AGENDA
BPAC

Bicycle Pedestrian Advisory Committee

HYBRID IN-PERSON AND ZOOM VIRTUAL MEETING
Conference Room 609/610 Growth Management Division
Planning & Regulation Building
2800 N Horseshoe Dr, Naples

Meeting ID: 823 6876 0254
Password: 575507

Please click here to be directed to the Zoom website, or you may dial in at 1-646-876-9923

November 17, 2020
9:00 a.m.

1. **Call to Order**
2. **Roll Call**
3. **Approval of Agenda**
4. **Approval of the October 20, 2020 Meeting Minutes**
5. **Open to the Public for Comment on Items not on the Agenda**
6. **Agency Updates**
   A. FDOT
   B. MPO
7. **Committee Action**
   A. Review and Comment on Local Roads Safety Plan
   B. Endorse Draft 2045 Long Range Transportation Plan (LRTP)
8. **Reports & Presentations (May Require Committee Action)**
9. **Member Comments**
10. **Distribution Items**

    Draft 2021 MPO Calendar
11. **Next Meeting Date**

    January 19, 2021 – 9:00 a.m.
    Hybrid: In-Person Quorum Required, Virtual Access Available via ZOOM
12. **Adjournment**

PLEASE NOTE:
This meeting of the Bicycle & Pathways Advisory Committee (BPAC) to the Collier Metropolitan Planning Organization (MPO) is open to the public and citizen input is encouraged. Any person wishing to speak on any scheduled item may do so upon recognition by the Chairperson. Any person desiring to have an item placed on the agenda shall make a request in writing, with a description and summary of the item, to the MPO Executive Director 14 days prior to the date of the next scheduled meeting of the BPAC. Any person who decides to appeal a decision of this Committee will need a record of the proceedings pertaining thereto, and therefore may need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence upon which the appeal is to be based. In accordance with the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should contact the Collier Metropolitan Planning Organization 72 hours prior to the meeting by calling (239) 252-5814.The MPO's planning process is conducted in accordance with Title VI of the Civil Rights Act of 1964 and Related Statutes. Any person or beneficiary who believes that within the MPO's planning process they have been discriminated against because of race, color, religion, sex, age, national origin, disability, or familial status may file a complaint with the Collier MPO by calling Ms. Anne McLaughlin at (239) 252-5884 or by writing to her at 2885 South Horseshoe Dr., Naples, FL 34104.

BICYCLE & PEDESTRIAN ADVISORY COMMITTEE of the
COLLIER METROPOLITAN PLANNING ORGANIZATION
Virtual Meeting via ZOOM platform
October 20, 2020 ---- 9:00 A.M.
Meeting Minutes

1. **Call to Order**
Mr. Bonness called the meeting to order at 9:05 a.m.

2. **Roll Call**
Ms. McLaughlin called roll and confirmed a quorum was present.

Members Present
Joe Bonness, Chair
Anthony Matonti, Vice-Chair
Alan Musico, At-Large
Kim Jacob, At-Large
Susan Sonnenschein, At-Large
Andrea Halman, At-Large
Patty Huff, At-Large
Dayna Fendrick, At-Large
Dr. Mort Friedman, At-Large
David Driapsa, At-Large
Claudia Keeler, At-Large

Members Absent
Larry Smith, At-Large

MPO Staff
Anne McLaughlin, Executive Director
Brandy Otero, Principal Planner
Karen Intriago, Administrative Assistant

Others Present
Victoria Peters, FDOT
Lorraine Lantz, Collier County, TAC Chair
Trinity Scott, Collier County
Catherine Faerber, FDOT
Deborah Chesna, FDOT
Jodi Walborn, Blue Zones
Christie Betancourt, Immokalee CRA
Megan Greer, Blue Zone
Yvonne Blair

3. Approval of the Agenda

Mr. Friedman *moved to approve the agenda. Second by* ***Ms. Halman.*** *Carried unanimously.*

4. Approval of the September 15, 2020 Meeting Minutes

Ms. Peters – correction – Deborah Chesna was present at the last meeting but is not listed.

Ms. Halman *moved to approve the September 15, 2020 minutes as corrected. Second by* ***Ms. Sonnenschein.*** *Carried unanimously.*

5. Open to the Public for Comment on Items Not on the Agenda

Ms. Greer – Blue Zones is coordinating a safety coalition involving Naples Pathways Committee, Naples Velo and others in support of unified messaging for a public education campaign on bicycle safety. Has discussed with MPO regarding same message for MPO's Traffic safety campaign resulting from Local Roads Safety Plan. Blue Zones is willing to absorb the Community Transportation Safety Team into their Build Environment Committee - the process may lead to fewer meetings but more work accomplished. Seeking comments from Committee members. **Ms. Sonnenschein** – great idea, in favor of it. **Ms. Huff** – please include Everglades City's Bike/Ped Committee. **Ms. Halman** – please include Immokalee as well. **Ms. Lantz** – suggest coordinate with CTST Chair, Kyle Kemmish. **Ms. Greer –** Yes, have attempted to but haven't spoken yet.

6. Agency Updates

A. FDOT

Ms. Peters – None.

Deborah Chesna – SUN-Trail Call for Projects rescinded for this year.

B. MPO Executive Director

Ms. McLaughlin – None.

7. Committee Action

A. Review and Comment on 2045 Long Range Transportation Plan (LRTP) Draft Chapter 6 Cost Feasible Plan

Ms. McLaughlin presented Executive Summary contained in agenda packet. Noted that entire draft 2045 LRTP has just been loaded on MPO's website. Committee members encouraged to review and comment on any portion of the Plan. Described Needs Plan (Ch4) and Cost Feasible Plan (Ch 6), key information contained in charts showing project name, to/from, time period, funding. **Ms. Halman –** Immokalee Rd carries traffic to/from Casino. That segment should be done first. **Ms. Scott –** explained relationship between County's Annual Update and Inventory Report (AUIR), Capital Improvements Program, developer agreements and phasing projects in the LRTP. **Ms. Sonnenschein** – referring to Paradise Coast Trail Vision as example, when is it possible to request modifications to roadway designs to accommodate bike/ped facilities? **Ms. Scott** – most are County roads, go through various steps such as 30%, 60% design, PD&E locks in cross section. County is aware of Paradise Coast Trail and proposed FPL greenway and considers that as well as Bike/Ped Master Plan when designing roads. **Mr. Bonness** – example is 6-lane section of Oil Well Rd has greenway on north side. **Ms. Fendrick –** segment with pathway gap on US41 East falls within project #58 [Map ID Number]. **Ms. Scott** – could be done sooner if additional ROW not needed. **Ms Fendrick** – aren't local developers required to provide bike/ped facilities? **Ms. Scott** – not when a capital project is planned that would necessitate tearing improvements out within 5-10 years. **Ms. Huff** - can trail be placed behind bushes? **Ms. Scott –** probably build to align with previous section.

Ms. Peters [interjected later in meeting] – FDOT's Project Manager reports that 60% plans completed in 2012, will revisit, project is a candidate for design/build; is 90% confident additional ROW will not be needed unless design standards change, affect should be minor.]

Ms. McLaughlin – continued overview - where to find SU Box fund discussion. Proposal to add Safety Projects, which in addition to Planning projects (such as the LRTP) would modify current 40:40:20 split divided among Bike/Ped, Congestion Management and Bridges. Revised Budget would be Planning 3%, Bike/Ped 38%, Congestion Management 38%, Bridge 19%, Safety 2-3%. Transportation Alternative – Urban (TALU) funds may be able to make up difference in SU for bike/ped. Preliminary proposal. Interested in Committee's comments. Safety projects important to include now that Board has adopted FDOT's Vision Zero Safety Targets. Note widespread interest in Traffic Safety Education campaign.

Mr. Bonness – could be a good trade off. **Mr. Musico** – net comes out about the same, may as well codify. **Ms. Halman** – funding for safety should be ongoing. **Ms. Jacob** – agree with concepts, concerned with duplication of effort among entities developing safety campaigns. Will education be a focus? **Ms. McLaughlin –** Yes. Local Roads Safety Plan recommends multifaceted approach including Engineering (design), Education, and Enforcement. Education is key. **Dr. Friedman** – proposed toll roads, will they consider bike/ped safety? **Mr. Bonness** – FDOT is looking at multimodal [for MCORES]but bike/ped won't be included on I-75 [managed lanes study].

***Ms. Halman** moved to approve for moving forward, Chapter 6 Cost Feasible Plan of the 2045 Long Range Transportation Plan (LRTP. **Ms. Jacob** seconded. Passed unanimously.*

8. Reports & Presentations (May Require Committee Action)

A. FDOT D1 Districtwide Pedestrian-Bicycle Active Transportation Plan

Ms. Chesna – gave PPT presentation [MPO will provide electronic copy on request]. The Active Transportation Plan will build on existing local partner agencies plans, highlight gaps and needs for bike and ped infrastructure, prioritize improvement sand outline types of infrastructure intended along FDOT roadways by facility type. Prioritization metrics include safety, connectivity, equity, economic vitality, comfort – based on Level of Traffic Stress / Bicyclist Design user profiles analysis. Streetlight data used. FDOT's interactive mapping / analysis tool will be made available for public use.

B. Everglades City Bicycle & Pedestrian Master Plan

Ms. Huff and Ms. Fendrick gave update highlighting the planning process and the details contained in the exhibits in agenda packet. The Everglades City Council adopted the Bike/Ped Master Plan on October 6, 2020. Described Phase 3 road diet on Copeland Ave South to City limits and Broadway sidewalks. County has maintenance responsibility. Decided to expand road diet concept on Copeland Ave south to north segment. Concept approved by Everglades City Council in September. Will be first road diet approved in Collier County, good location due to low traffic demand. Phase 4 in a commercial area, no sidewalks, informal, overflow parking off edges of road. Roads tend to flood during heavy rains, king high tides, any improvements for sidewalks/bike lanes will require road reconstruction. Chokoloskee Causeway has 5' wide pathway, heavily used, 2-way traffic, not easy to pass, would like to expand multiuse path to make wider, add benches, tables, shade trees, shade structures, as a linear park. Fishing off bridge. Family friendly location, distance between Chokoloskee and Everglades City. Old Railroad ROW privately owned by local businessman, somewhat open, if can make a profit, to Rails-to-Trails proposal to connect Everglades City to Fakahatchee off-road. Phase 4 includes Everglades School, only 10% walk, ride or use golf cart to go to school. Most get picked up by bus. Want to encourage Safe Routes to Schools. Would like to develop more sidewalks and bike lanes in that area. [Everglades City is a designated Golf Cart Community, too.]

Ms. Huff asked whether Committee needs to take action to endorse the Plan. **Ms. McLaughlin** – the MPO's 2019 bicycle/Pedestrian Master Plan states that the Everglades City plan, when adopted, will be included in the MPO's BPMP by reference. [see p5], but it is always helpful to formally acknowledge the Committee's support.

Mr. Musico – *move to include the Everglades City Bicycle and Pedestrian Master Plan in the MPO's Bicycle and Pedestrian Plan by reference.* ***Dr. Friedman*** *– seconded motion. Passed unanimously.*

C. Public Meetings – Quorum Requirement

Ms. McLaughlin – unless Governor extends Executive Order, will have to establish physical quorum in meeting room, then committee can vote to allow other members to participate remotely. Public and consultants can participate remotely. CR 609/610 has technology installed to host hybrid virtual/in-person meetings.

9. Members Comments

Ms. Halman – unable to watch 2045 CFP video on home computer. **Ms. McLaughlin –** may be a bandwidth problem.

Ms. Peters just received notice via an email that [virtual] CTST meeting has just been scheduled for this Thursday at 10 am [10/22/20].

10. Distribution Items

A. 2045 LRTP Draft Chapter 4 – Revised

Ms. McLaughlin – provided at Committee's request. Note that a more current version was recently loaded on MPO website, LRTP page.

11. Next Meeting Date

November 17, 2020 – 9:00 a.m.
TBD whether will be virtual or hybrid

12. Adjournment

The meeting was adjourned at 11:35 a.m.

EXECUTIVE SUMMARY
COMMITTEE ACTION
ITEM 7A

Review and Comment on the Draft Local Roads Safety Plan

OBJECTIVE: For the Committee to review and comment on the Draft Local Roads Safety Plan (LRSP).

CONSIDERATIONS: The Congestion Management Committee prioritized the development of a Strategic highway Safety Plan (SHSP) in 2013. The name was subsequently changed to the Local Roads Safety Plan to differentiate it from FDOT's SHSP.

Tindale Oliver submitted a Statistical Analysis Technical Memorandum and a Recommendations Technical Memorandum after the CMC met in September. Those documents were reviewed by the CAC and TAC at their September meetings. The drafts were distributed to CMC members for review and comment and was posted on the MPO's website for public access. Even though it is still in draft form, the statistical analysis prepared for the LRSP was factored into the safety evaluation component of the Transportation System Performance Report and Action Plan approved by the Board on September 11, 2020. The LRSP is also referenced in the draft 2045 LRTP.

Tindale Oliver has addressed comments received thus far in the November 2020 draft of the Local Roads Safety Plan shown in **Attachment 1**. The draft LRSP will be reviewed by the BPAC, CMC, CAC, TAC and Community Transportation Safety Team (CTST) in November. The MPO Board will receive a briefing on December 11, 2020. The process of completing the LRSP will continue into calendar year 2021 in order to allow sufficient time for review.

STAFF RECOMMENDATION: That the Committee review and comment on the November 2020 Draft Local Roads Safety Plan.

Prepared By: Anne McLaughlin, MPO Director

Attachment:
1. November 2020 Draft Local Roads Safety Plan

Collier County MPO Local Road Safety Plan

Advisory Committee Review Draft November 2020

Prepared for

Prepared by

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SECTION 1: EXECUTIVE SUMMARY

Introduction and Intent

Collier MPO's Local Road Safety Plan (LRSP) is a collaborative and comprehensive plan that identifies transportation safety issues and provides a framework for reducing fatalities and serious injuries on highways and local public roads. This framework is developed through data analysis and public outreach, along with the development and adoption of recommendations. The data analysis step allows for the identification of emphasis areas which represent the most critical safety concerns within Collier County. Emphasis areas are then matched with strategies and action steps for reducing roadway fatalities and serious injuries.

These strategies will be grouped under the 4 Es of safety: Engineering, Enforcement, Education, and Emergency Response.

In addition to a thorough analysis of safety issues in Collier County and development of recommended strategies, other high-level objectives of this project include the following:

- Quality Control (QC) of Collier Crash Data Management System to ensure the best quality data for development of the Plan and identification of potential areas of improvement for crash data reporting.
- Develop implementable short-term recommendations to address critical safety issues.
- Provide input to Collier Long Range Transportation Plan (LRTP) to address long-term strategies and funding needs.
- Achieve buy-in/community support to move Collier County towards adoption of Vision Zero.

The Collier County LRSP incorporates strategies currently being promoted by the Federal Highway Administration (FHWA) and Florida Department of Transportation (FDOT) and will be implemented in close coordination with these agencies, Collier MPO Member Governments, and local law enforcement.

Key Conclusions and Recommendations

Based on the data analysis conducted as part of the Collier LRSP, four key Collier County LRSP emphasis areas were identified for further analysis and identification of high-crash corridors. The following crash types were identified as having a high severity ratio (constituting a greater percentage of severe crashes than all crashes) and accounting for a high overall number of severe crashes (more than 5% of total severe crashes):

- Bicycle
- Pedestrian
- Left-turn
- Angle
- Hit fixed object

Additionally, rear-end, single vehicle, head-on, and run-off-road crash types either account for a high frequency of severe crashes or have a high severity ratio. Based on similar characteristics and countermeasure profiles, these crash types can be combined to form the following Emphasis Areas:

- Non-Motorized (Bicycle and Pedestrian Crashes)
- Intersection (Left-Turn and Angle Crashes)
- Lane Departure (Hit Fixed Object, Single Vehicle, Head-On, and Run-Off-Road Crashes)
- Same Direction (Rear-End and Sideswipe Crashes)

Table 1-1 is a summary of Emphasis Area crash statistics excluding private roads and interstate highways. Each emphasis area is discussed further in Section 2: including maps and tables illustrating crash concentrations and high-crash corridors for each area.

Table 1-1: Emphasis Area Summary

	All Crashes	Non-Motorized	Intersection	Lane Departure	Same Direction
Total Crashes	38,887	862	6,819	3,829	23,419
Injury Crashes	3,469	448	1,030	567	1,111
Total Injuries	4,719	470	1,621	747	1,492
Total Serious Injuries	928	136	326	201	187
Fatal Crashes	148	38	39	53	10
Total Fatalities	160	38	40	64	10
Severity Ratio	2.4%	15.8%	4.8%	5.2%	0.8%
Percent of All Crashes	NA	2%	18%	10%	60%
Percent of Severe Injuries	NA	15%	35%	22%	20%
Percent of Fatalities	NA	24%	25%	40%	6%

In addition to the definition of Collier County-specific emphasis areas, the following key conclusions help to formulate data-driven recommendations for reducing crashes, injuries, and fatalities in Collier County:

1. **Roadway Safety Relative to Florida**: Collier County has fewer crashes, traffic injuries, and traffic fatalities than Florida as a whole as a function of population and daily vehicle miles of travel (VMT).
2. **Major Roadway Focus**: As is common in many urbanized Florida communities, a significant majority of public road traffic crashes, including severe injury crashes, occur along elements of the county's arterial and collector road network.
3. **Local Autonomy:** Because Collier County has a relatively sparse network of State highways and many County-maintained roadways that carry significant traffic volume, approximately 2/3 of crashes occur along County-maintained roadways. This means Collier County has substantial agency to self-manage safety outcomes on its roadway network.
4. **Driver Demographics:** Driver age data show that older road users do not disproportionately contribute to crashes in Collier County; however, inferential time-of-day data suggest that older drivers (age 55+) also have less exposure to nighttime and rush-hour driving.
5. **Moderate Enforcement:** Fewer traffic citations per capita and per vehicle mile of travel are issued in Collier County than in Florida as a whole and within a group of similarly-sized coastal counties.
6. **High Severity Emphasis Areas:** Certain crash types contribute disproportionately to incapacitating injury and fatal crashes. Collectively, non-motorized road user, angle, left-turn, and lane departure crashes account for 30% of all crashes but result in 72% of severe injuries and 89% of fatalities.
7. **High Frequency Emphasis Area:** Though significantly less likely to result in severe injury than the crash types noted above, rear-end and sideswipe crashes result in a significant number of incapacitating injuries due to their frequency.

Based on the LRSP Emphasis Areas and the summary conclusions described above, infrastructure and non-infrastructure strategies have been identified. These are summarized in Table 1-2 and 1-3 and described in detail in Section 4:.

Table 1-2: Infrastructure Strategies Matrix

Infrastructure Strategies	Non-Motorized	Intersection	Lane Departure	Same Direction
Speed Management	•	•	•	•
Alternative Intersections (ICE Process)	•	•		•
Intersection Design Best Practices for Pedestrians	•			
Median Restrictions/Access Management		•		•
Right Turn Lanes	?			•
Signal Coordination	?			•
Rural Road Strategies including:				
• Paved shoulder	•		•	
• Safety edge			•	
• Curve geometry, delineation, and warning			•	
• Bridge/culvert widening/attenuation			•	
• Guardrail/ditch regrading/tree clearing			•	
• Isolated intersection conspicuity/geometry		•		
Shared Use Pathways, Sidewalk Improvements	•			
Mid-Block Crossings & Median Refuge	•			
Intersection Lighting Enhancements	•	•	•	
Autonomous Vehicles (Longer-Term)	TBD	•	•	•
(= Applicable Strategy ? = Possible Contra-indications				

Table 1-3: Non-Infrastructure Strategies Matrix

Non-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

Plan Organization

The Collier LRSP is divided into three main sections as follows:

- **Data and Analysis:** This section includes an analysis of the County's traffic crash history, a comparison of Collier County traffic citation data with the State of Florida and with "peer" counties, and a discussion of the four emphasis areas described above. The Data and Analysis Section of the LRSP also includes "Key Conclusions" derived from the analysis of the County's traffic crash and citation data.
- **Recommendations:** This section begins with a problem statement that builds from the "Key Conclusions" part of the Data and Analysis Section. Next Recommendations related to both infrastructure and non-infrastructure strategies are presented where "infrastructure" refers to public roadway design and operations and "non-infrastructure" refers to education/marketing, law enforcement, and other strategies.
- **Implementation Plan:** The LRSP Implementation Plan shows potential processes for addressing each of the infrastructure and non-infrastructure strategies identified in the Recommendations Section of the Report. Implementation measures are categorized by timeframe (short-term, longer-term) and by order of magnitude cost. The Implementation Plan also includes recommendations for evaluating and updating the Plan.

In addition to the three main report section, the LRSP also includes the following appendices:

- **Glossary of Technical Terms (Appendix 1):** This is a glossary of technical terms used in the LRSP and is provided to make the document more legible for audiences that are not familiar with traffic engineering terms.
- **Traffic Crash Data Quality Control Technical Memorandum (Appendix 2):** As part of the LRSP, a five year history of Collier County's crash data was manually reviewed to ensure fatal and incapacitating injury crashes and non-motorized crashes were located correctly and that key data attributes were consistent with the crash report collision diagram and narrative. This appendix summarizes the methodology and findings of that process.
- **Community Survey Summary (Appendix 3):** As part of the public outreach process for the LRSP, a web-based community survey was distributed to better understand the perception and attitudes of Collier County residents and workers with respect to traffic safety. The survey questions and findings are provided in this appendix.

SECTION 2: STATISTICAL ANALYSIS

Introduction and methodology

Introduction

A critical input into the Collier Local Road Safety Plan (LRSP) is analysis of traffic crash data and other relevant quantitative data inputs. This Technical Memorandum provides a description of the data analysis methodology and findings used to inform the Collier LRSP. Key elements of this memorandum include the following:

- Analysis of countywide crash data distributions and comparison with statewide norms
- Analysis of traffic citation data for Collier County and comparisons with statewide citation data and citation data from peer counties
- Establishment of Collier County-specific safety emphasis areas and identification of high-crash locations based on Safety Emphasis Areas
- Key Conclusions

Methodology

The Collier LRSP uses traffic crash data from the Collier Crash Data Management System (CDMS) for the years 2014 to 2018. As described in the LRSP Crash Data Quality Control Memorandum, fatal, incapacitating injury, and bicycle/pedestrian crash reports were manually reviewed and key data fields were updated to ensure accuracy.

Next, crashes that occurred in parking lots and along private roads were removed from the data sample, and those that occurred along the county's major roadway network were assigned ID numbers from the major roadway database. This was done using a spatial query in which crashes within 100 ft of a major roadway segment were assigned to that segment. Data from Collier County's Annual Update and Inventory Report (AUIR) were then used to understand crash data distributions in the context of roadway system vehicle miles of travel (VMT), roadway characteristics, and other factors.

To evaluate traffic citations, data were collected from Florida Department of Highway Safety and Motor Vehicles (DHSMV) crash and citation reports and statistics web page. Data from Collier County, the State of Florida, and similar-size coastal counties were downloaded as Excel spreadsheets and compared.

A Glossary of Terms used in this Technical Memorandum is provided as Appendix A. Appendix B provides an overview of a public outreach survey that was disseminated by the Collier Metropolitan Planning Organization (MPO) to help understand public perceptions of traffic safety in Collier County.

Crash Data analysis

This section of the LRSP Statistical Analysis Technical Memorandum summarizes the following traffic crash data distributions:

- Comparison of State and County Crash Rates

- Roadway Functional Class
- Major Roadway Maintenance Authority
- Major Roadway Number of Lanes
- Area Type (Urban/Rural)
- Lighting Condition
- Crash Type
- (At Fault) Driver Age
- Temporal Trends (Annual and Monthly)

State of Florida Crash Rate Comparison

Using data from FLHSMV (for consistency) the average number of reported crashes, fatalities, and injuries from the State of Florida and Collier County are shown in Table 2-1. These crash totals are represented as crash rates as a function of millions of daily vehicle miles of travel (DVMT) and as a function of 100,000 persons. The data shows that Collier County has fewer crashes and traffic fatalities and injuries than the State of Florida in terms of both population and vehicle miles of travel.

Table 2-1: Comparison of Collier County and State of Florida Crash Rates

	Florida	Collier County	Collier vs. State
Crashes	383,862	4,962	NA
Fatalities	2,972	38	NA
Injuries	242,709	2,829	NA
Daily VMT	582,491,060	9,939,709	76%
Crashes/m DVMT	659	499	76%
Fatalities/mDVMT	5.1	3.8	75%
Injuries/mDVMT	417	285	68%
Population	20,159,183	351,121	NA
Crashes/100k Pop.	1,904	1,413	74%
Fatalities/100k Pop.	15	11	73%
Injuries/100k Pop.	1,204	806	67%

Crash Distribution by Roadway Functional Class

Using the location data for each traffic crash report and a GIS layer representing Collier County's major road network (arterial and collector roads), all Collier County crashes for 2014–2018 were either assigned to a major roadway segment or classified as a local roadway crash. Figure 2-1 shows the distribution of all crashes and severe crashes in Collier County. Approximately 3/4 of crashes occurred along the county's major signalized arterial and collector road network, with fewer than 10% occurring along I-75 and fewer than 20% occurring along local streets.

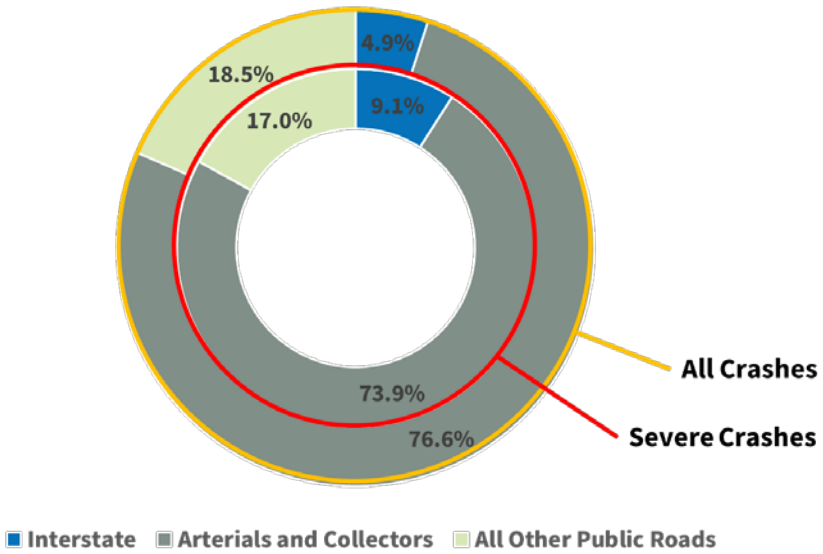


Figure 2-1: Crashes by Roadway Functional Classification

To put this data into context, Table 2-2 show how automobile traffic is distributed across Collier County's roadway network as compared with roadways statewide. The table shows that proportionally fewer vehicle miles of travel (VMT) in Collier County is handled by limited access highways (interstate, turnpike, etc.) while a greater share of VMT is handled by arterial roads and major collector roadways. These types of roadways tend have a higher number of reported crashes per VMT than limited access highways or lower-speed minor collectors and local roads.

Table 2-2: VMT Distribution of Collier County and Florida by Functional Classification

Roadway Functional Classification	Florida		Collier		Crash Characteristics
Interstate, Turnpike & Freeways	26%		21%		Limited Access, Low Crashes/VMT
Other Principle Arterials	25%	50%	16%	59%	Higher Speed, More Conflict Points
Minor Arterials	15%		29%		
Major Collectors	11%		14%		
Minor Collectors	2%	23%	2%	20%	Lower Speed, Less Severe Crashes
Locals	21%		18%		

Crash Distribution of Major Roadway Crashes by Maintenance Authority

To understand how Collier County, the Florida Department of Transportation (FDOT), and Naples and Marco Island each contribute to managing safety along the county's road network, it is useful to look at how crashes are distributed based on roadway ownership/maintenance responsibility. Figure 2-2 shows the distribution of all crashes, severe crashes, and vehicle miles of travel along the county's major roadway network excluding I-75.

The percentage of all crashes and severe crashes is more or less proportional to each maintenance jurisdictions' overall VMT, with a slightly higher proportion of severe crashes occurring along State roads compared with County-maintained roads. In more metropolitan areas of Florida, there is a

denser grid of State-maintained arterial roads than in Collier County. Accordingly, up to half of VMT and half of all crashes in those jurisdictions occur on the State Highway System (SHS). In Collier County, County-maintained major roadways that look and function like State highways carry a greater share of the load and therefore account for a more significant proportion of crashes.

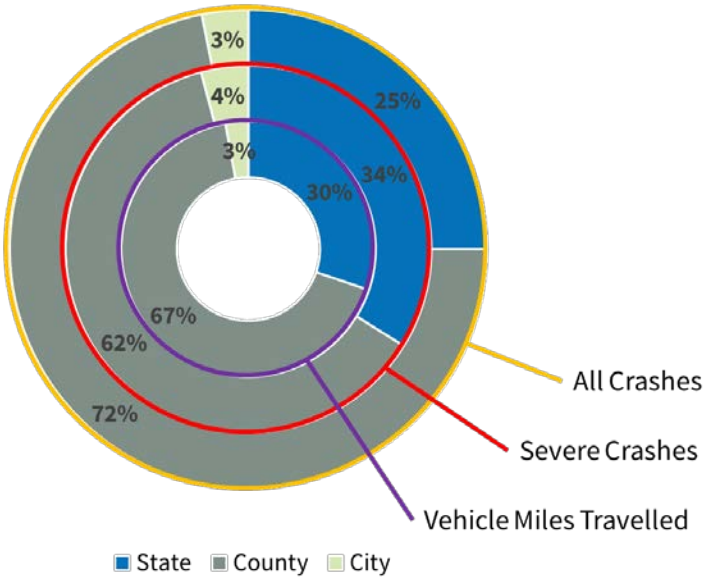


Figure 2-2: Crash Distribution by Major Roadway Maintenance Authority

Crash Distribution of Major Roadway Number of Lanes

Another way to understand Collier County's crash history, especially when comparing concentrations of severe crashes, is to look at the distribution of crashes by the number of roadway lanes along the major roadway network (excluding I-75). Referring to the inner ring of Figure 2-3, roadways with six or more lanes account for half of arterial and collector roadway VMT and overall crashes but only 38% of severe crashes. Conversely, two-lane roadways account for 31% of VMT but 41% of severe crashes.

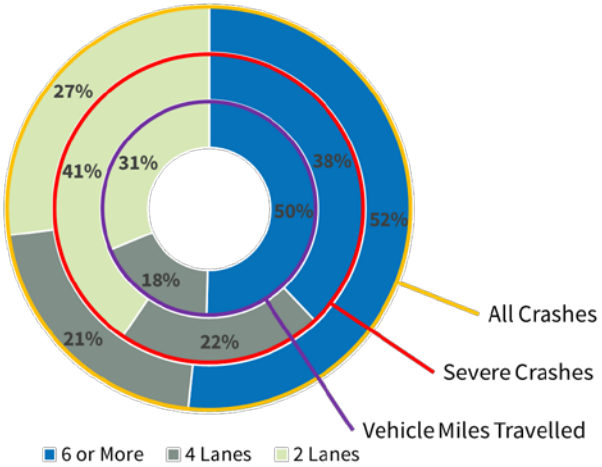


Figure 2-3: Crash Distribution by Major Roadway Number of Lanes

Crash Distribution by Area Type

The proportion of all crashes, severe crashes, and VMT was also compared for the western, more urban part of the county and the eastern, more rural part of the county using CR-951/Collier Boulevard as an approximate meridian. Including travel on I-75, approximately 60% of all VMT occurs on major roadways to the west of and including CR-951, and these roadways account for nearly 3/4 of all crashes and about 57% of severe crashes.

Roadways in the eastern, more rural part of the county account for proportionally fewer crashes overall but a somewhat higher proportion of severe crashes compared with VMT. These data, combined with the prior analysis of crash severity by number of lanes, indicate a potential issue with rural highway safety, including a potential for single-vehicle (lane departure) crashes.

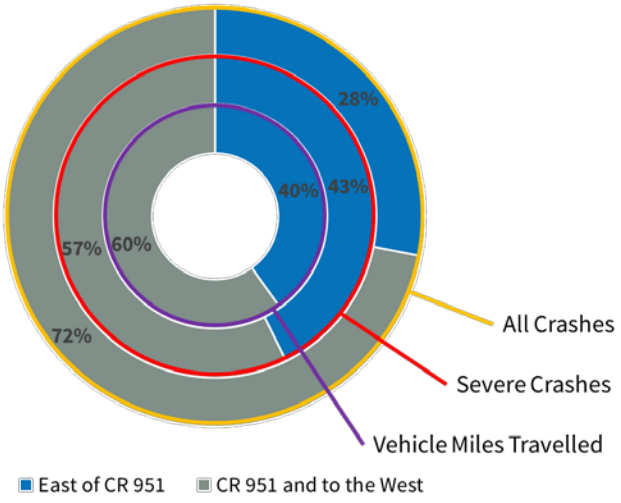


Figure 2-4: Major Roadway Crashes by Sub-Area

Crash Distribution by Lighting Condition

In addition to the roadway characteristics of the county's crash history, it is also helpful to understand key environmental conditions. One of the most useful of these is the lighting conditions in which crashes occurred. Because crash report coding of lighting condition does not always reflect whether nighttime lighting is functionally adequate (i.e., meets applicable AASHTO or FDOT standards), it is better to focus on whether crashes occurred during daylight or non-daylight conditions as a primary indicator while considering the specific non-daylight conditions as a secondary measure.

The chart on the left of Figure 2-5 compares the observed lighting condition of all crashes and severe crashes, and the chart on the right shows a comparison of all non-motorized crashes, severe non-motorized crashes and all crashes. The overall percentage of non-daylight crashes (22%) is about typical for Florida (25%). These data also show that severe crashes are more likely to occur outside of daylight hours for both motorized and non-motorized crashes.

The preponderance of severe non-motorized crashes during non-daylight hours is also a common finding statewide and nationally and reflects the fact that driver ability to observe, react, and respond to non-motorized users in the roadway is drastically diminished at night due to the frequent lack of adequate running lights on bicycles or use of retroreflective clothing by cyclists and pedestrians.

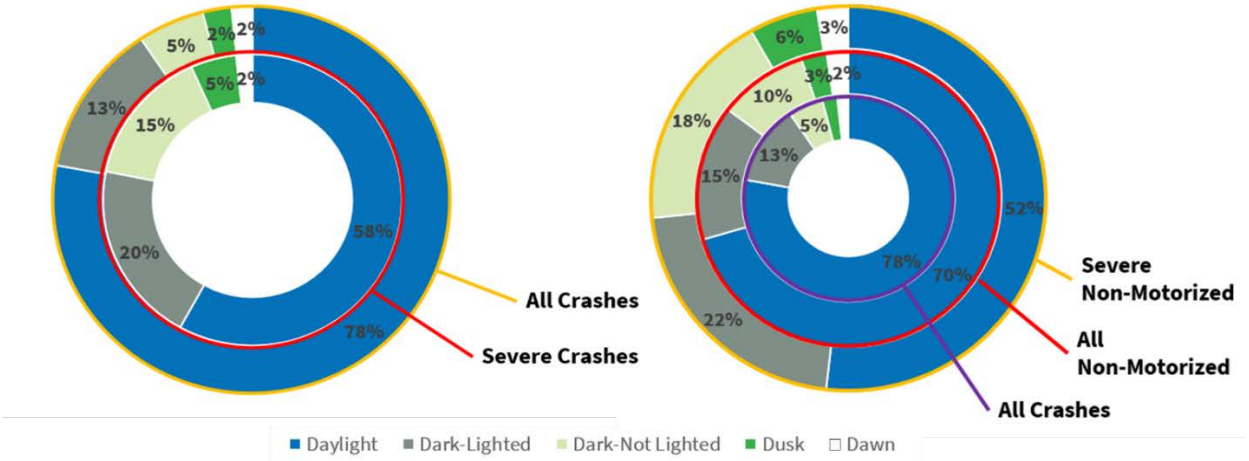


Figure 2-5: Lighting Conditions

Crash Type Distribution

A critical way of looking at Collier County's crash history is to understand what types of crashes occur most frequently and what types result in the most incapacitating injuries and fatalities. **Error! Reference source not found.** shows all crashes ranked by crash type and the percentage of severe crashes for each. These data show that rear-end crashes are the most common overall crash type (nearly 50%) and result in the highest overall number of severe crashes, but the relative severity of rear-end crashes is lower than many other crash types.

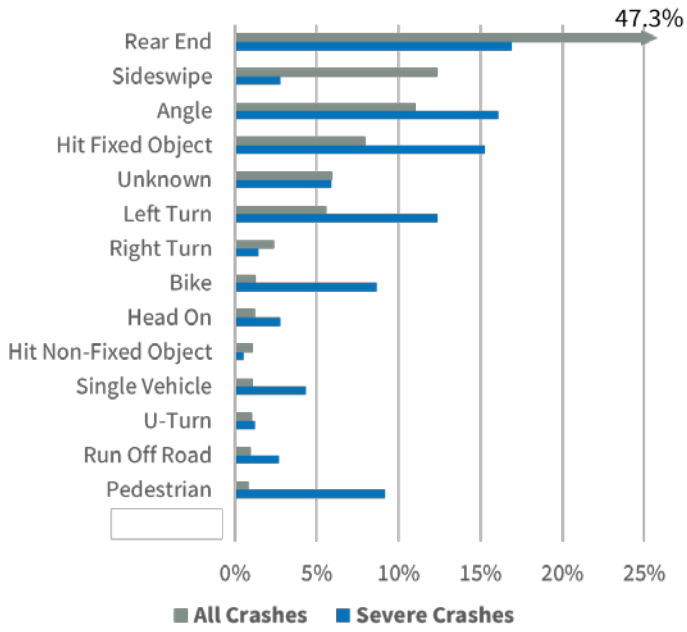


Figure 2-6: Crash Type Distribution

Table 2-3 shows crash type and severity data shown in Figure 2-7 presented as a two-by-two matrix. The top left quadrant represents crash types that have a high severity ratio (account for a greater percentage of severe crashes than overall crashes) and also a high absolute number of severe crashes (account for more than 5% of all severe crashes). This quadrant is the most important strategically since eliminating a relatively small percentage of overall crashes can have a relatively large effect in reducing life-altering injuries and fatalities.

Table 2-3: Crash Type and Severity Matrix

	High Severity Ratio	Low Severity Ratio
High Severity Frequency (> 5% of All Severe Crashes)	Bike Pedestrian Left-Turn Angle Hit Fixed Object	Rear-End Unknown/Other
Low Severity Frequency (<5% of All Severe Crashes)	Head-On Single Vehicle U-Turn Run Off Road	Sideswipe Right-Turn Hit Non-Fixed Object

Driver Age

In addition to understanding where and how crashes occur in Collier County, it is also useful to consider demographic information about the people involved in crashes. Figure 2-7 shows the relative contribution of different age drivers to crashes countywide and also shows the extent to which each age bracket contributes to the county's overall population. These data indicate that young drivers are more likely to be cited as "at fault" in crashes both in absolute terms and in proportion to their representation in the county's population.

Although it is common to find that younger drivers are at a greater risk of being involved in a crash, it is unusual to find that middle-age adult drivers are over-represented compared to older drivers. To understand these data better, crash time-of-day data were compared to at-fault driver age for drivers ages 54 and younger and 55 and up. Figure 2-7 confirms that some of the difference between older and younger driver risk is related to time of day.

Across all time periods, drivers age 54 and younger account for 70% of all crashes, and drivers age 55 and older account for the remaining 30% of all crashes. Accordingly, the younger age group is over-represented in late-night crashes and also during morning and afternoon rush hours and in the evening. Conversely, older drivers very rarely are at fault in late-night crashes but are over-represented during the midday period.

Although not definitive proof, these data imply that part of the lower risks attributed to older drivers is that they are less likely to drive at night and may also avoid driving during the most congested times of day.

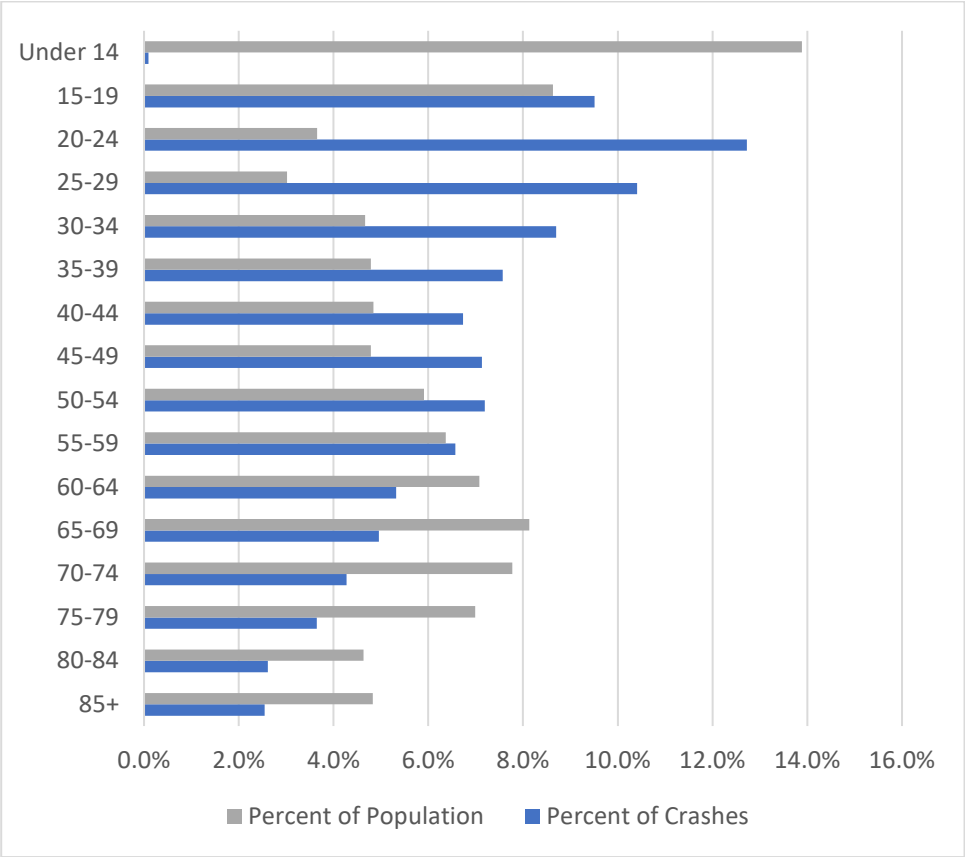


Figure 2-7: At Fault Driver Age

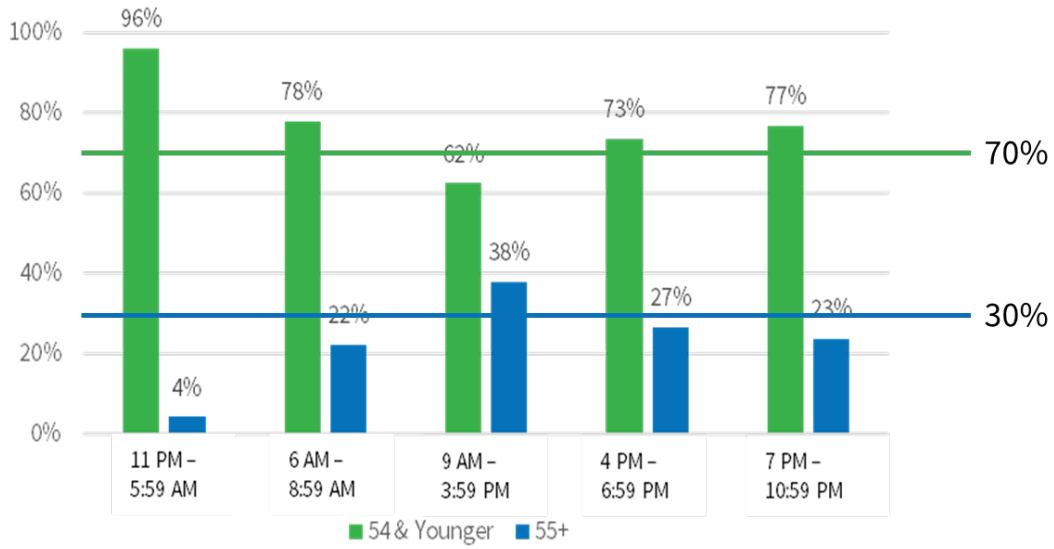


Figure 2-8: Crash Distribution for Age 54 and Younger vs. Age 55 and Older

Temporal Trends

Figure 2-9 shows annual crash frequencies for crashes in Collier County for 2014–2018. Reported crashes ranged from a low of approximately 7,600 crashes in 2014 to a high of nearly 9,000 crashes in 2016. Nominally, the trend in crash frequency is increasing by about 130 crashes per year; however, the year-over-year data are somewhat erratic, resulting in a low R2 value of about 0.20.

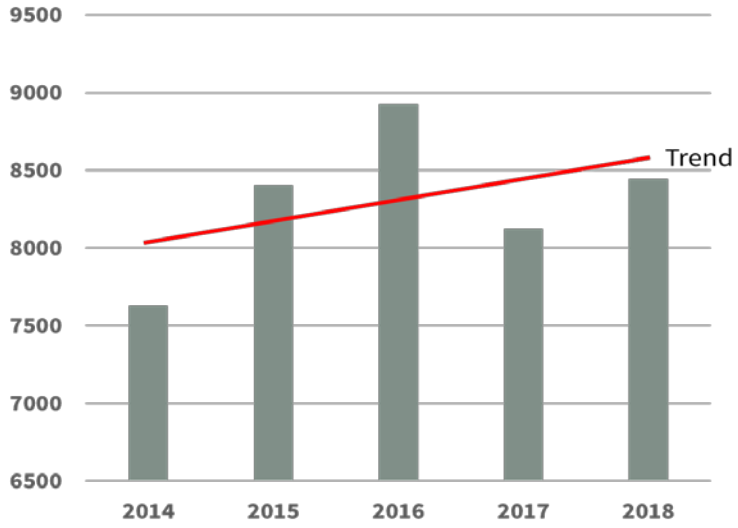


Figure 2-9: Crash Trend, 2014–2018

Figure 2-10 shows average monthly crash frequencies Collier County for 2014–2018. Over this period, there was an average of approximately 700 reported crashes per month, with a monthly distribution that generally reflects the overall seasonal traffic patterns exhibited in Collier County.

