in 4 years
	Condition of NHS Non-Interstate Pavement	≥40% in <i>good</i> condition in 2 & 4 years
		<5% in <i>poor</i> condition in 2 & 4 years
Bridge (PM2)	NHS Bridge Deck Area Condition	≥50% in <i>good</i> condition in 2 & 4 years
		<10% in <i>poor</i> condition in 2 & 4 years

	Measure	Target
System Performance (PM3)	% of Person-Miles on the Interstate that are reliable	≥75% in 2 years ≥70% in 4 years
	% Person-Miles on Non-Interstate NHS that are reliable	N/A in 2 years ≥50% in 4 years
	Truck Travel Time Reliability Index	≤1.75 in 2 years ≤2.0 in 4 years
Transit Asset Management	Transit Rolling Stock	10% have met or exceeded ULB
	Transit Equipment	≤25% have met or exceeded ULB
	Transit Facilities	25% of facilities <3.0 on FTA's Transit Economic Requirements Model scale (1 [Poor] to 5 [Excellent])

Notes:

NHS = National Highway System

ULB = Useful Life Benchmark

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MPO partners and constituents can review current and past SPRs by visiting the respective MPO website and by attending public MPO meetings in which the reports are reviewed and adopted.

The first Collier MPO 2020 SPR is included in this 2045 LRTP update as [Appendix F](#). The SPR is comparable to the Collier MPO *Fiscal Year 2019 Annual Report*, which also presents ongoing improvements and monitoring.

### Federal Planning Factor Consistency

The LRTP goals and objectives discussed in Chapter 3 incorporate the federal planning factors required for all MPOs to address through planning. [Table 7-2](#) illustrates which 2045 LRTP goals meet the federal planning factor requirements.











The Collier MPO added a new transit priority project in 2019 to purchase a replacement bus for the CAT system, contributing \$500,000 in MPO funds specifically to address the Transit Asset Management Performance Plan target for rolling stock. The MPO included the same amount in its newly adopted transit priorities for 2020.

## 7-2 Planning Programs

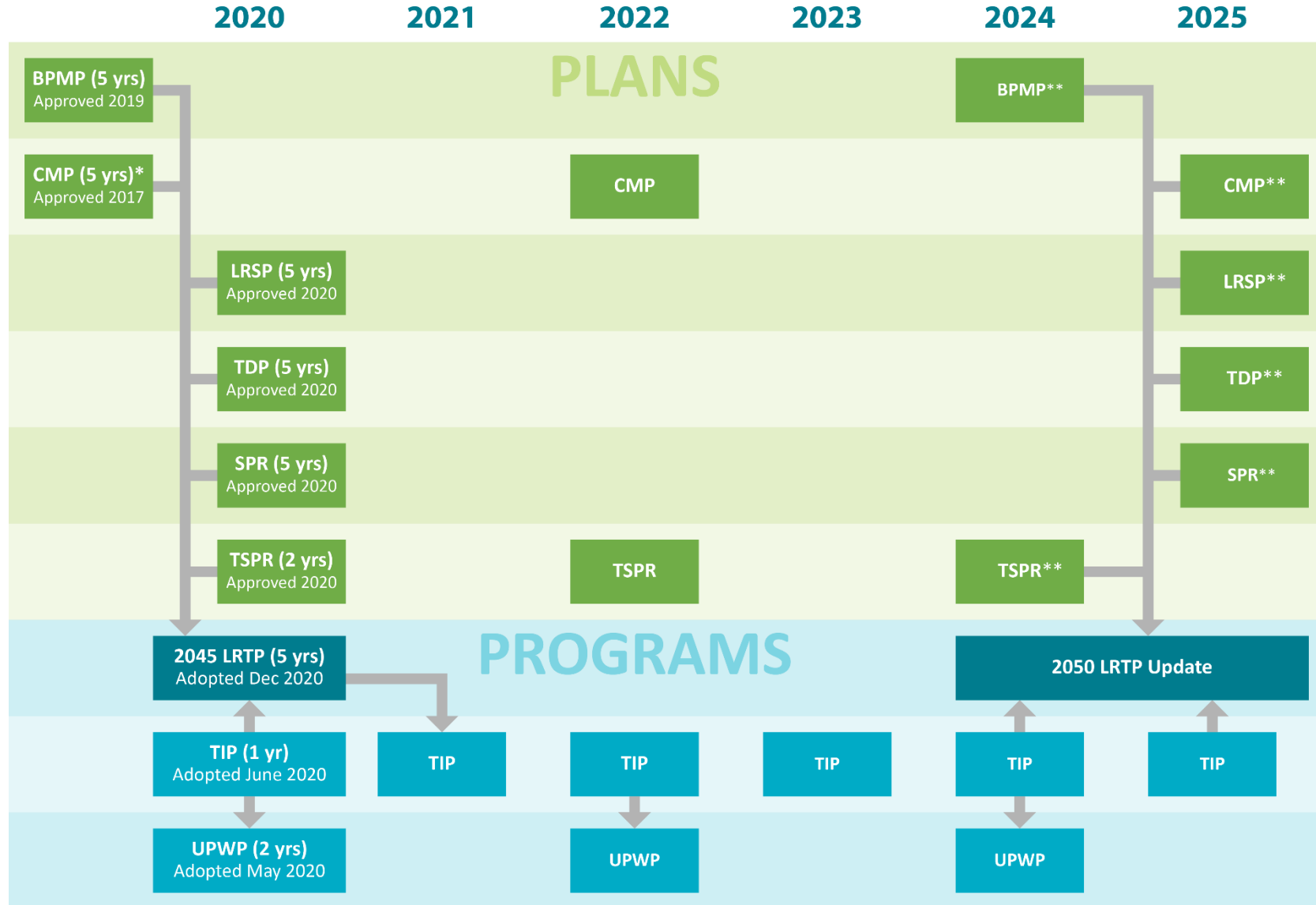
The Collier MPO implements the LRTP through short- and long-term transportation plans and through programs and projects, which is done in partnership with the County and associated municipalities that design, develop, and deliver policies, programs, and infrastructure projects identified in the LRTP.

As noted earlier, this LRTP update incorporates other plans by reference including the BPMP, TDP, CMP, TSPR, and the Local Road Safety Plan (LRSP). Each plan creates foundations for the LRTP by containing in-depth analysis and public processes from which the long-range planning builds a comprehensive and coordinated regional, multimodal vision. The LRTP reflects the needs and prioritized strategies identified in these plans in the needs and cost feasible project lists. Planning partners will look to these plans for implementation analysis and guidance. [Figure 7-1](#) presents the plans that are incorporated by reference into the LRTP, their update cycle, and how they ultimately inform the TIP and UPWP. Figure 7-1 also presents a timeline of Collier MPO's programs and plans from the 2045 LRTP adoption to the 2050 LRTP update and adoption.

Table 7-2. LRTP Goals and Federal Planning Factors

Federal Planning Factors	 Goal 1 Ensure the Security of the Transportation System for Users	 Goal 2: Protect Environmental Resources	 Goal 3: Improve System Continuity and Connectivity	 Goal 4: Reduce Roadway Congestion	 Goal 5: Promote Freight Movement	 Goal 6: Increase the Safety of the Transportation System for Users	 Goal 7: Promote Multimodal Solutions	 Goal 8: Promote the Integrated Planning of Transportation and Land Use	 Goal 9: Promote Sustainability in the Planning of Transportation and Land Use	 Goal 10: Consider Climate Change Vulnerability and Risk in Transportation
Safety						✓				
Security	✓									
Accessibility & Mobility			✓	✓			✓	✓		
Multimodal Connectivity			✓				✓		✓	
System Preservation										✓
Economic Vitality					✓		✓			
Environmental Quality		✓							✓	
System Efficiency				✓	✓			✓		
Resiliency & Reliability	✓			✓						✓
Transit & Tourism							✓	✓		

**Figure 7-1. Collier MPO Plans and Programs Timeline**



(X yrs) = Update Cycle

\* Since the TSPR is updated every 2 years, it could trigger a more frequent update of the CMP.

\*\* Approval should be at least 6 months prior to LRTP adoption.



## Other Implementing Programs

Collier MPO provides six programs to implement planning and development strategies identified in the LRTP. These programs typically result in the plans that are incorporated by reference into the LRTP, but may also include funding grant programs, initiatives, data collection, public information, and other activities and resources for local and partner agencies. Each is described briefly as follows.

### *Traffic Safety*

Collier MPO leads initiatives and planning processes to continually improve motorized and non-motorized transportation safety on federal, state, and local facilities. The MPO produced the LRSP that prioritized safety improvements on locally owned roadways and includes input from the FDOT Community Traffic Safety Team, law enforcement agencies, FDOT, and other state and federal planning partners.