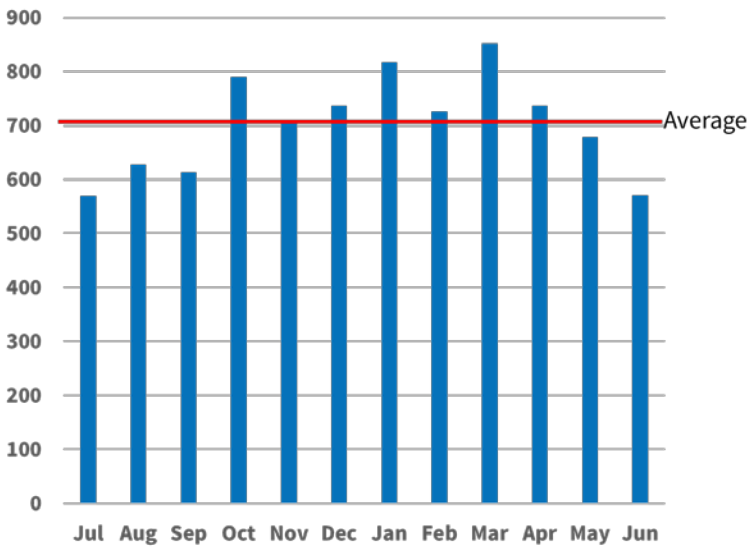


Figure 2-10: Average Crashes per Month

Traffic Citation Analysis

Traffic citation data are another lens through which to analyze traffic safety in Collier County. For the LRSP, citation data for 2014–2018 were obtained from the Florida Department of Highway Safety and Motor Vehicles (DHSMV) for Collier County, the State of Florida, and several "peer" counties.

Figure 2-6 shows the most common moving violations recorded in Collier County. "Exceeding the Posted Speed" (speeding) accounts for more than half of all moving violations, followed by "Disregard Traffic Control Device" (e.g., ran stop sign or yield sign) and "Disregard Traffic Signal" (ran red light).

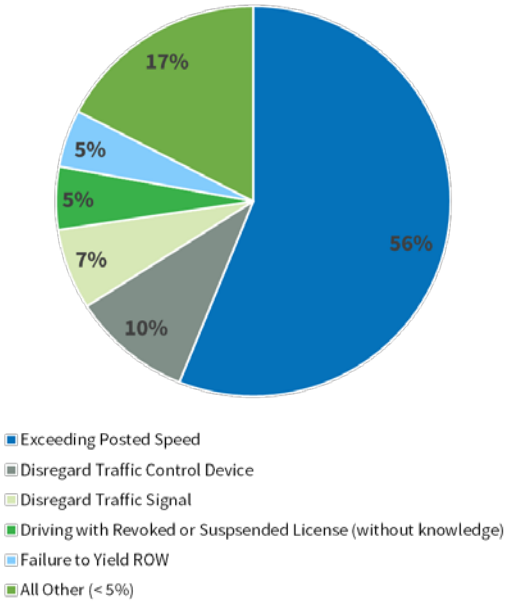


Figure 2-6: Most Common Collier County Moving Violations

Figure 2-7 shows the distribution of traffic citations by issuing agency for Collier County. These data indicate that the Collier County Sheriff's Office accounts for about 45% of all traffic citations, followed by the Florida Highway Patrol at 39%. Naples and Marco Island collectively issue about 15% of the citations countywide.

Table 2-4 compares traffic citation activity in Collier County with similarly-sized coastal Florida counties and Florida overall. These data suggest that Collier County law enforcement agencies issue fewer citations on average than the State of Florida and most peer counties in terms of both citations per capita and citations per vehicle miles of travel.

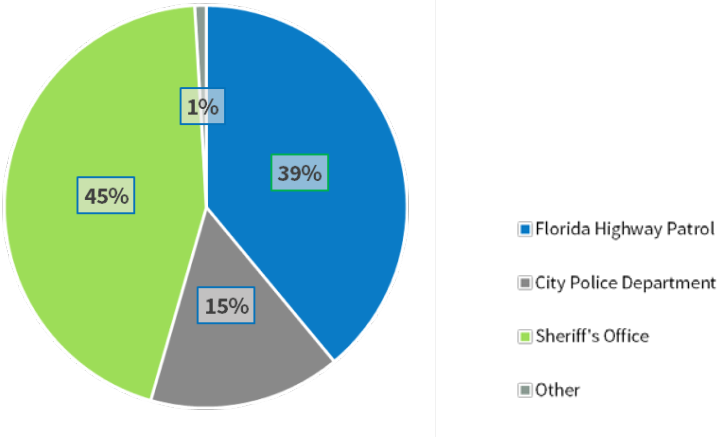


Figure 2-7: Traffic Citation by Law Enforcement Agency (LEA)

Table 2-3: Traffic Citations per Capita and per VMT Comparison

State and County	Violations (2014–18)	Total VMT (2014–18)	Citations per 100K VMT	Population	Citations per 100K Pop.
Florida	1,978,741	582,491,060	340	20,159,183	9,816
Collier	22,136	9,939,709	223	351,121	6,304
Brevard	29,592	17,784,554	166	568,367	5,206
Escambia	24,176	9,657,445	250	310,556	7,785
Lee	83,614	20,667,894	405	682,448	12,252
Manatee	23,208	10,038,803	231	358,616	6,472
Sarasota	33,880	12,052,890	281	400,694	8,455

Table 2-5 shows the types of criminal, non-criminal (moving), and non-moving traffic violations in Collier County compared with Florida. Generally, high-frequency citation types in Collier County align with those issued statewide; however, the following exceptions are noteworthy:

- Collier County issues a lower percentage of citations for driving with a suspended or revoked driver's license. This may be due, in part, to the relative affluence of Collier County compared with Florida.
- Collier County does not have a substantial number of red-light running camera violations. These account for approximately 15% of moving violations statewide.

Table 2-4: Traffic Citations (State Totals vs. Collier County) Collier LRSP Emphasis Areas

COLLIER COUNTY			STATE TOTALS		
Infraction	Average Annual Citations	Percent of Category	Infraction	Average Annual Citations	Percent of Category
CRIMINAL					
DR/DL/Sus/RV	1,287	25%	DR/DL/SUS/RV	149,717	37%
No/Imp/Expired Driver's License	1,243	24%	No/Imp/Expired Driver's License	87,385	22%
DUI	1,173	23%	DUI	45,791	11%
Other Crime	349	7%	No/Imp/Exp TAG	36,220	9%
No/Imp/Exp. Tag	240	5%	Other Crime	20,857	5%
All Other (< 5%)	400	9%	All Other (<5%)	30,648	8%
NON-CRIMINAL (MOVING)					
Exceeding Posted Speed	12,428	56%	SPD Post Zone	746,886	38%
Disregard Traffic Control Device	2,182	10%	Red Light Camera	302,601	15%
Disregard Traffic Signal	1,480	7%	Careless Dr	203,096	10%
Driving with Revoked or Suspended License (w/o knowledge)	1,154	5%	Disregard Traffic Control Device	116,733	6%
Failure to Yield ROW	1,053	5%	UNK DR/DL/SUS/RV	93,217	5%
All Other (< 5%)	3,850	17%	All Other (<5%)	516,207	26%
NON-MOVING INFRACTIONS					
Exp/Fail Display Tag	2,637	25%	Exp/Fail/ Display Tag	253,969	28%
No Proof of Insurance	2,518	24%	No Proof of Insurance	215,538	24%
Seat Belt Viol	2,215	21%	Seat Belt Viol	159,253	18%
Other	1,185	11%	Other	81,346	9%
Exp/Fail Display DL	1,097	10%	Exp/Fail Disp DL	67,964	8%
Def/Unsafe Equip	536	5%	Def/Unsafe Equip	63,465	7%
All Other (<5%)	199	2%	All Other (<5%)	30,158	3%

Based on the data analysis described, four key Collier County LRSP emphasis areas were identified for further analysis and identification of high-crash corridors. The following crash types were identified as having a high severity ratio (constituting a greater percentage of severe crashes than all crashes) and accounting for a high overall number of severe crashes (more than 5% of total severe crashes):

- Bicycle
- Pedestrian
- Left-turn
- Angle
- Hit fixed object

Additionally, rear-end, single vehicle, head-on, and run-off-road crash types either account for a high frequency of severe crashes or have a high severity ratio. Based on similar characteristics and countermeasure profiles, these crash types can be combined to form the following Emphasis Areas:

- Non-Motorized (Bicycle and Pedestrian Crashes)
- Intersection (Left-Turn and Angle Crashes)
- Lane Departure (Hit Fixed Object, Single Vehicle, Head-On, and Run-Off-Road Crashes)
- Same Direction (Rear-End and Sideswipe Crashes)

Table 2-6 is a summary of Emphasis Area crash statistics excluding private roads and interstate highways. Each emphasis area is discussed further in this section, including a summary of high-crash corridors and a "heat map" showing crash concentrations for each emphasis areas. Because much of Collier County is undeveloped, the maps focus on the western, urban part of the county and the area around Immokalee and Marco Island.

Table 2-5: Emphasis Area Summary

	All Crashes	Non-Motorized	Intersection	Lane Departure	Same Direction
Total Crashes	38,887	862	6,819	3,829	23,419
Injury Crashes	3,469	448	1,030	567	1,111
Total Injuries	4,719	470	1,621	747	1,492
Total Serious Injuries	928	136	326	201	187
Fatal Crashes	148	38	39	53	10
Total Fatalities	160	38	40	64	10
Severity Ratio	2.4%	15.8%	4.8%	5.2%	0.8%
Percent of All Crashes	NA	2%	18%	10%	60%
Percent of Severe Injuries	NA	15%	35%	22%	20%
Percent of Fatalities	NA	24%	25%	40%	6%

Emphasis Area 1: Non-Motorized Crashes

Non-motorized crashes (crashes in which a pedestrian or bicyclist are involved) are a statewide Emphasis Area and an important component of traffic safety challenges in Collier County. These crashes account for only 2% of all reported crashes in Collier County but constitute 15% of the county's severe injury crashes and 24% of the county's crash fatalities.

Table 2-6 shows a list of major roadway corridors with the most non-motorized crashes, and Figure 2-8 is a “heat map” of non-motorized user crashes. Consistent with prior Collier MPO bicycle/pedestrian safety analyses, key focus areas include the area defined by US-41 (Tamiami Trail), Airport Road, and Davis Boulevard and SR-29 through Immokalee. Other critical corridors are listed in Table 2-7 and highlighted in Figure 2-9.

Table 2-6: Non-Motorized High Crash Corridors

On Street	From Street	To Street	Crashes	Fatal Crashes	Incap. Injury Crashes
Airport Rd	US-41 (Tamiami Trail)	Davis Blvd	31	2	3
Tamiami Trail E	Davis Blvd	Airport Rd	24	2	2
Tamiami Trail N	Vanderbilt Beach Rd	Immokalee Rd	22	1	0
SR 29	1st St	9th St	21	1	4
Bayshore Dr	Thomasson Dr	US-41 (Tamiami Trail)	20	0	3
Radio Rd	Livingston Rd	Santa Barbara Blvd	20	0	2
SR 29	9th St	Immokalee Dr	19	0	5
Tamiami Trail E	Airport Rd	Rattlesnake Hammock Rd	19	0	2
Collier Blvd	Vanderbilt Beach Rd	Immokalee Rd	16	0	1
Lake Trafford Rd	Carson Rd	SR-29	16	1	3
Immokalee Rd	Stockade Rd	SR-29	15	0	2
Davis Blvd	Lakewood Blvd	County Barn Rd	14	0	2
SR-29	Immokalee Dr	CR-29A North	14	1	2
Airport Rd	Davis Blvd	North Rd	13	0	2
Airport Rd	Radio Rd	Golden Gate Pkwy	13	0	1

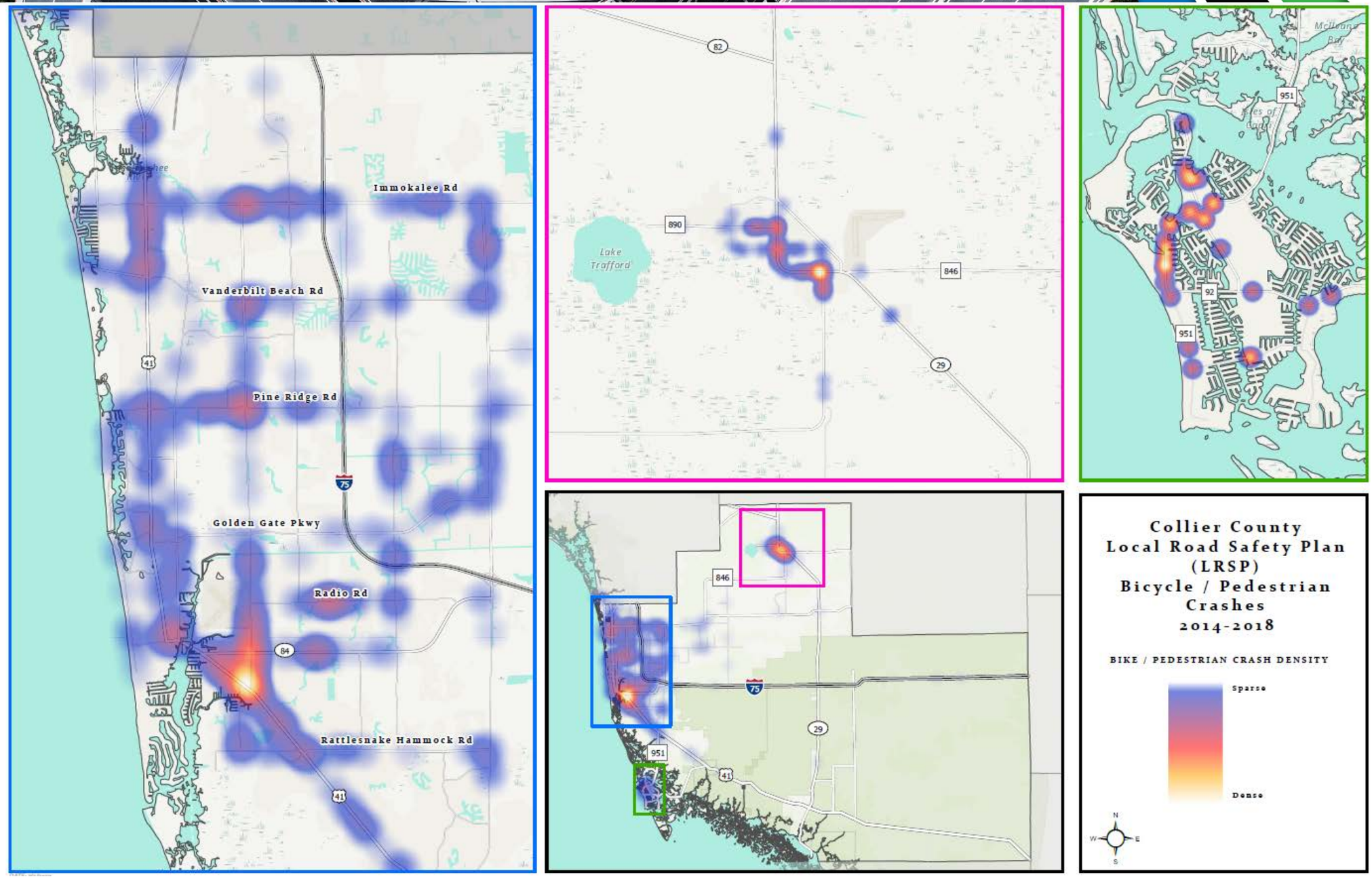


Figure 2-8: Non-Motorized Crash Heat Map

Emphasis Area 2: Intersection Crashes (Angle and Left-Turn)

Angle and left-turn crashes involve either two motor vehicles traveling at roughly perpendicular directions or a motor vehicle making a left turn across the path of an oncoming vehicle. Because these crashes are often extremely violent, high-energy events, they are more likely to result in incapacitating or fatal injuries than crashes in which vehicles are traveling in the same direction. These crashes account for only 18% of all crashes but 35% of severe injuries and 25% of fatalities.

Table 2-8 shows a list of major roadway corridors with the most angle and left turn crashes based on the data mapped in Figure 2-9. Many of the high-crash corridors include one or more high-volume arterial intersections; however, some corridors, including Golden Gate Parkway (Santa Barbara Blvd. to Collier Blvd.) include crash concentrations associated with lower-volume intersections.

Table 2-7: Intersection (Angle and Left-Turn) High-Crash Corridors

On Street	From Street	To Street	Crashes	Fatal Crashes	Incap. Injury Crashes
Golden Gate Pkwy	Santa Barbara Blvd	Collier Blvd	190	0	4
Tamiami Trail N	SR-84 (Davis Blvd)	CR-851 (Goodlette Rd S)	136	0	1
Collier Blvd	Golden Gate Pwky	Green Blvd	111	1	4
Tamiami Trail N	12th Ave	Park Shore Dr/ Cypress Woods Dr	106	0	4
Goodlette-Frank Rd	US-41 (Tamiami Trail)	Golden Gate Pkwy	87	0	3
Tamiami Trail N	Park Shore Dr/ Cypress Woods Dr	Pine Ridge Rd/ Seagate Dr	84	1	2
Santa Barbara Blvd	Golden Gate Pkwy	Green Blvd	82	0	1
Airport Rd	Radio Rd	Golden Gate Pkwy	81	1	1
Airport Rd	Pine Ridge Rd	Orange Blossom Dr	74	2	1
Goodlette-Frank Rd	Golden Gate Pkwy	Pine Ridge Rd	74	0	4
Pine Ridge Rd	Airport Rd	Livingston Rd	73	0	2
Collier Blvd	Vanderbilt Beach Rd	Immokalee Rd	67	0	4
SR-29	9th St	Immokalee Dr	67	0	2
Tamiami Trail N	Pine Ridge Rd/ Seagate Dr	Gulf Park Dr	65	1	4
Tamiami Trail E	Airport Rd	Rattlesnake Hammock Rd	63	1	2

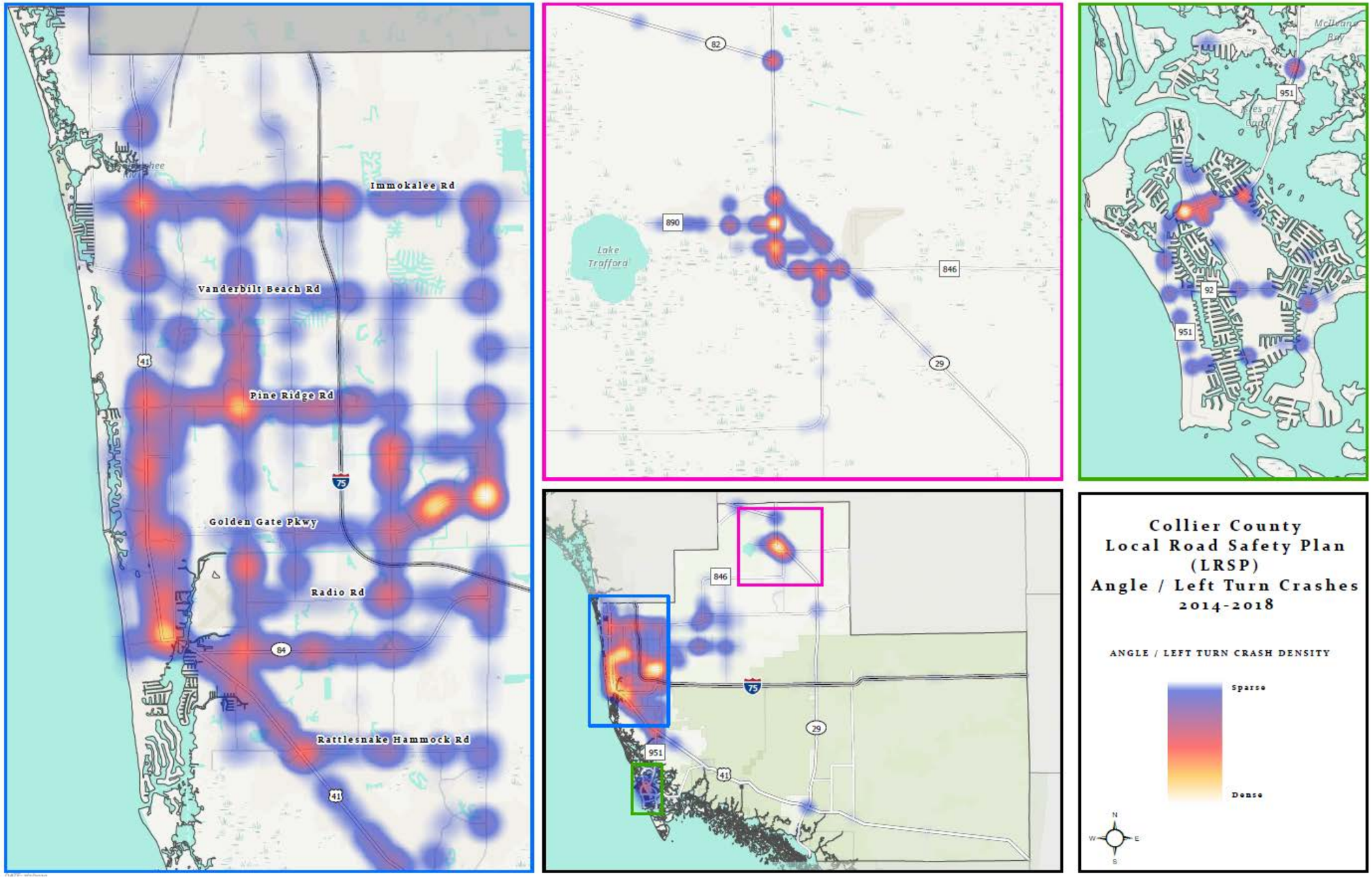


Figure 2-9: Angle and Left Turn Crash Heat Map

Emphasis Area 3: Lane Departure

Lane departure crashes, referred to as "run-off-road" crashes, include crash types in which a single vehicle leaves the roadway and either strikes a fixed object or otherwise crashes. Head-on crashes, though rare events, are included in this Emphasis Area as they are precipitated by similar circumstances. Because these types of crashes often involve vehicles traveling at high speeds, they are more likely to have severe outcomes. In Collier County, roadway departure crashes account for only 10% of overall crashes but are responsible for 22% of severe injuries and 40% of fatalities.

Table 2-8 shows a list of major roadway corridors with the most lane departure crashes and Figure 2-10 shows a "heat map" of non-motorized user crashes. While more lane departure crashes occur in the along busier roadways west of and including Collier Boulevard, approximately 40% of these crashes occur along rural highways and local roadways in the eastern part of Collier County.

Table 2-8: Lane Departure High Crash Corridors

On Street	From Street	To Street	Crashes	Fatal Crashes	Incap. Injury Crashes
Immokalee Rd	Collier Blvd	Wilson Blvd	51	1	3
Immokalee Rd	Oil Well Rd	Stockade Rd	45	0	4
Golden Gate Blvd	Collier Blvd	Wilson Blvd	43	0	2
Airport Rd	Radio Rd	Golden Gate Pkwy	39	0	1
Airport Rd	Pine Ridge Rd	Orange Blossom Drive	35	0	1
Goodlette-Frank Rd	US-41 (Tamiami Trail)	Golden Gate Pkwy	35	0	1
Collier Blvd	Vanderbilt Beach Rd	Immokalee Rd	33	0	2
Tamiami Trail N	12th Ave	Park Shore Dr/ Cypress Woods Dr	33	0	0
Tamiami Trail N	SR-84 (Davis Blvd)	CR-851 (Goodlette Rd S)	33	0	0
Collier Blvd	US-41 (Tamiami Trail)	Rattlesnake Hammock Rd	32	0	2
Collier Blvd	Rattlesnake Hammock Rd	Davis Blvd	31	0	2
Collier Blvd	Mainsail Drive	Manatee Rd	29	0	0
Tamiami Trail E	Rattlesnake Hammock Rd	Treetops Dr	29	0	2
Vanderbilt Beach Rd	Logan Blvd	Collier Blvd	28	0	1
Pine Ridge Rd	Airport Rd	Livingston Rd	28	0	1

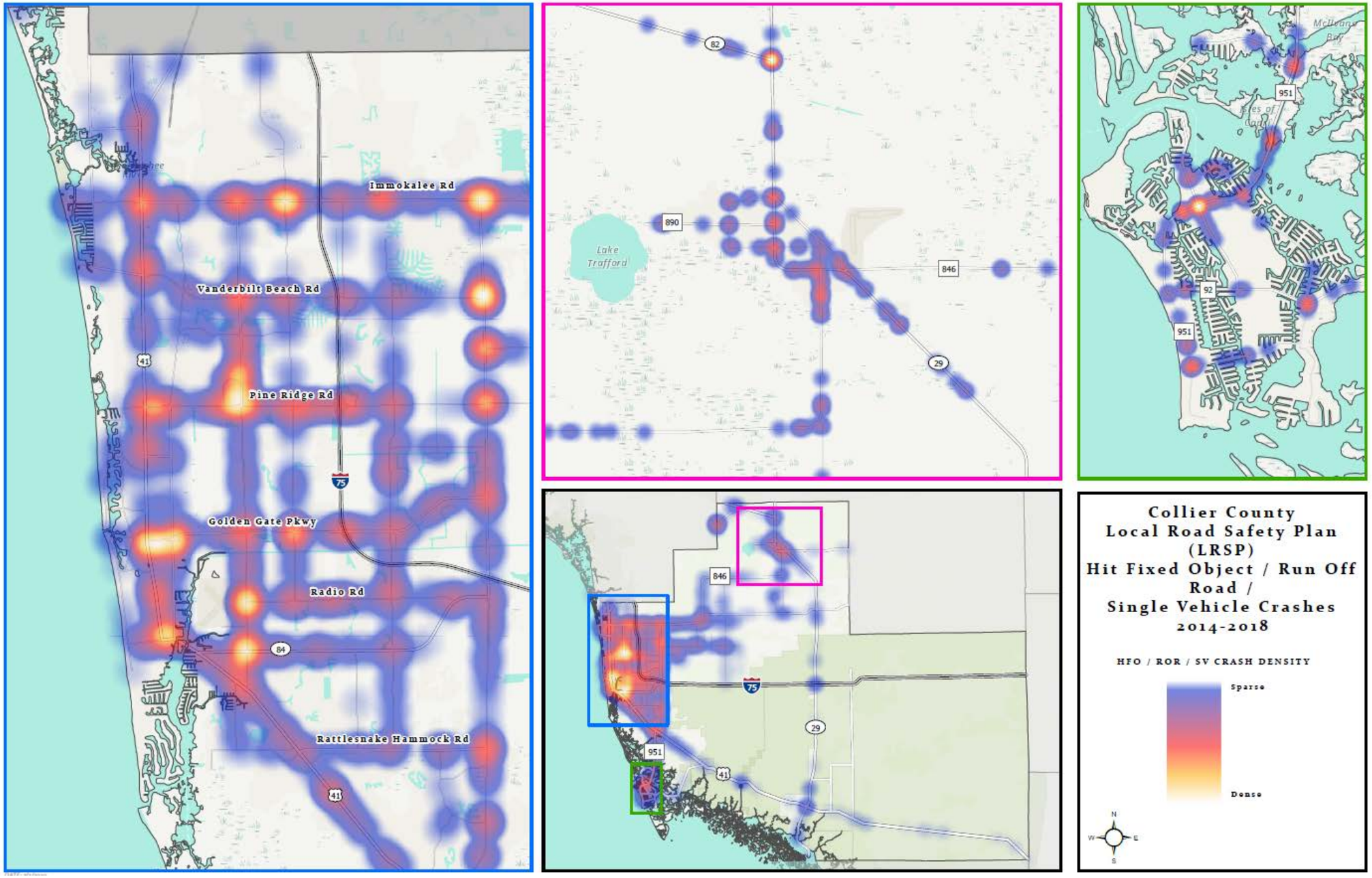


Figure 2-10: Lane Departure Crash Heat Map

Emphasis Area 4: Same Direction (Rear-End and Sideswipe) Crashes

Rear-end and sideswipe crashes are much less likely to result in incapacitating or fatal injuries than crash types included in the other three emphasis areas; however, these crashes are the most common type of crash to occur and contribute to injuries and deaths as a function of their frequency.

Table 2-9 shows a list of major roadway corridors with the most non-motorized crashes and Figure 2-11 shows a "heat map" of non-motorized user crashes. Consistent with prior Collier MPO Bicycle/Pedestrian safety analyses, key focus areas include the area defined by US 41 (Tamiami Trail), Airport Road, and Davis Boulevard and SR 29 through the town of Immokalee.

Table 2-9: Same Direction High Crash Corridors

On Street	From Street	To Street	Crashes	Fatal Crashes	Incap. Injury Crashes
Golden Gate Parkway	Santa Barbara Boulevard	Collier Boulevard	190	0	4
Tamiami Trail North	SR 84 (Davis Blvd)	CR 851 (Goodlette Rd South)	136	0	1
Collier Boulevard	Golden Gate Pwky	Green Boulevard	111	1	4
Tamiami Trail North	12th Ave	Park Shore Dr / Cypress Woods Dr	106	0	4
Goodlette-Frank Road	US 41 (Tamiami Trail)	Golden Gate Parkway	87	0	3
Tamiami Trail North	Park Shore Dr / Cypress Woods Dr	Pine Ridge Rd / Seagate Dr	84	1	2
Santa Barbara Boulevard	Golden Gate Parkway	Green Boulevard	82	0	1
Airport Road	Radio Road	Golden Gate Parkway	81	1	1
Airport Road	Pine Ridge Road	Orange Blossom Drive	74	2	1
Goodlette-Frank Road	Golden Gate Parkway	Pine Ridge Road	74	0	4
Pine Ridge Road	Airport Road	Livingston Road	73	0	2
Collier Boulevard	Vanderbilt Beach Road	Immokalee Road	67	0	4
SR 29	9th Street	Immokalee Dr	67	0	2
Tamiami Trail North	Pine Ridge Rd / Seagate Dr	Gulf Park Drive	65	1	4
Tamiami Trail East	Airport Road	Rattlesnake Hammock Road	63	1	2

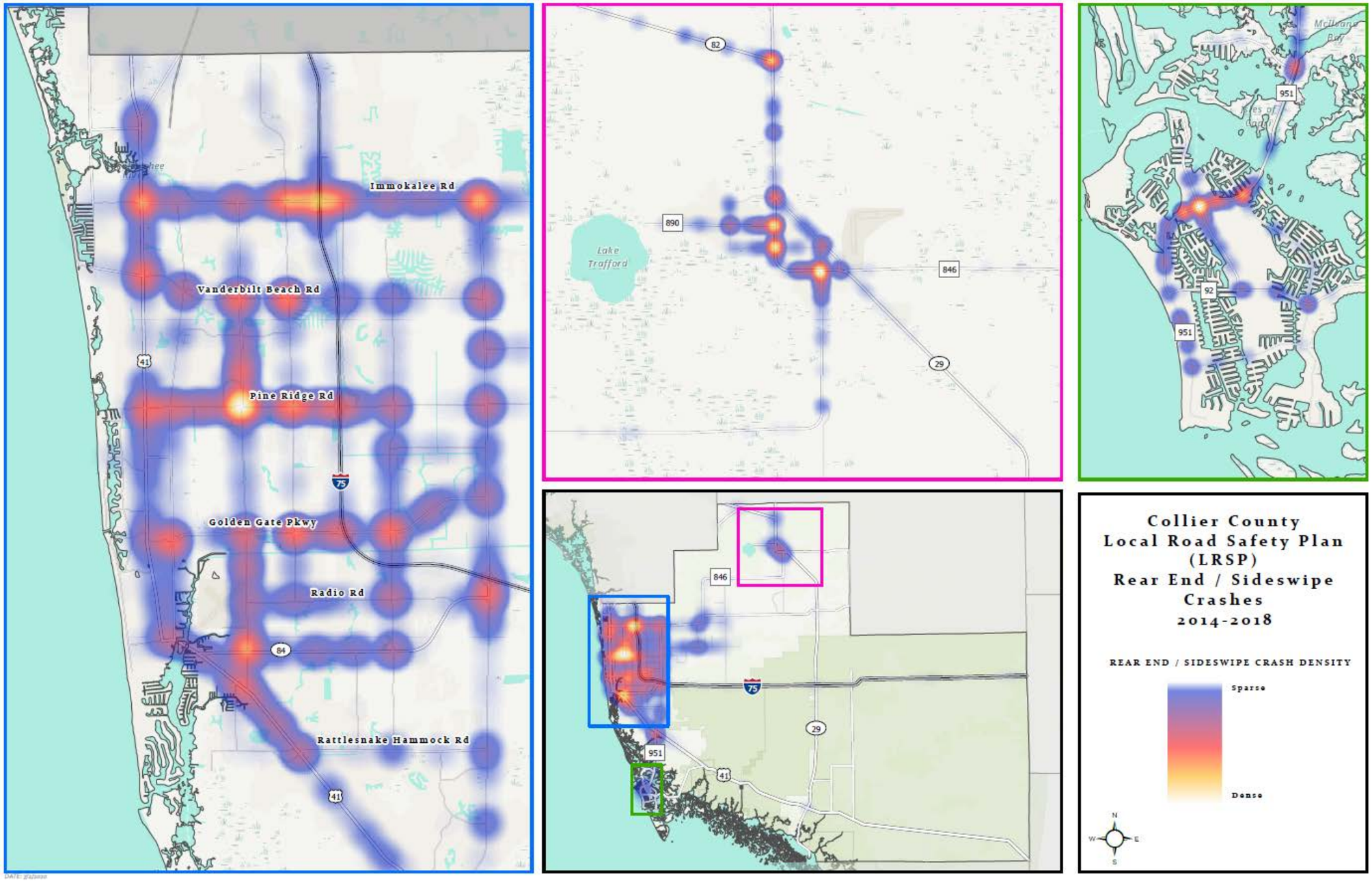


Figure 2-11: Same Direction Crash Heat Map

Key Conclusions

Based on the data analysis summarized above, the following key conclusions are evident:

- Collier County has fewer crashes, traffic injuries, and traffic fatalities than Florida as a whole as a function of population and daily VMT.
- As is common in many urbanized Florida communities, a significant majority of public road traffic crashes, including severe injury crashes, occurs along elements of the county's arterial and collector road network.
- Because Collier County has a relatively sparse network of State highways and many County-maintained roadways that carry significant traffic volume, approximately 2/3 of crashes occur along County-maintained roadways. This means Collier County has substantial agency to self-manage safety outcomes on its roadway network.
- Driver age data show that older road users do not disproportionately contribute to crashes in Collier County; however, inferential time-of-day data suggest that older drivers (age 55+) also have less exposure to nighttime and rush-hour driving.
- Fewer traffic citations per capita and per vehicle mile of travel are issued in Collier County than in Florida and within a group of similarly-sized coastal counties.
- Certain crash types contribute disproportionately to incapacitating injury and fatal crashes. Collectively, non-motorized road user, angle, left-turn, and lane departure crashes account for 30% of all crashes but result in 72% of severe injuries and 89% of fatalities.
- Though significantly less likely to result in severe injury than the crash types discussed above, rear-end and sideswipe crashes result in a significant number of incapacitating injuries due to their frequency.

SECTION 3: RECOMMENDATIONS

Introduction and Problem Statement

Based on the data analysis documented in the Collier Local Road Safety Plan (LSRP) Data Analysis Chapter, the following key conclusions help to formulate data-driven recommendations for reducing crashes, injuries, and fatalities in Collier County:

1. **Roadway Safety Relative to Florida**: Collier County has fewer crashes, traffic injuries, and traffic fatalities than Florida as a whole as a function of population and daily vehicle miles of travel (VMT).
2. **Major Roadway Focus**: As is common in many urbanized Florida communities, a significant majority of public road traffic crashes, including severe injury crashes, occur along elements of the county's arterial and collector road network.
3. **Local Autonomy:** Because Collier County has a relatively sparse network of State highways and many County-maintained roadways that carry significant traffic volume, approximately 2/3 of crashes occur along County-maintained roadways. This means Collier County has substantial agency to self-manage safety outcomes on its roadway network.
4. **Driver Demographics:** Driver age data show that older road users do not disproportionately contribute to crashes in Collier County; however, inferential time-of-day data suggest that older drivers (age 55+) also have less exposure to nighttime and rush-hour driving.
5. **Moderate Enforcement:** Fewer traffic citations per capita and per vehicle mile of travel are issued in Collier County than in Florida as a whole and within a group of similarly-sized coastal counties.
6. **High Severity Emphasis Areas:** Certain crash types contribute disproportionately to incapacitating injury and fatal crashes. Collectively, non-motorized road user, angle, left-turn, and lane departure crashes account for 30% of all crashes but result in 72% of severe injuries and 89% of fatalities.
7. **High Frequency Emphasis Area:** Though significantly less likely to result in severe injury than the crash types noted above, rear-end and sideswipe crashes result in a significant number of incapacitating injuries due to their frequency.

Each of these conclusions is considered below to begin formulating recommended strategies.

Conclusions #1 and 4: Roadway Safety Relative to Florida and Driver Demographics

Data from 2014–2018 indicate that Collier County experiences approximately 25% fewer traffic crashes and fatalities than Florida as a whole when normalized for both population and VMT. Understanding factors that contribute to this can help to build on Collier County's existing strengths. Some potential explanations for Collier County's relatively low rate of traffic crashes and fatalities compared with Florida as a whole include the following:

- **Demographics:** Collier County has a lower proportion of younger drivers than Florida as a whole. Statewide, approximately 18.4% of the population is ages 15–29, whereas in Collier

County only 14.4% of the population falls within this age range. Less experienced drivers are more likely to be involved in crashes than older drivers, so a community with proportionately fewer younger drivers should exhibit fewer crashes per capita than average. When statewide crash rates for each age bracket are applied to Collier County's population, the expected number of crashes in Collier County is approximately 90% of statewide figures. Accordingly, driver demographics may explain part of the reason why Collier County has fewer crashes per capita and per VMT than Florida overall.

- **Roadway Characteristics:** Compared with Florida as a whole, Collier County has a similar proportion of VMT on relatively safe roadway types such as limited access highway, minor collector streets, and local roads but carries substantially less VMT on signalized principal arterials and, instead, handles more traffic with its minor arterial network. Although both principal arterials and minor arterials are focused on longer-distance mobility, minor arterials tend to be more compact and generally operate at somewhat lower ambient speeds. Although difficult to quantify, this may, in part, contribute to Collier County's superior safety performance compared with Florida as a whole.
- **Land Use and Network Characteristics:** With some exceptions, commercial land uses in Collier County tend to be organized around major intersection nodes rather than along thoroughfare roadways. This means that between major intersections, access points are limited, resulting in fewer potential conflicts.

As Collier County continues to grow, it is reasonable to expect its demographic profile will "regress to the mean," resulting in a more normal proportion of young drivers and associated increase in crashes. Strategies to improve driver training and education for younger drivers and services to provide mobility for older road users are discussed in Section 3. Strategies to further enhance safety on the county's major roadway network and maintain good access controls are discussed in Section 2.

Conclusions #2 and #3: Major Roadway Focus and Local Autonomy

Because a majority of crashes in Collier County occur along County-maintained minor arterial and collector roadways, Collier County, in conjunction with the Collier MPO, has the ability to be proactive in making roadway safety infrastructure investments while continuing to coordinate with the Florida Department of Transportation (FDOT) to enhance safety on I-75 and major state highways such as US-41 and SR-29, Davis Boulevard, and State-maintained sections of Collier Boulevard.

Specific strategies applicable to the county's roadway network are discussed in Section 2.

Conclusion #5: Moderate Enforcement Efforts

Statewide, more than half of Floridians live in municipalities, and just over half of all traffic citations are issued by City police departments, with the remainder split roughly 60/40 between County Sheriffs and the Florida Highway Patrol. Because the municipalities in Collier County account for only about 10% of the county's population, the role of City police departments in traffic enforcement is less prevalent in Collier County, with approximately 15% of citations being issued by municipal police. Section 3 addresses strategies to target and enhance traffic enforcement where appropriate.

Conclusions #6 and 7: High Severity Ratio and High Frequency Crash Emphasis Areas

Because specific crash types are more likely to result in incapacitating injury or death, it is logical that these should be the focus of both infrastructure and non-infrastructure strategies to enhance traffic safety in Collier County. All types of crashes and crash severities may be reduced by speed management strategies and strategies to combat distracted driving, whereas other crash types respond to specific infrastructure and non-infrastructure interventions.

The remainder of this chapter offers infrastructure and non-infrastructure strategies that relate to the conclusions from the LRSP's data and analysis described above.

Infrastructure Strategies

The term "substantive safety" refers to the measurable safety performance of a roadway or roadway system, usually expressed in terms of crashes, injuries, and fatalities normalized for user exposure, typically expressed in terms of VMT. The design and operating characteristics of a roadway system affect the substantive safety performance of the system based on the interplay of two other expressions of safety—nominal safety and perceived safety.

"Nominal safety" refers to the application of evidence-based design standards and best practices intended to reduce the frequency and severity of crashes. Examples include elements such as minimum lane widths, speed limits, effective drainage, clear and level roadside shoulders, curve super-elevation, guardrails, roadway lighting, and hundreds of other roadway design and operating standards. Each of these elements is intended to reduce the likelihood of automobile crashes and/or to reduce the severity of crashes if they occur.

"Perceived safety" refers to how roadway users gauge the relative safety of the roadway system, including the crashworthiness of their automobiles. This is important because for most roadway users, perceived safety impacts their level of focus and operating behavior. Roadway users who perceive a particular roadway environment to be relatively safe are more likely to relax their concentration and may engage in higher-risk driving behaviors such as speeding, multi-tasking, and "jaywalking," whereas roadway users who perceive a roadway environment to be less safe are more likely to remain vigilant.

There are two primary challenges implicit in the interaction of these fundamental aspects of roadway safety. The first is that many of the measures intended to make roadways nominally safer also result in increased perception of safety by roadway users and corresponding increases in riskier user behavior. This riskier behavior, in turn, diminishes the safety benefits of the roadway system design.

The second challenge is that typical roadway users are not well-equipped to accurately assess their risk operating in a modern roadway system. The former challenge is intuitive but nonetheless problematic to the extent that the very design decisions that are meant to make a roadway system safer often contribute to the abuse of that system by its users. The latter challenge is a function of both biological and cognitive limitations which, when combined, can contribute to unsafe user behavior.

From a biological perspective, the speeds, distances, and complexities of modern roadway environments are outside the normal parameters of what the "human animal" has encountered for the vast majority of our recorded history. Multiple times per minute, a human roadway user will pass within arm's length of objects that are comparable in mass to some of the largest animals on earth, traveling at speeds that are naturally achievable only by falling from a high place. Rationally, human/automobile interactions should be terrifying, but most modern humans have been conditioned since childhood to accept them as a normal, low-risk activity.

From a cognitive perspective, most people's ability to accurately assess and process risk is more limited when probabilities are very low and outcomes are extreme. For example, most people can easily understand both the probabilities and the outcomes of a $1.00 bet against a coin toss but have almost no capacity to logically process the risk/reward proposition of buying a lottery ticket. By the same mechanism, most people cannot intuitively process the extent to which individual higher-risk, but otherwise routine, behaviors alter their probability of being involved in an automobile crash.

Historically, the traffic safety industry has focused considerable attention on nominal safety, both in terms of roadway system design and operations and motor vehicle design (bumpers, crush zones, air bags, etc.). Generally, the assumption has been made that roadway users will behave as "rational actors" using available information to make benefit/cost analyses that govern choices expected to deliver preferred outcomes. Based on quantitative and qualitative assessment of crash histories, there is ample evidence that road users do not consistently perform according to the rational actor model. This includes incidences of wantonly irrational behavior (road racing, driving while intoxicated, etc.) but more commonly occurs from a failure to accurately process risk.

Accordingly, the Collier LRSP will consider infrastructure strategies from the perspective of nominal safety and also from the standpoint of how each strategy provides better information to roadway users to help them make safer decisions about how they interact with each other and the roadway system.

Table 3-1 provides a summary of infrastructure strategies and shows how each strategy is applicable to the four emphasis areas defined through the analysis of Collier County's crash history.

The remainder of this section provides more information about each strategy and discusses how the strategies relate to one another. Non-infrastructure strategies are addressed in Section 3 of this chapter.

Table 3-1: Infrastructure Strategies Matrix

Infrastructure Strategies	Non-Motorized	Intersection	Lane Departure	Same Direction
Speed Management	•	•	•	•
Alternative Intersections (ICE Process)	•	•		•
Intersection Design Best Practices for Pedestrians	•			
Median Restrictions/Access Management		•		•
Right Turn Lanes	?			•
Signal Coordination	?			•
Rural Road Strategies including:				
• Paved shoulder	•		•	
• Safety edge			•	
• Curve geometry, delineation, and warning			•	
• Bridge/culvert widening/attenuation			•	
• Guardrail/ditch regrading/tree clearing			•	
• Isolated intersection conspicuity/geometry		•		
Shared Use Pathways, Sidewalk Improvements	•			
Mid-Block Crossings & Median Refuge	•			
Intersection Lighting Enhancements	•	•	•	
Autonomous Vehicles (Longer-Term)	TBD	•	•	•
(= Applicable Strategy ? = Possible Contra-indications				

Speed Management

Speed is a critical factor in both a driver's ability to perceive, react, and effectively respond to roadway conflicts and in determining crash outcomes/severity. "Speed management" refers to a combination of infrastructure and non-infrastructure strategies to both curtail incidences of speeding—traveling too fast for conditions or exceeding the posted speed limit—and designing roadways to deliver operating speeds that match the land use and access contexts of the roadway. From an infrastructure standpoint, key elements of speed management include:

- Context classification and establishment of target speeds
- Design interventions
- Proactive signal management

Each of these elements is discussed in greater detail below.

Context Classification and Target Speeds

As part of FDOT's implementation of "Complete Streets," the Department has established a process for classifying major roadways based on land use and roadway network connectivity to create a continuum of context classifications ranging from rural preserve to urban core (Figure 3-1). The

context classification assignment of each segment of the State Highway System (SHS) is then used to define design specifications including appropriate design speed ranges.