### *Bicycle and Pedestrian*

In addition to developing the BPMP, the Collier MPO along with Blue Zones installed a bicycle/pedestrian counter to aid in bicycle and pedestrian data collection on Bayshore Drive for the Bayshore Drive CRA. The MPO also has completed multiple walkable community studies as well as the Pedestrian and Bicycle Safety Study that analyzed travel trends and crashes to better plan for future investments. Critical information gathered during the course of these studies is shared with its planning partners.

### *Congestion Management*

Collier MPO convenes the CMC to oversee implementation of the CMP and related planning activities. The CMP along with the TSPR inform multimodal traffic safety concerns within the County and its municipalities. The MPO coordinates with state

partners to update data and modeling tools to better understand traffic demand and safety conditions.

### *Transit*

Collier MPO works with the County to ensure that CAT plans are coordinated with partner agencies' plans and comply with federal and state requirements that ensure sustainable operations and maintains compliance with state and federal funding program requirements. The MPO also produces or coordinates transit-related plans and studies, including comprehensive operational analyses, transit impact analyses, Public Transit-Human Service Transportation Plan (referenced as the Collier MPO Transportation Disadvantaged Service Plan), a park-and-ride study, and the TDP.

### *Freight*

Collier MPO works to enhance the integration and connectivity of transportation systems and the movement of goods and commodities through freight. The Collier MPO staff participate in regional meetings with freight industry representatives hosted by the FDOT District One Freight Coordinator. The *FDOT District One Freight Mobility & Trade Plan* (FDOT 2020b) notes that Collier County's top import and export commodity flow is the bulk movement of boxcars with more than 1.1 million tons imported and more than 650,000 tons imported. Additionally, Collier County is one of the top three counties in District One for vegetables, tomatoes, and watermelons harvested by acreage.

### *Aviation*

As noted in Chapter 4, five public airports serve the Collier MPO planning area. With the exception of the Dade-Collier Training and Transition Airport (just west of the Miami-Dade County line), the Collier MPO coordinates with the airport authorities for off-airport transportation needs. Further, the

Naples and Collier County Airport Authorities submit annual aviation project priorities to the MPO via Joint Automated Capital Improvement Programs for each airport within the Collier MPO's planning area.

### Other Collier Metropolitan Area Projects

The Collier MPO also implements plans by participating and contributing to major projects in the region. They include regionally significant plans, studies, and project development and delivery tasks. Several ongoing efforts are described as follows.

#### *Lee County MPO Rail Feasibility*

In October 2013, the Lee County MPO finalized the *Lee County Rail Corridor Feasibility Study* (David Plummer & Associates et al. 2013) to analyze multimodal transportation options in the existing rail corridor in Lee and northern Collier County. Transportation alternatives included freight service, commuter or light rail transit, BRT, and/or multi-use paths. The Lee MPO is coordinating with Collier County Transportation Planning and the Collier MPO throughout the study.

The Lee County MPO is currently embarking on a detailed trail feasibility study for the Lee County portion of this trail northward as far as Alico Road. The Seminole Gulf Railway, which terminates in northern Collier County, purchased the ROW from CSX in 2018, after 30 years of leasing the corridor from them. A trail along the rail corridor from Bonita Beach Road north is now part of Florida's SunTrail Network. The trail is planned to run east of the railroad along Bonita Beach Road, then south along the Livingston Road corridor into Collier County.

### *M-CORES*

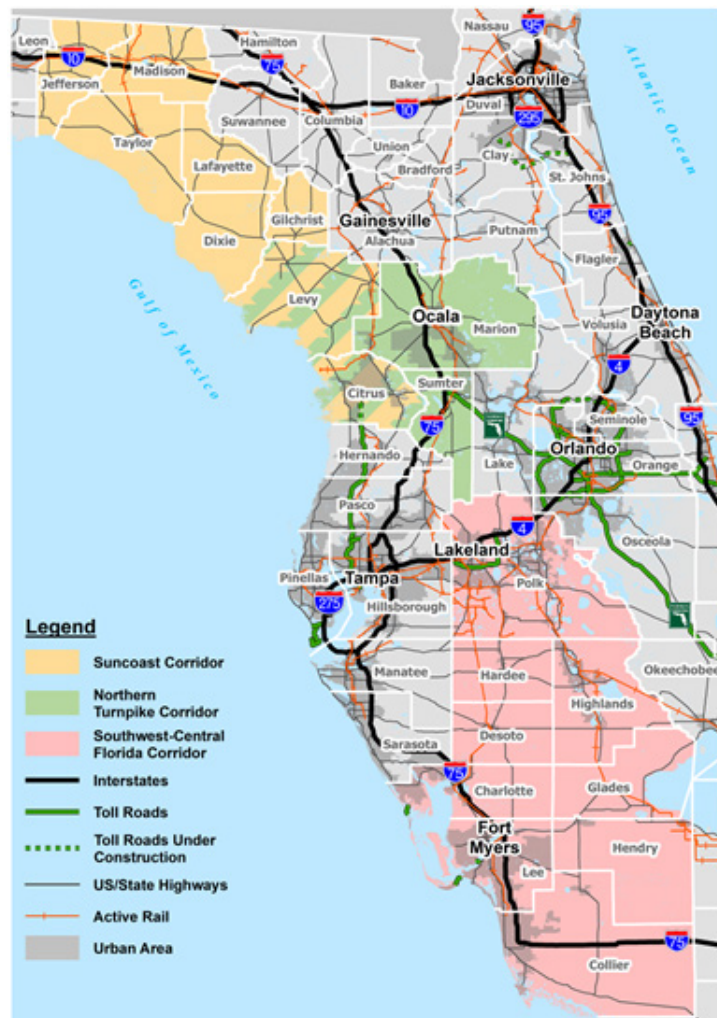
Created by Section 338.2278, F.S., the M-CORES Program seeks to revitalize rural communities, encourage job creation, and provide regional connectivity while leveraging technology, enhancing quality of life and public safety, and protecting the environment and natural resources. FDOT is responsible for organizing task forces to study three specific corridors detailed as follows and presented on **Figure 7-2**:

- The Suncoast Corridor (from Citrus County to Jefferson County)
- The Northern Turnpike Corridor (from the northern terminus of Florida's Turnpike northwest to the Suncoast Parkway)
- The Southwest-Central Florida Corridor (from Collier County to Polk County)

The goal of the M-CORES Program involves advancing the construction of regional corridors that accommodate multiple modes of transportation and multiple types of infrastructure. The Southwest-Central Florida Corridor study area spans nine counties, from Collier County to Polk County, as shown on Figure 7-2. The Collier MPO area is part of the Southwest-Central Florida Corridor study area.

M-CORES projects are projects of regional significance and, therefore, must be included in the LRTP, TIP, and the STIP [per 23 CFR Part 450.324(d) and Section 339.175(7), F.S.]. The 2045 LRTP update did not include any M-CORES projects as none has been developed as of the publication of this document.

**Figure 7-2. M-CORES Study Area**



MPOs and transportation planning organizations within an M-CORES study area are responsible for actively involving all affected parties in an open, cooperative, and collaborative process when developing LRTPs and TIPs. Regional coordination is required because M-CORES projects affect

multiple MPOs. 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.

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

The proposed projects in the Southwest-Central Florida Corridor will be tolled facilities and will be part of the Florida's Turnpike system and the 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 2019c). FDOT is working with the Southwest-Central Florida Corridor Task Force to develop purpose and need, guiding principles, and potential paths/courses. The Collier MPO is a member of the Southwest-Central Florida Corridor Task Force and is actively engaged in pertinent aspects of planning and corridor analysis through the Task Force activities. The Task Force will submit its evaluation report to the governor, the president of the senate, and the speaker of the house of representatives by November 15, 2020. As the program progresses to PD&E, design, and construction phases, FDOT will identify projects, prepare cost estimates, and coordinate with Collier 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 ROW 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 ROW or to

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secure or use transportation ROW 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 Connect (South Corridor) Study*

FDOT is embarking on a program that will lead to the long-term build out of the interstate corridors in Southwest Florida, first envisioned by prior planning studies. This capacity improvement project involves the potential construction of managed lanes in each direction on I-75, from east of Collier Boulevard (SR 951) in Collier County to Bayshore Road (SR 78) in Lee County. Additional general-use lanes, collector-distributor roadways, and auxiliary lanes, as well as interchange operational improvements, are also being considered. As such, up to a 12-lane typical section is being explored.

There are opportunities to operate reliable, efficient transit service within the managed lanes, as well as provide connections to park-and-ride or kiss-and-ride lots located within the project area. Further, there is opportunity to provide improved or new bicycle and pedestrian accommodations as well as landscaping/streetscaping treatments on roadways connecting to or passing under the interstate to enhance bicycle and pedestrian circulation and access to area transit service.