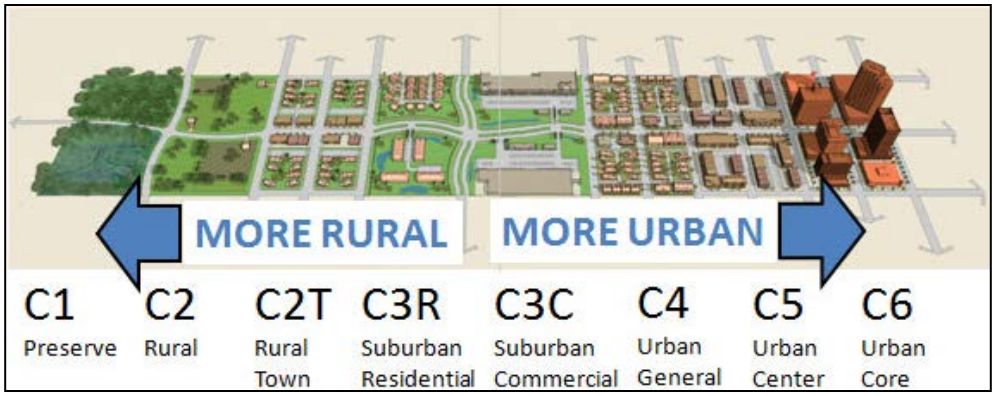


Figure 3-1: FDOT Context Classification System

In addition to design elements such as lane width and multimodal facilities requirements, a roadway's context classification establishes allowable design speed ranges and identifies speed management strategies for each context class and design speed range. Context classifications also provide guidance for establishing appropriate target speeds, the desired operating speed for any given segment of roadway based on strategic safety and mobility objectives. When a roadway's target speed is not supported by the roadway's design characteristics (e.g., design speed), the roadway owner (City, County, FDOT) can establish short-, medium-, and longer-term strategies to modify the subject roadway so that the target speed is achieved.

Design Interventions

There are many design techniques to modify roadway characteristics to achieve a desired target speed, but generally they correspond with the concepts of Enclosure, Engagement, and Deflection. Chapter 202 of FDOT's 2020 *Florida Design Manual* (FDM) defines these concepts as follows:

- **Enclosure** is the sense that the roadway is contained in an "outside room" rather than in a limitless expanse of space. A driver's sense of speed is enhanced by providing a frame of reference in this space. The same sense of enclosure that provides a comfortable pedestrian experience also helps drivers remain aware of their travel speed. Street trees, buildings close to the street, parked cars, and terminated vistas help to keep drivers aware of how fast they are traveling. This feedback system is an important element of speed management.
- **Engagement** is the visual and audial input connecting a driver with the surrounding environment. Low-speed facilities use engagement to help bring awareness to the driver, resulting in lower operating speeds. As the cognitive load on a driver's decision-making increases, he/she needs more time for processing and will manage speed accordingly. Uncertainty is one element of engagement; the potential of an opening car door, for instance, alerts drivers to drive more cautiously. On-street parking and proximity of other moving vehicles in a narrow-lane are important elements of engagement, as are architectural detail, shop windows, and even the presence of pedestrians.
- **Deflection** is the horizontal or vertical movement of a driver from the intended path of travel. It is used to command a driver's attention and manage speeds. Being a physical

sensation, deflection is the most visceral and powerful of the speed management strategies. Whereas enclosure and engagement rely, in part, on psychology, deflection relies primarily on physics. Examples includes roundabouts, splitter medians (horizontal deflection), and raised intersections (vertical deflection). Deflection may not be appropriate if it hinders truck or emergency service vehicle access.

Chapter 202 of the FDM describes specific design strategies and provides a matrix of applicable strategies to achieve various speed ranges for each roadway context classification.

Signalization

Traffic signalization is another method of providing actionable information to drivers to help achieve desired operating speeds. When traffic signals are spaced at intervals of not more than 0.25 miles and are timed in a coordinated pattern consistent with a desired operating speed, most road users will learn to drive at the signal "progression speed" rather than race ahead to stop at a standing queue. Alternative performance measures for signal timing are discussed further later in this section.

Recommendation

As part of the Collier LRSP, Collier MPO Member Governments should consider adopting/adapting FDOT's context classification to the County's major roadway network as a critical aspect of an overall speed management strategy. Once context classes have been established, the County should define target speeds for each segment of the major roadway network and prioritize engineering studies to identify necessary design interventions based on the frequency of severe crashes and other considerations. As part of these engineering studies, the County should consider traffic signal operations (signal density, progression speed, and cycle length) as potential interventions to help achieve desired target speeds.

Alternative Intersections (ICE Process)

According to the Federal Highway Administration (FHWA), the term "alternative intersections" refers to at-grade intersections that remove one or more conventional left-turn movements. By removing one or more of the critical conflicting traffic maneuvers from the major intersection, fewer signal phases are required for signal operation. This can result in shorter signal cycle lengths, shorter delays, and higher capacities compared to conventional intersections.

Alternative intersections also offer substantial safety benefits, with expected crash reductions of at least 15%, depending on the specific treatment. When deployed along an integrated corridor, alternative intersections can also aid in speed management and other systemic safety improvements. The key concepts, constraints, and safety benefits of common alternative intersections are described below.

ICE Process

Intersection Control Evaluation (ICE) is a data-driven process to objectively identify optimal geometric and control solutions for roadway intersections. Factors considered in the ICE process include capacity/operational analysis, safety, and feasibility/cost. ICE is required for new intersections and for substantial changes to existing intersections on FDOT roadways, and the ICE process used by FDOT may be applied or adapted to County and City-maintained roadways as well.

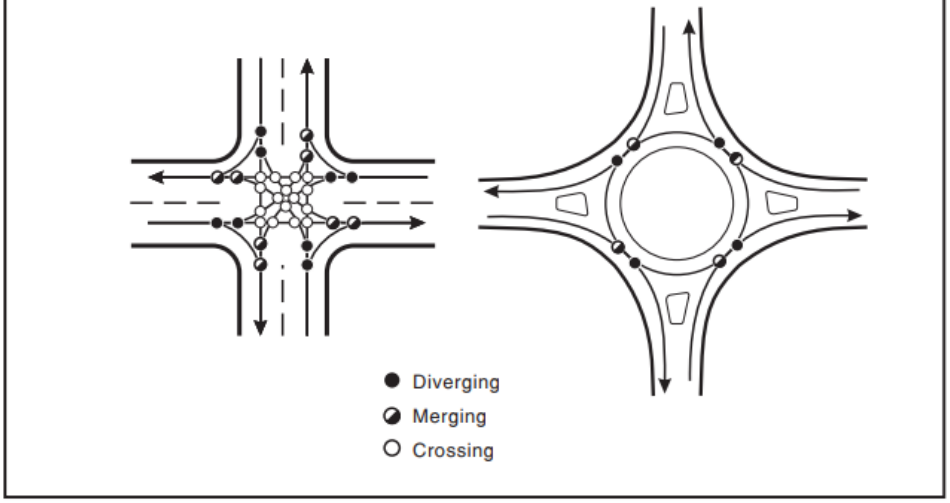
Roundabouts

FHWA's informational guide on roundabouts (FHWA-DR-00-067) explains that "roundabouts are circular intersections with specific design and traffic control features. These features include yield control of all entering traffic, channelized approaches, and appropriate geometric curvature to ensure that travel speeds on the circulatory roadway are typically less than 30 mph." Modern roundabouts may connect three or more roadway approaches and may have one or more circulating lanes.

The key safety benefit of roundabouts is that they eliminate high-energy "crossing" conflicts and have fewer overall conflicts than conventional intersections. Figure 3-25, from FHWA-DR-00-067, shows and explains the difference in conflict points between roundabouts and conventional intersections. Attention is directed to the fact that whereas traffic signals assign right-of-way to crossing conflicts, these conflicts are not eliminated by signals in cases of red-light-running and permissive left-turn movements. Merge conflicts also exist in the context of right-turn-on-red movements.

Properly designed roundabouts also are generally easier/safer to navigate for pedestrians and bicyclists, and pedestrian crossings at multi-lane roundabouts can be supplemented with various mid-block crossing devices (see discussion on pedestrian mid-block crossing elsewhere in this section). Because of these motorized and non-motorized user safety benefits, roundabouts have been found to reduce crashes overall by about 37% and reduce injury crashes by 51%.

The principal constraint of roundabouts is that they often require a greater right-of-way footprint than conventional intersections of equivalent capacity. This is especially challenging in retrofit scenarios along commercial corridors where right-of-way costs may make roundabout retrofits cost prohibitive. Because the safety benefits of roundabouts diminish as more circulating lanes are added, most roundabouts are limited to two circulating lanes. Accordingly, they are most commonly used at the intersections of either two 2-lane roadways or a 4-lane roadway and 2-lane roadway.



Conflicts can be divided into three basic categories, in which the degree of severity varies, as follows:

- *Queuing conflicts.* These conflicts are caused by a vehicle running into the back of a vehicle queue on an approach. These types of conflicts can occur at the back of a through-movement queue or where left-turning vehicles are queued waiting for gaps. These conflicts are typically the least severe of all conflicts because the collisions involve the most protected parts of the vehicle and the relative speed difference between vehicles is less than in other conflicts.
- *Merge and diverge conflicts.* These conflicts are caused by the joining or separating of two traffic streams. The most common types of crashes due to merge conflicts are sideswipes and rear-end crashes. Merge conflicts can be more severe than diverge conflicts due to the more likely possibility of collisions to the side of the vehicle, which is typically less protected than the front and rear of the vehicle.
- *Crossing conflicts.* These conflicts are caused by the intersection of two traffic streams. These are the most severe of all conflicts and the most likely to involve injuries or fatalities. Typical crash types are right-angle crashes and head-on crashes.

Figure 3-2: Roundabout Safety Benefits

Restricted Crossing U-Turn and Median U-Turn Intersections

Restricted Crossing U-Turn (RCUT) and Median U-Turn (MUT) intersections are illustrated in Figure 3-3 and Figure 3-4 from FHWA Informational Guides #FHWA-SA-14-070 and #FHWA-SA-14-069, respectively. Generally, RCUT intersections are more effective when the minor street thru volumes are lower than the major street left-turn volumes, with the reverse true for MUT intersections. RCUT intersections, when sequenced together in a corridor, also allow each direction of the major street to

thru movements to be coordinated separately which can have exceptional benefits for mainline capacity.

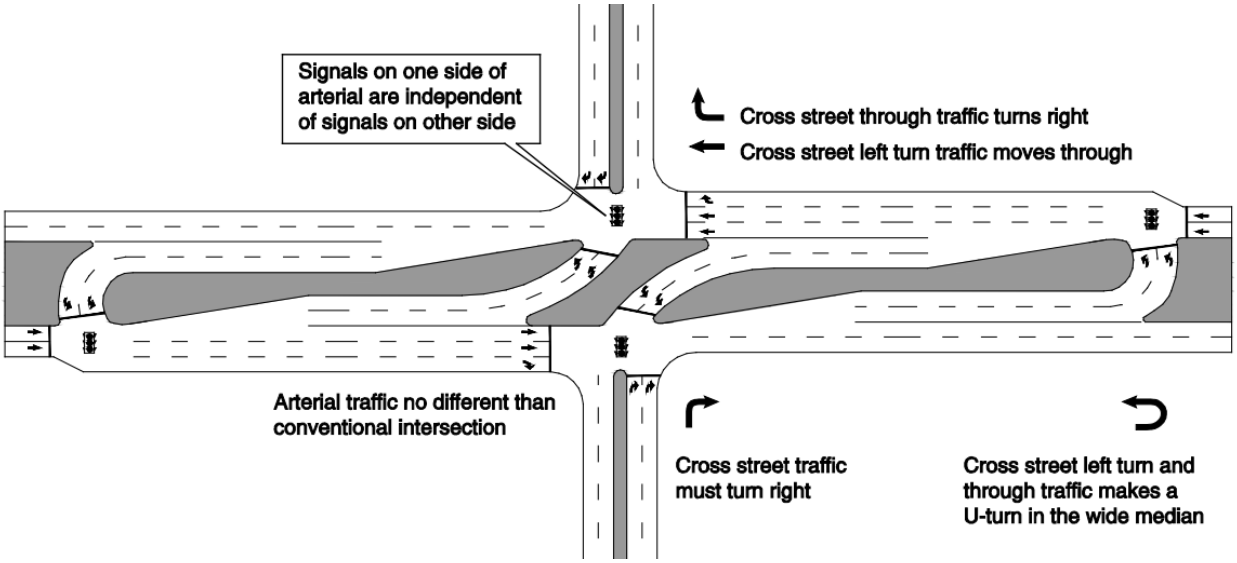


Figure 3-3: Diagram of Signalized RCUT Intersection

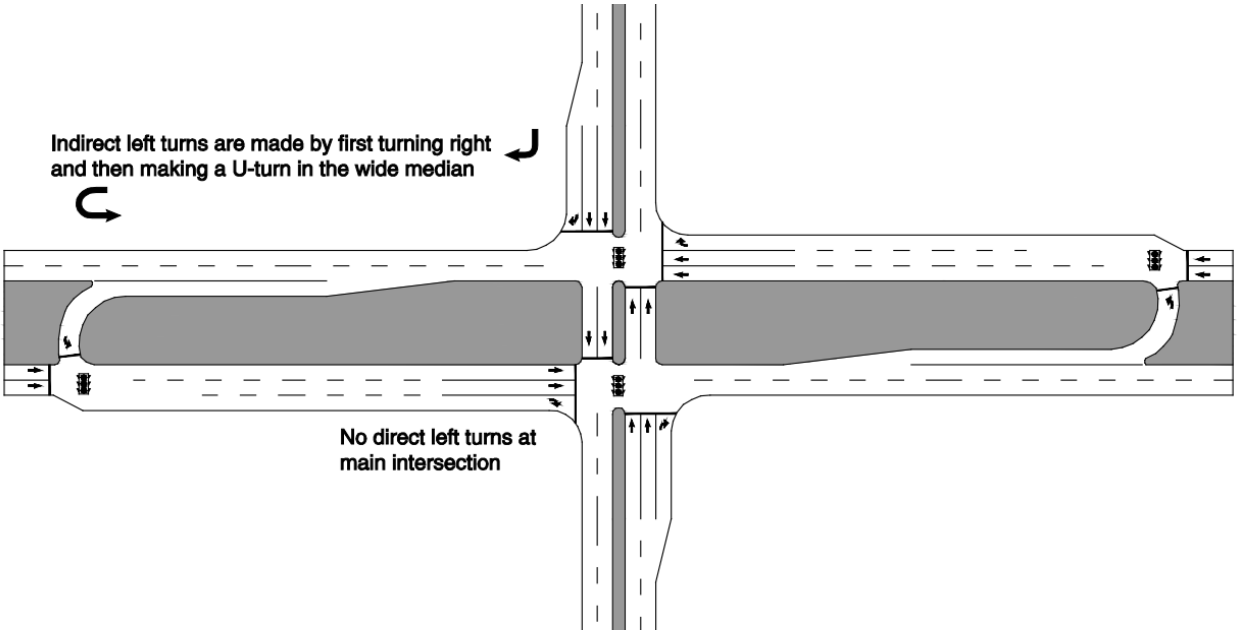


Figure 3-4: Diagram of Median U-Turn Intersection

Common features of both these alternative intersection types include the following:

- Both RCUT and MUT intersections use adjacent "secondary" intersections to help process the movements that are restricted at the main intersection. These are usually about 1/8-mile from the main intersection and may be signalized, as shown in Figure 2-3, or stop/yield controlled, similar to commonplace directional median openings. When signalized, these secondary intersections provide an opportunity for mid-block pedestrian crossing locations.
- When either intersection type displaces truck movements, either an extra-wide median or U-turn aprons, sometimes referred to as "loons," are necessary to accommodate truck movements. The U-turn diameter (referred to as the swept-path) for a typical tractor-trailer is just under 90 ft, but the U-turn diameter of a typical 6-lane arterial with a standard 22 ft median is a little over 60 ft.
- Except in cases where the displaced movements represent an unusually high proportion of all intersection movements, RCUT and MUT intersections generally offer substantial reductions to major roadway delay and more moderate reductions in overall intersection delay. The distance traveled by displaced movements is naturally increased, but delay for displaced movements may be slightly reduced or only moderately increased depending on a range of operational factors.
- Both RCUT and MUT intersections allow for reduced signal cycle length, especially when pedestrian crossings of the major roadway are handled as two-stage movements. This, combined with greater signal density from the use of secondary intersections, can help with speed management and platooning of vehicles along alternative intersection corridors.

Similar to roundabouts, RCUTs and MUTs convert some high-energy crossing conflicts to lower energy merge-diverge conflicts, helping to reduce crash frequency and severity. According to FHWA-HRT-17-073, RCUT intersections can have an overall crash reduction of 15% and reduce injury crashes by 22% compared with conventional intersections. MUT intersections have similar benefits, with a 16% overall crash reduction and 30% injury crash reduction compared to conventional intersections.

As noted, the principal constraint on converting existing 4-phase conventional intersections to 2-phase RCUT or MUT intersections is available right-of-way to accommodate truck U-turn movements, about 140 ft for a 6-lane road and about 130 ft for a 4-lane road. Other constraints include the suitability of the RCUT or MUT operations with respect to individual intersection turning volumes and driver education about navigating the intersections.

Other Alternative Intersections

Besides RCUTs and MUTs, other alternatives at-grade intersections include displaced left turn intersections (DLT), as shown in Figure 3-5 (FHWA-SA-14-068) and quadrant intersections, as shown in Figure 3-6 (FHWA-SA-19-029). The safety outcomes of these intersection alternatives are less well understood than for RCUT and MUT intersections and, for reasons discussed below, their limited applicability makes them less integral to the LRSP than roundabout, RCUT, and MUT intersections. Nonetheless, they are included in the County's toolkit should specific circumstances warrant their use.

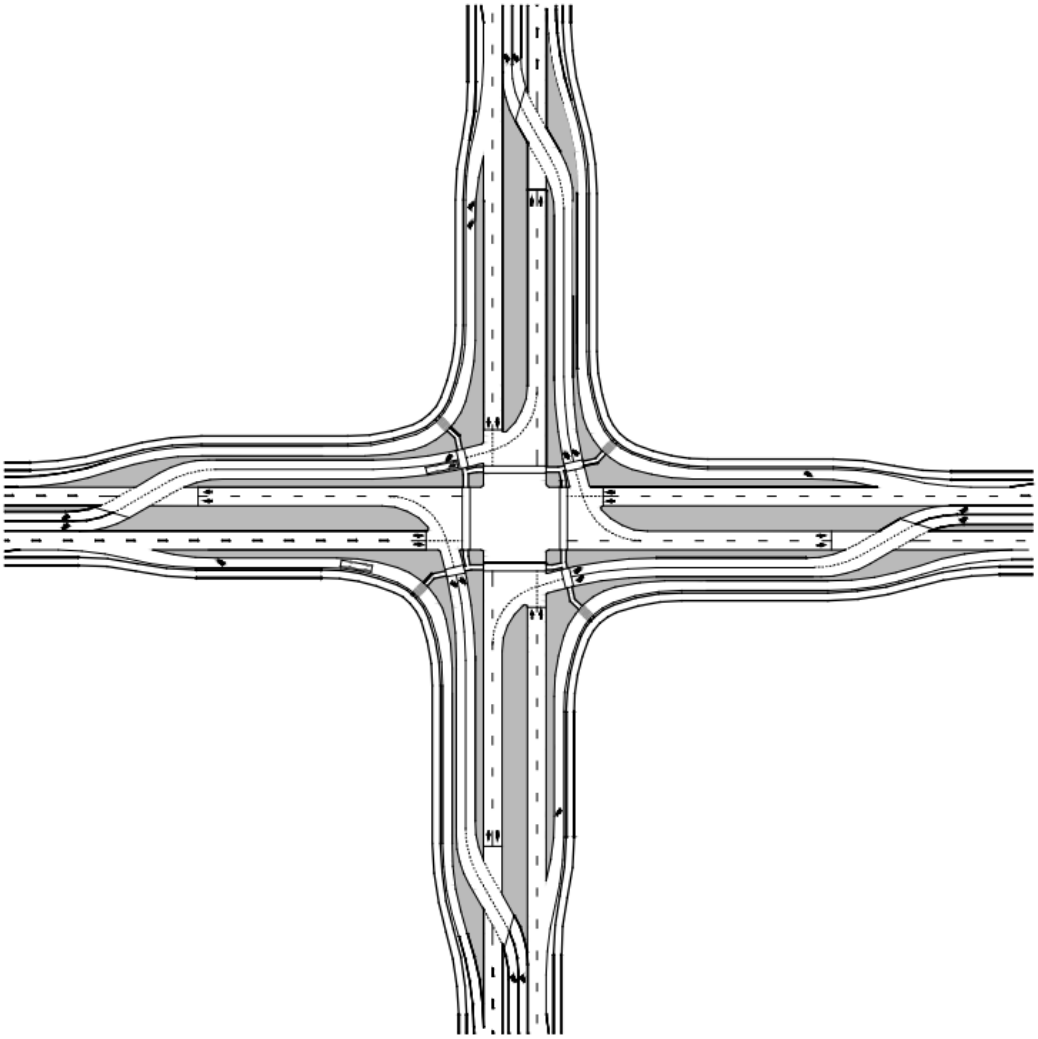


Figure 3-5: Displaced Left Turn Intersection

DLT intersections are very-high-capacity at-grade intersections that “displace” left-turn movements at “cross-over” intersections in advance of the main intersection. This allows left-turn and thru movements from the same roadway to occur concurrently. Given the high capacity, complexity, and cost of DLT intersections, they are perhaps better thought of as alternatives to grade separation (trading right-of-way costs for structure costs) rather than alternatives to conventional intersections. Because of their substantial right-of-way footprints and potential for substantial business access impacts to adjacent land uses, DLT intersections are challenging to implement as retrofit projects.

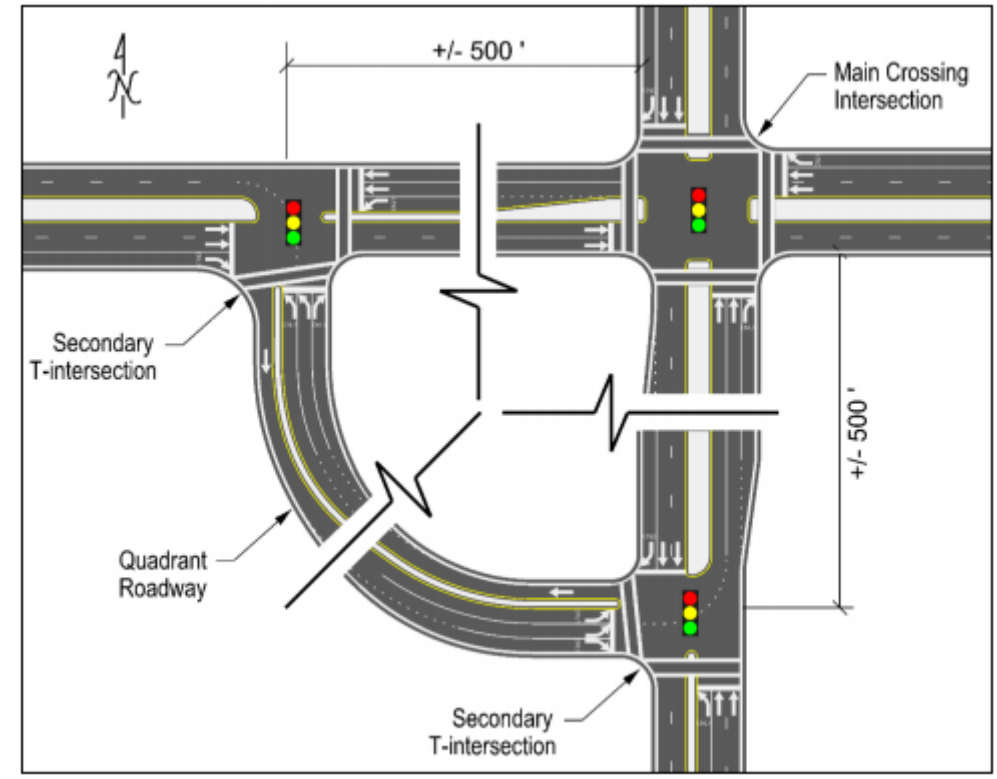


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Figure 3-6: Quadrant Intersection Diagram

Quadrant intersections distribute turning movements at the main intersection across multiple smaller intersections, allowing left-turn movements at the main intersection to be eliminated or limited to either roadway. Although all turning movements can be accommodated with a single-quadrant roadway, quadrant intersections offer more benefits when diagonal opposing quadrants, or all four quadrants can be fitted with perimeter roads. Unlike DLT intersections, quadrant intersections allow the main intersection to be quite compact; however, existing land uses often preclude the construction of the quadrant roadways except in greenfield or redevelopment scenarios.

Recommendation

Collier MPO Member Governments should adopt/adapt FDOT's ICE process to provide data-driven analysis of intersection alternatives as part of new intersection construction and substantial modification of existing intersections. The Collier MPO, in cooperation with Collier MPO Member Governments and FDOT, should identify candidate intersections and corridors based on traffic crash history and other planning factors to conduct feasibility studies (Stage 1 ICE/SPICE analysis) for prioritizing and programming retrofit projects.

Intersection Design for Pedestrians

Many existing major roadway intersections in Collier County (as well as throughout Florida) were designed with the primary intention of maximizing motor-vehicle throughput. In addition to arterial intersections often having multiple thru traffic lanes and auxiliary left- and right-turn lanes, the radii of an intersection's curbs are also often very large. All of these features increase the exposure of pedestrians to motor vehicle traffic and can contribute suboptimal placement of crosswalks and curb ramps, which may make crosswalks longer than necessary and/or place pedestrians in positions where they may be difficult for turning drivers to see.

When pedestrians are exposed to overly-large intersections with right-turning traffic and permissive left turns, they may not see a value proposition in using signalized intersection pedestrian features. This may result in pedestrians crossing away from intersections, relying on their own judgment rather than trusting motorists to yield and reducing pedestrian compliance with traffic signals.

Curb Radii

Large curb radii are sometimes necessary to allow trucks to navigate turns without running over the curb, damaging infrastructure, and posing a hazard to pedestrians waiting to cross. However, in many cases, urban and suburban intersections are using highway design principles where large curb radii are provided to reduce friction between right-turning vehicles and high-speed thru traffic. This makes sense in a rural setting where pedestrians are rare, but when right-turning drivers can navigate a turn at high speeds, their ability to perceive and react to pedestrians in a crosswalk is severely limited.

Whenever possible, urban intersection should be designed with the smallest possible radii that still can accommodate the appropriate design vehicle. When there are multiple lanes, intersection should be designed so that trucks turn into the interior lane(s) rather than the curb lane. When large radii cannot be avoided due to heavy truck movements, channelization (discussed below) or use of truck aprons is preferable to very large radii.

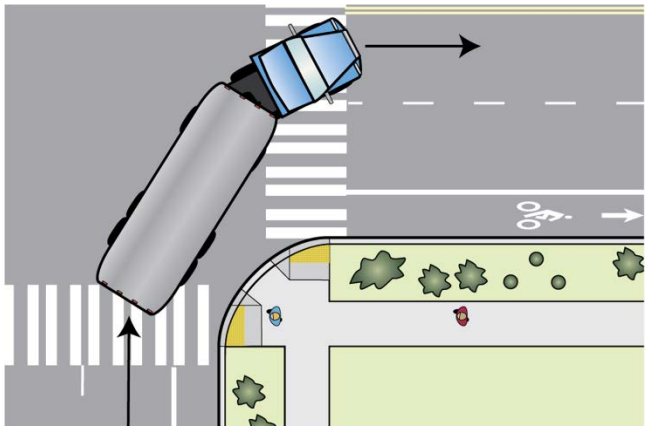

Figure 3-7: Truck Turning Into Interior Lane

Figure 3-8: Truck Apron Helps Slow Turning Cars

Channelization

Using channelizing islands to break pedestrian crossings into multiple smaller stages can make large, high-capacity intersections safer and more accommodating for pedestrians. Figure 3-9 shows the preferred design for right-turn islands in which approach traffic has a clear view of the crosswalk between the curb and the island and also good views of approaching traffic. The graphic also shows the crosswalk "engaged" with the median nose, which helps ensure that left-turning drivers cannot cut the corner, thereby helping to moderate their speed.

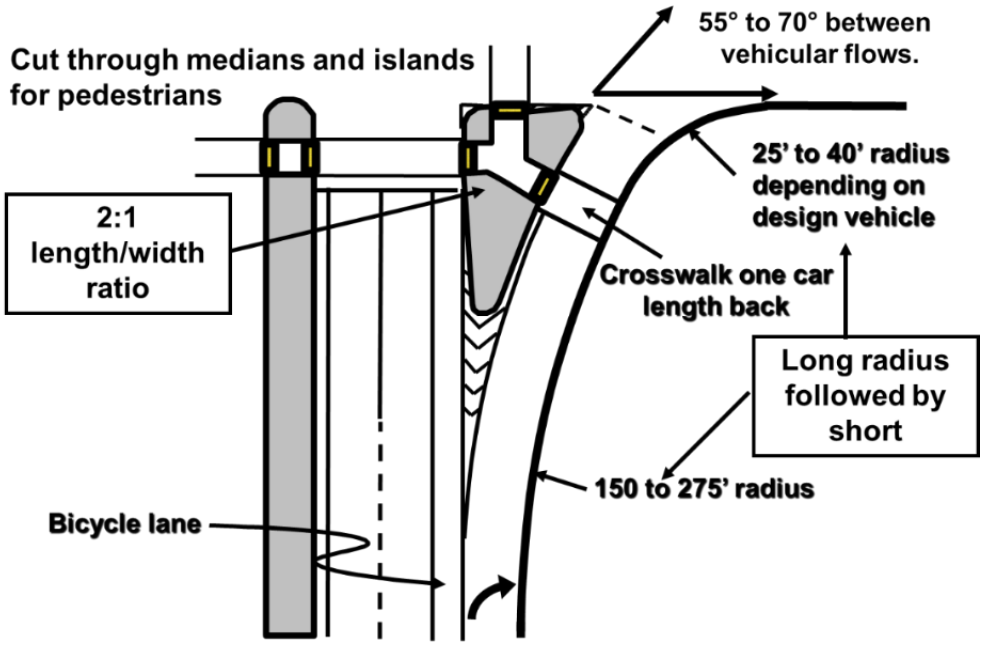

Figure 3-9: Preferred Right-Turn Island Design Parameters and "Engaged" Median

Crosswalk Design & Operation

As shown in Figure 3-10, crosswalks should be marked using both lateral and transverse markings, be placed with individual/directional curb ramps, where possible, and generally be aligned parallel to the roadway they are along. Although crosswalks must be a minimum of 10 ft wide, they may be

wider where pedestrian volumes are high or intersection geometry is irregular. Textured or colored pavement is acceptable to supplement the retroreflective pavement markings but should not be a substitute for those markings.

At signalized intersections, crosswalks should be supplemented with countdown pedestrian signals and the "Walk" phase should be provided automatically for crossing along the major roadway and whenever the concurrent minor roadway thru-green signal interval is greater than or equal to the minimum pedestrian crossing interval. Except in special circumstances where high pedestrian volumes may effectively prohibit right-turning traffic to pass through an intersection, the "Walk" interval should be timed so that the countdown reaches zero when the concurrent thru-green signal changes from green to amber, thereby maximizing the available time for pedestrians to cross.

When heavy right-turn movements conflict with pedestrian crossings, a leading pedestrian interval (LPI) should be considered. An LPI provides pedestrians with a "Walk" indication a few seconds before parallel traffic gets a green signal, giving the pedestrian an opportunity to "take possession" of the crosswalk before turning traffic commences.

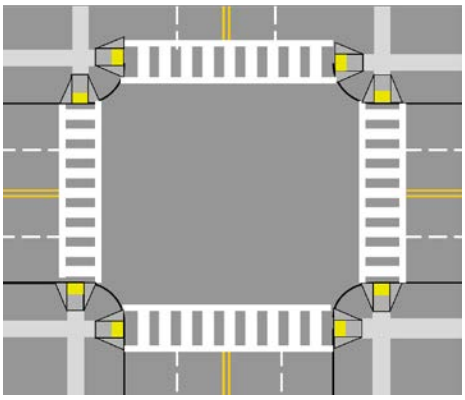

Figure 3-10: Proper Crosswalk Placement and Markings

Figure 3-11: Countdown Pedestrian Signal

Recommendation

Collier MPO Member Governments should ensure that new major roadway intersections incorporate design best practices for pedestrians and the Collier MPO, in cooperation with Collier MPO Member

Governments and FDOT, should identify candidate intersections based on traffic crash history and other planning factors for prioritizing and programming retrofit projects.

Median Restrictions/Access Management

FDOT and Collier County both have sophisticated approaches to managing access along arterial roadway corridors. Strategies include restricting median access to prohibit direct left turns from unsignalized approaches, consolidation of driveways, provisions for interconnected parking lots, reverse-frontage access, and avoiding driveways within major intersection influence areas.

Although the default approach to access management is to convert full-access medians to directional medians, as shown in Figure 3-12 along Radio Road, maintaining cross-access and providing a new traffic signal may help to address speed management and signal coordination issues as discussed elsewhere in this section.

Figure 3-12: Conversion of Full Access Median to Dual Directional Median

Recommendation

Collier MPO Member Governments should continue to employ access management strategies to minimize curb cuts and encourage right-turn-then-U-turn movements instead of direct left turns across high-volume arterial streets. However, in more urban contexts, the potential of signalizing problem intersections should be considered as an alternative to installing directional medians with the intent of providing more controlled crossings for motorists and non-motorized road users and facilitating greater signal density to help with corridor signal coordination.

Right Turn Lanes

Right-turn lanes can help reduce rear-end and sideswipe crashes by allowing turning traffic to move out of the way of thru traffic; however, in urban contexts, right -lanes can present the following safety challenges:

- Right-turn lanes can make intersections larger than they need to be, posing challenges to pedestrians.

- Right-turns lane between signalized intersections (i.e., at commercial driveways) create higher-speed conflict points for cyclists travelling in bike lanes.
- When right-turn lanes extend a substantial distance from an intersection, right-turning traffic may be able to speed past standing queues waiting at the signal. If another vehicle or a pedestrian is "nosing" thru the queues of stopped traffic to access a driveway, the resulting crash can be very severe.
- Right-turn lanes facilitate right-turn-on-red movements because the lane will never be blocked by a vehicle waiting to pass thru an intersection. Right-turn-on-red movements can make crossing more challenging for pedestrians, especially if the failure of right-turning traffic to yield to pedestrians in the crosswalk results in inadequate time to safely cross the intersection.

Recommendation

Right-turn lanes should be used primarily along higher-speed, high-volume suburban roadways where the mitigation of high-speed rear-end and sideswipe crashes outweighs the challenges presented by the scenarios above. Right-turn lanes should be no longer than necessary to allow for safe deceleration of turning vehicles and should not be designed with the primary intent of allowing right-turning traffic to bypass queues. Because right-turn lanes allow turning traffic to get out of the way of thru traffic, curb radii should be minimized to allow for very low speed turns.

Signal Coordination

Signal coordination refers to the timing of traffic signals relative to one another to manage the flow of traffic along a roadway corridor. Generally, the goal of signal coordination is to minimize delay along major roadways while allowing for side-street approaches to process traffic with a reasonable amount of delay. Although this approach is effective to maintain roadway level of service (LOS) along major thoroughfares, it is not always the best approach for promoting safety.

When traffic signals along a corridor are optimized to process thru traffic, the cycle-length of signals often becomes very long, taking 3, 3.5, or even 4 minutes to completely cycle through all the various signal phases. Long cycle lengths combined with signals spaced a half-mile or more apart can result in vehicles being randomly-spaced along a roadway with greater variation in speeds. Conversely, when signal cycle lengths are short and traffic signals are more closely spaced, vehicles tend to group together in "platoons"; this grouping, combined with visual cues from the next traffic signal, result in drivers maintaining a more consistent speed.

The top section of Figure 3-13 shows traffic moving along a roadway with widely-spaced signals and long cycle lengths. Because there is little driver feedback and a very wide "green band" in which approaching traffic can clear the next signal, cars are spread out along the roadway with few adequate gaps for drivers, pedestrians, and cyclists to cross the road or turn across oncoming traffic. The lower section shows the same number of cars in a platoon, with large gaps between the beginning of one platoon and the end of the preceding one. These gaps allow cross-traffic maneuvers can be made more safely.

Gaps between platoons also mean fewer vehicles will be caught in the "dilemma zone" when approaching a changing traffic signal in which the driver must quickly decide whether to brake or try

and accelerate to clear the signal. Keeping traffic out of the dilemma zone can reduce both rear-end crashes and left turn/angle crashes.

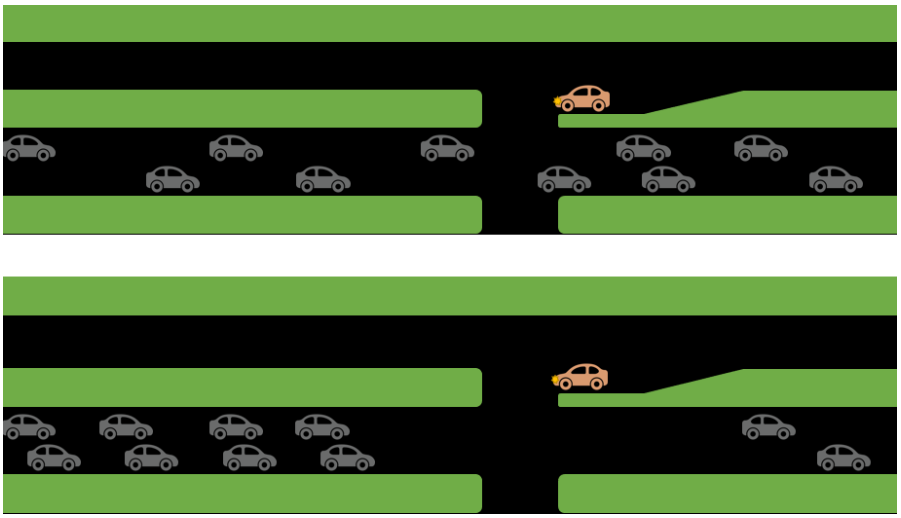

Figure 3-13: Graphic Depicting Random vs. Platooned Traffic

Recommendation

As discussed, converting roadway corridors to two-phase signal operation using alternative intersection designs is an excellent method of reducing cycle length and increasing signal density to allow for more effective platooning of traffic and achieving resulting safety outcomes. Independent of alternative intersection implementation, the MPO should coordinate with Collier MPO Member Governments and FDOT to identify corridors where alternative signal coordination approaches may be feasible. This may include reducing cycle lengths off-peak, operating minor intersections between arterial intersections at half the cycle length of the adjacent major intersections, and identifying locations where a new traffic signal might help the coordinated signal system perform more efficiently and more safely.

Rural Road Strategies

Rural roadways tend to have lower traffic volumes and fewer crashes per mile than busy urban roads; however, because of generally higher travel speeds and the potential for fixed objects and/or deep ditches along the roadside, crash severity tends to be higher. The strategies discussed below can be used to treat known problem locations but should also deployed in a systemic approach to reduce severe crashes along rural highways and local streets.

Paved Shoulder, Safety Edge, and Audible-Vibratory Markings

Where possible, rural roadways should have 5-ft paved shoulders and adequate, level clear zones to facilitate recovery of vehicles that leave the roadway. Audible-vibratory pavement markings or ground-in rumble strips should be provided between the travel lanes and the shoulder to help alert drivers before they leave the roadway, and retroreflective pavement markings should be used to delineate both the roadway centerline and the outside edge of the travel lanes.

When drivers do leave the roadway, steering the tires back onto the pavement against a vertical edge can make it difficult to safely re-enter the travel lane; drivers may oversteer and lose control of the vehicle, leading to severe crashes. As shown in Figure 3-14, providing a 30-degree contoured pavement “safety edge” can mitigate this issue, especially on roadways that lack adequate paved shoulders and warning strips.

Figure 3-14: Photo Depicting "Safety Edge" Pavement Design

Curve Geometry, Warning, and Delineation

Because rural highways often have long, straight segments with few discerning features, drivers may become complacent and not exercise due care when entering curves. Accordingly, curves should be well-marked with pavement markings and chevrons, and attempts should be made to provide adequate shoulders and recovery areas. Where necessary, the roadway should be super-elevated to help drivers navigate high-speed curves, and guardrail should be used when roadside hazards within the clear zone cannot be completely eliminated. Devices such as solar static or actuated flashing beacons and speed feedback signs may also be used to alert drivers to curve advisory speeds.

Clear Zone Hazards

Common hazards adjacent to the roadway include trees and ditches as well as lateral and cross-drain structures and concrete bridge barrier walls. Efforts should be made to inventory infrastructure elements within roadway clear zones and implement measures to mitigate the hazards they pose. This can include removing trees, re-grading ditches, providing attenuation in advance of bridge walls, and converting projecting or square edge drains to mitered-end-section designs.

Figure 3-15: Mitered-End-Section Drain Pipe

Intersection Conspicuity/Geometry

Much like curves along rural highways that may catch drivers by surprise, rural intersections can be unexpected features, and drivers traveling along a rural highway may not be prepared to respond to crossing traffic. Rural intersections may also exhibit irregular or skewed geometry and may have foliage interrupting sight triangles or may exhibit other features that make it more challenging for side-street traffic to maneuver safely. Mitigation strategies include correcting poor geometry, consistently maintaining sight triangles, and posting advance warning signs with/or without flashing beacons to raise awareness of approaching drivers.

Recommendations

Specific, known issues along rural highways should be mitigated, but a proactive, systemic approach is also necessary to improve the overall safety performance of rural road systems. The Collier MPO should work with Collier MPO Member Governments and FDOT to identify funding "boxes" for systemic inventory and improvements to the county's rural and exurban roadways, including curve and isolated intersection treatments, improved shoulders and edge treatment, and mitigation of roadside hazards.

Low-Stress, Separated Cycling Facilities

Since the 1970s, "vehicular cycling" has been the predominant approach to accommodating bicyclists within the roadway network. This approach means that cyclists operate using the same rules as motor vehicle traffic and share the roadway with motor vehicles either operating in marked bicycle lanes or riding with traffic. Vehicular cycling can be an effective approach for faster, confident cyclists to safely interact with traffic; however, a substantial majority of cyclists do not fall within this group and are uncomfortable or unwilling to ride with traffic on higher-volume, higher-speed roadways.

Although vehicular cycling has been shown to help cyclists avoid certain crash risks, sideswipe and rear-end crash types that would generally result in less severe outcomes between two motor vehicles can have severe outcomes when one of the vehicles is a bicycle. This is especially true when the speed differential between the cyclist and overtaking traffic is large. For example, a typical road cyclist operates at speeds of 15–20 mph, so along 30–35 mph roadways, the closing speed of the cyclist and overtaking traffic is not more than 20 mph. Whereas this can result in a serious crash, the overtaking motorist has more time to observe and react to the cyclist, and if a crash does occur, it is

likely to be survivable. Conversely, along roadways with operating speeds of 45 mph or greater, a faster closing speed means a motorist is less likely to react and respond to a cyclist, and if a crash does occur, it is much more likely to be fatal.

For these reasons, many agencies, including FDOT, are working to provide separated bicycle facilities, especially along roadways that operate at speeds greater than 35 mph. Separated facilities include protected bike lanes, sometimes referred to as cycle tracks, and shared-use pathways along the edge of roadways. Other low-stress bicycling facilities form alternative networks to thoroughfare streets and include “bike boulevards” and off-road trails.

Cycle tracks may be two-way or directional and feature some type of physical barrier between motor vehicle lanes and the cycling facility. Figure 3-16 shows an example of a two-way cycle track in downtown Tampa that uses a raised curb and on-street parking to separate bicycle and motor-vehicle traffic. The cycle track features special signals and other design features at intersections to help mitigate bicycle/turning motor vehicle conflicts.

Figure 3-16: Rendering of 2-way Cycle Track in Downtown Tampa along Jackson Street/SR-60

When separated facilities cannot be provided along thoroughfare streets, parallel “bike boulevards” are an option to provide for bicycle mobility. Bike boulevards are streets that have been designed, designated, and prioritized for bicycle travel and can provide a safe, inviting, low-stress option for bicyclists of varying degrees of experience. Although there is no set design template for bike boulevards, a few common principles apply:

- Logical, direct, and continuous bike route
- Safe and comfortable intersection crossings
- Reduced bicyclists delay
- Enhanced access to desired destinations
- Low motor vehicle speeds
- Low motor vehicle volumes

Recommendation

Consistent with emerging guidance from FDOT and FHWA, the Collier MPO and Collier MPO Member Governments should prioritize major roadway corridors to provide separated bicycle facilities and work to establish networks of bike boulevards and other off-road facilities where public rights of way connect between major roadways. One strategy to provide space for a curb to separate bike lanes from traffic is to reduce the lane width on roadways with existing 5-ft-wide bike lanes and using the recovered space to provide for separating features.

On roadways that lack adequate pavement width to construct protected bike lanes, it will usually be more cost-effective to provide parallel side-paths than to widen and reconstruct the roadway. If the shoulder is sufficiently wide, side-paths may be provided by widening or reconstructing the existing sidewalk. Along roadways with constrained rights-of-way, it may be possible to provide pathways by narrowing the roadway either by reducing lane widths or cannibalizing an existing bike lane.

When side-paths are constructed, care must be taken to ensure good visibility at unsignalized conflict points (driveway and side-street approaches). Cyclists should also be encouraged to ride in the same direction as parallel traffic when facilities are provided on both sides of the road. This helps with driver expectancy, especially drivers turning left across the pathway who are not likely to anticipate a cyclist approaching over their left shoulder.

Pedestrian Crossings and Median Refuge

Given the distances between traffic signals along most of Collier County's suburban roadway network, it is reasonable to expect that pedestrians will cross major roadways between signalized intersections. Elements such as adequate lighting, traffic platooning, and speed management make it safer to cross the street generally; however, specific infrastructure to facilitate pedestrian crossings is also necessary. These include median refuge areas and mid-block crossings.