While the proposed improvements are anticipated to be constructed primarily within the existing ROW, some additional ROW may be required, particularly around the interchanges. Specific ROW requirements will be determined during the PD&E study phase. Within the Collier MPO planning area, the interchanges at Immokalee Road, Pine Ridge Road, Golden Gate Parkway, and Collier Boulevard are being studied. The study is expected to be complete by the fourth quarter of 2022.





# 8

## References

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## Chapter 8 References

Airports Council International-North America (ACI-NA). 2020. *Airport Infrastructure Funding*. Accessed October 2020. <https://airportscouncil.org/advocacy/airport-infrastructure-funding>.

City of Everglades City. 2019. *Everglades Town Trail Master Plan*. January.

City of Marco Island. 2009. *Comprehensive Plan: Goals, Objectives and Policies*. Amended December 7. Accessed August 2020. [https://www.cityofmarcoisland.com/sites/default/files/fileattachments/growth\\_management/page/5551/compplanpart1\\_2009.pdf](https://www.cityofmarcoisland.com/sites/default/files/fileattachments/growth_management/page/5551/compplanpart1_2009.pdf).

City of Marco Island. 2018. *Marco Island Bike Path Master Plan*. Adopted April 16. Accessed August 2020. <https://www.cityofmarcoisland.com/sites/default/files/fileattachments/ordinance/54821/18-30.pdf>.

City of Marco Island. 2020. *Present Day Marco Island*. Accessed October 13. <https://www.cityofmarcoisland.com/community/page/present-day-marco-island>.

City of Naples. 2010. *Comprehensive Plan*. Amended October 20. Accessed August 2020. [https://www.naplesgov.com/sites/default/files/fileattachments/planning/page/4451/comprehensive\\_plan\\_120613\\_201312060904513380.pdf](https://www.naplesgov.com/sites/default/files/fileattachments/planning/page/4451/comprehensive_plan_120613_201312060904513380.pdf).

City of Naples. 2019. *City of Naples Planning Advisory Board Vision 2020 Analysis and Recommendations*. September 11. [https://www.naplesgov.com/sites/default/files/fileattachments/planning/page/27021/pab\\_city\\_of\\_naples\\_vision\\_report\\_9.11.2019.pdf](https://www.naplesgov.com/sites/default/files/fileattachments/planning/page/27021/pab_city_of_naples_vision_report_9.11.2019.pdf).

City of Naples. 2020. *Adopted Budget City of Naples, Florida Fiscal Year 2020-2021*. Accessed October 13. [https://www.naplesgov.com/sites/default/files/fileattachments/finance/page/8031/20-21\\_adopted\\_budget\\_-\\_final.pdf](https://www.naplesgov.com/sites/default/files/fileattachments/finance/page/8031/20-21_adopted_budget_-_final.pdf).

Collier Area Transit (CAT) and Collier Metropolitan Planning Organization (MPO). Forthcoming. *Park & Ride Study*.

Collier County Airport Authority. 2017. *Immokalee Regional Airport Layout Plan Update*. August. Accessed August 2020. <https://www.colliercountyfl.gov/Home/ShowDocument?id=75385>.

Collier County Growth Management Department. 2019. *Annual Update & Inventory Report/Capital Improvement Element Schedule Update on Public Facilities*. Prepared for Collier County Board of County Commissioners. November. Accessed August 2020. <https://www.colliercountyfl.gov/home/showdocument?id=91644>.

Collier County Planning and Zoning Department. 2017. *Collier County Growth Management Plan, Transportation Element*. Prepared for Collier County Board of County Commissioners. Amended June. Accessed August 2020. <https://www.colliercountyfl.gov/home/showdocument?id=74327>.

Collier County Planning and Zoning Department. 2019. *Collier County Growth Management Plan, Future Land Use Element*. Prepared for Collier County Board of County Commissioners. Amended November. Accessed August 2020. <https://www.colliercountyfl.gov/home/showdocument?id=91408>.

Collier County. 2017. *Collier County Community Housing Plan*. Final Draft. October 24. Accessed August 2020. <https://www.colliercountyfl.gov/home/showdocument?id=74936>.

Collier County. 2019. *Collier One-Cent Sales Tax*. Accessed August 2020. <https://collieronecenttax.com/>.

Collier County. 2020a. *Collier County Planning Communities* [map]. January. Accessed August 2020. <https://www.colliercountyfl.gov/home/showdocument?id=28844>.

Collier County. 2020a. *Collier Metropolitan Planning Organization Transportation Improvement Program FY2021-FY2025*. June. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/FY21-25-TIP-Adopted-June-12-2020-AS-AMENDED-ADMIN.MODIFIEDv2.pdf>.

Collier County. 2020b. *Growth Management Plan (Current)*. Accessed July 2020. <https://www.colliercountyfl.gov/your-government/divisions-a-e/comprehensive-planning/growth-management-plan-current>.

Collier County. 2020b. *Immokalee Regional Airport*. Accessed August 2020. <https://www.colliercountyfl.gov/your-government/divisions-a-e/airport-authority/immokalee-regional-airport>.

Collier Metropolitan Planning Organization (Collier MPO). 2017. *Congestion Management Process 2017 Update*. October. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2017-CMP.pdf>.

Collier Metropolitan Planning Organization (Collier MPO). 2018. *Collier 2040 Long Range Transportation Plan*. Final. Amended May 25. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2018/11/2040-LRTP-as-Amended.pdf>.

Collier Metropolitan Planning Organization (Collier MPO). 2019a. *Bicycle & Pedestrian Master Plan*. March 8. <https://www.colliermopo.org/wp-content/uploads/2020/09/Bicycle-and-Pedestrian-Master-Plan-2019-Final.pdf>.

Collier Metropolitan Planning Organization (Collier MPO). 2019b. *Fiscal Year 2019 Annual Report*. December. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2019-Annual-Report-FINAL.pdf>.

Collier Metropolitan Planning Organization (Collier MPO). 2020. *Transportation Improvement Plan FY2021 - FY2025*. Adopted June 12, 2020. <https://www.colliermopo.org/wp-content/uploads/FY21-25-TIP-Adopted-June-12-2020-AS-AMENDED-ADMIN.MODIFIEDv2.pdf>.

Collier Metropolitan Planning Organization (Collier MPO). Forthcoming. *2045 LRTP Update Project Cost Development Methodology Technical Memorandum*.

David Plummer & Associates, Inc., Spikowski Planning Associates, David Douglas Associates, Inc., HDR Engineering, Inc., and RMI Midwest. 2013. *Lee County Rail Corridor Feasibility Study*. October 25. Accessed October 2020. [http://leempo.com/wp-content/uploads/2017/03/Rail-Corridor-Feasibility-Study\\_Final-Report\\_.pdf](http://leempo.com/wp-content/uploads/2017/03/Rail-Corridor-Feasibility-Study_Final-Report_.pdf).

Environmental Science Associates (ESA). 2020. *Naples Airport Master Plan*. Draft. February 29. Prepared for City of Naples Airport Authority. <https://flynaples.com/wp-content/uploads/2020/04/APF-MP-Consolidated-Draft-Report-February-29-2020.pdf>.

Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). 2018. *Federal Strategies for Implementing Requirements for LRTP Updates for the Florida MPOs*. January. Accessed August 2020. <https://www.fdot.gov/docs/default-source/planning/Policy/metrosupport/Resources/LRTP-Expectations-2018.pdf>.

Federal Highway Administration (FHWA). 2017. *Resilience and Transportation Planning*. Accessed August 2020. <https://www.fhwa.dot.gov/environment/sustainability/resilience/publications/ratp/index.cfm>.

Federal Highway Administration (FHWA). 2020. *Congestion Management Process (CMP)*. Accessed August 2020. [https://ops.fhwa.dot.gov/plan4ops/focus\\_areas/cmp.htm](https://ops.fhwa.dot.gov/plan4ops/focus_areas/cmp.htm).

Florida Department of Transportation (FDOT). 2016. *Shared-Use Nonmotorized (SUN) Trail Program*. <https://www.fdot.gov/planning/systems/SUNTrail.shtm>.

Florida Department of Transportation (FDOT). 2017. *Tentative Five Year Work Program, Fiscal Years 2019-2023*. Collier County. Draft. October. Accessed August 2020. <http://swflroads.com/D1EpublicHearing/documents/Collier.pdf>.

Florida Department of Transportation (FDOT). 2018a. *Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles*. September. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/metrosupport/resources/fdot\\_mpoguidebook\\_20181005.pdf](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/metrosupport/resources/fdot_mpoguidebook_20181005.pdf).