Median Refuge Areas

When pedestrian crossing patterns are not concentrated between obvious origins and destinations, continuous raised medians or intermittent median islands allow pedestrians to break roadway crossings into two discreet movements. Ensuring that medians are dry, level walking surfaces can help encourage pedestrians to wait for an adequate gap before attempting the second leg of their crossing.

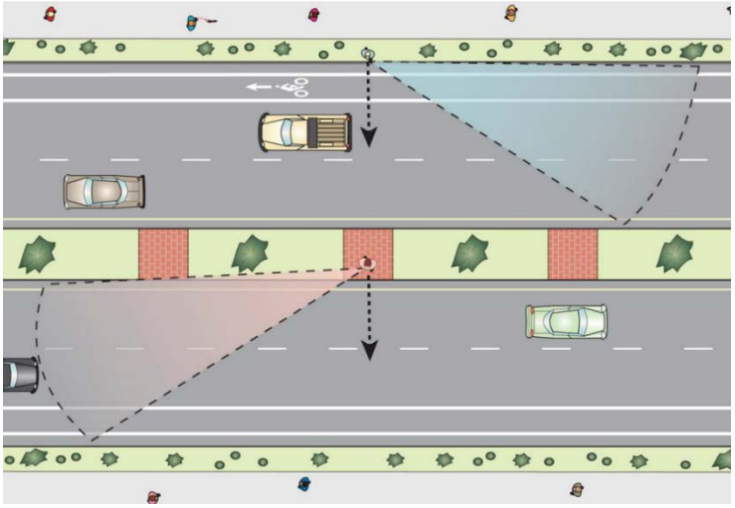

Figure 3-17: Median Refuge Breaks Complex Crossing into Two Simple Crossings

Median Refuge Areas

When pedestrian crossing patterns are more tightly clustered, mid-block marked crosswalks should be considered to provide a safer crossing option; however, along multilane roadways, a marked crosswalk alone is insufficient to provide a safe crossing, and the crosswalk markings should be supplemented with warning beacons or traffic control devices. Beacons such as a rectangular rapid-flashing beacon (RRFB), shown in
Figure 3-18, should be pedestrian-actuated and are best suited to roadways with no more than four lanes and speeds of 35 mph or less.

If a midblock crosswalk is provided across a roadway with more than four lanes or speeds greater than 35 mph, a pedestrian hybrid beacon (PHB) is the preferred supplemental device. A PHB is like a traffic signal but creates less motor vehicle delay by switching to a flashing red (stop sign) operations after the first few seconds of the walk interval, as shown in Figure 3-19.

Figure 3-18: RRFB

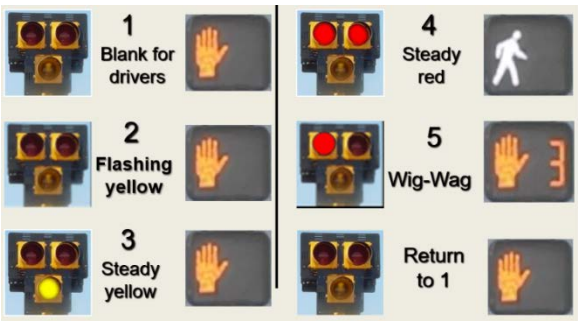

Figure 3-19: Pedestrian Hybrid Beacon Sequence

Recommendation

Median refuge islands and pedestrian mid-block crossings complement speed management and signal coordination strategies to allow pedestrians to more safely cross major roadways. Medians should be used when there are not clear concentrations of pedestrian traffic, and crosswalks should be considered to connect origins and destinations such as transit stops and neighborhood serving commercial lane uses. Marked crosswalks across major roadways generally require supplemental devices and should be selected based on the speed and characteristics of motor vehicle travel.

As with considerations related to restricting median access, traffic engineers should investigate whether a midblock crossing need might be better served by signalizing a local street intersection to provide for controlled crossings at that point while also helping to provide downstream gaps for other crossing movements.

Lighting

Roadway lighting helps drivers see roadway features at night and, if properly designed, can help drivers detect pedestrians and cyclists. Adequate lighting and well-maintained pavement markings reduce lane departure crashes but also can reduce all types of nighttime crashes by reducing the workload necessary for drivers to stay in their lane, thereby freeing up mental resources for other defensive driving tasks.

Intersection lighting provides the same function for drivers, but if designed correctly, can also help drivers see pedestrians at night. Figure 3-20 shows how intersection lighting should be in advance of crosswalk approaches to that light reflects from pedestrians back towards approaching traffic. Section 231.3.2–4 of the Florida Design Manual defines lighting criteria for intersections, roundabouts, and mid-block crosswalks to help ensure pedestrians are visible to approaching drivers.

Figure 3-21 shows a roadway corridor with light-emitting diode (LED) street lights. Contemporary LED lights offer energy cost savings compared to conventional street lights and the spectrum of light is more effective to promote safety.

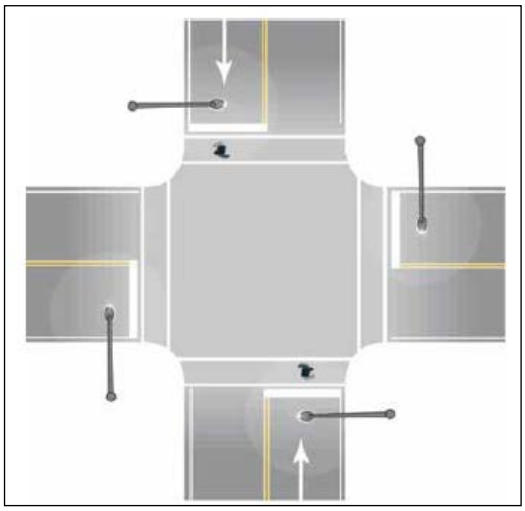

Figure 3-20: Simplified Intersection Lighting

Figure 3-21: LED Lighting

Recommendation

Collier MPO Member Governments should adopt or adapt FDOT's current intersection lighting standards for new construction, and the Collier MPO, Collier MPO Member Governments, and FDOT should coordinate to prioritize intersections and roadway corridors for lighting retrofits based on nighttime crash percentages and non-motorized user crashes. Collier MPO Member Governments or the Collier MPO should consider using the mobile lighting data collection system developed by the University of South Florida to inventory actual lighting levels along County-maintained throroughfare streets.

Autonomous and Connected Vehicles

Because the majority of traffic crashes involve some element of human error, the promise of automated vehicles offers tremendous crash reduction potential, especially when those vehicles are

not only able to sense the roadway environment but also capable of communicating with one another.

Although this technology is generally thought of as futuristic, the reality is that vehicle automation has been with us for some time. Figure 3-22 shows how elements such as cruise control, anti-lock brakes, and various warning sensors have been part of our vehicle fleet for some time, and Figure 2-23 shows the various levels of vehicle autonomy with level one and two being common today.

Some challenges with automated vehicles include delay between the time fully-automated technologies are available and there is sufficient saturation in the motor vehicle fleet to result in effective use of vehicle-to-vehicle communications and measurable safety benefits. Another challenge is the limitations of automated/connected vehicles in detecting non-motorized road users. Specifically, pedestrians and cyclists are relatively small, varied in appearance, hard to predict, most exposed/fragile, and not "connected" to vehicle-to-vehicle communication systems.

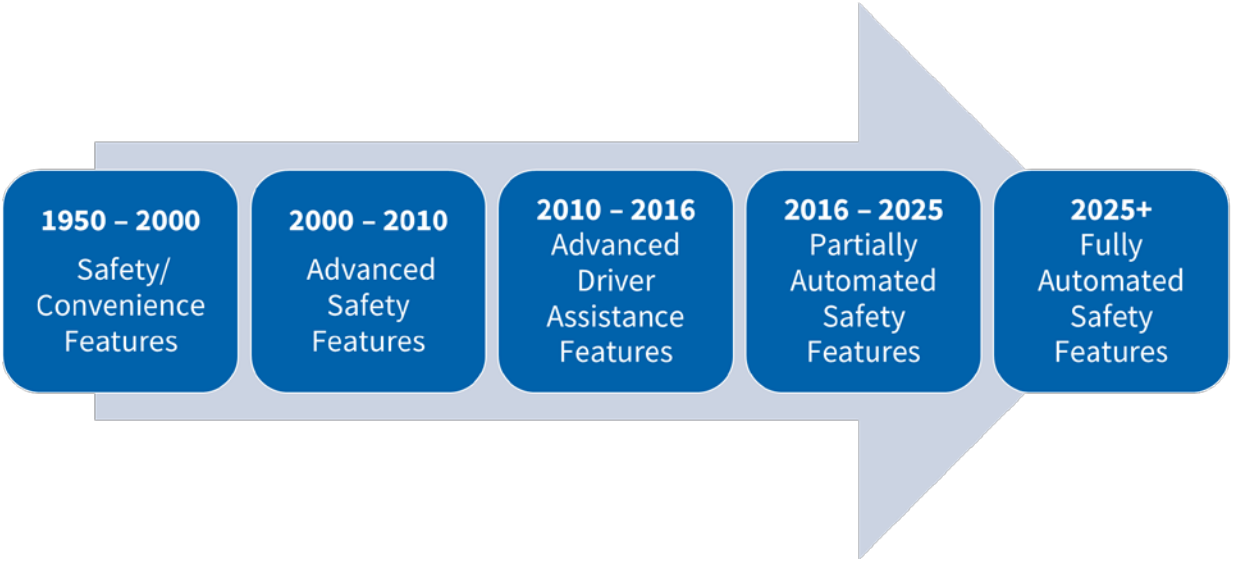

Figure 3-22: History and Future of Autonomous Vehicles

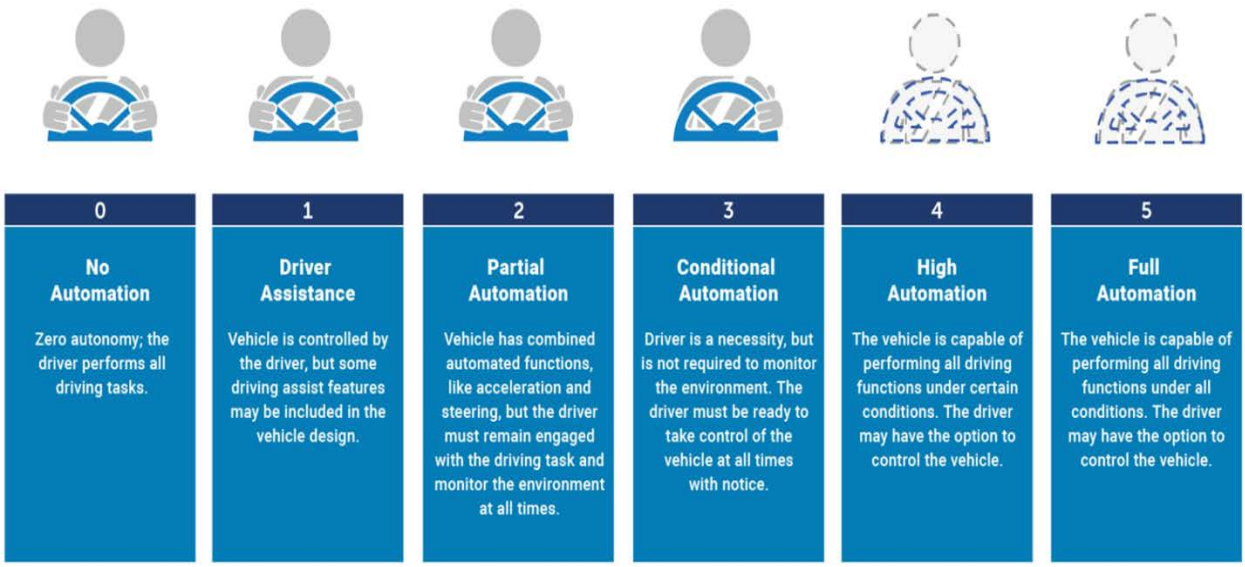

Figure 3-23: Vehicle Autonomy Levels and Features

Recommendation

Within the 2045 planning timeframe, FDOT District 1 projects that Connected and Automated vehicles will comprise approximately 35% of Collier County's motor vehicle fleet; however, in the interim, proactive spot and systemic safety measures are still necessary. Good design of roadways with a balance between mobility and connectivity and good infrastructure for non-motorized road users will provide benefits even once the majority of motorized vehicles drive themselves.

Non-Infrastructure Strategies

Referring to the same four emphasis areas, Table 3-2 shows a list of non-infrastructure strategies and the emphasis areas to which they correspond.

Non-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

Table 3-2: Non-Infrastructure Strategies Matrix

Traffic Enforcement

The Statistical Analysis Technical Memorandum indicates that Collier County records fewer traffic citations per capita and per vehicle mile of travel. This appears to be in part due to relatively small municipal law enforcement agencies and therefore a greater reliance on the Collier County Sheriff's Office and the Florida Highway Patrol to handle traffic enforcement needs. Based on the Statistical Analysis Technical Memorandum, the following enforcement areas could help to reduce severe crashes in Collier County.

- Speed Enforcement
- Red Light Running Enforcement
- Non-Motorized User Safety Enforcement (focusing on driver yield behaviors)

Although automated enforcement (red light running cameras) was suspended in Collier County in 2013, a transparent use of red-light cameras with revenues directed to fund other traffic safety programs should be considered as part of the County's toolkit.

Recommendation:
Traffic enforcement is one aspect of an effective speed management program and should be used to target drivers who are significantly exceeding the Speed Limit. Collier County law enforcement agencies should consider applying for FDOT High Visibility Enforcement Grants for bicycle and pedestrian enforcement and automated enforcement should be revisited—especially if manpower resources preclude additional human red-light-running enforcement.

Material Give-Aways

The LRSP Statistical Analysis Memorandum notes that while Collier County does not have a disproportionate ratio of nighttime crashes overall, non-motorized road user crashes are more likely to occur at night. A common tactic to reduce nighttime non-motorized user crashes it to provide retro-reflective materials to vulnerable populations including:

- School-age children
- Transit customers
- Homeless shelter clients
- Shift workers who may commute at night

Examples of retroreflective materials include low-cost backpacks with reflective strips, Velcro ankle strips to keep pant cuffs from catching in bicycle gears, and simple safety vests. Low-cost bicycle light kits can also be distributed and may be provided as part of a warning stop when police officers notice cyclists riding at night without proper lights.

Figure 3-24: Example Retroreflective Promotional Materials

Young Driver Education

A key conclusion from the LRSP Statistical Analysis Memorandum is that Collier County's demographics likely play a role in its better than average safety performance. Because Collier County does not have a high proportion of younger drivers, the overall expected crash rates as a function of population age demographics are better than Florida as a whole. However, as Collier County continues to grow, it is likely that its demographic profile will become more "normal" and the introduction of more, young drivers will begin to adversely impact Collier County crash statistics.

Although older drivers certainly have limitations in terms of vision, reflexes, and other age-related deficits, these drivers are more likely to recognize their limitations than younger drivers and act accordingly. This is born-out by data showing that older drivers are less likely to be involved in nighttime crashes or crashes during rush hour because these drivers choose to avoid higher-risk times of day.

To help reduce crashes among younger drivers, supplemental drivers' education programs should be considered. One such program, funded by FDOT District 7, provides high school seminars focused on teen driver safety issues including bicycle and pedestrian safety, motorcycle safety, and impacts of DUI. Statewide FDOT provides grants under the umbrella of the State Safety Office Teen Driver Safety program to fund programs that help to educate teen drivers.

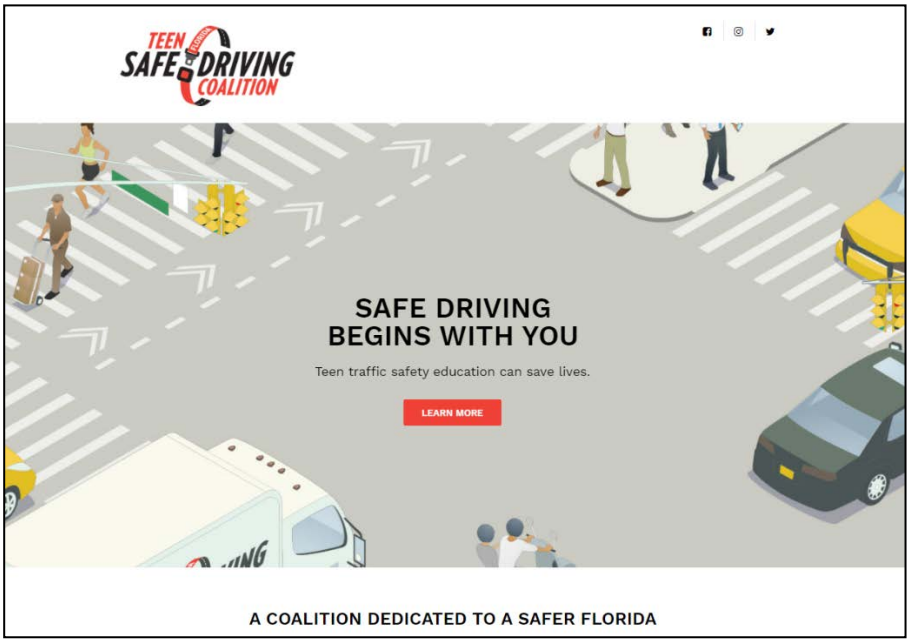

Figure 3-25: Florida Teen Safe Driving Coalition Homepage

Recommendation:

The Collier MPO and/or the Collier County Sheriff's Office should engage with the Florida Teen Safety Driving Coalition to identify potential teen driver education programs that can be implemented in Collier County. Although teen drivers make up a relatively small proportion of Collier County's demographic presently, safer driving habits will have a long-term benefit and establishing programs now will be useful as the County's population continues to grow.

Adult Traffic Safety Education

From the public outreach survey responses, it is clear that many Collier County residents do not feel safe biking or walking along major roadways and that driver behavior with respect to yielding/making space for non-motorized users is inadequate. The Bike/Walk Tampa Bay program, administered by the University of South Florida and funded by FDOT District 7, offers virtual and in-person pedestrian, driver and bicyclist safety presentations to adult audiences. The presentation uses an Audience Response System to quiz the audience and poll their opinions.

Since 2015 over 30,000 individuals have participated in seminars with each participant taking a "pledge" to WalkWise, BikeSmart, and Drive Safely and work to educate others about the importance of safe behaviors.

Figure 3-26: Walk Wise Class Photo

Recommendation:
The Collier MPO should consider coordinating with FDOT District 1 to pilot a similar program within the District. Implementation activities included as part of the Collier LRSP include an inventory of safety-oriented organizations which can be reviewed to identify potential seminar providers.

Continuing Education

Continuing education programs for safety professionals can help ensure that as standards and practices evolve, the professional community remains abreast with the state of the art. This is especially important in Collier County where so much of the public roadway system is constructed by private developers. The Collier MPO should encourage participation in FDOT's Local Agency Traffic Safety Academy (LATSA).

LATSA is a free webinar series focused on:

- Sharing knowledge about traffic safety
- Discussing new and ongoing safety programs
- Explaining available funding sources
- Presenting local best practices,
- Learning about new safety treatments and technologies
- Discussing project delivery processes

Over 75 webinars have been presented since 2013 covering a wide range of traffic safety topics.

Recommendation:

The Collier MPO should encourage local agency partners and the development community to participate in LATSA webinars to help ensure good roadway design practices along both public and private roadways.

Safety Issue Reporting System

Non-emergency reporting systems can help identify potential safety issues before crash histories are established. Applications such as Wikimaps allow agencies to collect "crowdsourced" tips which can be categorized. These applications also allow users to click on and concur with previously reported issues and/or upload photos so that monitoring agencies can gather more actionable intelligence about potential issues. In the northeast Florida Area, FDOT District 2 maintains a Community Traffic Safety Team engineering issues system which allows safety partners to submit engineering concerns with pictures and follow-up contact information.

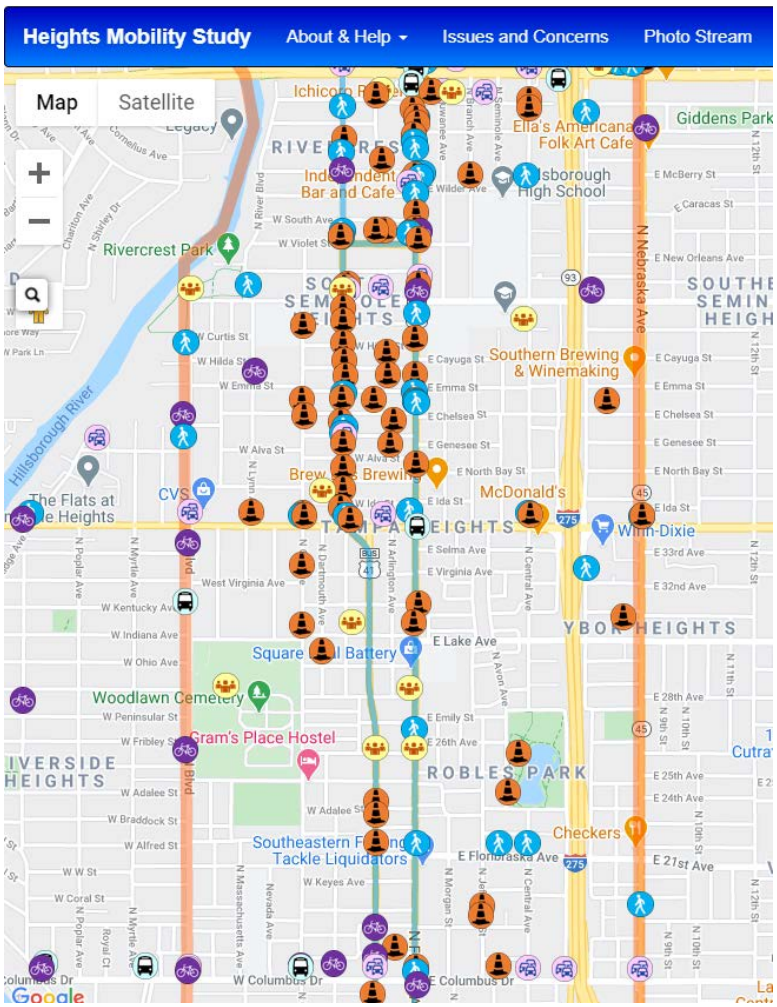

Figure 3-27: Example Wikimaps Issue Page

Recommendation:

The Collier MPO consider piloting a safety issue reporting system; however it is important that unlike an automated public works customer services system, users are clearly informed that the program is a pilot project only until such time as the agency workload, intake, and resolution process can be understood and managed.

Vision Zero Policy

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero has proved successful across Europe — and now it is now gaining momentum in major American cities. Vision Zero focuses on systems approaches to preventing crash fatalities and incapacitating injuries. Speed management, equity, and human engagement are key aspects of Vision Zero.

While Vision Zero is normally a city-centric approach to traffic safety relying on the strong executive leadership of a city mayor, aspects of Vision Zero can be translated to a County framework. According to the Vision Zero Network, there are nine components of a strong Vision Zero commitment:

1. Political commitment from the highest-ranking local officials
2. Multi-disciplinary leadership
3. Action plan identifying clear strategies, owners, and interim targets and performance measures
4. Equity focus
5. Cooperation and collaboration
6. Systems-based approach
7. Data-driven
8. Community engagement
9. Transparency

Recommendation:

As part of the implementation process for the Collier LRSP, the Collier MPO and the County's leadership should continue to explore the merits of adopting a Vision Zero approach to safety in Collier County.

SECTION 4: IMPLEMENTATION PLAN

The Infrastructure and Non-Infrastructure strategy recommendations in the prior chapter of the Collier LRSP will require coordination between the Collier MPO, its member governments, FDOT, and other agencies to implement. This chapter provides a summary matrix of potential implementation processes for each strategy including the relative timeframe and order of magnitude costs. The matrix includes identification of agency responsibilities for planning/prioritizing and actual implementation of each strategy where that distinction is applicable.

In addition to implementation processes for each recommended strategy, this chapter also includes recommendations for LRSP monitoring measures for both implementation and outcomes as well as recommendations related to incorporating updates to the LRSP within existing Collier MPO and Member Government processes.

Infrastructure Implementation Processes

This section outline implementation processes for each infrastructure strategy recommended in the prior section. For the purposes of this discussion, the following general parameters apply to the timeframe and cost descriptions for each implementation step.

- Timeframe from LRSP adoption:
  - Short: 0 to 3 years
  - Medium: 3 – 5
  - Long: Greater than 5 years
- Cost per implementation step for planning, prioritization, and non-infrastructure activities and per roadway centerline mile or per major intersection for infrastructure projects:
  - Low: Less than $250,000
  - Medium: $250,000 - $1,000,000
  - High: Greater than $1,000,000

Attention is directed to the fact that while individual policy, prioritization, and project development activities are identified for many of the infrastructure countermeasures, these activities could occur in parallel with individual corridor and intersection identification, prioritization, and project development processes addressing multiple strategy areas.

Speed Management

Speed management refers to a broad set of strategies to help ensure that roadway operating speeds are compliant with posted speed limits and that speed limits are set with intentionality and are appropriate for the land use context of each roadway corridor. Accordingly, the first step in implementing speed management strategies is to establish roadway context classification and define target speeds. Once this is done, design interventions can be identified and implemented either as stand-alone projects or through the course of ongoing investments like state and local resurfacing programs.

Implementation Step	Lead Agency	Timeframe	Cost
Assign Context Classification	Collier MPO	Short	Low
Notes: Context classifications have been assigned to State Highway System (SHS) by FDOT. Systemwide context class assignments should be reviewed and adjusted as necessary when specific projects are planned. The MPO or the member governments could take a lead role in establishing context classification assignments for thoroughfares that are not part of the SHS.			
Establish Target Speeds	Maintaining Agencies	Short	Low
Notes: In addition to context classification, target speeds assignments should consider traffic crash history (i.e. is the roadway a emphasis area corridor) as well as future development patterns. The MPO or member governments should take a leadership role for establishing target speeds for the entirety of the County's major road network, but FDOT consultation/concurrence should be incorporated in setting target speeds on the SHS. As with context class assignments, target speeds assigned on a systemic basis should be updated when specific projects are programmed.			
Implement Design Interventions	Maintaining Agencies	Medium – Long	Medium – High
Notes: Design interventions generally fall into two categories: Shorter term, lower cost interventions generally limited to sign and pavement marking improvements and longer-term, higher-cost modifications to roadway geometry and or signal density/intersection control. Identification and implementation of sign and pavement marking speed management strategies should be incorporated into each maintaining agency's roadway resurfacing program. Geometric changes (i.e. "complete streets projects") are more likely to be implemented as stand-alone projects and should be prioritized by the MPO in conjunction with relevant maintaining agencies as part of the MPO's Congestion Management Process (CMP) and Long Range Transportation Plan (LRTP).			
Implement Proactive Signal Management Strategies	Maintaining Agencies	Short – Medium	Low – Medium
Notes: Traffic signal timing and phasing strategies to moderate progression speeds and improve gaps can be implemented as a short-term strategy along corridors which have sufficiently close signal spacing (i.e. <= 0.25 miles) for signals to provide drivers with adequate feedback to help them moderate their speeds. The maintaining agencies can identify and prioritize corridors based on discrepancy between posted/operating speeds and target speed with the support of the Collier MPO. Once prioritized, operational analyses can be performed to evaluate the potential for speed management through signal coordination. Along roadways with broader signal spacing, this strategy will require investments in new signalized intersections (see also ICE Process and Median Restrictions/Access Management) and is therefore a higher cost and longer-term implementation process.			

Table 4-1: Speed Management Implementation Steps

Alternative Intersections (ICE Process)

The ICE process is a technical approach and a policy commitment to evaluate alternative intersection designs along new/widened roadways, when new signals are needed, and when major modifications are planned for an existing signalized intersection. Consideration of alternative intersections can also be done proactively as part of intersection operational and safety projects or multimodal corridor studies.

Implementation Step	Lead Agency	Timeframe	Cost
Adopt/Adapt FDOT ICE Process for Locals Roads	Member Governments	Short	Low
Notes: This is a simple policy commitment to consider intersection alternatives under specific circumstances and is not inconsistent with current Collier County and FDOT practice.			
Evaluate/Implement Alternative Intersections as Part of New Roadways, Roadway Widening, and Major Intersection Improvements	FDOT/Member Governments	Ongoing	Medium
Notes: Cost may be neutral or cost savings may be achieved depending on the intersection alternatives selected and the relative costs of conventional signalized intersections.			
Identify/Prioritize Corridors and Intersections and Conduct ICE Stage I Screening	Collier MPO/ Maintaining Agencies	Medium	Low - Medium
Notes: Identification/prioritization of corridors based on crash data, level of service, and other parameters such as roadway/right-of-way cross section can be done on a countywide basis as a continuation of strategies already included in the MPO's CMP. Stage I ICE screenings of corridors can be performed with either the Collier MPO or member governments/FDOT as the lead agency. Depending on the number of corridors/intersections screened, timeframe and cost may extend beyond the short-term/low-cost parameters established for this Implementation Plan.			
Implement ICE Corridor Screening Recommendations	Maintaining Agencies	Medium – Long	Medium - High
Notes: Once intersections and corridors have completed Stage I screening, additional technical analysis is necessary to validate project concepts, design alternatives, and proceed to construction. In some circumstances—especially if right-of-way acquisition or environmental impacts are likely, it may be necessary to conduct a Planning, Design & Environmental (PD&E) study prior to moving to design and construction. Implementation of Alternative Intersections should be done in conjunction with other strategies including speed management interventions and implementation of design best practices for non-motorized users.			

Table 4-2: Alternative Intersection (ICE) Implementation Steps

Intersection Design Best Practices for Pedestrians

Similar to implementation of Alternative Intersections, implementation of design best practices for pedestrians includes both a commitment to apply best-practice design principles to planned projects and identification and prioritization of intersections and corridors for retrofit projects.

Implementation Step	Lead Agency	Timeframe	Cost
Incorporate Best-Practice Design Elements in Member Government Design Manuals or Incorporate by References by Adoption of NACTO Design Guidance and/or Relevant Elements of the Florida Design Manual (FDM)	Member Governments	Short	Low
Notes: Formally adopting design standards/guidance will help ensure design best practices are implemented uniformly—especially for roadway and intersection projects constructed by developers.			
Incorporate Pedestrian Design Best Practices in Planned Projects	FDOT/Member Governments	Ongoing	Medium
Notes: Cost may be neutral or cost savings may be achieved depending on the design strategies applied			
Identify/Prioritize Corridors and Intersections and Pedestrian Design Best Practice Concept Development	Collier MPO/ Maintaining Agencies	Short – Medium	Low - Medium
Notes: Identification/prioritization of corridors based on crash data, level of service, and other parameters such as roadway and intersection characteristics can be done on a countywide basis as a continuation of strategies already included in the MPO's CMP. Screening and concept development can be performed with either the Collier MPO or member governments/FDOT as the lead agency. Depending on the number of corridors/intersections screened, timeframe and cost may extend beyond the short-term/low-cost parameters established for this Implementation Plan.			
Implement Pedestrian Design Best-Practice Projects	Maintaining Agencies	Medium – Long	Medium - High
Notes: Once intersections and corridors pedestrian design concepts have been identified and vetted at a planning/concept design level, additional technical analysis is necessary to validate project concepts, design alternatives, and proceed to construction. Generally, most pedestrian design interventions will not require a PD&E study prior to moving to design and construction. Implementation of pedestrian design interventions may occur as stand-along projects or may incorporate speed management and alternative intersection strategies.			

Table 4-3: Pedestrian Design Best Practice Implementation Steps

Median Restrictions/Access Management

From the standpoint of reducing left-turn and angle crashes, these strategies are largely a continuation of existing FDOT and Collier MPO Member Governments' preference for raised medians and restricted left-turn access along higher-speed multilane roadways. With respect to implementation of LRSP Speed Management strategies, the following implementation steps are needed.

Implementation Step	Lead Agency	Timeframe	Cost
Consider Signalization Based on Coordinated Systems Warranting Criteria In Lieu of Directional Medians in More Urban Context Areas (i.e. C4, C5 and C6)	Maintaining Agencies	Medium – Ongoing	Medium
Notes: As discussed herein, more closely spaced coordinated traffic signals can help moderate speeds and increase the extent to which thru traffic is grouped in "platoons" making more gaps for other movements. Collier County maintaining agencies should think critically about closing existing full-access median openings in more urban context areas and consider whether signalization or implementation of alternative intersection types might better serve the overall safety and mobility outcomes of the system. When intersecting roadway traffic volumes do not meet the minimum Manual of Uniform Traffic Control Devices (MUTCD) criteria to warrant a traffic signal, the subject roadway corridor, consideration should be given to evaluate the roadway using the coordinated systems warranting process to determine if a new signal is likely to improve overall traffic progression.			

Table 4-4: Median Restriction/Access Management Implementation

Right Turn Lanes

Right turn lanes should continue to be used along higher speed (45 MPH+) arterial roadways where they are effective in reducing rear-end and sideswipe crashes. However, in more urban contexts use of auxiliary right turn lanes can complicate pedestrian crossings, discourage speed management, and create unnecessary key-hole conflict areas for cyclists. In more urban contexts, right turn lanes should not be used primarily for capacity reasons and, when necessary for safety purposes, should be complemented by tighter curb radii (or properly designed islands) and should be no longer than necessary to allow for deceleration.

Implementation Step	Lead Agency	Timeframe	Cost
Consider Limiting Use of Right Turn Lanes in More Urban, Lower Speed Contexts (i.e. C4, C5 and C6)	Maintaining Agencies	Medium – Ongoing	Low
Notes: Critically examine the need for right turn lanes with respect to contraindications related to pedestrian crossing, bike conflicts, and speed management in more urban context areas. When provided, ensure right turn lanes are no longer than necessary for safety purposes and that any capacity benefits are ancillary to meeting a demonstrable safety need.			

Table 4-5: Right Turn Lane Strategy Implementation

Signal Coordination

See discussion under Speed Management: Proactive Signal Coordination Strategies.

Rural Road Strategies

Rural road strategies primarily focus on reducing the frequency and severity single-vehicle/roadway departure crashes and crashes at isolated, unsignalized intersections. For the most part, these investments are considered "systemic" safety improvements in that they should be applied based on roadway characteristics (i.e. substandard road conditions) rather than solely in response to documented, site-specific crash histories.

The following measures are recommended to implement the LRSP rural road strategies.

Implementation Step	Lead Agency	Timeframe	Cost
Inventory rural roadways to identify roadway segments, intersections, curves, and other features that have substandard features.	Maintaining Agencies	Short – medium	Low - Medium
Notes: Inventory elements include pavement width, condition of pavement edge, fixed objects within the clear zone, ditch grades, curve geometry, warnings, and guardrail; and intersection sight distance and skew geometry. This inventory process may be undertaken as a stand-alone effort, but, at a minimum, should be performed as part of any future rural roadway resurfacing projects.			
Paved Shoulder and Safety Edge should be considered along rural roadway which lack an existing paved shoulder.	Maintaining Agencies	Medium	Medium
Notes: Even when a 5ft paved shoulder cannot be accommodated, a 2ft shoulder with Safety Edge provide a safety benefit. Rumble strips and rumble stripes should also be considered where appropriate.			
Identify curve and isolated intersection needs and prioritize geometric improvements and low-cost treatments.	Maintaining Agencies	Medium	Medium
Notes: Based on crash history, estimated entering volumes, and adverse geometric conditions (skew, limited sight distance, etc.) advance warning, advisory speed, delineation, and lighting should be considered for isolated intersections and curved roadway segments. In addition to more costly geometric improvements, low cost interventions can include solar flashing beacons, oversized stop signs, chevrons and other delineation (for curves), trimming of trees and foliage to improve sight triangles.			
Bridge and Guardrail Improvements	Maintaining Agencies	Medium	Medium
Notes: As part of the inventory of the County's rural roadways, substandard bridge/culvert guard rail and guard rail terminal ends should be identified and upgraded.			

Table 4-6: Rural Road Safety Strategy Implementation

Shared Use Pathways, Sidewalk Improvements

Emerging state and national guidance is moving away from on-street bike lanes towards separated or protected bicycle facilities along roadways with operating speeds over 35 MPH. With recent and pending updates to the Florida Design Manual, preference for buffered bike lanes along higher-speed arterial roadways (i.e. 35 MPH+) will be replaced with guidance advocating protected or separated bike facilities. The Collier MPO Bicycle and Pedestrian Plan includes recommendations for completing sidewalk gaps along the County's major roadway network.

Implementation Step	Lead Agency	Timeframe	Cost
Apply Level of Traffic Stress in addressing prioritized and addressing the County's bicycle and pedestrian needs.	Collier MPO or Maintaining Agencies	Medium to Long	Medium to High
Notes: Level of Traffic Stress (LTS) is a performance measure for bicycle facilities that identifies which facilities will be suitable for a broad cross-section of the public who, as a rule, are not comfortable operating in mixed traffic or in striped bike lanes along higher speed, higher volume motor vehicle traffic. The Collier MPO Bicycle and Pedestrian Master Plan (2019) provides a comprehensive evaluation of bicycle and pedestrian infrastructure along Collier County's thoroughfare roadway network and identifies priority improvement needs. Application of LTS criteria will generally shift investment toward separated pathways or protected on-street facilities in lieu of traditional marked bike lanes.			

Table 4-7: Shared Use Pathways Implementation

Mid-Block Crossings and Median Refuge

Crosswalks at unsignalized intersections with appropriate supplemental warning and/or traffic control devices may be necessary and appropriate when there is a concentration of pedestrian crossings within close proximity along a roadway. When pedestrian origins/destinations are more dispersed, raised medians or median islands (in conjunction with speed management, lighting, and other countermeasures) can improve safety for pedestrian crossings. Strategies to provide mid-block crossing infrastructure are described below.

Implementation Step	Lead Agency	Timeframe	Cost
Evaluate roadways with painted medians (i.e. two-way-left-turn lanes) for construction of median islands	Maintaining Agencies	Medium	Low
Notes: Most major roadways in Collier County have raised medians; however, roadways with painted medians may provide opportunities to install pedestrian refuge islands which can allow pedestrians to cross each direction of traffic independently. Generally, construction of median islands within existing two-way left turn lanes represents a lower cost safety investment since the new islands do not generally impact drainage or utilities.			
Mid-block crosswalk candidate identification	Maintaining Agencies	Medium	Medium
Notes: As part of the inventory of the County's rural roadways, substandard bridge/culvert guard rail and guard rail terminal ends should be identified and upgraded.			

Table 4-8: Mid-Block Crossings and Median Refuge Implementation

Intersection Lighting Enhancements

FDOT has adopted new standards for intersection lighting that specifically focus on illumination levels at pedestrian crosswalks. These standards require approximately twice the level of illumination as AASHTO highway lighting standards as their intent is to help drivers see pedestrians crossing at night, rather than to simply help drivers see roadway features. Although Collier County does not have a disproportionate number of nighttime crashes overall, non-motorized user crashes are more likely to occur at night. Accordingly, the following implementation strategies are recommended to enhance lighting as a countermeasure for non-motorized user crashes with ancillary benefit of reducing lower-severity fixed-object cashes.

Implementation Step	Lead Agency	Timeframe	Cost
Inventory intersection lighting along urban corridors and non-motorized user emphasis area crash corridors	Maintaining Agencies	Short	Low
Notes: As an initial step, this can include a simple inventory of intersection lighting luminaires at and adjacent to signalized intersections with subsequent analysis of lighting levels compared to FDOT recommended horizontal illumination as described in Table 231.2.1 of the FDOT Florida Design Manual.			
Prioritize and implement lighting retrofits	Maintaining Agencies	Medium	Medium
Notes: For urban corridors (Context Classifications C4, C5, and C6) and for corridors identified as non-motorized crash emphasis corridors, lighting retrofits should be considered based on the degree to which intersection lighting is deficient, corridor crash history, and funding availability. In addition to stand-along lighting retrofit projects, intersection lighting should be upgraded as part of planned intersection improvement projects, new traffic signals, and signal reconstruction projects.			

Table 4-9: Intersection Lighting Retrofit Implementation

Autonomous Vehicles (Longer-Term)

Public agencies may promote autonomous vehicles by participating in pilot projects and potentially selecting partially or fully autonomous vehicles for public agency vehicle fleets (where cost feasible and appropriate). However, autonomous vehicle technology development and implementation is primarily driven by the marketplace as well as State and federal regulations. As such, no specific implementation strategies are recommended as part of the LRSP.

Non-Infrastructure Implementation Processes

This section outline implementation processes for each non-infrastructure strategy recommended in the prior section. For the purposes of this discussion, the following general parameters apply to the timeframe and cost descriptions for each implementation step.

- Timeframe from LRSP adoption:
  - Short: 0 to 3 years
  - Medium: 3 – 5
  - Long: Greater than 5 years
- Cost per implementation step for annual program costs and program management
  - Low: Less than $50,000
  - Medium: $50,000 - $100,000
  - High: Greater than $100,000

Traffic Enforcement Strategies

Enforcement strategies include supplementing general traffic enforcement activities with corridor-specific efforts to address emphasis area crash types, consideration of participating in FDOT's High Visibility Enforcement program and, reconsideration of the use of automated enforcement systems.

Implementation Step	Lead Agency	Timeframe	Cost
Identify corridor specific enforcement strategies	Law Enforcement Agencies	Ongoing	High
Notes: Data from the LRSP shows which Collier County roadway corridors have the highest incidence of severe crashes.			
Consider pursuing FDOT High Visibility Enforcement bicycle and pedestrian safety grants	Law Enforcement Agencies	Short	Low
Notes: As part of FDOT's Alert Today, Alive Tomorrow program, grants are available to Collier County law enforcement agencies to conduct high visibility enforcement for non-motorized user safety. Any such enforcement activities should be directed at both driver and non-motorized user compliance issues and should be used as an opportunity to provide educational material and safety equipment (e.g. retroreflective items, low-cost bike lights) to individual contacted by law enforcement.			
Reconsider use of automated traffic signal enforcement	Law Enforcement Agencies	Medium – Long	Medium
Notes: National research indicates that automated traffic signal enforcement can reduce angle and left turn crashes at signalized intersections. If Collier County elects to reinstate automated enforcement, best practices include selecting locations based on documented crash history, conducting before/after crash analyses, and using fines collected for traffic safety purposes (e.g. infrastructure and non-infrastructure program funding).			

Table 4-10: Law Enforcement Implementation Strategies

Safety Material Distribution

Safety materials including placards, low-cost bicycle light kits, and retroreflective items (bracelets, backpacks, vests) can be distributed either ancillary to enforcement activities or as part of "grass roots" safety outreach and education programs.

Implementation Step	Lead Agency	Timeframe	Cost
Procure and distribute safety materials	Multiple	Short Term	Low - Medium
Notes: Safety materials, as described here-in, can be procured using grant funding, agency discretionary funding, or private contributions. Distribution can occur across multiple outlets including law enforcement, schools, public health organizations, and homeless services.			

Table 4-11: Safety Material Distribution

Young Driver Education

In other communities safety professionals have been recruited by FDOT to lead high-school seminars to promote traffic safety awareness for teen drivers. These seminars are coordinated with the public school system and can be conducted though drivers' education courses or general assemblies. The seminars focus on safe driving behavior with an emphasis on bicycle and pedestrian safety from the perspective of motorists and non-motorists. As an alternate to FDOT, the Collier County Sheriff or Collier County School Board could serve as the sponsoring agency.

Implementation Step	Lead Agency	Timeframe	Cost
Coordinate with FDOT District 1 to pilot a Teen Safe Driving seminar program.	FDOT or Collier Sheriff	Short Term	Low - Medium
Notes: This program has been established in the Tampa Bay Area funded by FDOT through the University of South Florida Center for Urban Transportation Research.			

Table 4-12: Supplemental Drivers' Education Training

Small Group Outreach

In the Tampa Bay Area, a small group outreach program (WalkWise Tampa Bay) was funded by FDOT and managed by the University of South Florida Center for Urban Transportation Research (CUTR). The program provides in-person or virtual seminars to community groups, businesses, and other organizations upon request. The seminars focus on pedestrian and bicycle safety and also provide for distribution of safety materials. Other safety topics can be integrated based on local needs.

Implementation Step	Lead Agency	Timeframe	Cost
Coordinate with FDOT District 1 to consider piloting a small group outreach program similar to WalkWise Tampa Bay.	FDOT (funding); TBD (Implementation)	Short Term	Low - Medium
Notes: This program has been established in the Tampa Bay Area funded by FDOT through the University of South Florida Center for Urban Transportation Research. A similar institutional partner should be recruited for program implementation in Collier County. This program appears to be consistent with the mission of the Southwest Florida Blue Zones project.			

Table 4-13: Small Group Outreach

Continuing Education

This LRSP recommendation refers to provision of professional development information to Collier County safety professionals related to emerging best practices for traffic safety engineering and planning. Several FDOT Districts are currently collaborating to expand on FDOT District 7's (Tampa Bay) Local Agency Safety Academy webinar series. This free webinar series provides information on various safety engineering topics. The Collier MPO can also encourage member governments to participate in the Gulf Coast Safe Streets Summit, South East Florida Safe Streets Summit, or partner with Southwest Florida MPOs to establish a similar annual safety-focused event.

Implementation Step	Lead Agency	Timeframe	Cost
Promote participation in FDOT's Local Agency Traffic Safety Academy webinars	FDOT or Collier MPO	Short Term	Low - Medium
Notes: http://www.tampabaytrafficsafety.com/LATSA/SitePages/Home.aspx			
Participate in regional Safety Summits and consider establishing a Southwest Florida Safety Summit or collaborating to expand the Gulf Coast Safety Summit	Collier MPO – Other Southwest Florida MPOs	Medium – Ongoing	Medium
Notes: Gulf Coast Safe Streets Summit: https://www.gulfcoastsafestreetssummit.org/ Southeast Florida Safe Streets Summit: https://www.safestreetssummit.org/			

Table 4-14: Continuing Education

Vision Zero Policy

As part of the Collier MPO's Performance-Based Planning Process, Safety Performance Targets have been established that include zero traffic deaths and zero serious injuries. The LRSP provides the vast majority of technical analysis—including definition of the County's High Injury Network—necessary to become a Vision Zero Community. Implementing the LRSP within the context of the Vision Zero framework expresses the policy commitment of Collier County's elected leaders to implementation of the Plan across multiple discipline areas to achieve the MPO's existing performance targets.

Implementation Step	Lead Agency	Timeframe	Cost
Implement steps necessary to be recognized as a Vision Zero Community	Collier Member Governments	Short Term	Low - Medium

Notes: The steps to become recognized as a Vision Zero Community are summarized below. Note that while the Vision Zero framework is generally based around municipal governments, County governments can become members.

- Setting a clear goal of eliminating traffic deaths and serious injuries among all road users within an explicit timeframe (i.e. 10 years);
- The Mayor (or top elected official) publicly, officially committing to Vision Zero within the set timeframe and directing appropriate city staff to prioritize the work;
- A Vision Zero Action Plan or Strategy is in place, or the Mayor and key departments have committed to creating one in a specified time frame and which includes a focus on being data driven, equitable, and including community input;
- Key city departments, including Transportation, Public Health, and Mayor's Office are actively engaged as leaders and partners in the process of developing the Vision Zero Plan, implementing it, and evaluating and sharing progress;
- A Vision Zero Task Force (including the agencies listed above, as well as community stakeholders, and others) meets regularly to lead and evaluate efforts.

Table 4-15: Vision Zero Policy

Relationship to Collier MPO 2045 Long Range Transportation Plan

The MPO's Long Range Transportation Plan (LRTP) documents multimodal transportation needs and cost-feasible project priorities over the 20-year period from 2026 – 2045. Committed projects slated for construction prior to 2026 are incorporated in the MPO's 5-year Transportation Improvement Program (TIP). The Draft 2045 LRTP incorporates the Emphasis Areas identified in the LRSP by reference and also incorporates the MPO's Bicycle and Pedestrian Mobility Plan.

Infrastructure Strategy Implementation Opportunities

Table 4-16 on the following page shows the relationship of the projects prioritized in the Draft 2045 LRTP to corridors identified as having an overrepresentation of emphasis area crashes in Chapter 2 of the LRSP. Each LRTP project shown in the table represents an opportunity to advance the infrastructure strategies described in Chapter 3 of the LRSP. While there is significant overlap between DRAFT 2045 LRTP projects and LRSP emphasis corridors, some emphasis area corridors do not have planned capital projects and will need to be studied and prioritized for safety enhancements consistent with the prior sections of this Chapter.

In addition to the potential for substantive safety improvements to be incorporated in the LRTP Cost-Feasible Plan projects, the LRTP sets aside over $41m of funding for implementation of the Collier Bicycle Pedestrian Mobility Plan. While not all bicycle and pedestrian mobility projects have an inherent safety nexus, the prominence of non-motorized user safety as a planning factor in developing the mobility project priorities for cyclists and pedestrians means that implementation of this plan, as a component part of the LRTP, will generally advance non-motorized user safety.

LRSP Update Cycle

Because the LRTP sets funding priorities for the Federal and State dollars within the MPO's purview, the most effective timeframe to update the Collier MPO LRSP is concurrent with or in advance of the LRTP. If updated in advance of the LRTP, the LRSP would remain a stand-alone document that would serve as input into the LRTP needs assessment and project prioritization process. Alternately, the LRSP could be integrated into future updates of the LRTP as a component part. In either scenario, the 5-year cycle of the LRTP update process would allow for adequate time to assess the recommended LRSP monitoring measures (discussed below) and would allow for the data-driven analysis of safety performance in Collier County to influence capital project priorities.

MPO SEGMENT ID	LRTP Project ID, Description, and Construction Timeframe		On Street	From Street	To Street	Total Crashes	Total Fatal Crashes	Total Severe Injury Crashes	Bike/ Pedestrian Rank	Lane Departure Rank	Intersection Rank	Rear End/ Sideswipe Rank
40			Airport Road	US 41 (Tamiami Trail)	Davis Boulevard	263	2	4	1			
41			Airport Road	Davis Boulevard	North Rd	306	1	4	14			
43			Airport Road	Radio Road	Golden Gate Parkway	688	1	7	15	4	8	2
45			Airport Road	Pine Ridge Road	Orange Blossom Drive	668	2	3		5	9	3
70			Bayshore Drive	Thomasson Drive	US 41 (Tamiami Trail)	232	0	7	5			
132			Collier Boulevard	Mainsail Drive	Manatee Road	296	0	5		12		
136			Collier Boulevard	US 41 (Tamiami Trail)	Rattlesnake Hammock Road	217	0	3		10		
137			Collier Boulevard	Rattlesnake Hammock Road	Davis Boulevard	447	1	7		11		
141			Collier Boulevard	Golden Gate Pwky	Green Boulevard	363	2	6			3	
145			Collier Boulevard	Vanderbilt Beach Road	Immokalee Road	576	0	7	9	7	12	5
222			Davis Boulevard	Lakewood Boulevard	County Barn Road	331	1	8	12			
250			Golden Gate Boulevard	Collier Boulevard	Wilson Boulevard	453	2	11		3		
263	78 - Major Intersection @ Livingston; 23 - Interchange @ I-75	FY26 - 30	Golden Gate Parkway	Livingston Road	I-75	425	0	4				8
265			Golden Gate Parkway	Santa Barbara Boulevard	Collier Boulevard	665	0	7			1	6
270			Goodlette-Frank Road	US 41 (Tamiami Trail)	Golden Gate Parkway	453	0	9		6	5	
271			Goodlette-Frank Road	Golden Gate Parkway	Pine Ridge Road	499	1	9			10	14
343	66 - Major Intersection @ Livingston	FY26 - 30	Immokalee Rd	Livingston Road	I-75	431	0	3				12
344	25 - Interchange Improvement @ I-75	FY26 -30	Immokalee Rd	I-75	Logan Boulevard	569	4	3				4
345	97 - Major Intersection @ Logan	FY36 - 45	Immokalee Rd	Logan Boulevard	Collier Boulevard	497	0	7				9
346			Immokalee Rd	Collier Boulevard	Wilson Boulevard	364	2	9		1		
348			Immokalee Rd	Oil Well Road	Stockade Rd	258	2	6		2		
349			Immokalee Rd	Stockade Rd	SR 29	182	0	5	11			
361			Lake Trafford Rd	Carson Rd	SR 29	223	1	5	10			
523			Pine Ridge Road	Airport Road	Livingston Road	808	0	8		15	11	1
524			Pine Ridge Road	Livingston Road	I-75	464	0	8				11
531			Radio Road	Livingston Road	Santa Barbara Boulevard	275	1	11	6			
593			Santa Barbara Boulevard	Golden Gate Parkway	Green Boulevard	295	1	6			7	
648			SR 29	1st St	9th Street	99	1	4	4			
649			SR 29	9th Street	Immokalee Dr	215	0	7	7		13	
650			SR 29	Immokalee Dr	CR 29A North	171	1	3	13			
670			Tamiami Trail East	Davis Boulevard	Airport Road	302	3	8	2			
671			Tamiami Trail East	Airport Road	Rattlesnake Hammock Road	501	3	10	8		15	10
672			Tamiami Trail East	Rattlesnake Hammock Road	Treetops Dr	307	2	8		13		
690	57 - Major Intersection @ Goodlette-Frank	FY31-35	Tamiami Trail North	SR 84 (Davis Blvd)	CR 851 (Goodlette Rd South)	398	0	4		9	2	
692			Tamiami Trail North	12th Ave	Park Shore Dr / Cypress Woods Dr	436	0	9		8	4	
693			Tamiami Trail North	Park Shore Dr / Cypress Woods Dr	Pine Ridge Rd / Seagate Dr	361	2	7			6	
694			Tamiami Trail North	Pine Ridge Rd / Seagate Dr	Gulf Park Drive	378	2	9			14	
696			Tamiami Trail North	Vanderbilt Beach Road	Immokalee Road	462	2	4	3			
697	111 - Intersection Improvement @ Immokalee	FY26 -30	Tamiami Trail North	Immokalee Road	Wiggins Pass Road	502	1	8				7
712			Vanderbilt Beach Road	Goodlette-Frank Road	Airport Road	414	1	1				15
714			Vanderbilt Beach Road	Livingston Road	Logan Blvd	425	0	4				13
715	99 - Minor Intersection @ Logan	FY36 - 45	Vanderbilt Beach Road	Logan Blvd	Collier Blvd	337	1	4		14		

Table 4-16: Relationship of Emphasis Areas Corridors and DRAFT 2045 LRTP Cost Feasible Projects

Monitoring and Performance Measures

Safety Performance Measures

The Collier MPO System Performance Report sets a target of zero for fatalities and incapacitating injuries. In addition to these high-level performance measures, incremental progress can be assessed by tracking safety outcomes on an ongoing basis as follows:

Data and Analysis Product	Update Cycle	Notes
Table 2-1: Comparison of Collier County and State of Florida Crash Rates	Annual	Update using 5-year average—data sourced from DHSMV and FDOT
Table 2-5: Emphasis Area Summary	Annual	Update using 5-year average—data sources from Collier CDMS
Tables 2-6 to 2-9: High Crash Corridors	5-years	Update using Collier CDMS and MPO Major Roadway Network segments
Tables 2-3 and 2-4: Traffic Citation Data	5-years	Data sourced from DHSMV, FDOT
Figures 2-1 to 2-5: Crash Data Distributions	5-years	Update using Collier CDMS and MPO Major Roadway Network segments

Table 4-15: LRSP Performance Measures Monitoring Process

Monitoring of Plan Implementation

Plan implementation can be monitored using a report card developed by consolidating Tables 4-1 through 4-15 into a single monitoring report. Consistent with the 5-year update cycle recommended above, implementation steps identified as short term should be completed prior to the next LRSP update and items identified as mid-term should be underway. If new strategies are adopted or currently recommended strategies are eliminated or modified, this should be noted in the monitoring report along with documentation of why a specific strategy was added, replaced, or eliminated.

Summary of Low Cost/Short-Term Infrastructure Strategies

While long term, transformative investments in the County's transportation system will require substantial resources, time, and policy commitment to implement, the LRSP includes a number of shorter-term, relatively low cost strategies to reduce the frequency and severity of crashes on the County's roadway network. These strategies are summarized in Table 4-18.

Low-Cost/Short Term Infrastructure Strategies	Non-Motorized	Intersection	Lane Departure	Same Direction
Speed Management • Establish context classification and set target speeds. • Implement relevant signal timing and coordination strategies.	•	•	•	•
Alternative Intersections (ICE Process) • Establish Member Government ICE Process and Identify Candidate Locations.	•	•		•
Intersection Design Best Practices for Pedestrians • Retrofit High Emphasis Crosswalk Markings, Countdown Pedestrian Signals, and R10-15 Warning Signs (as appropriate). • Provide Leading Pedestrian Interval as appropriate (consider FDOT guidance; Traffic Engineering Manual 3.11).	•			
Median Restrictions/Access Management • Provide directional median openings where appropriate.		•		•
Right Turn Lanes • Limit use of right turn lanes in lower-speed, urban context areas.	•			•
Signal Coordination • Consider new signals using coordinated systems warrant in lieu of directional median openings for developer permit projects.	•			•
Rural Road Strategies: • Integrate paved shoulder construction and use of Safety Edge treatment with resurfacing program. • Based on rural roadway inventory, provide solar flashing beacons and improve warning signs approaching curves and isolated rural intersections. • Based on rural roadway inventory, continue maintain sight triangles.		•	•	

Low-Cost/Short Term Infrastructure Strategies (continued)	Non-Motorized	Intersection	Lane Departure	Same Direction
Shared Use Pathways, Sidewalk Improvements • Update minimum design standards based on context classification to require shared use pathway construction as part of site access developer requirements where appropriate.	•			
Mid-Block Crossings & Median Refuge • Provide mid-block crosswalks with pedestal mounted RRFBs and/or median islands in existing two-way-left turn lanes	•			
Intersection Lighting Enhancements • Incorporate intersection lighting enhancements with signal reconstruction projects	•	•	•	

Table 4-16: Short-Term/Low Cost Infrastructure Strategies

APPENDIX 1: GLOSSARY OF TECHNICAL TERMS

GLOSSARY

- **AADT –** Average Annualized Daily Traffic: Daily traffic volumes collected over multiple (usually three) days and adjusted for seasonal variations in traffic volumes.

- **Emphasis Area –** Emphasis areas are usually divided into 22 categories based on extensive research by the AASHTO and National Cooperative Highway Research Program in their Strategic Highway Safety Plan (NCHRP). These include infrastructure (e.g., utility pole collisions), crash types (e.g., head-on collisions, lane departures), behavior (e.g., alcohol, speeding, occupant protection), vehicle types (e.g., bicycles, motorcycles, heavy trucks), and at risk populations (e.g., young drivers, older drivers). Implementation guides have been developed for these emphasis areas and are available as 22 volumes of the NCHRP Report 500. Emphasis Areas for the Collier LRSP represent a combination of similar crash types related to non-motorized road users, intersection crashes, lane departure crashes, and same direction (rear-end/side-swipe) crashes.

- **Functional Classification –** System used to classify roadways based on a transect of mobility vs. access.

    - **Freeway & Expressway -** Roads in this classification have directional travel lanes usually separated by some type of physical barrier, and their access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. These roadways are designed and constructed to maximize their mobility function, and abutting land uses are not directly served by them.
    - **Arterial Roadway (Major) -** These roadways serve major centers of metropolitan areas, provide a high degree of mobility and can also provide mobility through rural areas. Forms of access include driveways to specific parcels and at-grade intersections with other roadways.
    - **Arterial Roadway (Minor) -** Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts and offer connectivity to the higher Arterial system. In an urban context, they interconnect and augment the higher Arterial system, provide intra-community continuity and may carry local bus routes. In rural settings, Minor Arterials should be identified and spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of a higher level Arterial. The spacing of Minor Arterial streets may typically vary from 1/8- to 1/2-mile in the central business district (CBD) and 2 to 3 miles in the suburban fringes. Normally, the spacing should not exceed 1 mile in fully developed areas
    - **Collector Roadway -** Collectors serve a critical role in the roadway network by gathering traffic from Local Roads and funneling them to the Arterial network. Collectors are broken down into two categories: Major Collectors and Minor Collectors. Major Collector routes are longer in length; have lower connecting driveway densities; have higher speed limits; are spaced at greater intervals; have higher annual average traffic volumes; and may have more travel lanes than their Minor Collector counterparts. In rural areas, AADT and spacing may be the most significant designation factors. Major Collectors offer more mobility and Minor Collectors offer more access. Overall, the total

mileage of Major Collectors is typically lower than the total mileage of Minor Collectors, while the total Collector mileage is typically one-third of the Local roadway network

- **Local Street –** Locally classified roads account for the largest percentage of all roadways in terms of mileage. They are not intended for use in long distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land.

- **ICE –** Intersection Control Evaluation: A FHWA and FDOT process for evaluating appropriate traffic control measures at major intersections.

- **Signal Timing** – Refers to a set of parameters for controlling traffic signals what include:

  - Cycle Length – the time for a traffic signal to complete all phases
  - Phase – a set of allowed concurrent movements
  - Split – the amount of time allocated to each phase
  - Offset – the time between common phases at adjacent traffic signals. This is used to progress traffic along a roadway from upstream to downstream signals
  - Platoon – a group of vehicles travelling between coordinated traffic signals

- **VMT –** Vehicle Miles Traveled: A measure of driver exposure based on miles of roadway travel.

APPENDIX 2: CRASH DATA QUALITY CONTROL TECHNICAL MEMORANDUM

Collier County MPO
Local Road Safety Plan

Crash Data QC Technical Memorandum

March 24, 2020

FINAL

Prepared for:

Prepared by:

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APPENDICES

Appendix A: Revised Motorized Vehicle Crashes

Appendix B: Revised Non-Motorized Crashes

SECTION 1: INTRODUCTION

A five-year crash history from 2014 to 2018 was queried using data from the Collier County Crash Data Management (CDMS) for both motorized vehicles and crashes involving non-motorized road users. Table 1-1 shows a five-year total of motorized vehicle and non-motorized road user crashes based on the highest injury severity for each report.

Table 1-1: Summary of Crashes (2014-2018)

Severity	Motor-Vehicle		Non-Motorized		Total
	Crashes	Percent	Crashes	Percent	
Fatal	130	74%	45	26%	175
Incapacitating Injury	669	80%	170	20%	839
Non-Incapacitating Injury	2,758	85%	501	15%	3,259
Possible Injury	5,290	92%	454	8%	5,744
Property Damage Only	45,175	99%	315	1%	45,490
TOTAL	**54,022**	**97%**	**1485**	**3%**	**55,507**

As part of the Collier County Local Road Safety Plan (LRSP), key attributes of the more severe crashes in the data set were reviewed to verify that the coded crash data accurately corresponds to the narrative information and collision diagrams included in each crash report. This was done to ensure that reasonably accurate data is used for the purpose of developing the LRSP recommendations and to identify potential data coding trends and issues to address with each of the reporting Law Enforcement Agencies.

The purpose of this memorandum is to summarize the methodology used to review and re-code crash reports, as well as summarize the findings from the review process. Consistent with the LRSP Scope of Services, the following crash reports were reviewed:

- Motor Vehicle Crashes: Fatal, Incapacitating Injury, and Non-Incapacitating Injury (3,557 Crashes).
- Non-Motorized User Crashes: Fatal, Incapacitating Injury, Non-Incapacitating Injury, and Possible Injury (1,170 Crashes).

For each of these crash reports, the following data items were checked:

- Crash Location: Verification and correction of crash node assignment and approximate XY coordinates.
- Crash Type: Verification and correcting collision diagram crash type. (Note: this is a data attribute that is calculated by the Collier CDMS from other crash data attributes including vehicle direction, vehicle movement, manner of collision, and first harmful event.)
- Checking for completeness and compare key data fields with narrative and diagram as follows:
  - Manner of collision

- First Harmful Event
- Event Impact
- First Harmful Event Relation to Junction
- Driver Action (First)
- Driver Restraint System (Vehicle 1 and 2)
- Non-Motorized User Data:
    - Description
    - Action Prior to Crash
    - Location at Time of Crash
    - Actions/Circumstances (First)
    - Safety Equipment (First)

SECTION 2: METHODOLOGY AND DATA REVIEW

Attribute fields for motorized and non-motorized crash data were exported from the Collier WebCDMS database and manually reviewed and checked for accuracy by an engineering technician. When individual data elements were deemed inaccurate, a revised value was coded in a separate data field. An input was deemed inaccurate if the crash report data input was inconsistent with the crash report's written narrative or illustrated collision diagram.

As shown in Table 2-1, Collier County Sheriff's Office collects the highest number of crash reports, followed by Florida Highway Patrol, Naples Police Department (PD), and Marco Island PD. Collier County Sherriff's Office has the highest number (60 percent) of reports that were revised during the clean-up process, followed by Marco Island PD and Naples PD.

Table 2-1: Revised Data Input by Reporting Agency

Reporting Agency	Reports Reviewed	Reports Revised	Percent Reports Revised
Florida Highway Patrol (FHP)	1,895	608	32%
Collier County Sheriff's Office (CCSO)	2,690	1,613	60%
Naples Police Department (PD)	327	155	47%
Marco Island PD	124	91	73%
Other	6	3	50%
TOTAL	**5,042**	**2,470**	**49%**

During the review process, the fields with the most inconsistent coding needing editing were Event Relation to Intersection, Crash Type, and Impact Type. There were twelve (12) motorized and eight (8) non-motorized crash entries that did not have XY coordinates. These crash entries were manually reviewed, and a location was added.

Table 2-2 shows a summary of the total revisions to these attributes for Motor Vehicle (MV) crashes and Non-Motorized User (NM) crashes for each reporting agency.

Table 2-2: Frequently Revised Data Fields

Reporting Agency	Event Relation to Intersection		Crash Type		Impact Type		Location	
	MV Crashes	NM Crashes	MV Crashes	NM Crashes	MV Crashes	NM Crashes	MV Crashes	NM Crashes
FHP	96	34	310	12	90	168	0	0
CCSO	471	415	339	381	108	682	2	0
Naples PD	43	45	35	17	6	39	9	0
Marco Island PD	18	25	25	28	4	37	1	7
Other	0	3	0	1	0	0	0	1
TOTAL	**628**	**522**	**709**	**439**	**208**	**926**	**12**	**8**

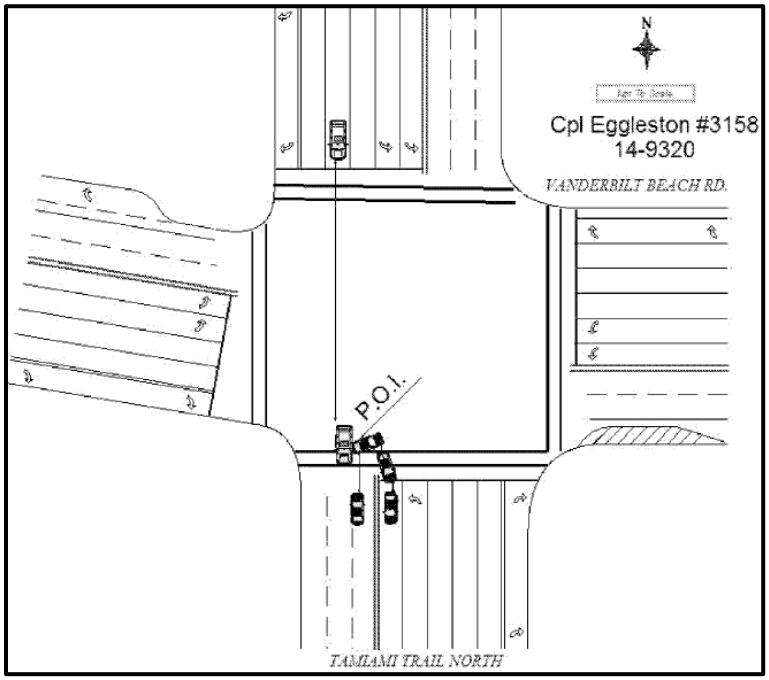
MV: Motor Vehicle **NM:** Non-Motorized

Example cases of each commonly miscoded crash type are described on the following pages of this memorandum. Appendices A and B show cross tabulations for each of these crash data attributes for motor vehicle and non-motorized user crashes respectively.

EVENT RELATION TO INTERSECTION

This field indicates where the crash event occurred on the roadway. There are 12 categories under this field:

- Non-Junction
- Intersection
- Intersection-Related
- Driveway/Ally Access Related
- Railway Grade Crossing
- Entrance/Exit Ramp
- Crossover-Related
- Shared Use Path or Trail
- Acceleration/Deceleration Lane
- Through Roadway
- Unknown
- Other



The image above was initially coded as “Non-Junction” then revised to “Intersection”

The QC process showed that the top 3 revised categories under Event Relation to Intersection were:

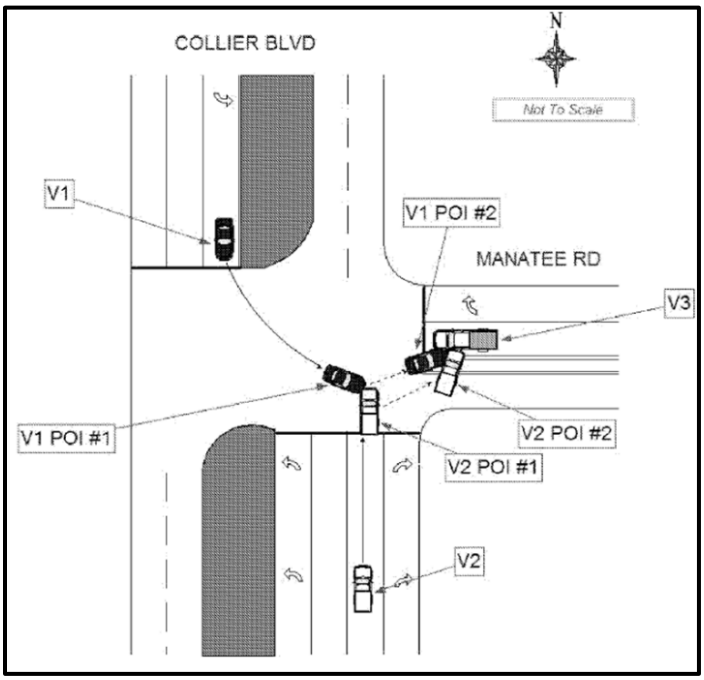
Motorized Vehicles:
- Non-junction
- Intersection
- Intersection-related

Non-Motorized:
- Non-Junction
- Intersection
- Driveway/Alley Access Related

CRASH TYPE

This field defines the overall type of the crash and is used to generate collision diagrams. There are 14 crash types:

- Angle
- Head On
- Hit Fixed Object
- Hit Non-Fixed Object
- Left Turn
- Rear End
- Right Turn
- Run Off Road
- Sideswipe
- Single Vehicle
- U-Turn
- Unknown
- Bike
- Pedestrian



The crash in the image above was correctly recoded to the intersection rather than a non-junction, and recategorized as a Left-Turn crash instead of the incorrect “Angle” crash.

The top 3 revised categories under Crash Type were:

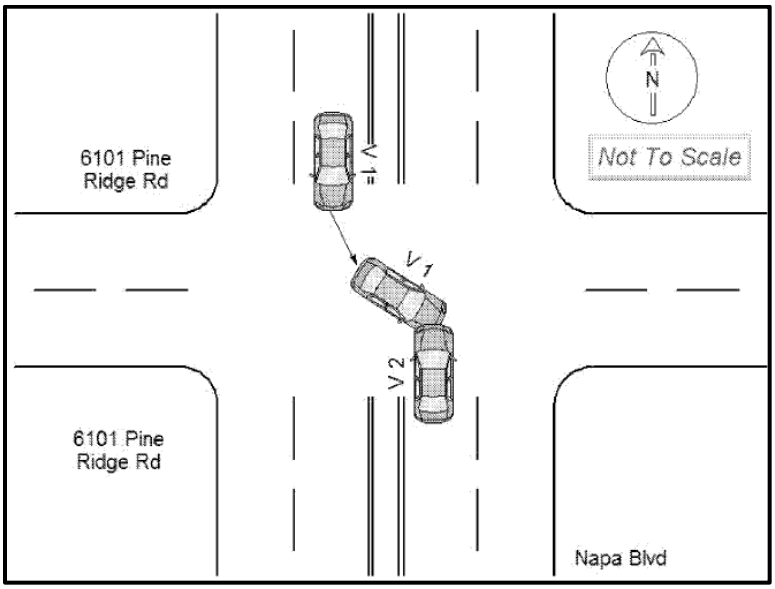
Motorized Vehicles:
- Angle
- Sideswipe
- Rear End
- Hit Fixed Object

Non-Motorized:
- Hit Non-Fixed Object
- Rear End
- Bike
- Pedestrian

IMPACT TYPE

This field defines the manner and direction of the collision. There are 9 impact type categories:

- Front to Rear
- Front to Front
- Angle
- Sideswipe (Same Direction)
- Sideswipe (Opposite Direction)
- Rear to Side
- Rear to Rear
- Unknown
- Other



The image above shows an example of a crash report initially coded as “Front to Front” then revised to “Angle”

The top 3 most revised categories under Impact Type:

Motorized Vehicles:
- Front to Rear
- Angle
- Sideswipe (same direction)

Non-Motorized:
- Angle
- Sideswipe (Same Direction)
- Rear to Rear

SECTION 3: CONCLUSIONS AND RECOMMENDATIONS

Coding errors and inconsistencies within crash reports impact the usefulness of crash data for both strategic planning and traffic study purposes. Specifically, inaccurate location coding can contribute to misidentified corridor and spot location priorities. Improper Relation to Intersection information can create confusion as to whether there is a problem with an intersection or if there are issues with the intersection approaches (e.g. adjacent commercial driveways or median openings). Incorrect or internally inconsistent coding of crash attributes such as First Harmful Event, Vehicle Movement, and Vehicle Direction can result in either incorrect Crash Type assignment or result in an inability to determine the Crash Type. This data field is critical for understanding overall crash patterns and is also a fundamental element in analyzing corridors or spot locations.

Differences in crash report edits between law enforcement agencies in Collier County suggest that data entry methods and training may play a part in determining the accuracy of crash reporting. As the Local Road Safety Plan progresses, the intent to discover what are the leading causes for crash report inconsistency and inaccuracy. Follow up interview will be conducted with LEA officers from different departments to gain additional insight on crash reporting and learn ways to improve accuracy and consistency.

Based on the data analysis conducted thus far, key question areas include methods to capture crash location and consistency of coding those data points that contribute to Crash Type assignment.

Appendix A: Revised Motorized Vehicle Crashes

EVENT RELATION TO INTERSECTION

		Reports Reviewed	Reports Revised	Percent Report Revised
Reporting Agency	CCSO	1,689	471	28%
	FHP	1,603	96	6%
	Naples PD	202	43	21%
	Marco Island PD	60	18	30%
	Other	3	0	0%

		TOTAL	REVISED VALUE												TOTAL REVISED	PERCENT REVISED
			Non-Junction	Intersection	Intersection-Related	Driveway/Ally Access Related	Railway Grade Crossing	Entrance/Exit Ramp	Crossover-Related	Shared Use Path or Trail	Acceleration/ Deceleration Lane	Through Roadway	Unknown	Other		
ORIGINAL VALUE	Non-Junction	2229	-	298	172	57	0	5	0	0	0	0	0	0	532	24%
	Intersection	838	5	-	0	1	0	1	0	0	0	0	0	0	7	1%
	Intersection-Related	253	3	9	-	1	0	0	0	0	0	0	0	0	13	5%
	Driveway/Ally Access Related	51	3	2	0	-	0	0	0	0	0	0	0	0	5	10%
	Railway Grade Crossing	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0%
	Entrance/Exit Ramp	26	0	2	0	0	0	-	0	0	0	0	0	0	2	8%
	Crossover-Related	5	1	2	2	0	0	0	-	0	0	0	0	0	5	100%
	Shared Use Path or Trail	7	0	2	3	0	0	0	0	-	0	0	0	0	5	71%
	Acceleration/Deceleration Lan	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0%
	Through Roadway	89	1	13	8	3	0	0	0	0	0	-	0	0	25	28%
	Unknown	6	1	3	2	0	0	0	0	0	0	0	-	0	6	100%
	Other	53	5	8	9	6	0	0	0	0	0	0	0	-	28	53%

CRASH TYPE

		Reports Reviewed	Reports Revised	Percent Report Revised
Reporting Agency	CCSO	1,689	339	20%
	FHP	1,603	310	19%
	Naples PD	202	35	17%
	Marco Island PD	60	25	42%
	Other	3	0	0%

		TOTAL	REVISED VALUE														TOTAL REVISED	PERCENT REVISED
			Angle	Head On	Hit Fixed Object	Hit Non-Fixed Object	Left Turn	Rear End	Right Turn	Run Off Road	Sideswipe	Single Vehicle	U-Turn	Unknown	Bike	Pedestrian		
ORIGINAL VALUE	Angle	647	-	4	9	4	60	6	1	1	18	0	8	0	2	0	113	17%
	Head On	83	9	-	9	1	7	1	0	0	5	1	1	0	0	0	34	41%
	Hit Fixed Object	537	4	1	-	22	1	10	0	1	10	10	0	0	0	0	59	11%
	Hit Non-Fixed Object	18	0	1	2	-	0	1	0	0	0	0	0	0	0	0	4	22%
	Left Turn	439	61	4	4	0	-	9	0	0	8	7	3	0	0	0	96	22%
	Rear End	1106	10	1	6	4	1	-	2	0	37	3	2	0	0	1	67	6%
	Right Turn	69	1	2	6	0	0	10	-	0	4	6	0	0	1	0	30	43%
	Run Off Road	84	0	0	16	0	0	0	0	-	0	9	0	0	0	0	25	30%
	Sideswipe	173	1	0	4	0	0	35	1	1	-	0	0	0	0	0	42	24%
	Single Vehicle	142	0	0	21	1	0	0	0	5	3	-	0	0	0	0	30	21%
	U-Turn	55	1	0	1	0	1	2	0	0	4	0	-	0	0	0	9	16%
	Unknown	204	10	0	66	7	0	7	0	14	6	84	1	-	2	3	200	98%
	Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0%
	Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0%

IMPACT TYPE

		Reports Reviewed	Reports Revised	Percent Report Revised
Reporting Agency	CCSO	1,689	107	6%
	FHP	1,603	90	6%
	Naples PD	202	6	3%
	Marco Island PD	60	4	7%
	Other	3	0	0%

		TOTAL	REVISED VALUE									TOTAL REVISED	PERCENT REVISED
			Front to Rear	Front to Front	Angle	Sideswipe (Same Direction)	Sideswipe (Opposite Direction)	Rear to Side	Rear to Rear	Unknown	Other		
ORIGINAL VALUE	Front to Rear	1,135	-	0	15	2	0	0	0	0	0	17	1%
	Front to Front	160	0	-	20	2	3	0	0	0	0	25	16%
	Angle	1,071	13	5	-	36	13	0	0	0	0	67	6%
	Sideswipe (Same Direction)	126	5	1	3	-	0	0	0	0	0	9	7%
	Sideswipe (Opposite Direction)	37	0	0	5	0	-	0	0	0	0	5	14%
	Rear to Side	13	1	0	1	2	0	-	0	0	0	4	31%
	Rear to Rear	1	0	0	0	0	0	0	-	0	0	0	0%
	Unknown	255	1	1	2	1	0	0	0	-	0	5	2%
	Other	759	9	0	61	4	1	0	0	0	-	75	10%

Appendix B: Revised Non-Motorized Crashes

EVENT RELATION TO INTERSECTION

		Reports Reviewed	Reports Revised	Percent Report Revised
Reporting Agency	CCSO	1,001	414	41%
	FHP	292	33	12%
	Naples PD	125	45	36%
	Marco Island PD	64	25	39%
	Other	3	3	100%

		TOTAL	REVISED VALUE												TOTAL REVISED	PERCENT REVISED
			Non-Junction	Intersection	Intersection-Related	Driveway/Ally Access Related	Railway Grade Crossing	Entrance/Exit Ramp	Crossover-Related	Shared Use Path or Trail	Acceleration/ Deceleration Lane	Through Roadway	Unknown	Other		
ORIGINAL VALUE	Non-Junction	986	-	254	36	137	0	1	0	0	0	0	0	2	430	44%
	Intersection	239	0	-	1	2	0	1	0	0	0	0	0	0	4	2%
	Intersection-Related	82	1	3	-	0	0	0	0	0	0	0	0	0	4	5%
	Driveway/Ally Access Related	74	3	1	0	-	0	0	0	0	0	0	0	0	4	5%
	Railway Grade Crossing	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0%
	Entrance/Exit Ramp	4	0	0	0	0	0	-	0	0	0	0	0	0	0	0%
	Crossover-Related	6	1	4	0	1	0	0	-	0	0	0	0	0	6	100%
	Shared Use Path or Trail	8	0	3	1	2	0	0	0	-	0	0	0	0	6	75%
	Acceleration/Deceleration Lane	1	1	0	0	0	0	0	0	0	=	0	0	0	1	100%
	Through Roadway	26	1	6	2	4	0	0	0	0	0	-	0	0	13	50%
	Unknown	2	0	1	0	1	0	0	0	0	0	0	-	0	2	100%
	Other	57	18	18	2	12	0	0	0	0	0	0	0	-	50	88%

CRASH TYPE

		Reports Reviewed	Reports Revised	Percent Report Revised
REPORTING AGENCY	CCSO	1,001	380	38%
	FHP	291	12	4%
	Naples PD	125	17	14%
	Marco Island PD	64	28	44%
	Other	3	1	33%

		TOTAL	REVISED VALUE														TOTAL REVISED	PERCENT REVISED
			Angle	Head On	Hit Fixed Object	Hit Non-Fixed Object	Left Turn	Rear End	Right Turn	Run Off Road	Sideswipe	Single Vehicle	U-Turn	Unknown	Bike	Pedestrian		
ORIGINAL VALUE	Angle	**42**	-	0	3	2	0	1	0	0	0	0	0	0	24	6	**36**	86%
	Head On	**12**	0	-	0	2	0	0	0	0	0	0	0	0	5	4	**11**	92%
	Hit Fixed Object	**79**	0	0	-	9	0	1	0	0	3	0	0	0	2	9	**24**	30%
	Hit Non-Fixed Object	**17**	0	0	0	-	0	0	0	0	1	0	0	0	4	3	**8**	47%
	Left Turn	**22**	0	0	2	4	-	0	0	0	0	0	0	0	5	10	**21**	95%
	Rear End	**36**	0	0	1	1	0	-	0	0	2	0	0	0	6	9	**19**	53%
	Right Turn	**38**	0	0	1	1	0	0	-	0	0	0	0	0	25	10	**37**	97%
	Run Off Road	**1**	0	0	0	0	0	0	0	-	0	0	0	0	0	0	**0**	0%
	Sideswipe	**21**	0	0	0	1	0	0	0	0	-	0	0	1	3	8	**13**	62%
	Single Vehicle	**6**	0	0	0	0	0	0	0	0	0	-	0	0	3	2	**5**	83%
	U-Turn	**1**	0	0	0	0	0	0	0	0	0	0	-	0	0	0	**0**	0%
	Unknown	**158**	0	0	4	5	0	0	0	0	0	0	0	-	50	98	**157**	99%
	Bike	**587**	0	0	1	1	0	5	0	0	1	0	0	0	-	1	**9**	2%
	Pedestrian	**465**	0	0	3	10	3	4	0	0	3	0	0	0	75	-	**98**	21%

IMPACT TYPE

		Reports Reviewed	Reports Revised	Percent Report Revised
Reporting Agency	CCSO	1,001	679	68%
	FHP	291	168	58%
	Naples PD	125	39	31%
	Marco Island PD	64	37	58%
	Other	3	0	0%

		TOTAL	REVISED VALUE									TOTAL REVISED	PERCENT REVISED
			Front to Rear	Front to Front	Angle	Sideswipe (Same Direction)	Sideswipe (Opposite Direction)	Rear to Side	Rear to Rear	Unknown	Other		
ORIGINAL VALUE	Front to Rear	**87**	-	0	1	1	0	1	3	0	1	**7**	8%
	Front to Front	**35**	0	-	7	1	0	0	0	0	0	**8**	23%
	Angle	**313**	0	3	-	8	0	3	0	1	0	**15**	5%
	Sideswipe (Same Direction)	**41**	1	0	1	-	0	1	0	0	0	**3**	7%
	Sideswipe (Opposite Direction)	**13**	0	0	0	0	-	0	0	0	0	**0**	0%
	Rear to Side	**13**	0	0	0	0	0	-	0	1	0	**1**	8%
	Rear to Rear	**9**	0	0	0	0	1	0	-	1	0	**2**	22%
	Unknown	**460**	26	20	286	17	15	26	10	-	19	**419**	91%
	Other	**514**	16	10	350	24	14	46	7	1	-	**468**	91%

APPENDIX 3: COMMUNITY SURVEY SUMMARY

Collier MPO

Local Road Safety Plan

Community Survey Summary

10/09/2020

Final

Prepared for

Prepared by

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Appendix

Appendix A: Traffic Safety Survey.... A-1

SECTION 1: INTRODUCTION

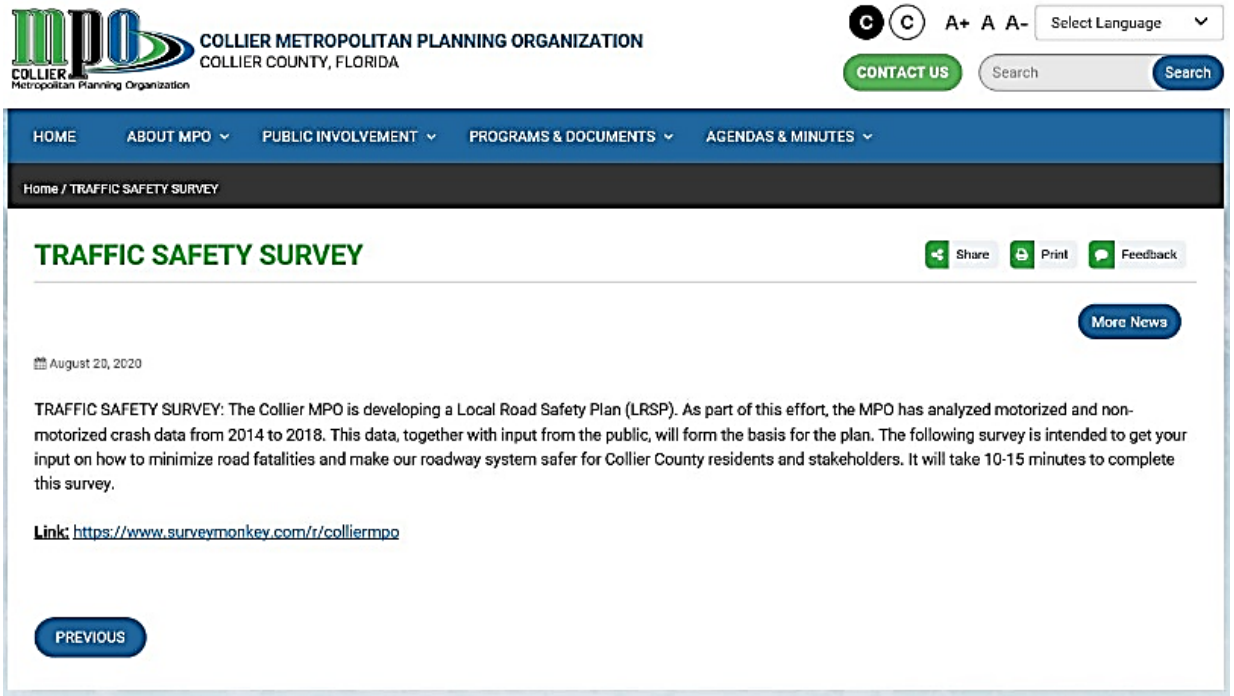
The Collier Metropolitan Planning Organization (MPO) is developing a Local Road Safety Plan (LRSP) with the goal of prioritizing opportunities to improve roadway safety, budget programs, and projects, develop highway safety strategies, and reduce the loss of life, injuries, and property damage while improving the performance and capacity of the county-wide street and highway network.

The purpose of the LRSP is to:

- Identify and define areas to improve the safety of Collier County's streets and highways.
- Define strategies and projects, including improvements to infrastructure (Engineering); driver, bicycle, and pedestrian behavior (Education); law enforcement programs (Enforcement); and response of emergency medical services (Emergency Services).
- Identify federal, State, and local funding programs.
- Provide structure for evaluating the progress in reducing crashes and fatalities.

The plan development process includes data analysis, public outreach, and plan drafting. The data analysis step looked at the county's motorized and non-motorized crash data from 2014 to 2018, and high-crash frequency locations, crash types, and roadway and weather conditions were reviewed. On August 20, 2020, a survey was sent out to capture the public's input on how to minimize roadway fatalities and make Collier County road systems safer for residents and stakeholders. The survey was posted on the Collier MPO website and Facebook page, sent out to the MPO's advisory committees and adviser network, and shared by WinkNews.

Figure 1-1: Website Survey Post



SECTION 2: KEY TAKEAWAYS

The survey was published in English and Spanish. Of 1,092 survey responses received, 1,060 were in English and 32 were in Spanish. Following are key takeaways from the survey.

Demographics and Travel Behavior

- A large number of survey respondents indicated that they either worked or lived in Collier County year-round, and a majority lived and worked in Naples and Immokalee. The top three home and work ZIP codes were as follows:
  - Home ZIP codes:
    - 34120 (Naples) – 186 participants
    - 34142 (Immokalee) – 146 participants
    - 34119 (Immokalee) – 84 participants
  - Work ZIP codes:
    - 34116 (Naples) – 129 participants
    - 34109 (Naples) – 93 participants
    - 34142 (Immokalee) – 77 participants
- More than two thirds of survey respondents were between ages 35 and 64.
- Survey respondents ranked driving, walking, and riding a bike as the top three most used modes of travel.
- Respondents ranked their top two destinations as “Retail Goods and Services” and “Work.” It is important to note that this survey was conducted during the COVID-19 pandemic during which most people were working from home.
  - In total, 75% of respondents drove a motor vehicle every day, with daily travel taking 30 minutes or more.

Safety Concerns and Improvements

- Of the 13 safety concerns indicated on the survey (see Appendix A, Question 5), respondents chose the following as their top three:
  - Drivers using cell phones or conducting other activities while driving
  - Speeding and aggressive driving
  - Aging drivers
- A large majority indicated support for “increased traffic enforcement” as a desired safety improvement, corresponding with one of the top safety concerns of aggressive driving. Other desired improvements were ranked as follows:

  1 – Increased traffic enforcement

  2 – Improved rural roads (e.g., wider shoulders, better signs, pavement markings)

  3 – Increased safety on major roads for pedestrians (e.g., better intersection design, marked crosswalks, better lighting)

4 – Better bicycle facilities, including wider bicycle lanes and separated bike paths

5 – Better roadway lighting

6 – Reduced speeds on major roads through design and traffic signalization strategies

Driving Habit Comparison between Aging and Younger Drivers

Further analysis of survey responses compared the driving habits of aging drivers (those age 55 and above) and younger drivers' habits (those age 54 and below). Survey respondents included 40% aging drivers and 60% younger drivers. Following are some key takeaways:

- A large number of respondents in both age groups indicated that they drove a motor vehicle every day, and aging drivers (21%) indicated that they drove more than 4 times per week but not daily.
- A majority of drivers in both age groups spent at least 30 minutes traveling each day. A significant number of aging drivers, however, indicated that they spent less time traveling (20–30 minutes).
- Both age groups had opposite rankings for travel destinations. Aging drivers rated "Retail Goods and Services" as their top travel destination and "Work" as their second choice. Younger drivers ranked those two destinations the opposite, with "Work" as their top destination.
- Both groups indicated concern about different safety-related items. Younger drivers were concerned about "people who do not know the rules of the road" and "aging drivers," and aging drivers were concerned about "speeding and aggressive driving" and "people using cell phones or doing other activities while driving."

The following survey results support the above findings. ***Travel Time and Frequenc***y

Table 2-1: Travel Time

Question: How much time do you typically spend traveling each day?

Response	Aging Drivers (Age 55+)		Younger Drivers (< Age 54)	
	Count	Percentage	Count	Percentage
0–10 minutes	33	8%	17	3%
10–20 minutes	96	23%	78	12%
20–30 minutes	124	30%	113	18%
30 minutes or more	163	39%	426	67%

Table 2-2: Travel Frequency

Question: How often do you drive a motor vehicle?