Florida Department of Transportation (FDOT). 2018b. *Revenue Forecasting Guidebook*. July 3. Accessed August 2020. <https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/revenueforecast/revenue-forecasting-guidebook.pdf>

Florida Department of Transportation (FDOT). 2018c. *Strategic Intermodal System Long Range Cost Feasible Plan, FY 2029-2045*. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/systems/programs/mspi/pdf/sis\\_2029-2045\\_cfp\\_yoe5149f504fbfb4849baa013d316f2da51.pdf?sfvrsn=b9b2bd1c\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/systems/programs/mspi/pdf/sis_2029-2045_cfp_yoe5149f504fbfb4849baa013d316f2da51.pdf?sfvrsn=b9b2bd1c_2).

Florida Department of Transportation (FDOT). 2019a. *Complete Streets Implementation*. <https://www.fdot.gov/roadway/csi/default.shtm>.

Florida Department of Transportation (FDOT). 2019b. *Florida Traffic Online*. Accessed August 2020. <https://tdaappsprod.dot.state.fl.us/fto/>.

Florida Department of Transportation (FDOT). 2019c. *MPO Program Management Handbook*. Revised July. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/policy/metrosupport/resources/fdot-mpo-handbook.pdf?sfvrsn=c4c6799f\\_0](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/policy/metrosupport/resources/fdot-mpo-handbook.pdf?sfvrsn=c4c6799f_0).

Florida Department of Transportation (FDOT). 2019d. *The Florida Connected Vehicle Initiative*. Accessed August 2020. <https://www.fdot.gov/traffic/its/projects-deploy/cv/connected-vehicles>.

Florida Department of Transportation (FDOT). 2020a. *Resilience Quick Guide: Incorporating Resilience in the MPO Long Range Transportation Plan*. January. Accessed August 2020. [http://floridatransportationplan.com/pdf/2020-01-29\\_FDOT%20Resilience%20Quick%20Start%20Guide\\_FINAL.pdf](http://floridatransportationplan.com/pdf/2020-01-29_FDOT%20Resilience%20Quick%20Start%20Guide_FINAL.pdf).

Florida Department of Transportation (FDOT). 2020b. *FDOT District One Freight Mobility & Trade Plan 2016*. July. Accessed August 2020. <http://heartlandregionaltpo.org/download/plans/FDOTD1FMTP.pdf>.

Florida Department of Transportation (FDOT). 2020c. *FDOT Context Classification Guide*. July. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/completestreets/files/fdot-context-classification.pdf?sfvrsn=12be90da\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/completestreets/files/fdot-context-classification.pdf?sfvrsn=12be90da_2).

Florida Department of Transportation (FDOT). 2020d. *First Five Year Plan Multi-Modal FY 2020/2021 through FY 2024/2025*. July. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/sis/1st\\_5\\_2020.pdf?sfvrsn=c6c3e627\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/sis/1st_5_2020.pdf?sfvrsn=c6c3e627_2)

Florida Department of Transportation (FDOT). 2020e. *Second Five Year Plan Multi-Modal FY 2025/2026 through FY 2029/2030*. July. Accessed August 2020. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/sis/2nd\\_5\\_2020.pdf?sfvrsn=f3231864\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/sis/2nd_5_2020.pdf?sfvrsn=f3231864_2).

Florida Department of Transportation (FDOT). 2020f. *Five Year Work Program 2021 – 2025 (Adopted July 1, 2020)*.

Florida Department of Transportation (FDOT). 2020g. *FDOT Traffic Online (2019)*. Accessed October. <https://tdaappsprod.dot.state.fl.us/fto>

Florida Department of Transportation (FDOT). 2020h. *White Paper -- Implementation of CAV into the D1RPM in Development of 2045 LRTP Updates*. September 17.

Florida Office of Economic & Demographic Research (EDR). 2020. *Population and Demographic Data – Florida Products*. Accessed August 2020. <http://edr.state.fl.us/Content/population-demographics/data/index-floridaproducts.cfm>.

Jacobs Engineering Group Inc. (Jacobs). 2019a. Collier MPO 2045 Long Range Transportation Plan: Goals, Objectives and Decision-Making Framework. Prepared for Collier Metropolitan Planning Organization. October 11. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/Goals-Objectives-Decision-Making-Framework-10-11-19.pdf>.

Jacobs Engineering Group Inc. (Jacobs). 2019b. Collier MPO 2045 Long Range Transportation Plan: Public Involvement Plan. Prepared for Collier Metropolitan Planning Organization. October 11. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/LRTP-Public-Involvement-Plan.pdf>.