Response	Aging Drivers (Age 55+)		Younger Drivers (< Age 54	
	Count	Percentage	Count	Percentage
Daily	246	59%	541	85%
2–4 times per week	69	17%	24	4%
More than 4 times per week	87	21%	64	10%
Once per week	14	3%	3	0%
Less than once per month	1	0%	1	0%

Mode of Travel

Question: How do you usually travel from place to place? (Rank from 1 to 6, with 1 being the most frequently used mode of transportation and 6 being the least used.)

Both age groups ranked their preferred modes of travel as the following:

- 1 – Drive
- 2 – Walk
- 3 – Bicycle
- 4 – Rely on others for rides
- 5 – Rideshare (e.g., Uber/Lyft)
- 6 – Bus

Travel Destination

Question: What is your usual destination when using your #1 ranked mode of transportation? (Rank from 1 to 5, with 1 being where you travel most often and 5 being where you travel least often.)

Younger drivers:

- 1 – Work
- 2 – Retail Goods and Services (e.g., shopping, dining out)
- 3 – Visiting friends/family
- 4 – School
- 5 – Medical Appointments

Aging drivers:

- 1 – Retail Goods and Services (e.g., shopping, dining out)
- 2 – Work
- 3 – Medical Appointments
- 4 – Visiting friends/family
- 5 – School

Top Three Safety Concerns

Question: Of the items below, which are your top three safety concerns about traveling in Collier County? (Choose three. See Appendix A, Question 5 for a full list.)

Younger drivers:

- 1 – People who do not know the "rules of the road"
- 2 – Aging drivers
- 3 – Speeding and aggressive driving

Aging drivers:

- 1 – Speeding and aggressive driving
- 2 – People using cell phones or doing other activities while driving
- 3 – People who do not know the "rules of the road"

Bike and Pedestrian Safety

- Almost half of respondents indicated that they walked and/or rode a bicycle less than once per month.
- Nearly one third of respondents (32%) indicated walking less than once per month, and another third (26%) walked daily.

- When respondents were asked if they felt safe and comfortable while riding a bicycle in Collier County, half either strongly or somewhat disagreed.
- More than half either strongly or somewhat agreed to feeling safe and comfortable while walking in Collier County.
- Almost half of survey respondents agreed that Collier County pedestrians and bicyclists do a good job of following the rules of the road.
- More than half of those surveyed expressed that Collier County drivers are not courteous about sharing the road with pedestrians and bicyclists.
- Respondents indicated the following as the top three improvements they believed could be done to make bicycling safer in Collier County:
    - More bicycle lanes that are physically separated from vehicle traffic
    - Reducing distracted driving
    - Making it easier to cross highways and high-speed streets

SECTION 3: TRAFFIC SAFETY SURVEY

Survey Respondent Demographics

Figure 3-1: Collier County Residence/Employment
Question: Please describe yourself by checking all that apply.

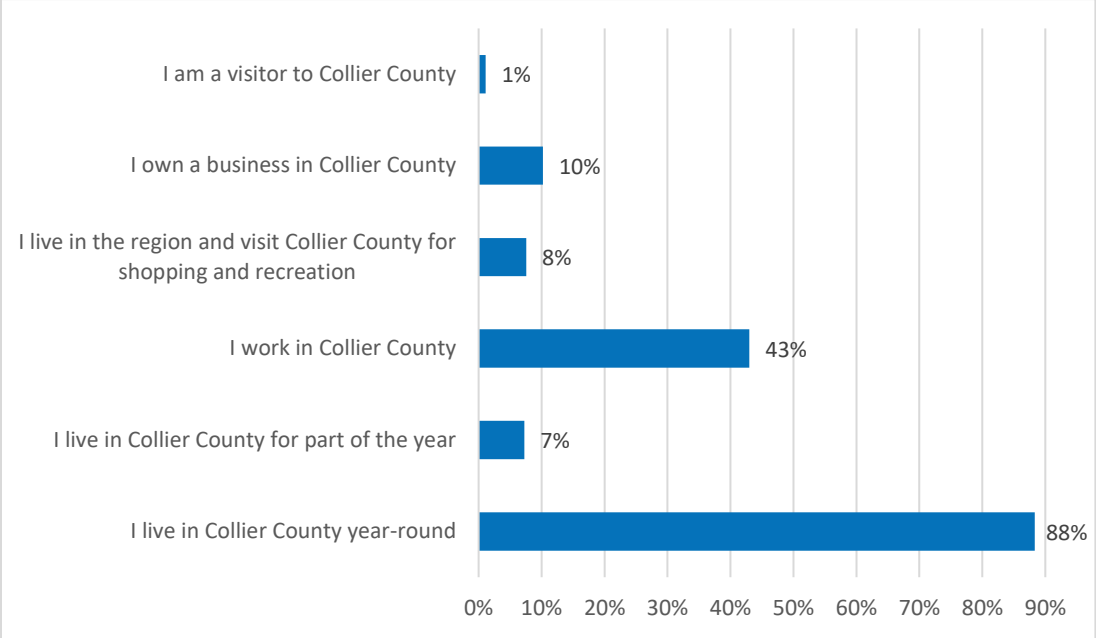


Figure 3-2: Age
Question: What is your age?

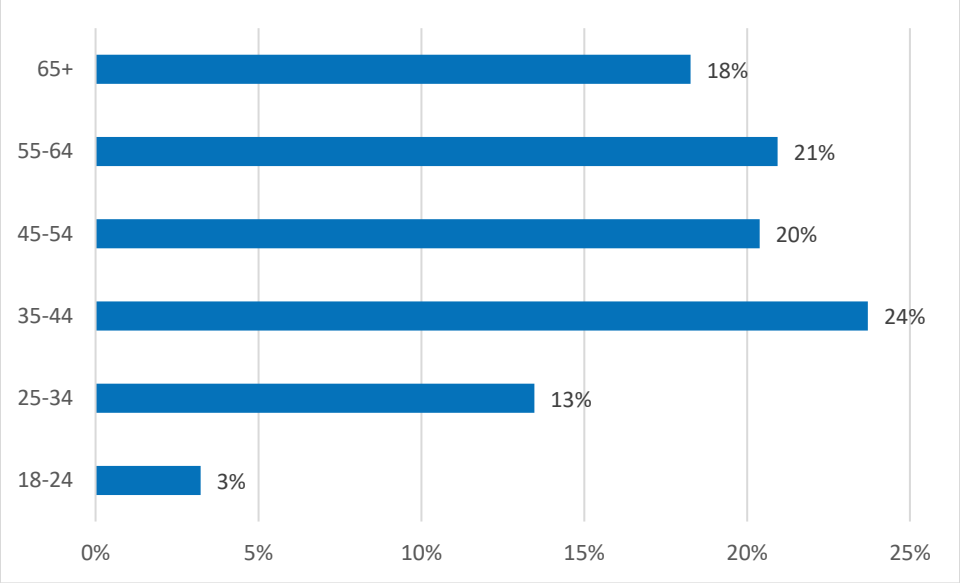
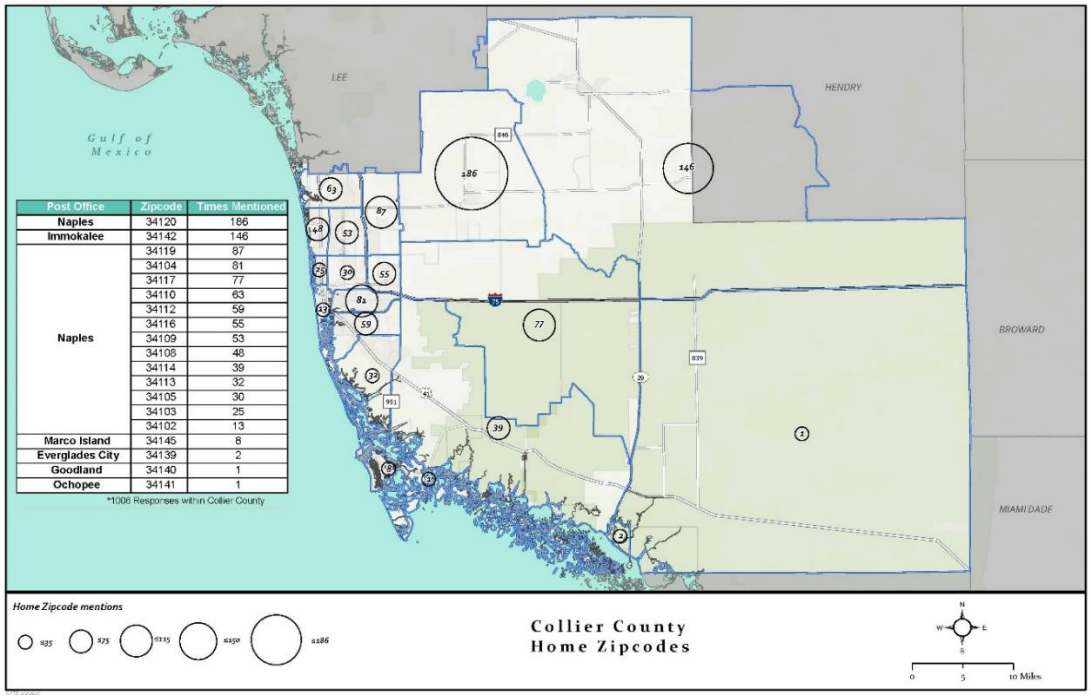


Figure 3-3: Home ZIP Code

Question: What is your home ZIP code?

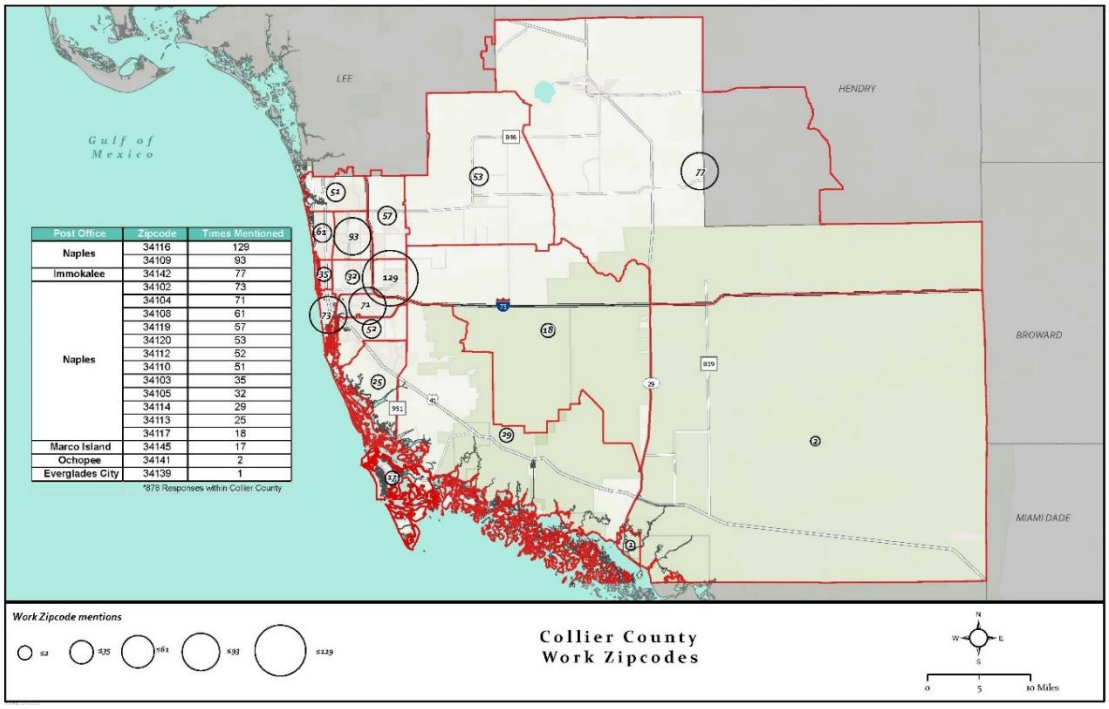


Post Office	Zipcode	Times Mentioned
Naples	34120	186
Immokalee	34142	146
Naples	34119	87
	34104	81
	34117	77
	34110	63
	34112	59
	34116	55
	34109	53
	34108	48
	34114	39
	34113	32
	34105	30
	34103	25
	34102	13
Marco Island	34145	8
Everglades City	34139	2
Goodland	34140	1
Ochopee	34141	1

*1006 Responses within Collier County

Figure 3-4: Work ZIP Code

Question: What is your work ZIP code?



Post Office	Zipcode	Times Mentioned
Naples	34116	129
	34109	93
Immokalee	34142	77
Naples	34102	73
	34104	71
	34108	61
	34119	57
	34120	53
	34112	52
	34110	51
	34103	35
	34105	32
	34114	29
	34113	25
	34117	18
Marco Island	34145	17
Ochopee	34141	2
Everglades City	34139	1

*878 Responses within Collier County

General Traffic Safety

Figure 3-5: Travel Mode

Question: How do you usually travel from place to place? (Rank from 1 to 6**,** with 1 being the most frequently used mode of transportation and 6 the least used.)

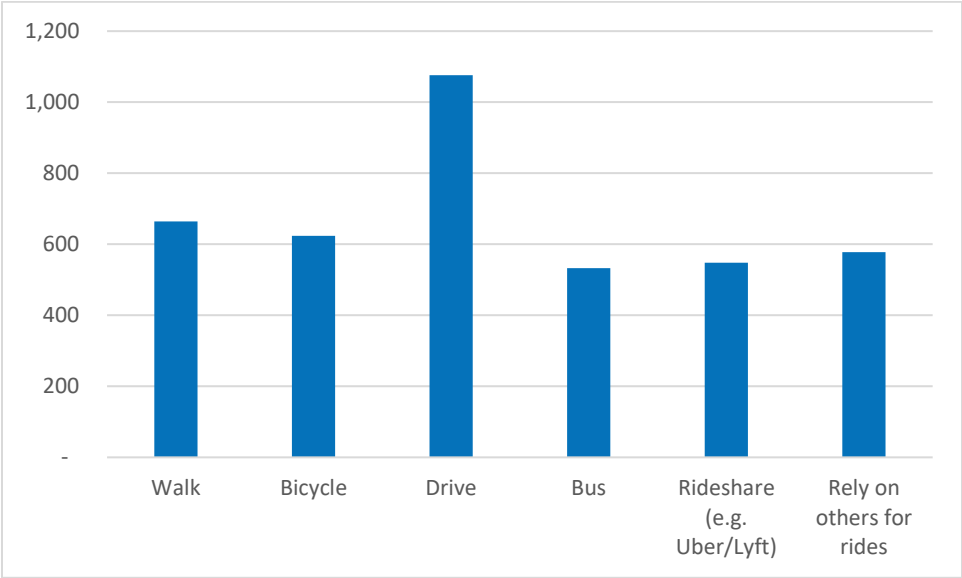


Figure 3-6: Travel Destination

Question: What is your usual destination when using your #1 ranked mode of transportation? (Rank from 1 to 5 with 1 where you travel most often and 5 where you travel least often.)

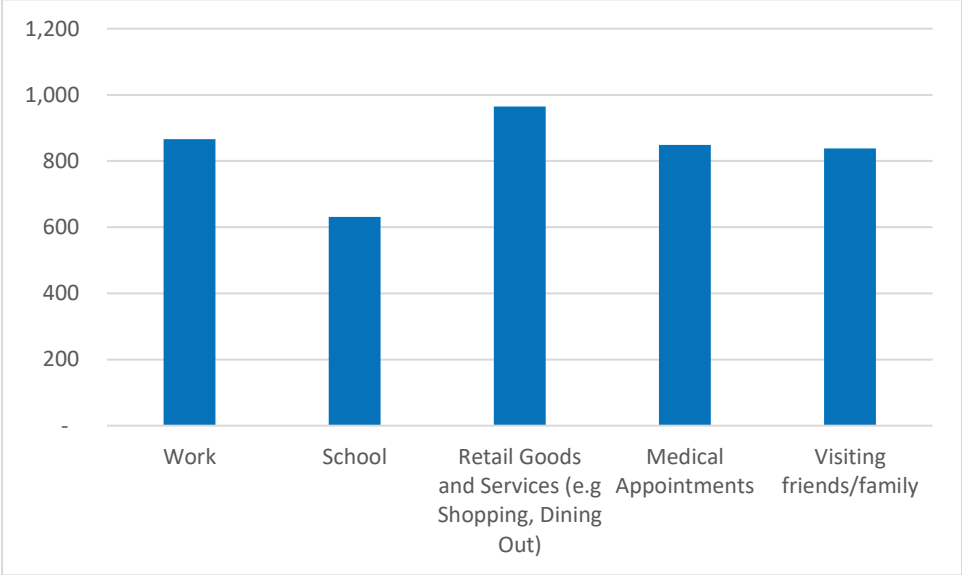


Figure 3-7: Driving Frequency

Question: How often do you drive a motor vehicle? (Select one.)

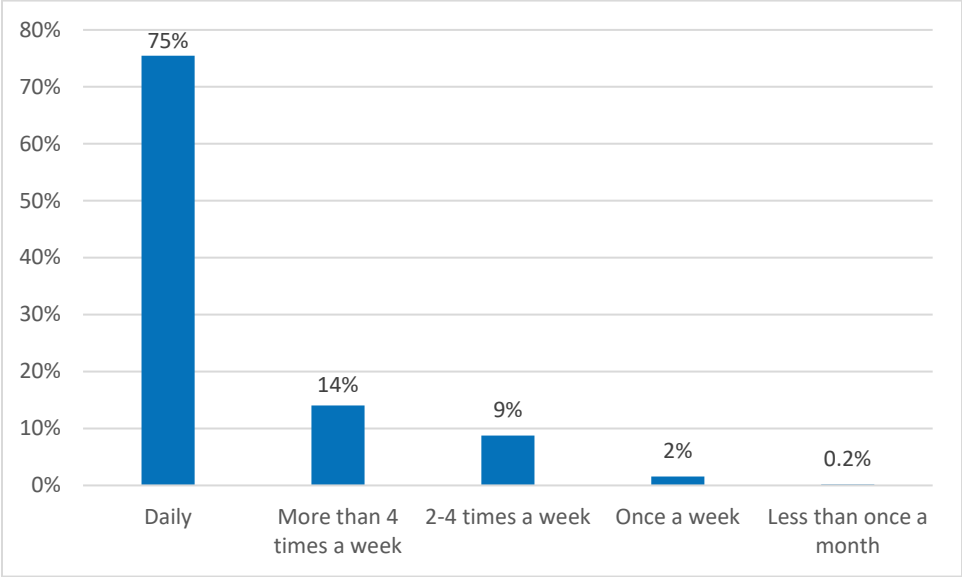


Figure 3-8: Travel Time

Question: How much time do you typically spend traveling each day? (Select one.)

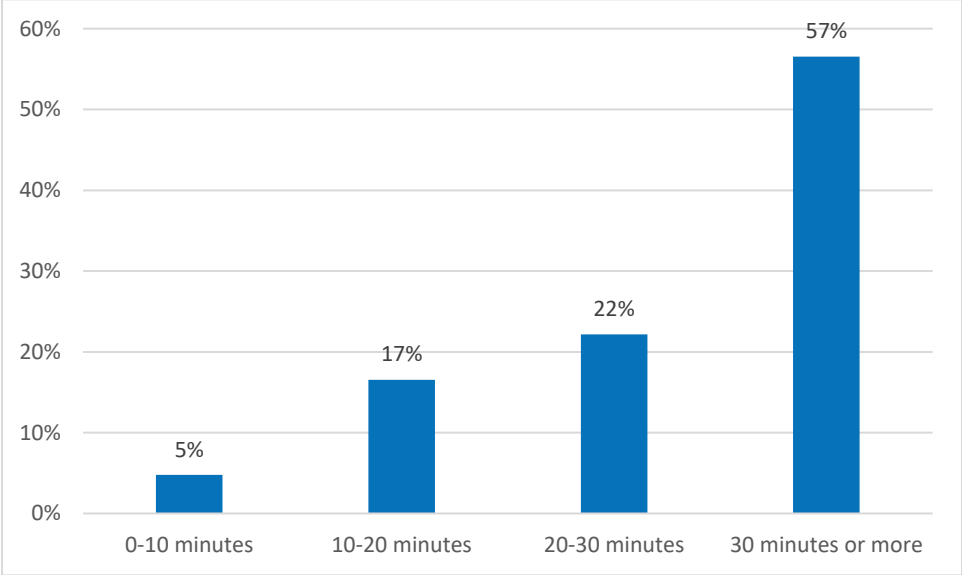


Figure 3-9: Travel Safety Concerns

Question: Of the items below, which are your top three safety concerns about traveling in Collier County? (Choose three.)

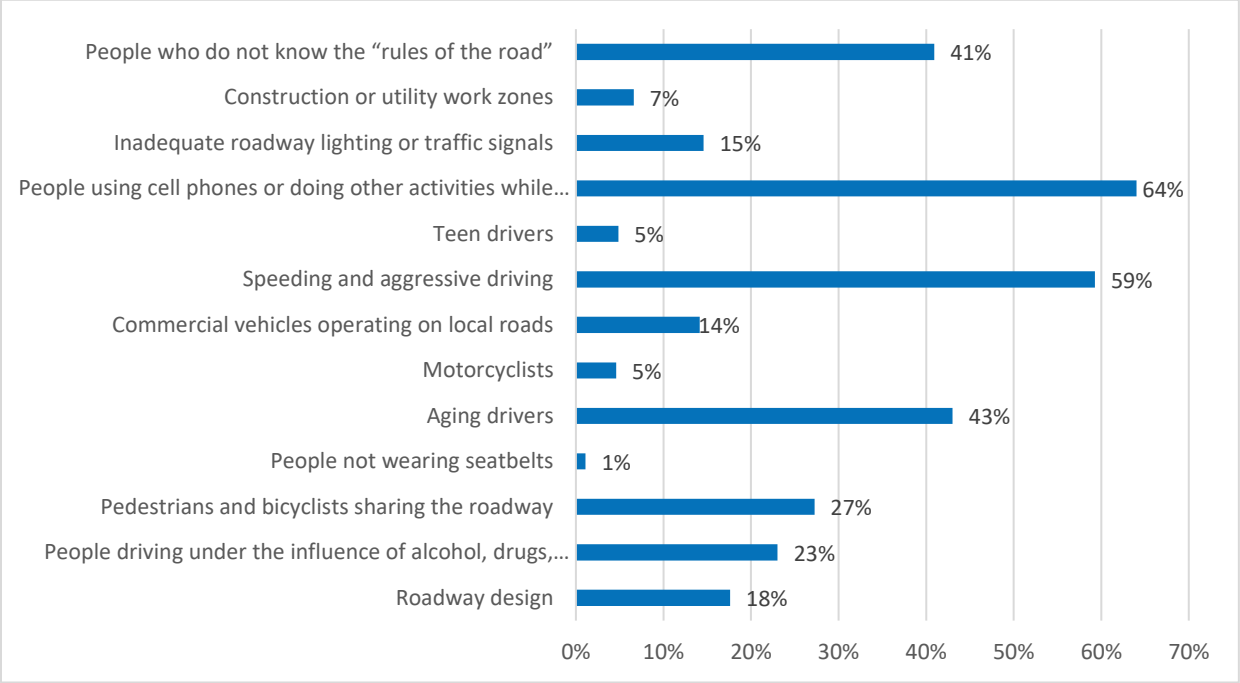
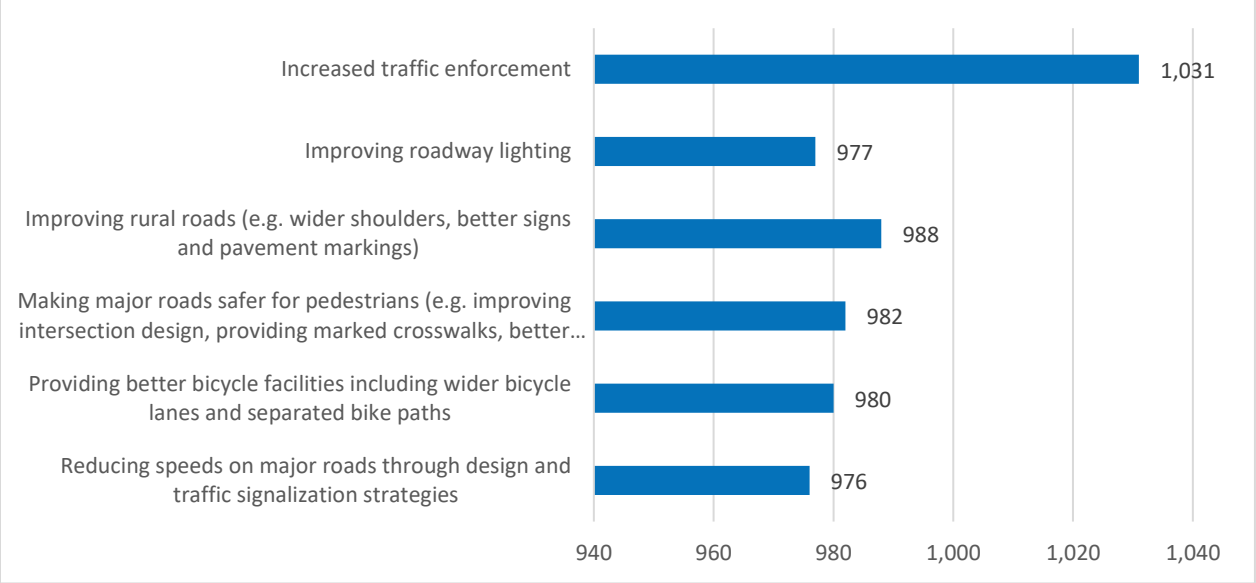


Figure 3-10: Safety Improvement Support

Question: What is your level of support for the following safety improvements? (Rank each from 1 to 5, with 1 being the most support and 5 being the least support.)



Bicyclists and Pedestrians

Figure 3-11: Walk and Bike Frequency
Question: How often do you walk and/or ride a bicycle? (Choose one.)

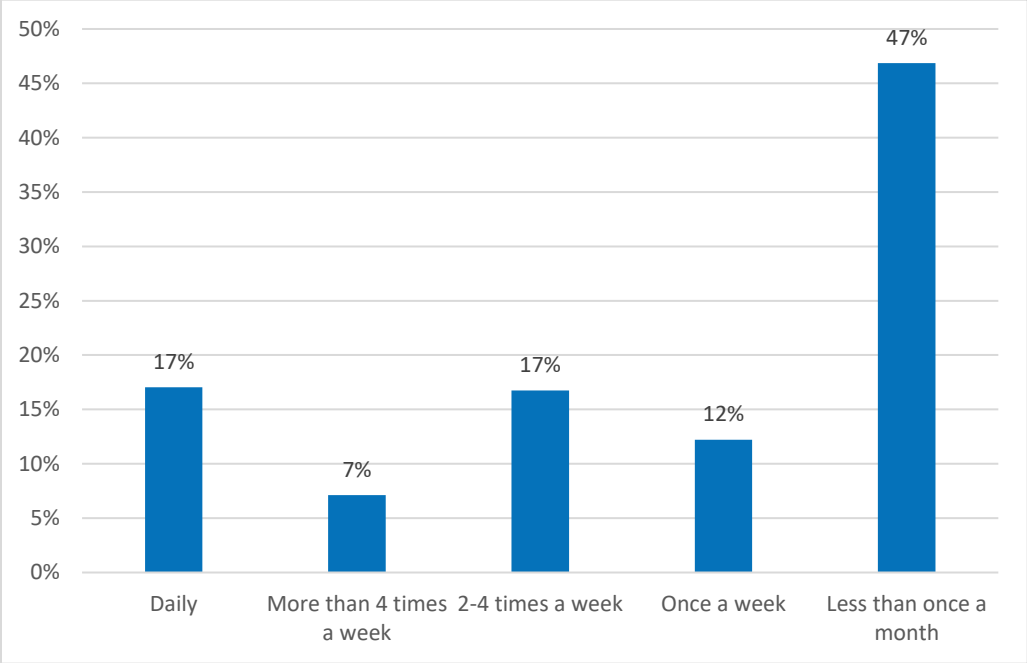


Figure 3-12: Walking Frequency
Question: How often do you walk? (Choose one.)

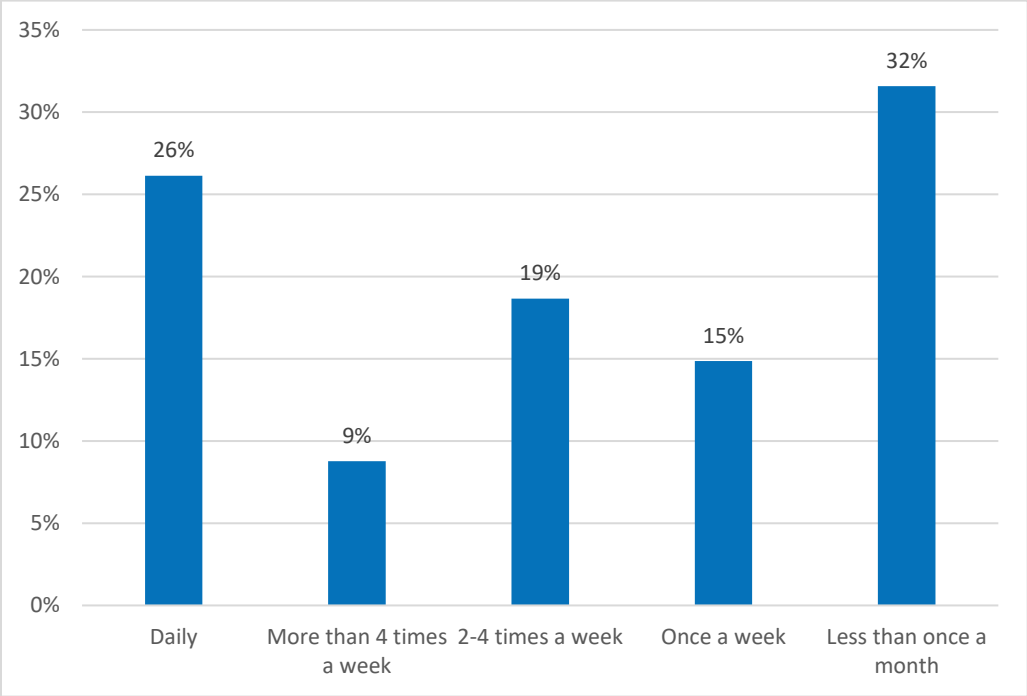


Figure 3-13: Bike Safety

Question: In general, I feel safe and comfortable while riding a bicycle in Collier County.

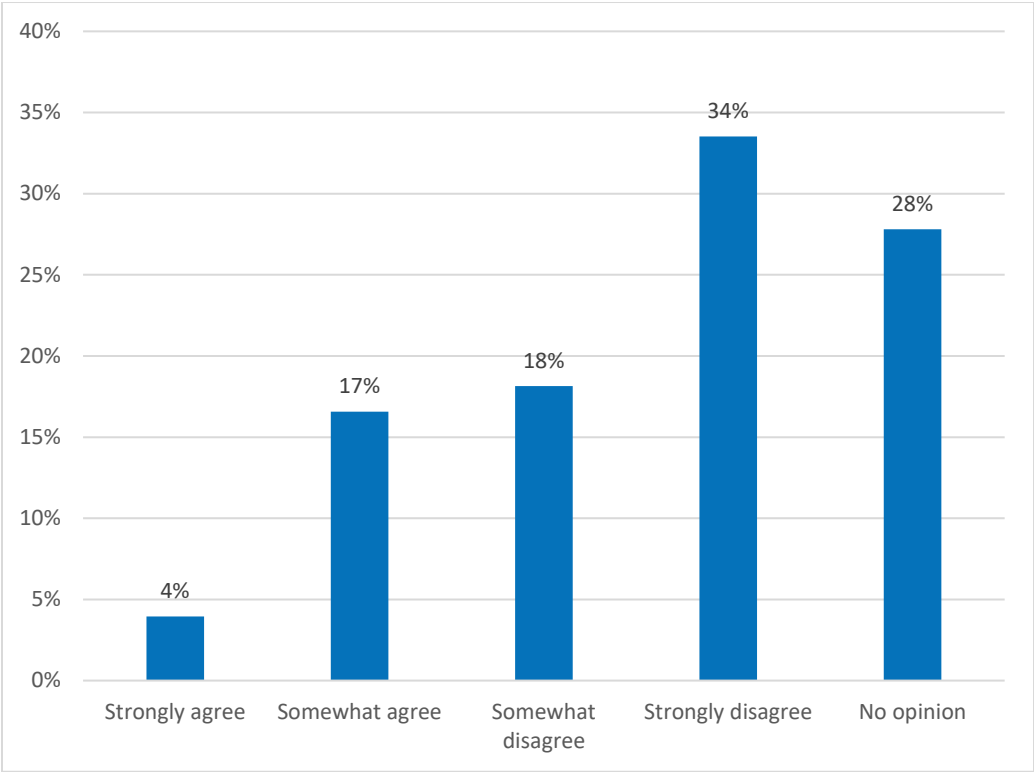


Figure 3-14: Pedestrian Safety

Question: In general, I feel safe and comfortable while walking in Collier County.

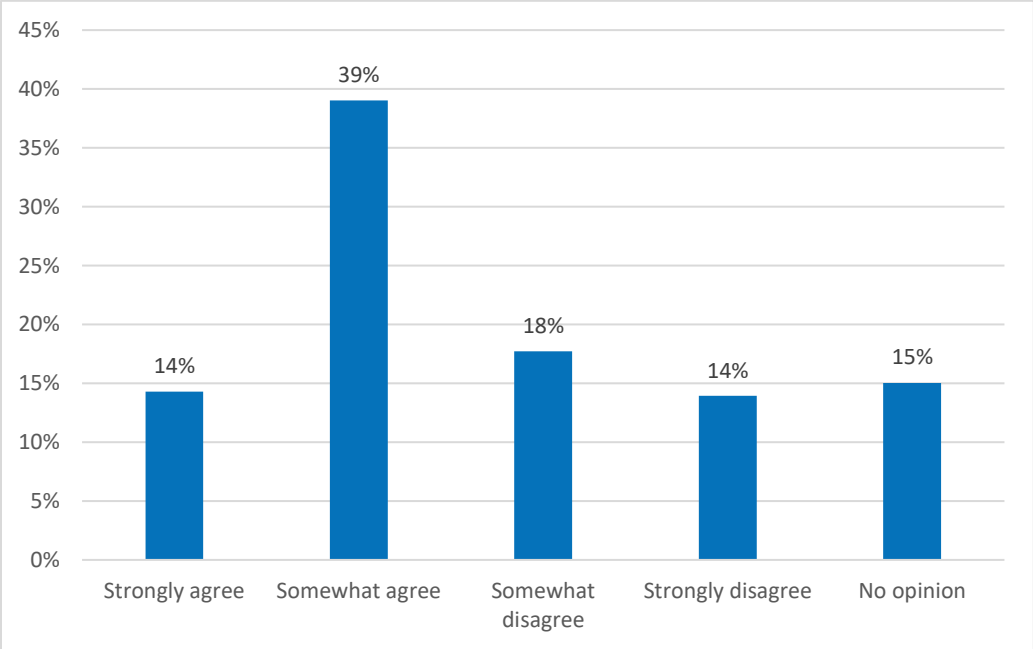


Figure 3-15: Traffic Rules Adherence

Question: In general, Collier County pedestrians and bicyclists do a good job following the rules of the road.

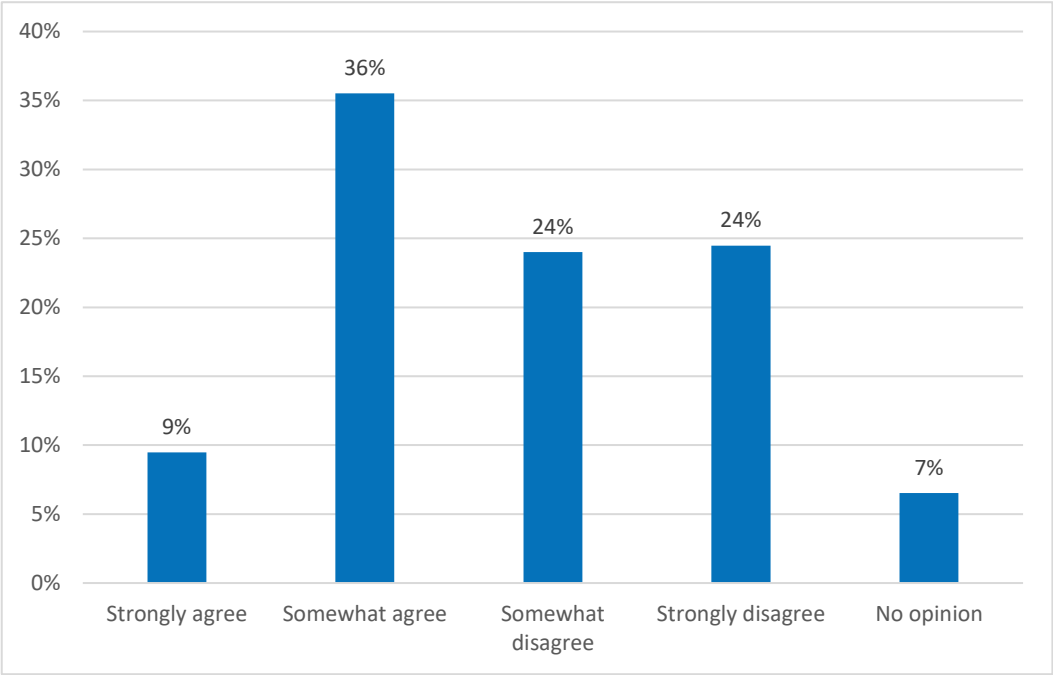


Figure 3-16: Driver Behavior

Question: In general, Collier County drivers are courteous about sharing the road with pedestrians and bicyclists.

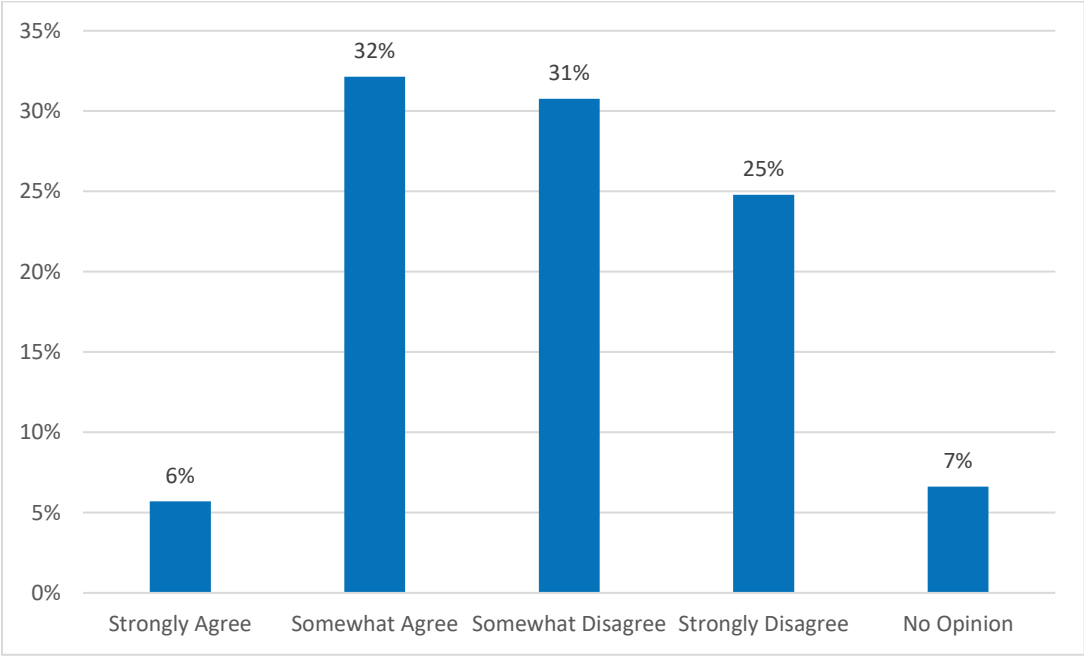
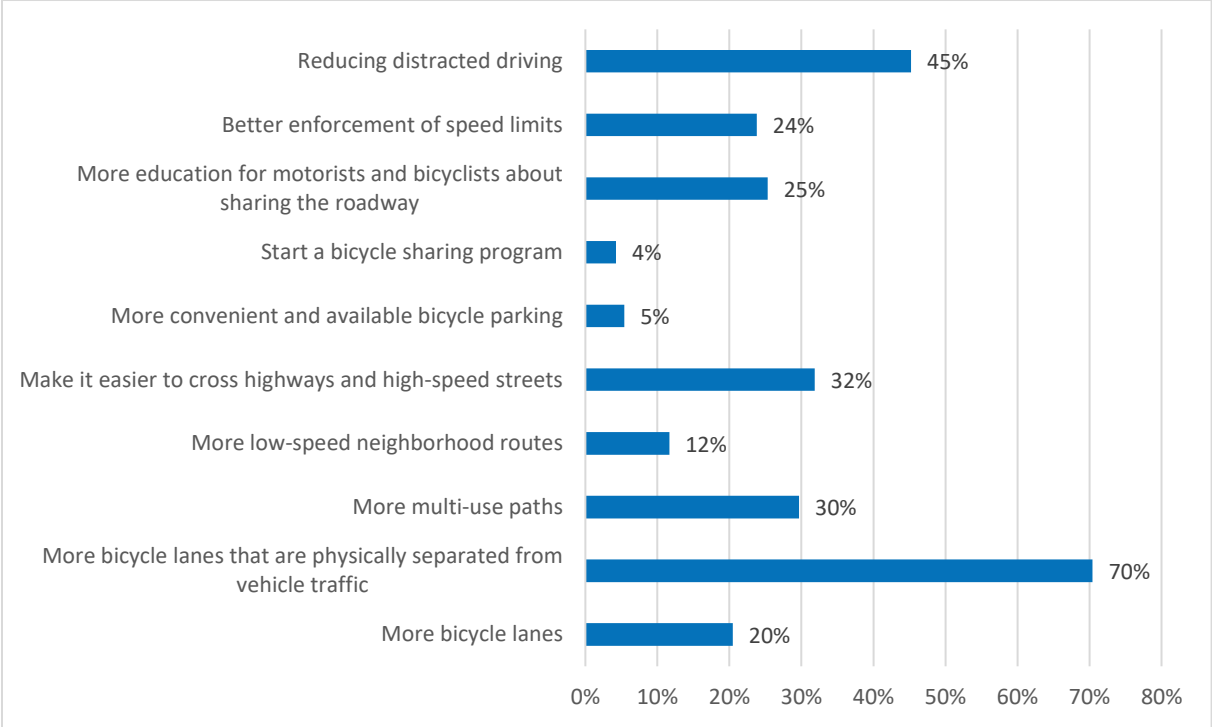


Figure 3-17: Bike Safety Improvement

Question: What could be done to make bicycling safer in Collier County? (Choose three.)



SECTION 4: ADDITIONAL OBSERVATIONS

Summary of Concerns for Local Road Safety

Aggressive/ Careless Driving/ Speeding – Concerns raised by Collier County residents and stakeholders regarding aggressive driving include speeding and tailgating, high-speed lane changing, running red lights and stop signs, drivers not using indicator lights before lane change, and drivers traveling dangerously below the posted speed limit. Survey respondents noted that aggressive drivers make it unsafe for drivers obeying traffic laws and gave US-41 as an example of a roadway segment with of excessive speeding.

Distracted Drivers – Distracted driving behavior includes using a cell phone either for a call or texting, loud music, and impaired driving under the influence of substances. Survey respondents suggested increased law enforcement for drivers that use cell phones while driving.

Law Enforcement – Survey participants indicated that increased enforcement is needed to crack down on high-speed drivers and cell phone users while driving.

Aging Drivers – Survey participants expressed that aging drivers have slower reaction times and drive below the speed limit, even in fast lanes. Participants suggested more frequent licensing retesting and better public transportation as options for aging drivers.

Traffic – Respondents indicated that there is traffic during AM and PM peak hours and during tourist seasons, noting that tourist season leads to overcrowding of roads, which slows down traffic and leads to accidents. Respondents provided examples of roadway systems that need immediate attention— Oil Well Road and the intersection of I-75 and Everglades Boulevard.

Bicyclist and Pedestrians – Respondents felt that bicyclists and pedestrians do not follow the rules of the road and that bike lanes are not fit for safe travel, indicating that bicyclists are ignored on the roadway. Suggestions included providing additional sidewalks for safer pedestrian travel and adding bike lanes to Vanderbilt Drive between 111th and Vanderbilt Beach Road.

Roadways/ Maintenance / Infrastructure – In general, survey participants were concerned about back roads being too small and that some landscapes are dangerous in that they act as an obstruction. They also pointed out that lack of traffic lights results in unsafe exiting and suggested adding more speed limit signs and improved infrastructure to combat high traffic volume. Examples noted were Immokalee Road being poorly lit and making it dangerous to drive at night and Oil Well Road needing maintenance and additional shouldering and lighting.

Miscellaneous – Some respondents commented that there were too many one-way roads and that additional education on driver safety is needed.

Table 4-1: Intersections/Roadway Corridors in Need of Improvement

Question: Please tell us if there is a specific roadway or intersection that you would most like to see improved.

Street	Times Mentioned	@ intersection of	Comments
Immokalee Rd	133	Livingston Rd, Collier Blvd, Goodlette-Frank Rd, Golden Gate Pkwy, US-41, I-75, Northbrooke Dr, Randall Blvd, Tarpon Bay Blvd, Strand Blvd, Collier Blvd, Airport-Pulling Rd, Oil Well Rd, Pine Ridge Rd, Vanderbilt Beach Rd	N/A
Oil Well Rd	95	Camp Keais Rd, SR-29, Everglades Blvd, Ave Maria, Desoto Blvd, Immokalee Rd	• Lack of overall knowledge by drivers using them.
Pine Ridge Rd	75	Livingston Rd, US-41, Airport-Pulling Rd, Taylor Rd, Goodlette-Frank Rd, Santa Barbara Blvd	N/A
Golden Gate Pkwy	56	Collier Blvd, Goodlette-Frank Rd, Livingston Rd, Santa Barbara Blvd, Sunshine Blvd, Wilson Blvd, Pine Ridge Rd	N/A
Airport-Pulling Rd	56	Pine Ridge Rd, Davis Blvd, Immokalee Rd, Horseshoe, Naples Blvd, Orange Blossom, Golden Gate Pkwy	N/A
Collier Blvd/ CR-951	51	US 41, I-75, Immokalee Rd, Davis Blvd, Championship Drive, Golden Gate Pkwy, Pine Ridge Rd, Tamiami Trail	• Aggressive driving.
US-41	35	Goodlette-Frank Rd, Bayshore, Immokalee Rd, Mooring Line Dr, Vanderbilt Beach Rd, Immokalee Rd, 91st Ave, Airport-Pulling Rd, Davis Blvd	• Too many red light runners. • People drive too fast. • Excessive bushes and other flora in median is huge safety risk.
Randall Blvd	20	Everglades Blvd, Immokalee Rd, 8th Ave, 16th Ave, Desoto Blvd	• Randall Blvd needs better flow; light is very long. • Needs more speed enforcement.
Livingston Rd	18	Immokalee Rd, Bonita Beach Rd, Osceola Trail, Golden Gate Pkwy, Osceola Trail, Learning Ln	• Accident zone. • Need traffic lights.
SR-49	18	SR 82 and Oil Well Rd	N/A
Davis Blvd	17	Airport, Corporate Cir, Brookside, Collier Blvd, Lakewood Blvd, Shadowland Dr	• So many potholes and bumps. • How people have to turn and maneuver is an accident waiting to happen. • Needs more traffic control.
I-75	12	Everglades Blvd, Immokalee Rd, Tamiami Trail, Golden Gate Pkwy	N/A

Street	Times Mentioned	@ intersection of	Comments
Everglades Blvd	11	Immokalee Rd, Randall Blvd, Pine Ridge Rd	• Aggressive driving, confusion, dangerous situations for people driving in both directions, cyclists, and pedestrians.
DeSoto Blvd	5	Golden Gate Pkwy, Oil Well Rd	• Reduce congestion by providing other options for access to/from I-75. • Unbearable traffic congestion during morning rush hour and from 5:00–6:00 pm. • Too many lights, traffic, speeding.
Goodlette-Frank Rd	4	Pine Ridge Rd, Golden Gate Pkwy, Frank Rd	• Traffic congestion, especially in season. • Red light runners. • Bad visibility. • Reckless driving.
Downtown Area/ 5th Ave	3	5th Ave	• Needs more lanes, too much traffic, Desoto Blvd needs left lane, more lighting, add medians.
10th St	2	US-41	• Additional lighting needed. • Add flyover at Airport-Pulling Rd. • Need additional enforcement.

Table 4-2: Intersections/Roadway Corridors in Need of Bike and Ped Improvement

Are there specific intersections or roadway corridors that you think need safety improvements for bicyclists or pedestrians? (Indicate up to 3.)

Street	Times Mentioned	@ intersection of	Comments
Immokalee Rd	93	Camp Keais Rd, Corkscrew Sanctuary, Collier Blvd, Livingston Rd, Strand Blvd, Valewood Dr, US-41, I-75, Airport Pulling Rd, Juliet, Logan, Oil Well Rd, Pine Ridge Rd, Randall Blvd, Tamiami Trail, Gulf Coast High School, Wilson Blvd, Goodlette-Frank Rd, 1st St	• Immokalee should have a pedestrian bridge or tunnel. Entire road needs improvement, as it hosts bike tournaments. • Immokalee Rd should not have bicyclists.
Pine Ridge Rd	92	Airport Pulling Rd, Livingston Rd, US-41, Collier Blvd, Logan, Vanderbilt Beach Rd, Whipoorwill, I-75, Orange Blossom, Naples Blvd, Goodlette-Frank Rd, SeaGate	• Pine Ridge Rd needs sidewalk improvements, they are so close to road; if someone were to get in accident and go into sidewalk and someone was walking, they would be dead.
US 41	90	Collier Blvd, Lakewood Blvd, Bayshore, 91st, Airport Pulling Rd, Immokalee Rd, Ohio Rd, Pine Ridge Rd, Rattlesnake, Vanderbilt Beach Rd, Golden Gate Parkway, Fleishmann/Orchid, Neapolitan, Grenada, 5th Ave, 92nd Ave N, Davis Blvd, Goodlette-Frank Rd, Thomasson, Triangle Blvd, Fiddlers Creek, Courthouse, Wiggins Pass, 99th Ave	• Many sections of US-41. • In front of St Mathews between Glades Blvd & Great Blue Dr.
Airport-Pulling Rd	70	Immokalee Rd, US-41, Davis Blvd, Orange Blossom, Pine Ridge Rd, Radio Rd, Vanderbilt Beach Rd, Golden Gate Parkway, Estey Ave, East Trail	• Along Airport-Pulling Rd near The Beach House; would be great to see bike trail go through woods to take bikers off Airport on their way to North Rd & Baker Park. VERY scary biking and walking along Airport Rd; jaywalking.
Collier Blvd/ CR-951	69	Bald Eagle, Green, Livingston Rd, Barfield, Golden Gate Pkwy, Airport, US-41, 17th Ave SW, David, Immokalee Rd, Lely, Manatee Rd, Pine Ridge Rd, Tamiami Tr, Vanderbilt Beach Rd, Oakridge Middle School, Radio Rd	• Collier Blvd no place for bicyclists.
Oil Well Rd	63	Camp Keais Rd, SR-29, Desoto Blvd, Everglades Blvd, Immokalee Rd, Ave Maria, Everglades Blvd	• Improve roads for drivers commuting from Oil Well Rd to SR-29. • Full bike lane on Oil Well Rd. • Oil Well Rd should not have bicyclists. • Two-lane section of Oil Well Rd dangerous for bikes.

Street	Times Mentioned	@ intersection of	Comments
Vanderbilt Beach Rd	52	Airport Pulling Rd, Hammock Oak, Goodlette-Frank Rd, Livingston Rd, Tamiami, Gulf Shore, US 41	• Pedestrians competing with bicyclists on Vanderbilt Rd for sidewalk space. • Get bicyclists onto road and off sidewalks. • No bike lane; they ride in middle of road. • Vanderbilt and Livingston are great but more signs would be better.
Davis Blvd	42	US 41, Airport Pulling Rd, Collier Blvd, Radio Rd, Brookeside, Kings Lake Blvd, Rich King Memorial Greenway	N/A
Golden Gate Parkway	42	Livingston Rd, Airport Pulling Rd, Coronado, Goodlette-Frank Rd, Everglades Blvd, 53rd St. SW, Collier Blvd, Desoto Blvd, Santa Barbara Blvd, Max Hause Park, Wilson Blvd, I-75, Sunshine Blvd, US 41.	N/A
Livingston Rd	25	Bonita Beach Rd, Veterans, Airport Pulling Rd, Golden Gate Parkway, Pine Ridge Rd, Ravina Way, Vanderbilt Beach Rd, Immokalee Rd.	• Vanderbilt and Livingston are great but more signs would be better.
Randall Blvd	23	Wilson Blvd, 16th, Immokalee Rd, 8th St. NE, Everglades Blvd, Desoto Blvd.	N/A
Everglades Blvd	21	Oil Well Rd, Golden Gate Parkway, and Randall Blvd	N/A
Gulf Shore Blvd	19	Blue Hill/Immokalee Rd, Vanderbilt Beach Rd, 5th Ave North, Central Blvd, Gordon Drive	• People bike at night and without lights; difficult to see them; if car coming on opposite side. lights blind you. • You are doing a great job with downtown Naples, but Gulfshore Blvd is still a death trap.
Goodlette-Frank Rd	15	Vanderbilt Beach Rd, Golden Gate Parkway, Orange Blossom, Pine Ridge Rd, US 41	N/A
Tamiami Trail	12	Davis Blvd, 5th Ave, Collier Blvd, 7th Ave North, 111th, and Palm Drive.	N/A
Wilson Blvd	12	Golden Gate Parkway and Immokalee Rd.	N/A
Radio Rd	11	San Marco Blvd, Countryside Drive, Livingston Rd, Santa Barbara Blvd.	• Have seen several severe accidents by people making left off Radio to get into Countryside—very dangerous, bad visibility.
Brookside Drive	10	Davis Blvd, Estey Ave, Oakes Parking Lot, Harbor Lane, and Holiday	N/A
Pelican Bay Blvd	10	Gulf Park Drive, US 41, and Vanderbilt Beach Rd	N/A

Appendix 3: Traffic Safety Survey

General Traffic Safety Survey

1. How much time do you typically spend traveling each day (Choose one)
   - 0-10 minutes
   - 10-20 minutes
   - 20-30 minutes
   - 30 minutes or more
2. How do you usually travel from place to place? (Rank from 1-5 with 1 being the most frequently used mode of transportation and 5 is the least used)
   - Walk
   - Bicycle
   - Drive
   - Bus
   - Rideshare (e.g. Uber/Lyft)
   - Rely on others for rides
3. What is your usual destination when using your #1 ranked mode of transportation (Rank from 1-5 with 1 being where you travel most often and 5 being where you travel least often)
   - Work
   - School
   - Retail Goods and Services (e.g shopping, dining out)
   - Medical Appointments
   - Visiting Friends/Family
4. How often do you drive a motor vehicle (Choose one)
   - Daily
   - More than 4 times a week
   - 2-4 times a week
   - Once a week
   - Less than once a month
5. Of the items below, which are your top three safety concerns about traveling in Collier County (Choose three)
   - Roadway design
   - People driving under the influence of alcohol, drugs, medications or other substances
   - Pedestrians and bicyclists sharing the roadway
   - People not wearing seatbelts
   - Aging drivers
   - Motorcyclists
   - Commercial vehicles operating on local roads
   - Speeding and aggressive driving
   - Teen drivers

- People using cell phones or doing other activities while driving
- Inadequate roadway lighting or traffic signals
- Construction or utility work zones
- People who do not know the "rules of the road"

In your own words, what is your biggest concern for local road safety in Collier County? _____

6. What is your level of support for the following safety improvements? (Rank each from 1 to 5, with 1 being the most support and 5 being the least support)
   - Reducing speeds on major roads through design and traffic signalization strategies
   - Providing better bicycle facilities including wider bicycle lanes and separated bike paths
   - Making major roads safer for pedestrians (e.g. improving intersection design, providing marked crosswalks, better lighting
   - Improving rural roads (e.g. wider shoulders, better signs and pavement markings)
   - Improving roadway lighting
   - Increased traffic enforcement
7. Please tell us if there is a specific roadway or intersection that you would most like to see improved.

   _____

Bicyclists and Pedestrians

8. How often do you walk and/or ride a bicycle? (Choose one)
   - Daily
   - More than 4 times a week
   - 2-4 times a week
   - Once a week
   - Less than once a month
9. How often do you walk? (Choose one)
   - Daily
   - More than 4 times a week
   - 2-4 times a week
   - Once a week
   - Less than once a month
10. In general, I feel safe and comfortable while riding a bicycle in Collier County. (Choose one)
    - Strongly agree
    - Somewhat agree
    - Somewhat disagree
    - Strongly disagree
    - No opinion
11. In general, I feel safe and comfortable while walking in Collier County. (Choose one)
    - Strongly agree

- Somewhat agree
- Somewhat disagree
- Strongly disagree
- No opinion

12. In general, Collier County pedestrians and bicyclists do a good job following the rules of the road. (Choose one)
    - Strongly agree
    - Somewhat agree
    - Somewhat disagree
    - Strongly disagree
    - No opinion
13. In general, Collier County drivers are courteous about sharing the road with pedestrians and bicyclists (Choose one)
    - Strongly agree
    - Somewhat agree
    - Somewhat disagree
    - Strongly disagree
    - No opinion
14. Are there specific intersections or roadway corridors that you think need safety improvements for bicyclists or pedestrians? (select up to three)
15. What could be done to make bicycling safer in Collier County. (Choose three)
    - More bicycle lanes
    - More bicycle lanes that are physically separated from vehicle traffic
    - More multi-use paths
    - More low-speed neighborhood routes
    - Make it easier to cross highways and high-speed streets
    - More convenient and available bicycle parking
    - Start a bicycle sharing program
    - More education for motorists and bicyclists about sharing the roadway
    - Better enforcement of speed limits
    - Reducing distracted driving

Demographic and Contact information

16. Please describe yourself by checking all that apply
    - I live in Collier County year-round
    - I live in Collier County for part of the year
    - I work in Collier County
    - I live in the region and visit Collier County for shopping and recreation
    - I own a business in Collier County
    - I am a visitor to Collier County

17. What is your age range
    - 18-24
    - 25-34
    - 45-54
    - 55-64
    - 65+
18. What is your home ZIP code? _____
19. What is your work ZIP code? _____
20. If you would like to be contacted to provide input on future Collier County roadway safety survey programs and initiatives, please provide your preferred contact information below.

    Name: _____

    Address: _____

    Phone: _____

    Email: _____

EXECUTIVE SUMMARY
Committee Action
Item 7B

Endorse Draft 2045 Long Range Transportation Plan (LRTP)

OBJECTIVE: For the Committee to endorse the draft 2045 Long Range Transportation Plan (LRTP).

CONSIDERATIONS: MPO staff will give a brief presentation on the latest updates to the draft 2045 LRTP and work still in progress. The MPO advisory committees are conducting final reviews in November. The Board will adopt the final 2045 LRTP on December 11, 2020.

The draft LRTP is shown in **Attachment 1.** The draft Appendices are shown in **Attachment 2**. The presentation is shown in **Attachment 3.**

STAFF RECOMMENDATION: That the Committee review and comment on the draft 2045 Long Range Transportation Plan (LRTP).

Prepared By: Anne McLaughlin, MPO Director

Attachment:
1. 10/16/20 Draft 2045 LRTP
2. 11/3/20 Draft Appendices
3. Presentation on Draft 2045 LRTP

COLLIER MPO 2045 LONG RANGE TRANSPORTATION PLAN

Draft 10-16-20

DECEMBER 2020

COLLIER Metropolitan Planning Organization

2045 LONG RANGE TRANSPORTATION PLAN

Collier MPO

Prepared for

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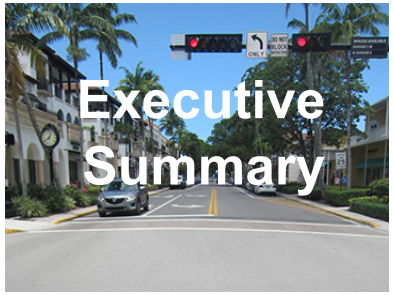

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Abbreviations and Acronyms

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

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

ES

Executive Summary

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

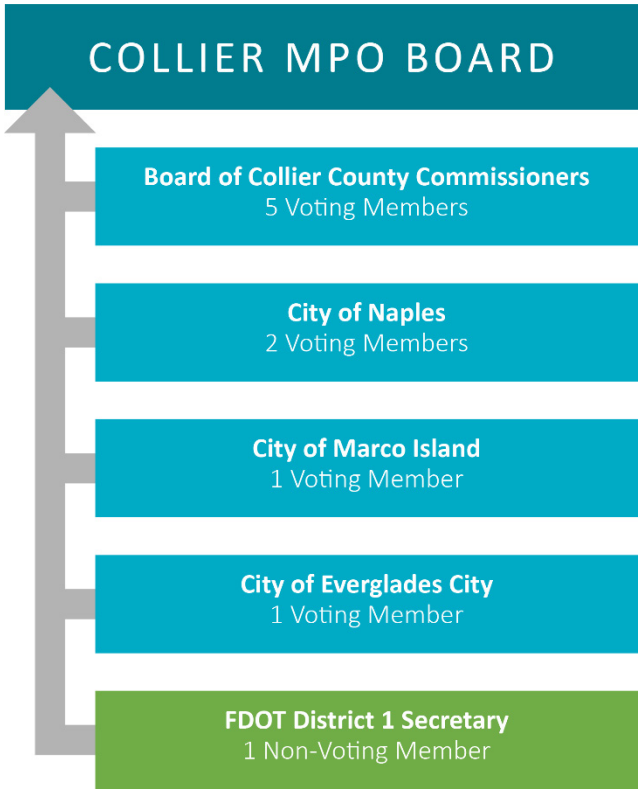
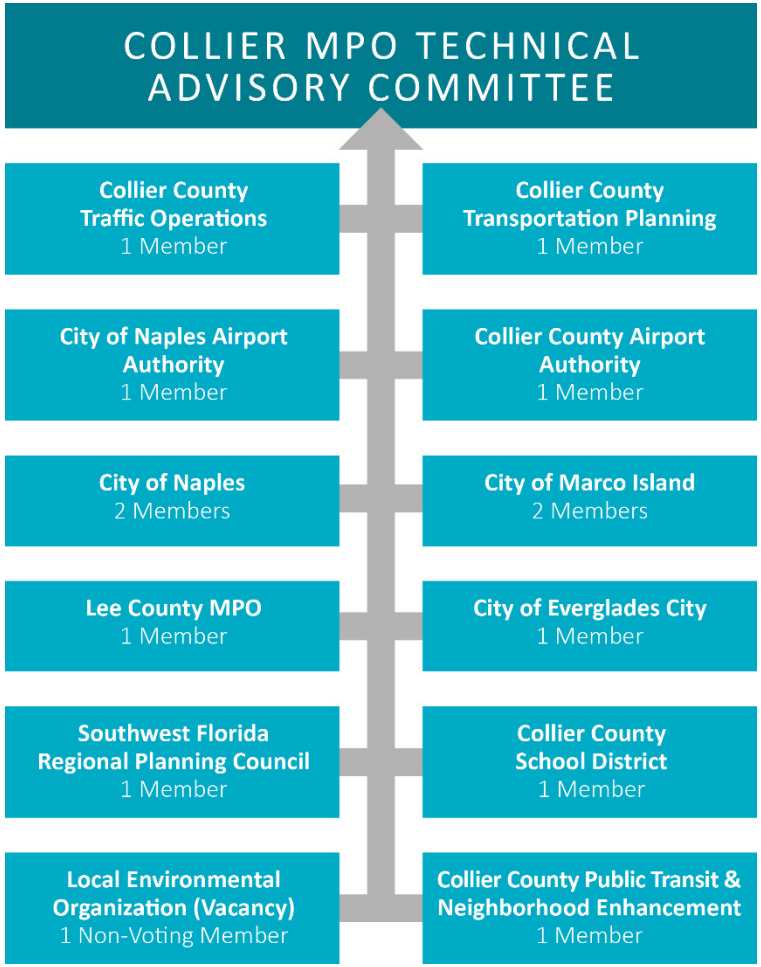


Figure 1-2. Collier MPO Jurisdiction

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 LRTPs, 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**).

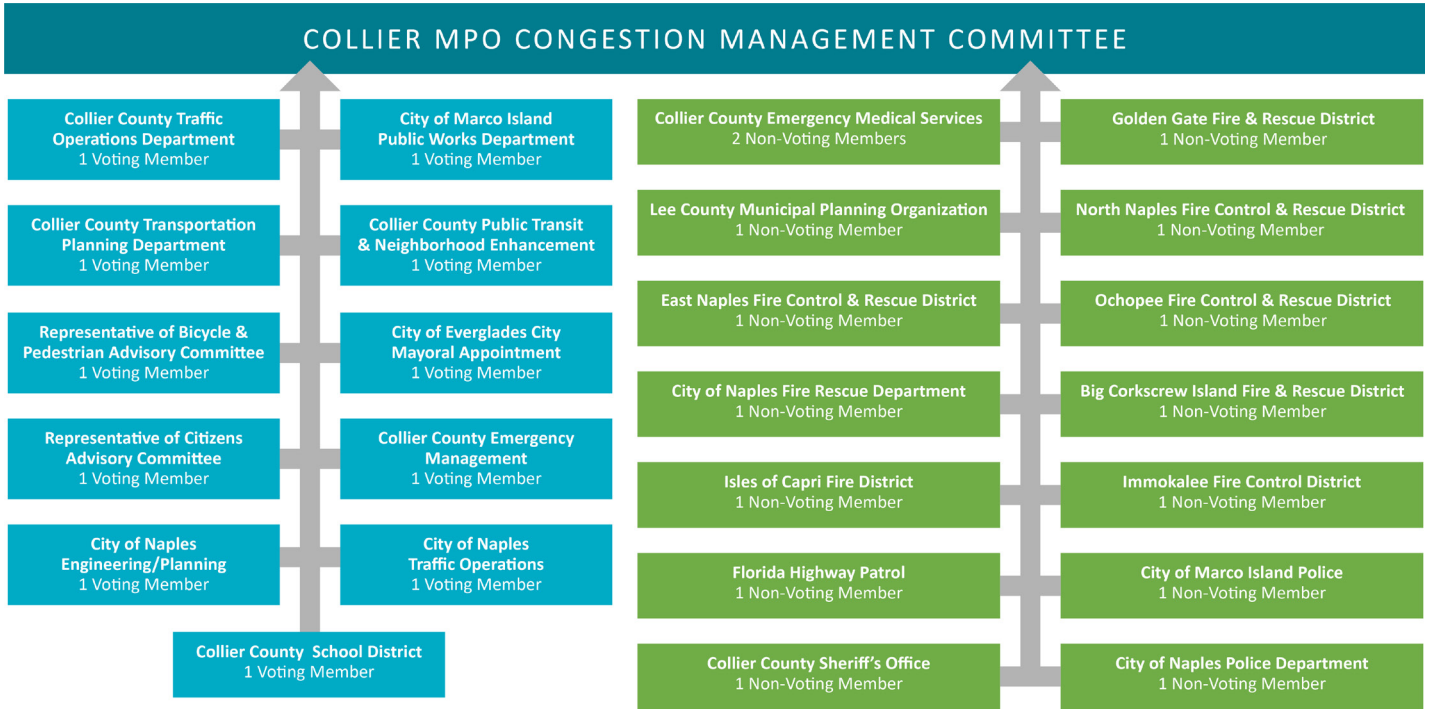
Figure 1-4. Citizens Advisory Committee

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.

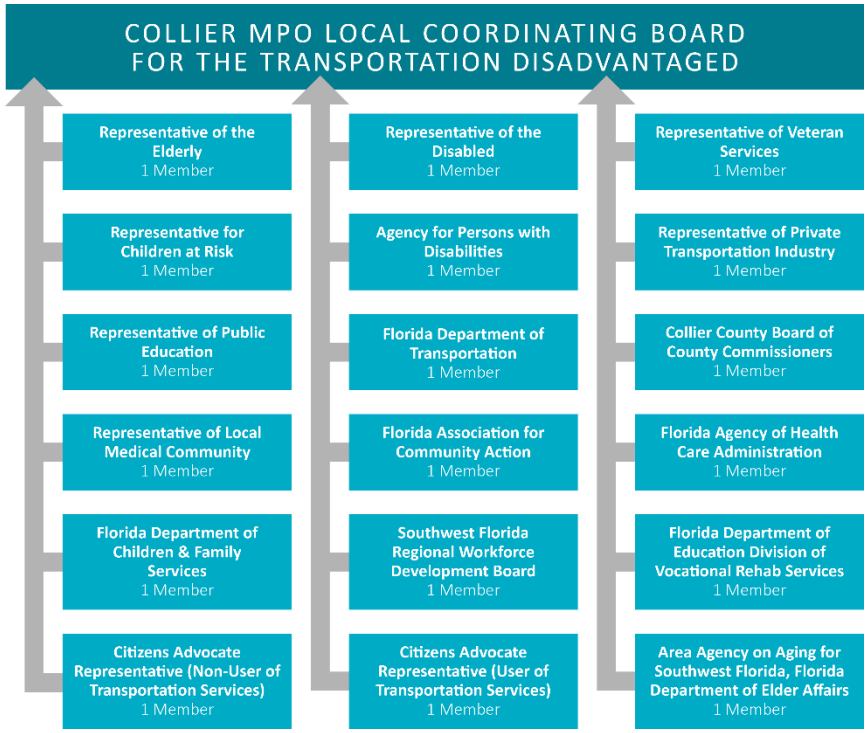
Figure 1-5. Congestion Management Committee



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

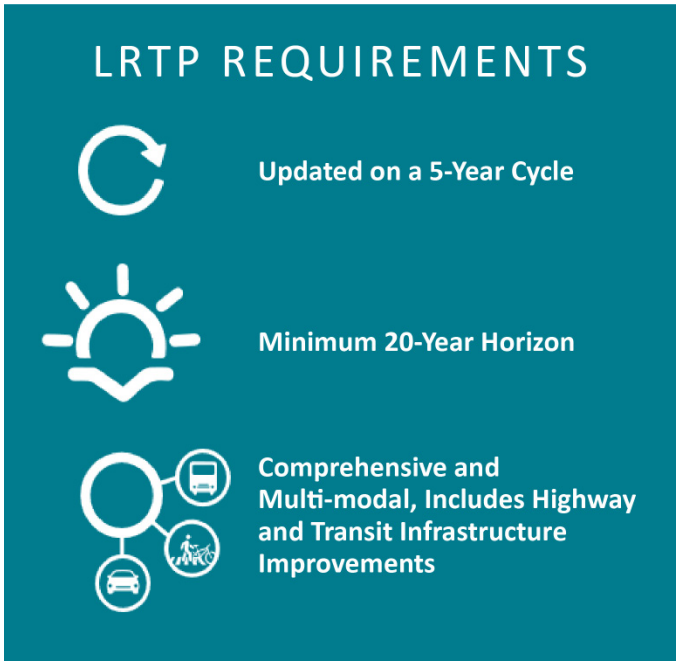


1-2 What Is the Long Range Transportation Plan?

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.

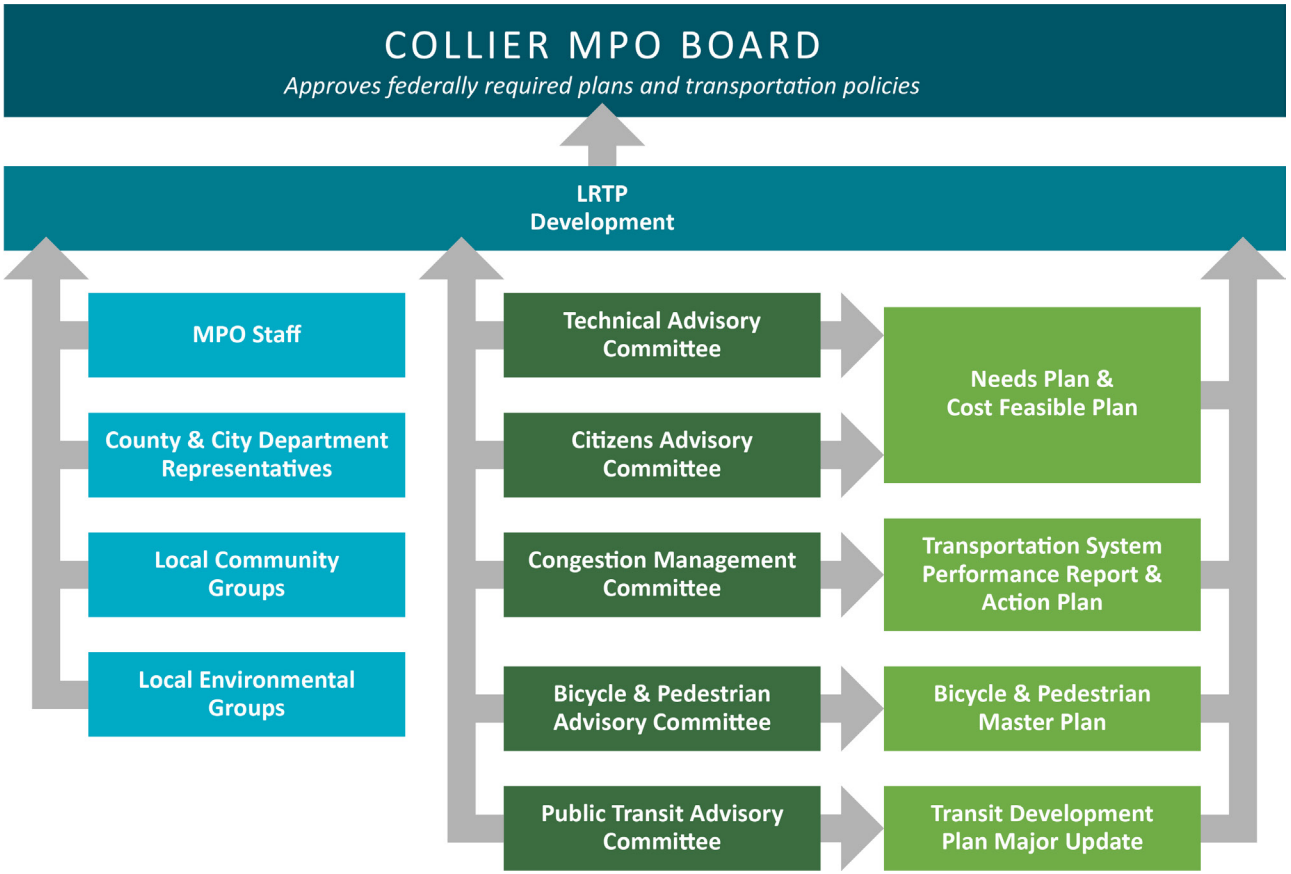


During the development of the 2045 LRTP, the MPO engaged its standing committees, particularly the TAC and CAC, who reviewed and commented on every aspect of the LRTP. Both committees held a series of monthly meetings through the summer of 2020 to assist the MPO on the Needs and Cost Feasible Plans.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

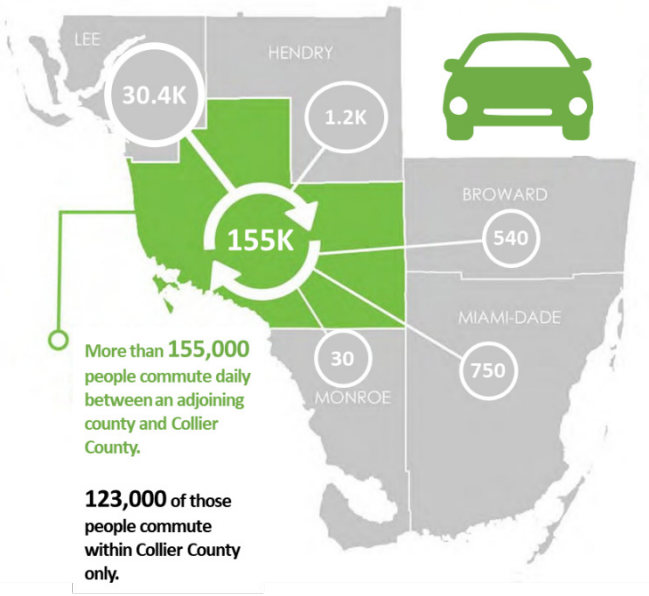
In addition to adhering to these requirements, other statutory requirements set forth by the state of Florida regarding the development of a LRTP are presented in **Appendix A**.

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



Source: U.S. Census Bureau, 2011-2015 5-Year American Community Survey Commuting Flows

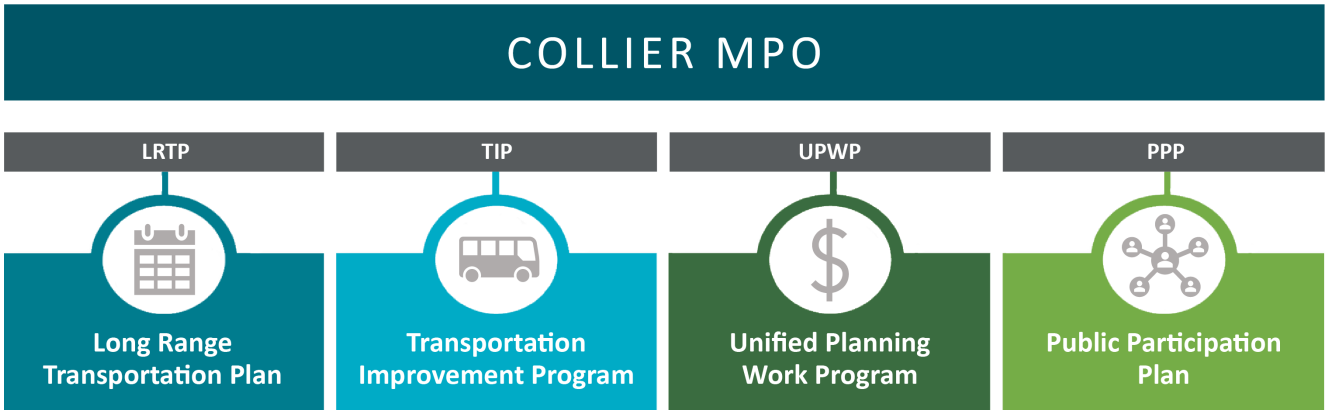
The Collier MPO provides for the creation of a region-wide multimodal transportation planning process in accordance with federal and state guidelines to ensure the coordination of transportation planning and policy activities in FDOT District One.

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



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

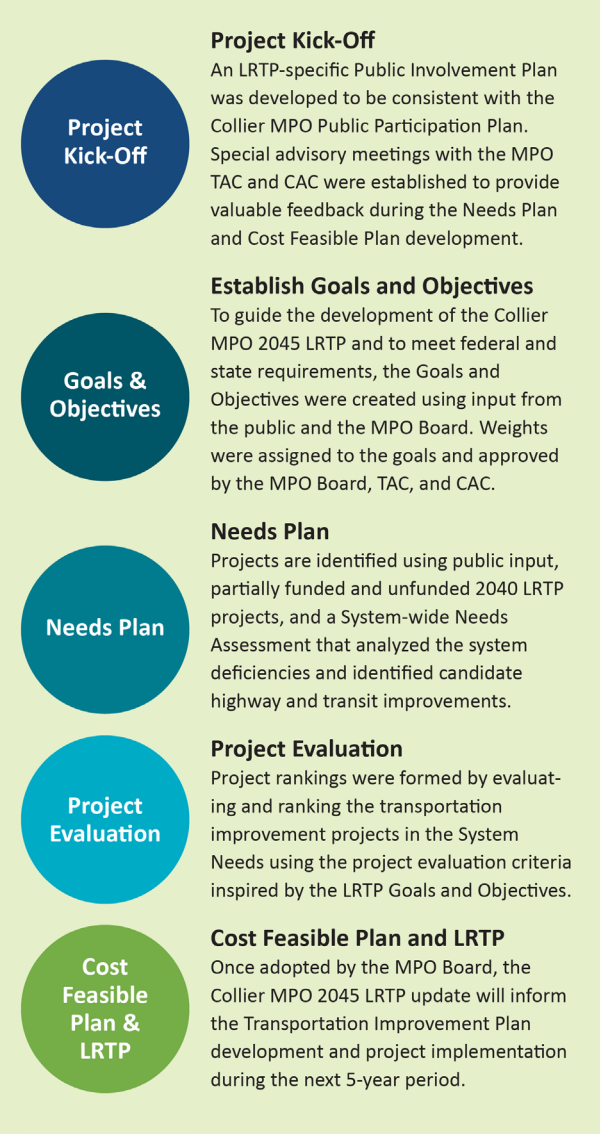
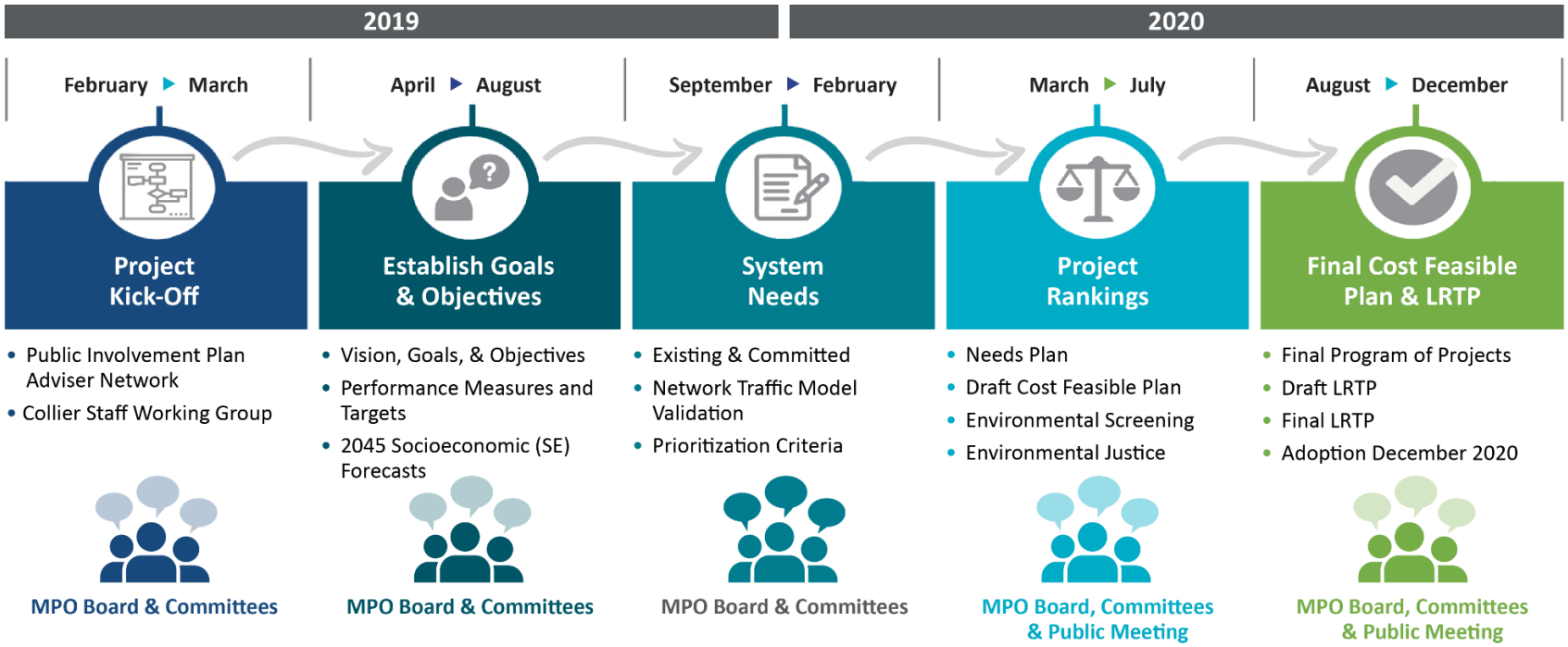


Figure 2-2. Plan Process



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

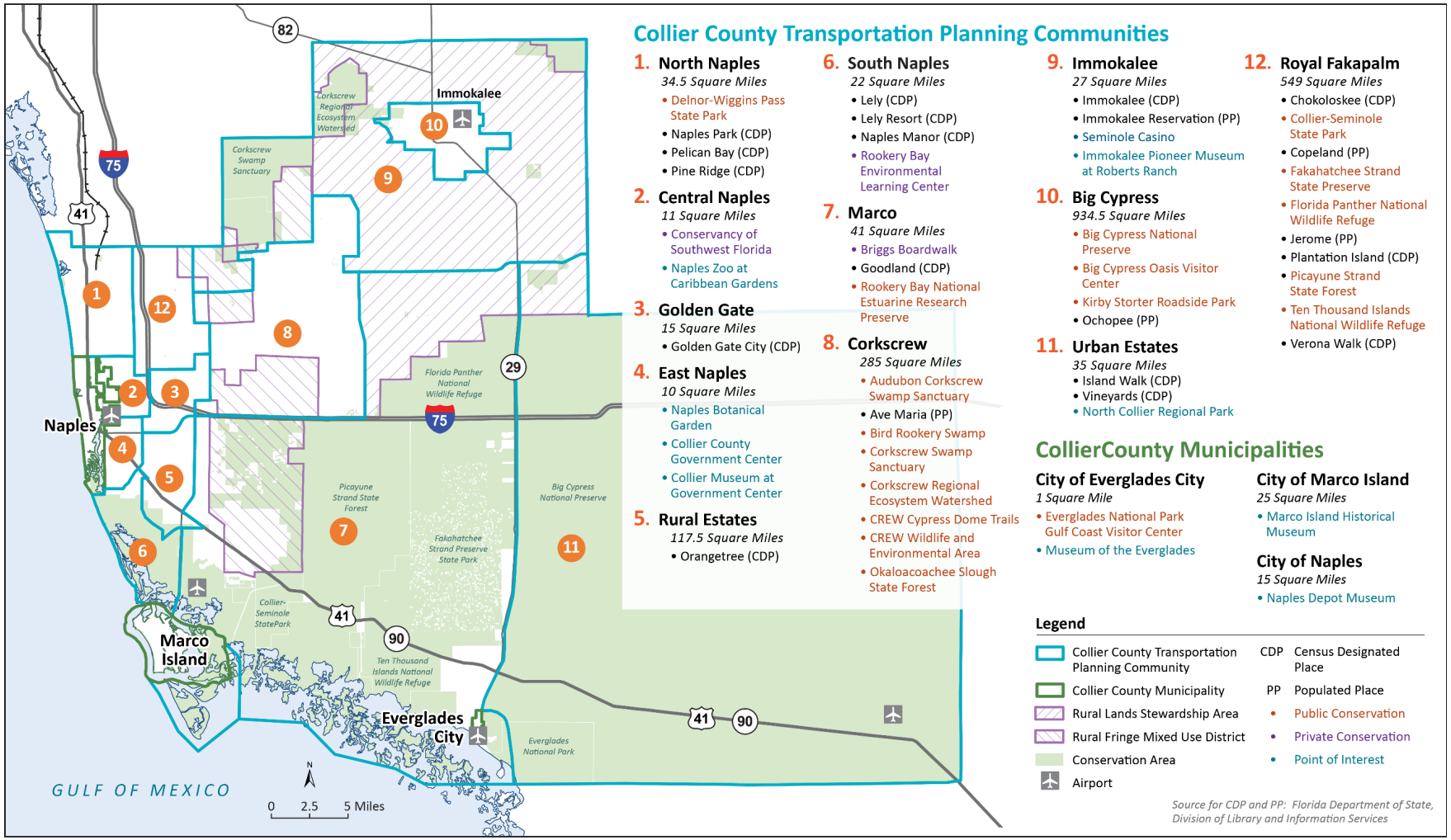
The City of Marco Island is located on the largest barrier island of the chain of islands off the southwest Florida coast known as the Ten Thousand Islands. According to the U.S. Census, the 2019 population estimate is almost 18,000. The City estimates the potential seasonal population as more than 40,000 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

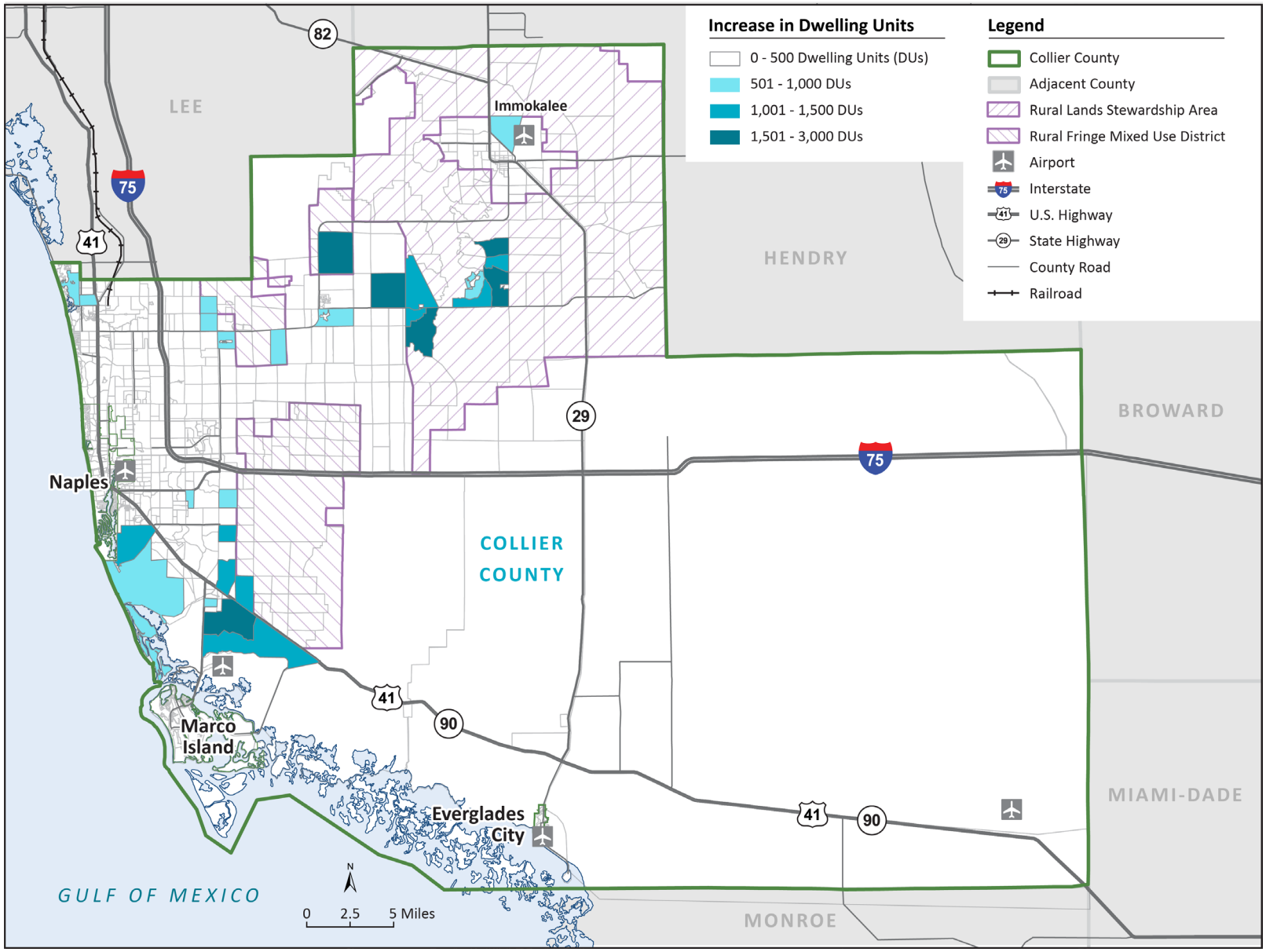
The Collier 2045 LRTP *2015 and 2045 Socio-economic Data Technical Memorandum* prepared under separate cover (Spikowski Planning Associates 2020) presents further details on the development of the socioeconomic data and forecasting. While the land use forecasting process is based upon reasonable assumptions 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%