Jacobs Engineering Group Inc. (Jacobs). n.d.. *Golden Gate City Walkable Community Study*. Prepared for Collier Metropolitan Planning Organization. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/GoldenGate-Walk-Comm-Study-Adopted.pdf>.

Naples Airport Authority. 2020. *About Naples Airport*. Accessed August 2020. <https://flynaples.com/about/>.

National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management. 2020a. *Sea Level Rise Viewer*. Accessed August 2020. <https://coast.noaa.gov/digitalcoast/tools/slr.html>

National Oceanic and Atmospheric Administration (NOAA) RESTORE Science Program. 2020b. *A Web-Based Interactive Decision-Support Tool for Adaptation of Coastal Urban and Natural Ecosystems (ACUNE) in Southwest Florida*. Accessed August 2020. <https://restoreactscienceprogram.noaa.gov/projects/local-coastal-tool>.

Renaissance Planning. 2015. *Technical Memorandum: Freight Congestion Considerations for the Collier 2040 Long Range Transportation Plan (LRTP)*. Prepared for the Collier Metropolitan Planning Organization. November. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2018/11/3-Freight-Considerations-Tech-Memo.pdf>.

RWA, Inc. 2011. *Immokalee Walkable Community Study*. Prepared for the Collier Metropolitan Planning Organization. December. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2018/11/Immokalee-Walkable-Community-Study.pdf>.

RWA, Inc. 2012. *Collier MPO 2012 Comprehensive Pathways Plan*. Prepared for Collier Metropolitan Planning Organization. December. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2012-CPP-Comp-No-Append.pdf>.

Spikowski Planning Associates. 2020. *Collier 2045 Long-Range Transportation Plan 2015 and 2045 Socio-economic Data*. February 3.

Tindale Oliver. 2015. *Collier MPO 2040 Long Range Transit Element*. Prepared for Collier Metropolitan Planning Organization. Final. November. Accessed August 2020. <https://www.colliermopo.org/wp-content/uploads/2018/11/Collier-2040-LRTE-Final-Report.pdf>.

Tindale Oliver. 2020a. *Transportation System Performance Report & Action Plan, Baseline Condition Report*. Prepared for Collier Metropolitan Planning Organization. Draft. June. <https://www.colliermopo.org/wp-content/uploads/Baseline-Conditions-Report-V5-Combined-1.pdf>.

Tindale Oliver. 2020b. *Transportation System Performance Report & Action Plan, Action Plan*. Prepared for Collier Metropolitan Planning Organization. Draft. July. [https://www.colliermopo.org/wp-content/uploads/Action-Plan\\_V3-with-Appendices.pdf](https://www.colliermopo.org/wp-content/uploads/Action-Plan_V3-with-Appendices.pdf).

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Tindale Oliver. 2020c. *Ten-Year Transit Development Plan*. Prepared for Collier Area Transit and Collier Metropolitan Planning Organization. Draft. August. Accessed August 2020.

<https://www.colliermpo.org/wp-content/uploads/2020/08/Draft-CAT-TDP-2021-2030-Rev-08.25.2020.pdf>.

Tindale Oliver. 2020d. *Collier MPO Local Road Safety Plan Statistical Analysis Technical Memorandum*. Prepared for Collier Metropolitan Planning Organization. Draft/Final. September 15.

U.S. Army Corps of Engineers (USACE). 2020. *Collier County Coastal Storm Risk Management Feasibility Study*. Jacksonville District Website. Accessed October 2020. <https://www.saj.usace.army.mil/CollierCountyCSRMeasibilityStudy>

U.S. Census Bureau. 2019. *2011-2015 5-Year ACS Commuting Flows*. Updated October. Accessed August 2020.

<https://www.census.gov/data/tables/2015/demo/metro-micro/commuting-flows-2015.html>.

U.S. Department of Transportation (DOT). 2018. *Preparing for the Future of Transportation: Automated Vehicles 3.0*. Accessed August 2020. <https://www.transportation.gov/av/3>.

University of South Florida Center for Urban Transportation Research (CUTR). 2019. *Autonomous Vehicle (AV) and Alternative Fuel Vehicle (AFV) Florida Market Penetration Rate and VMT Assessment Study*. Prepared for Florida Department of Transportation. Final. October. Accessed August 2020. [http://floridatransportationplan.com/pdf/BDV25-977-48\\_Task\\_9\\_Final\\_Report\\_12\\_16\\_19.pdf](http://floridatransportationplan.com/pdf/BDV25-977-48_Task_9_Final_Report_12_16_19.pdf).