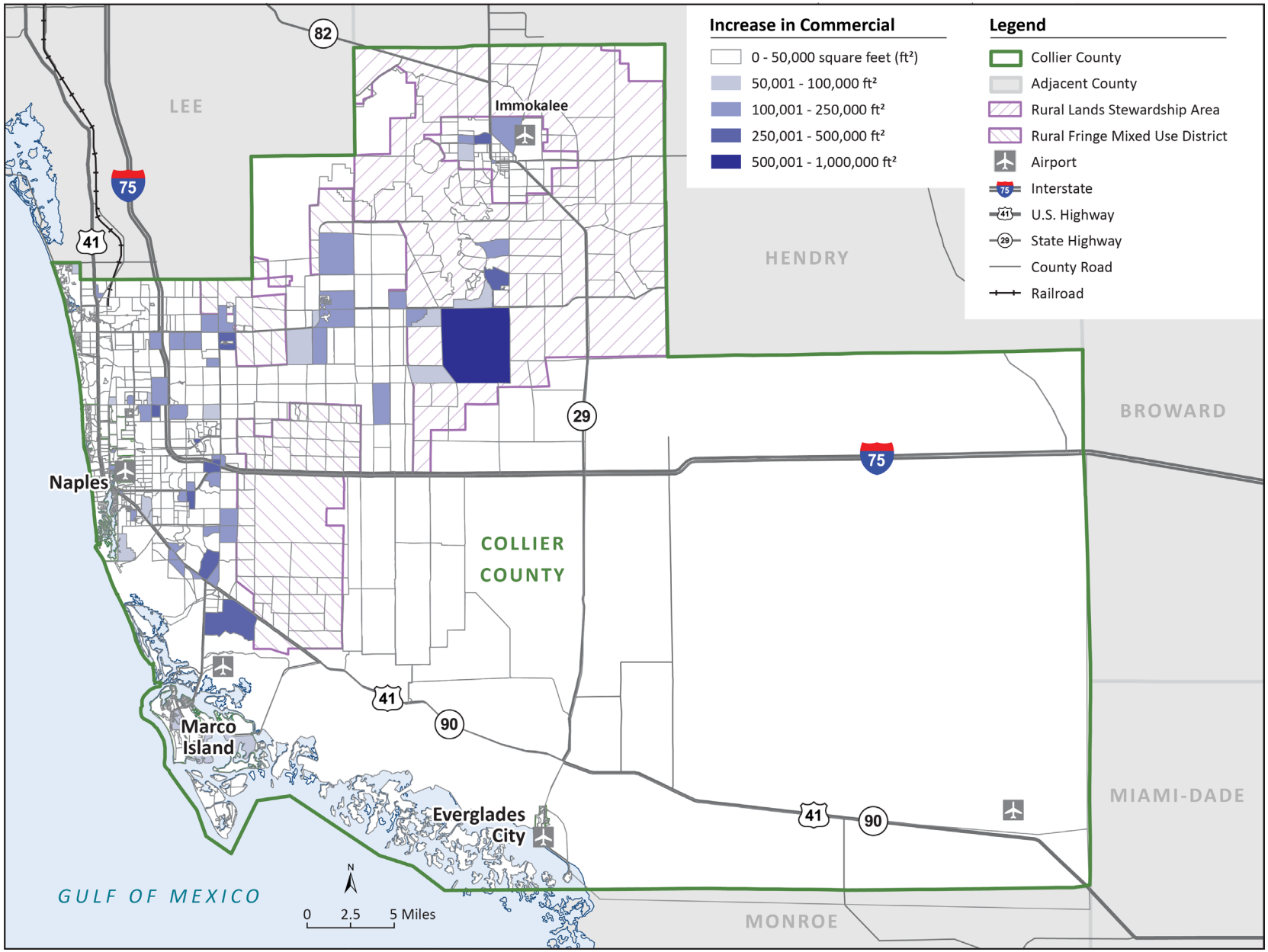
Source: Spikowski Planning Associates 2020

Figure 2-4. Dwelling Unit Growth Areas



Source: Spikowski Planning Associates (2015)

Figure 2-5. Commercial Square Footage Growth Areas



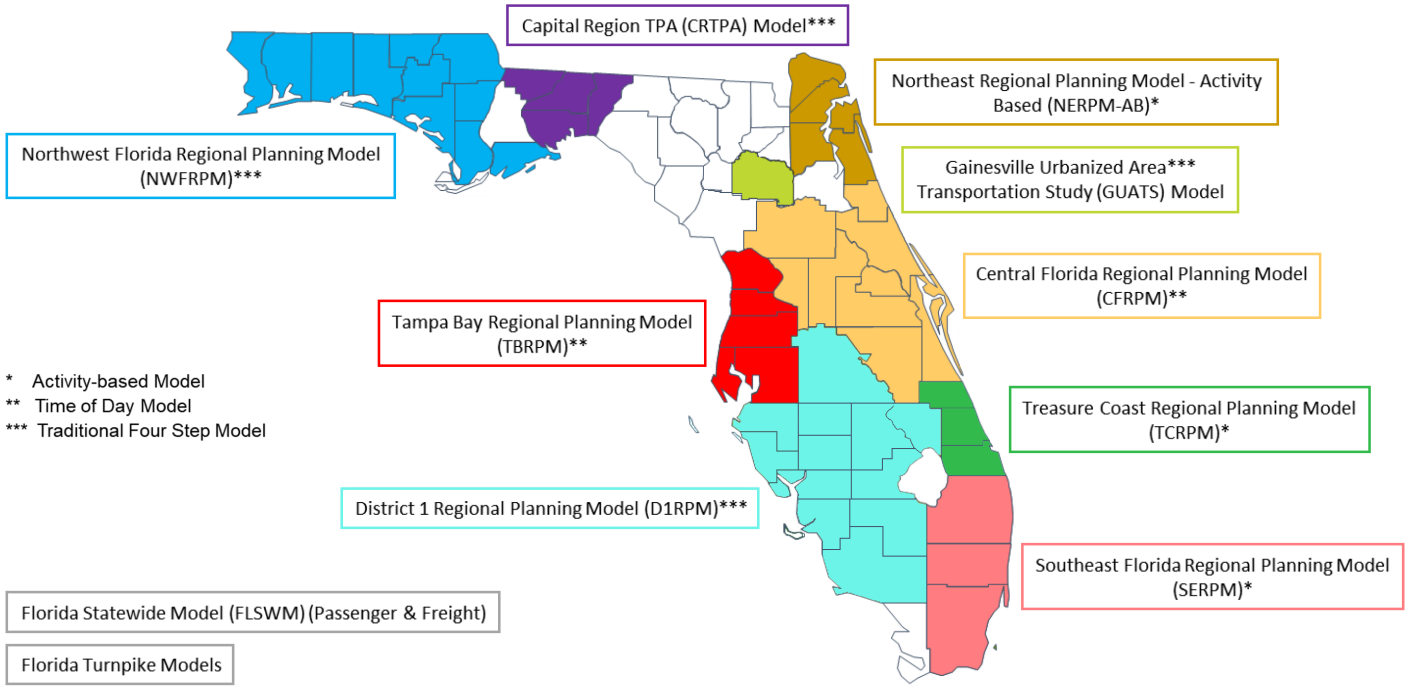
Source: Spikowski Planning Associates (2015)

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.

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 Ciclovia 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

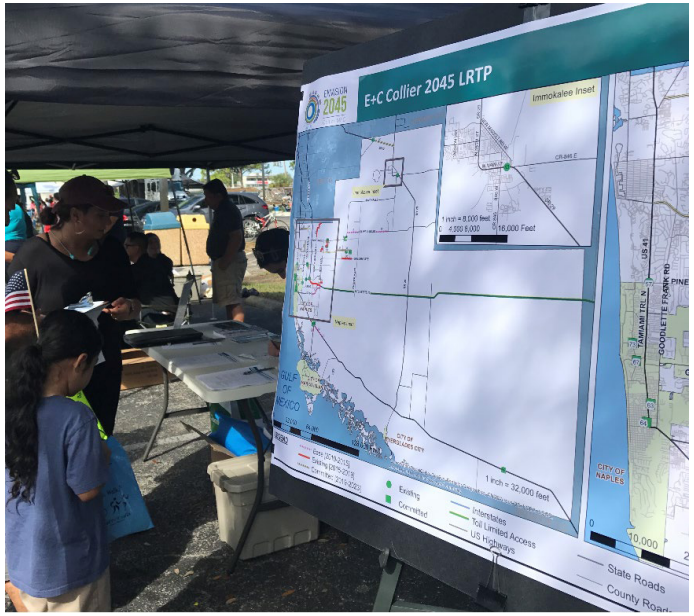
Event Details	Group	Date
Presentation of Alternative 1 Network Scenario modeling results and Proposed Alternative 2 Network Scenario. TAC/CAC provided input.	TAC/CAC	5/18/2020
Alternative 2 Modeling Results and Alternative 3 Modeling Coordination	MPO Staff and Representatives, Collier County Staff	6/9/2020
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 Ciclovia 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 Ciclovia 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

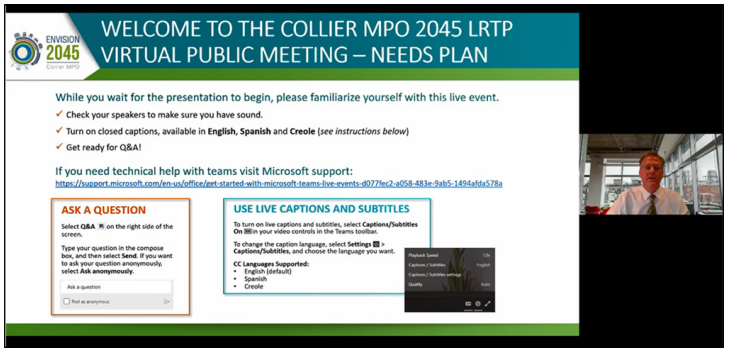
- Draft Cost Feasible Plan Roadway Network Maps by funding years
- Bicycle and Pedestrian Draft Cost Feasible Map
- Prerecorded video presentation

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

3

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

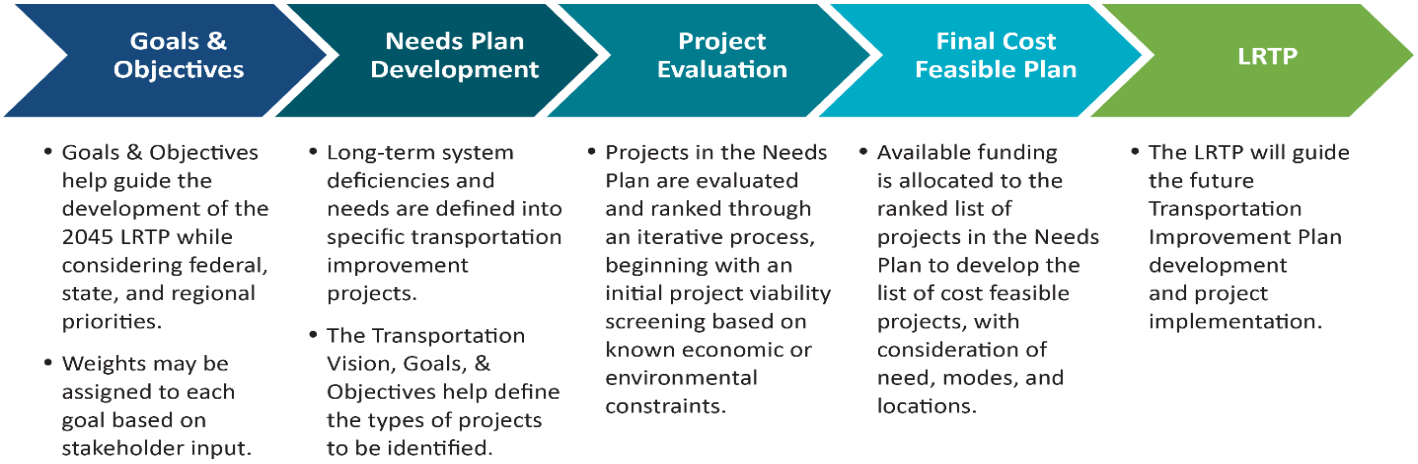
The 2045 LRTP Goals and Objectives are listed on the following pages. The goals provide a framework for realizing the LRTP vision. The objectives provide specific guidance on how to achieve each goal.

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[1]

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

[1] 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 transportations 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.)

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)
1. Ensure the Security of Transportation System for Users 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
2. Protect Environmental Resources 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)
3. Improve System Continuity and Connectivity 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
4. Reduce Roadway Congestion 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
5. Promote Freight Movement 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
6. Increase the Safety of Transportation System Users 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
7. Promote Multimodal Solutions 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
8. Promote the Integrated Planning of Transportation and Land Use 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)
9. Promote Sustainability in the Planning of Transportation and Land Use 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
10. Consider Climate Change Vulnerability and Risk in Transportation Decision-Making 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
11. Consider Connected and Autonomous Vehicles (CAV) Technology in the Future Total Weighting Factor: 4%	11A - Utilizes technological improvements (ITS, Transit Signal Priority, etc.)	Yes = 5 No = 0	4

4

2045 Needs Plan

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.

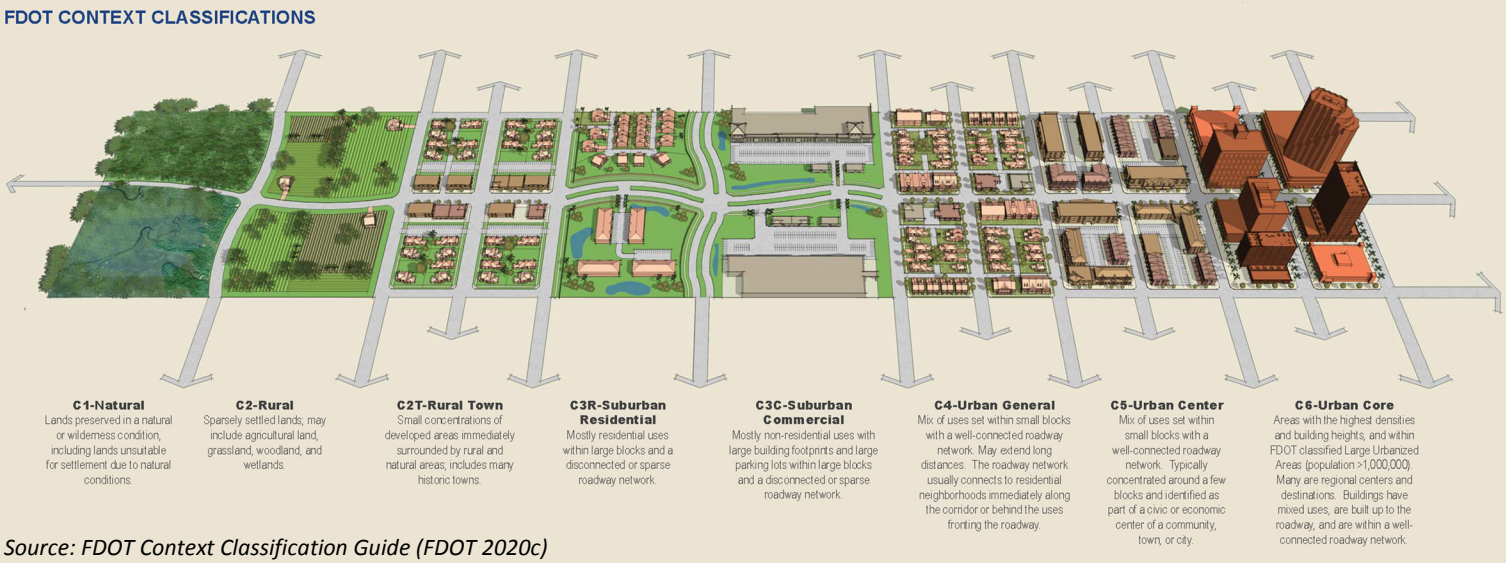
- Establish an integrated and connected road network to provide multiple, viable alternative travel modes or routes for common trips within the Northwest Transportation Concurrency Management Area (TCMA) and the East Central TCMA. Maintain 85 percent of the roadways within the TCMAs at or above the County 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



Source: FDOT Context Classification Guide (FDOT 2020c)

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

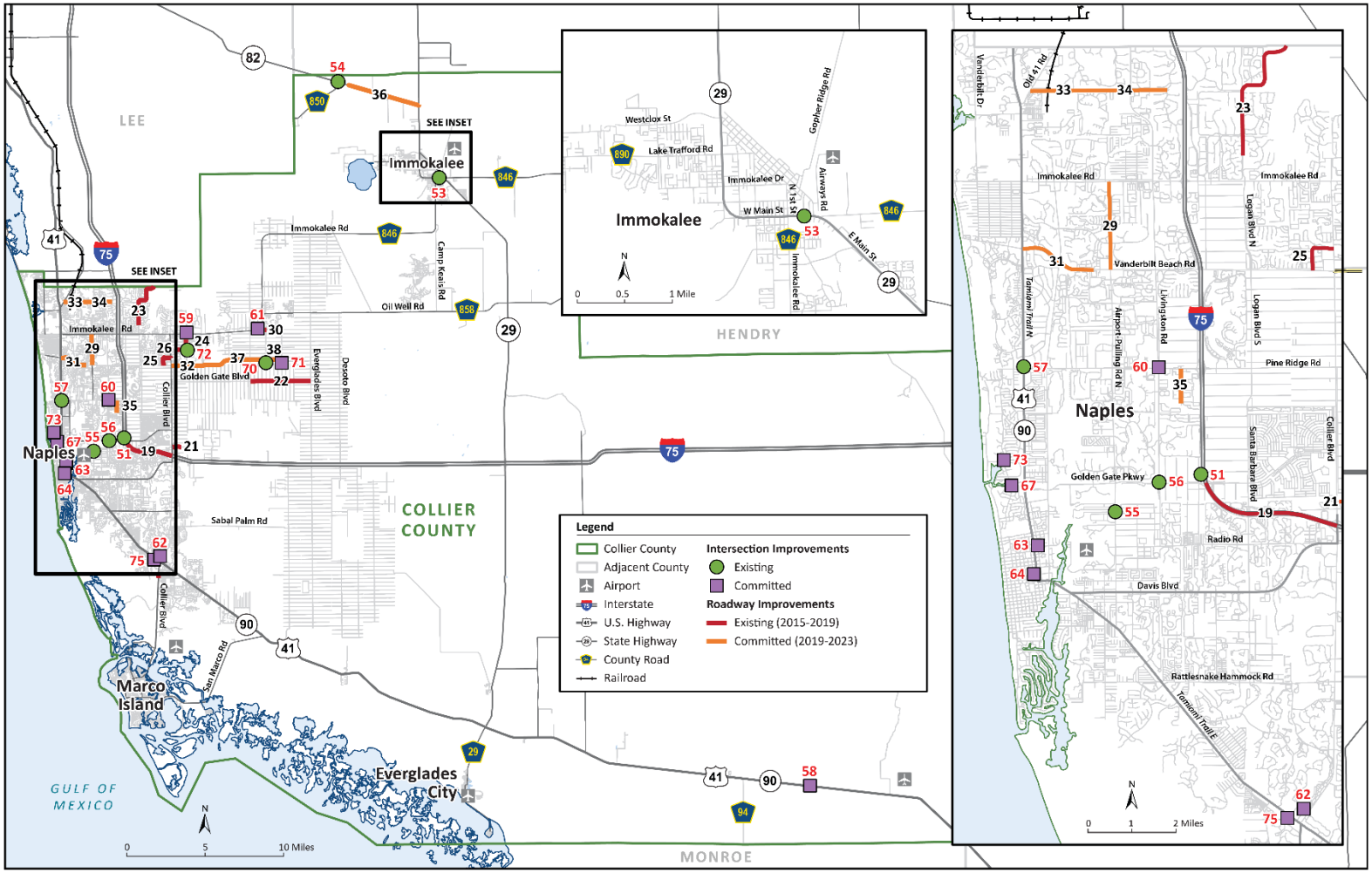


Table 4-1. 2045 Existing Plus Committed (E+C) Projects

Map ID	Roadway	From	To	Improvement	Agency or Municipality	Included in 2021-2025 TIP?
Existing (2015–2019)						
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?
Committed (2019–2023)						
29	Airport Pulling Rd.[a]	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 [a]	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 [a]	Curry Canal	Wilson Blvd.	New Four-Lane Facility	Collier County	Yes
38	Vanderbilt Beach Rd. Extension [a]	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.[a]	Livingston Rd.	-	Intersection Improvements	Collier County	Yes
61	Randall Blvd.[a]	Immokalee Rd.	-	Intersection Improvements	Collier County	Yes
62	Triangle Blvd.[a]	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.[a]	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

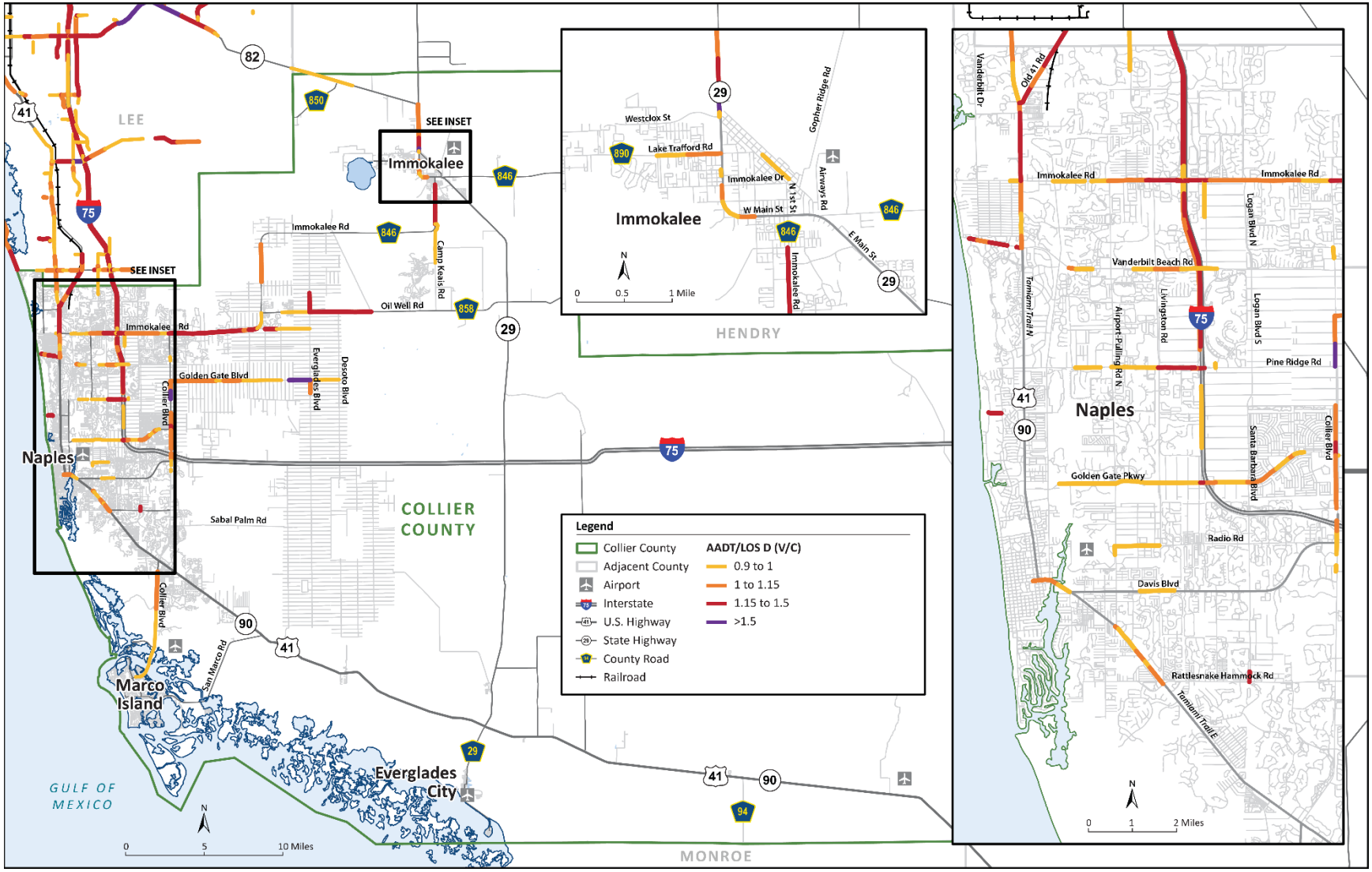
Sources: FDOT Collier County Five Year Work Program FY 2019-2023, Collier County AUIR Five Year Work Program FY 2019-2023, Collier County One-Cent Sales Surtax Website

[a] 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 infra-structure 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[a]	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.)

[a] 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

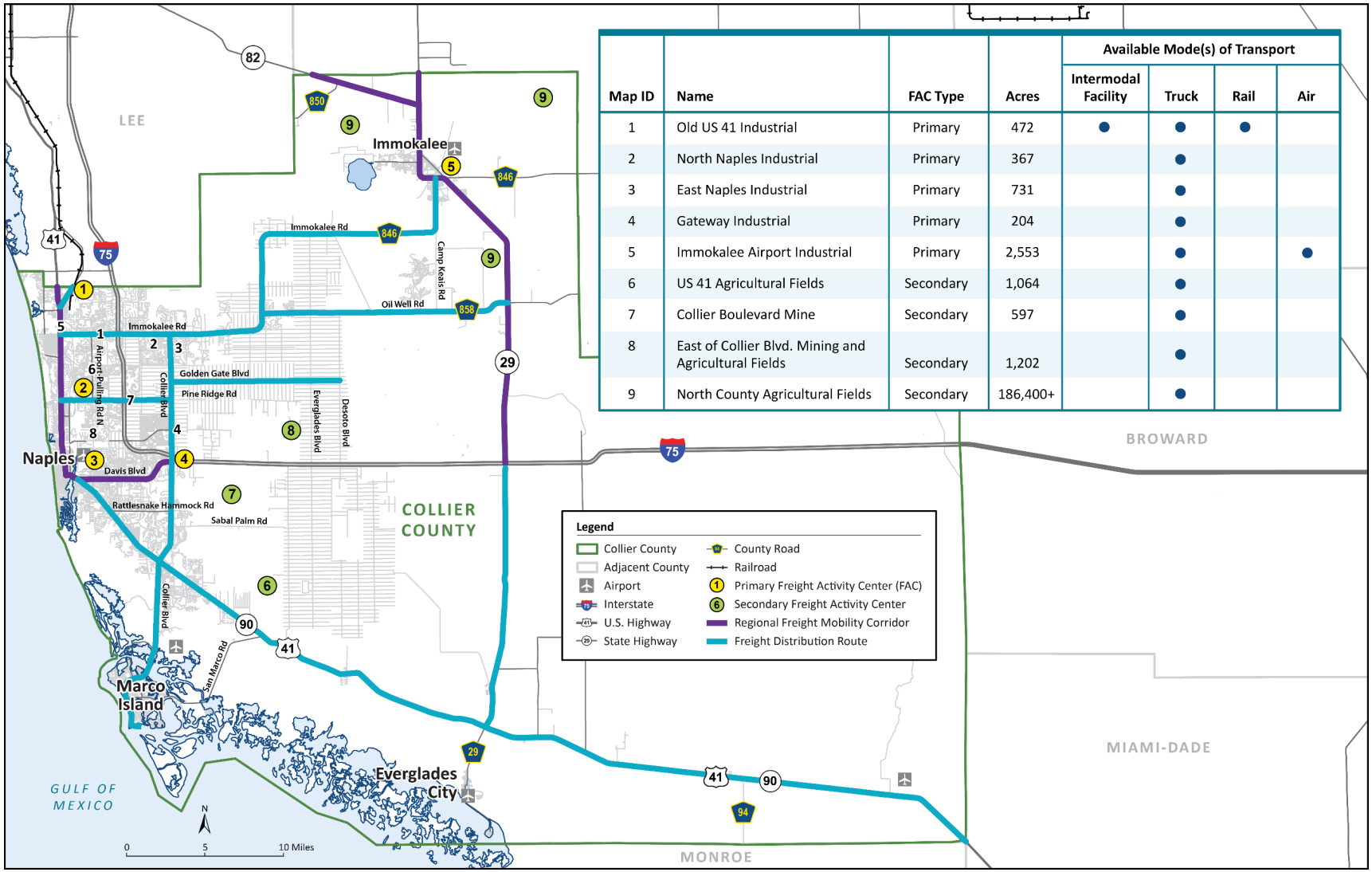
Freight distribution routes serve to distribute truck traffic to local delivery areas. These include state roadways and other local roadways designated in local truck route ordinances at the county and municipal levels. The freight distribution routes within the County consist of:

- 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



Map ID	Name	FAC Type	Acres	Available Mode(s) of Transport			
				Intermodal Facility	Truck	Rail	Air
1	Old US 41 Industrial	Primary	472	●	●	●	
2	North Naples Industrial	Primary	367		●		
3	East Naples Industrial	Primary	731		●		
4	Gateway Industrial	Primary	204		●		
5	Immokalee Airport Industrial	Primary	2,553		●		●
6	US 41 Agricultural Fields	Secondary	1,064		●		
7	Collier Boulevard Mine	Secondary	597		●		
8	East of Collier Blvd. Mining and Agricultural Fields	Secondary	1,202		●		
9	North County Agricultural Fields	Secondary	186,400+		●		

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.

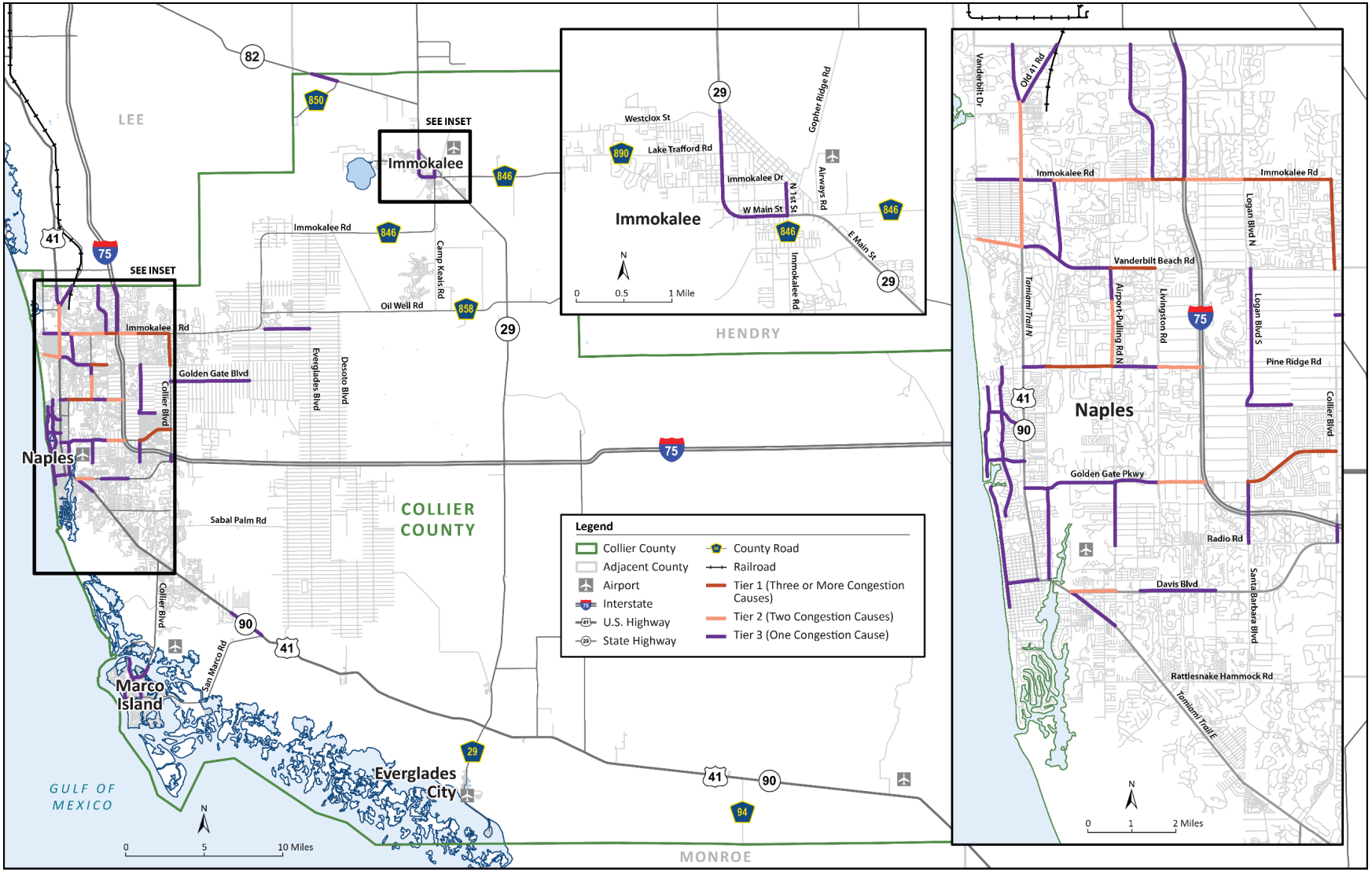
Congestion Management

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[a]	Top 20 Crash Frequency[b] 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[a]	Top 20 Crash Frequency[b] 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

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

[b] 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:

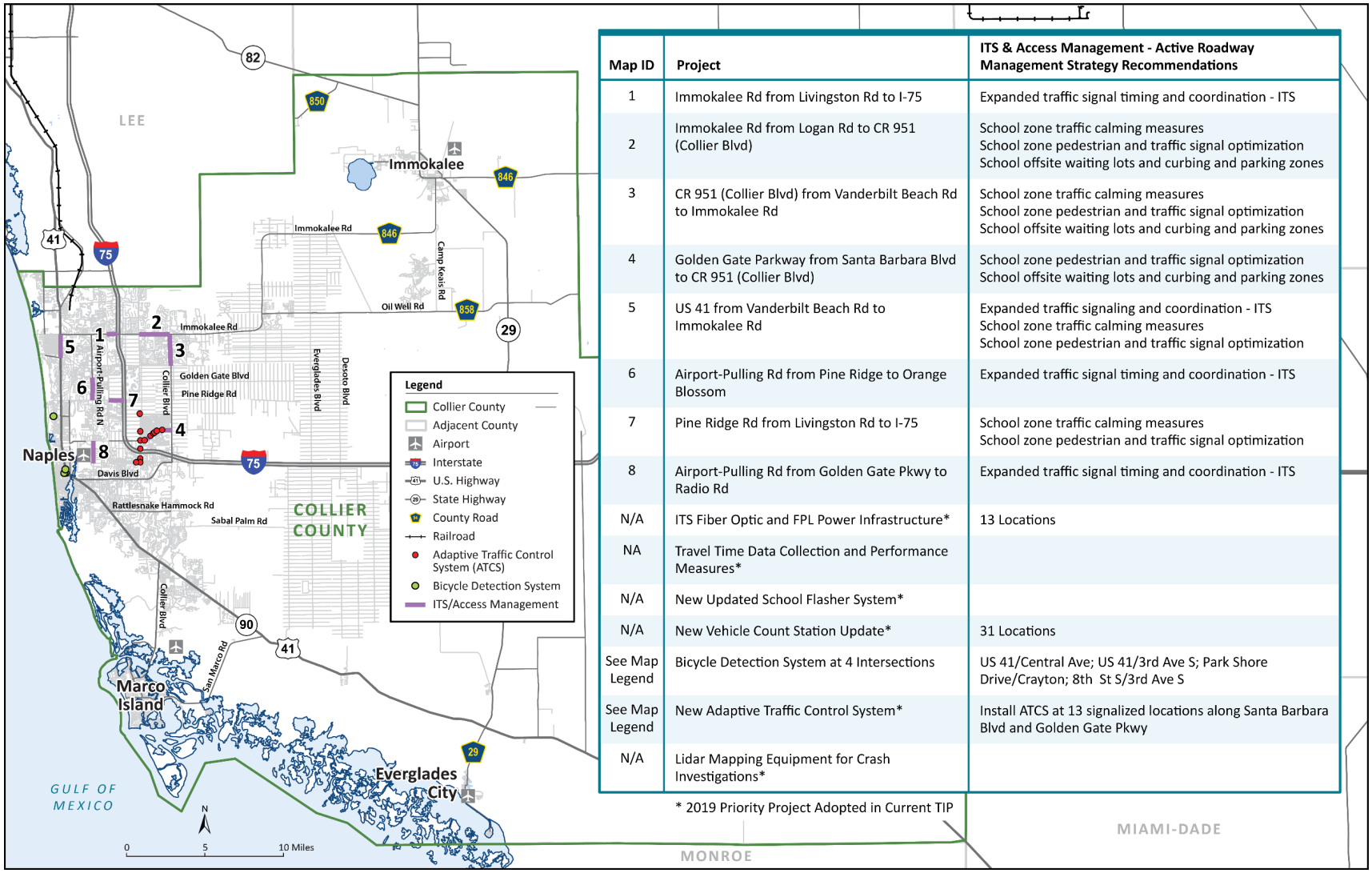
- Maintaining concurrency with FDOT Regional ITS Architecture and technological advances in TOC equipment and operations
- Increased number of signalized intersections connected to ITS
- Improved Travel Time Reliability

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



Map ID	Project	ITS & Access Management - Active Roadway Management Strategy Recommendations
1	Immokalee Rd from Livingston Rd to I-75	Expanded traffic signal timing and coordination - ITS
2	Immokalee Rd from Logan Rd to CR 951 (Collier Blvd)	School zone traffic calming measures School zone pedestrian and traffic signal optimization School offsite waiting lots and curbing and parking zones
3	CR 951 (Collier Blvd) from Vanderbilt Beach Rd to Immokalee Rd	School zone traffic calming measures School zone pedestrian and traffic signal optimization School offsite waiting lots and curbing and parking zones
4	Golden Gate Parkway from Santa Barbara Blvd to CR 951 (Collier Blvd)	School zone pedestrian and traffic signal optimization School offsite waiting lots and curbing and parking zones
5	US 41 from Vanderbilt Beach Rd to Immokalee Rd	Expanded traffic signaling and coordination - ITS School zone traffic calming measures School zone pedestrian and traffic signal optimization
6	Airport-Pulling Rd from Pine Ridge to Orange Blossom	Expanded traffic signal timing and coordination - ITS
7	Pine Ridge Rd from Livingston Rd to I-75	School zone traffic calming measures School zone pedestrian and traffic signal optimization
8	Airport-Pulling Rd from Golden Gate Pkwy to Radio Rd	Expanded traffic signal timing and coordination - ITS
N/A	ITS Fiber Optic and FPL Power Infrastructure*	13 Locations
NA	Travel Time Data Collection and Performance Measures*	
N/A	New Updated School Flasher System*	
N/A	New Vehicle Count Station Update*	31 Locations
See Map Legend	Bicycle Detection System at 4 Intersections	US 41/Central Ave; US 41/3rd Ave S; Park Shore Drive/Crayton; 8th St S/3rd Ave S
See Map Legend	New Adaptive Traffic Control System*	Install ATCS at 13 signalized locations along Santa Barbara Blvd and Golden Gate Pkwy
N/A	Lidar Mapping Equipment for Crash Investigations*	

* 2019 Priority Project Adopted in Current TIP

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 principals 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	• Restore degraded wetlands • Create new wetland habitats • Enhance or preserve existing wetlands • Improve stormwater management • Purchase credits from a mitigation bank
Forested and Natural Areas	• Use selective cutting and clearing • Replace or restore forested areas • Preserve existing vegetation
Habitats	• Construct underpasses, such as culverts • Implement other design measures to minimize potential fragmenting of animal habitats
Streams	• Perform stream restoration • Create vegetative buffer zones • Enforce strict erosion and sedimentation control measures
Threatened or Endangered Species	• Preservation • Enhance or restore degraded habitat • Create new habitats • Establish buffer areas around existing habitat

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

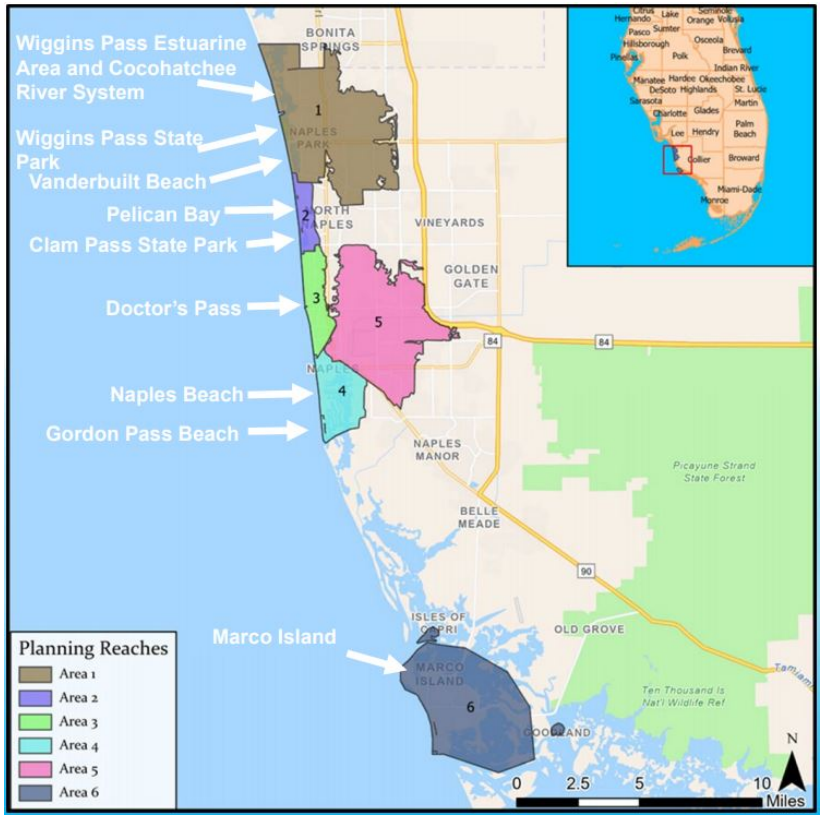
Source: FDOT 2020a

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)[1] tool was used to evaluate potential climate impacts to the Collier Metropolitan Area transportation network. The viewer provides a pre-

[1] 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	• Potential increase in VMT from empty vehicles • Changes in land use or urban form	• Increased mobility for children, elderly or the disabled at potentially lower costs • Reduced parking demand • Changes in land use or urban form
Connected Vehicles	• Potential hacking of a transportation network	• Potential increase in roadway capacities • New safety features • Improved congestion management
Electric Vehicles	• Decrease in transportation funding sources from reduction in motor fuel tax revenues	• Potential reduction in air emissions (depending on energy sources used to generate electricity)
Shared-Use Vehicles	• Complete Street design challenges because of competition for limited curb space in urban areas	• Opportunities for mobility hubs and new funding sources

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[2] 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

[2] 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)

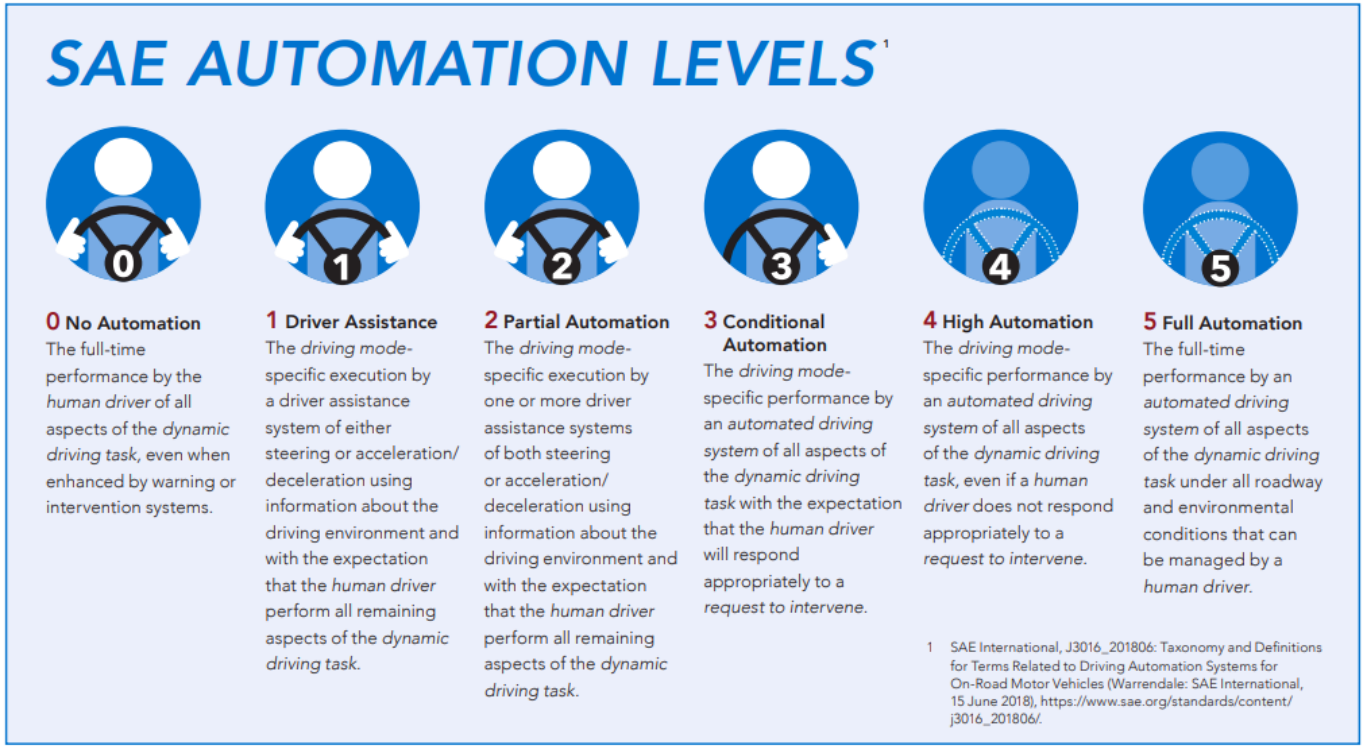


Figure 4-11. 2045 Needs Plan Project Map

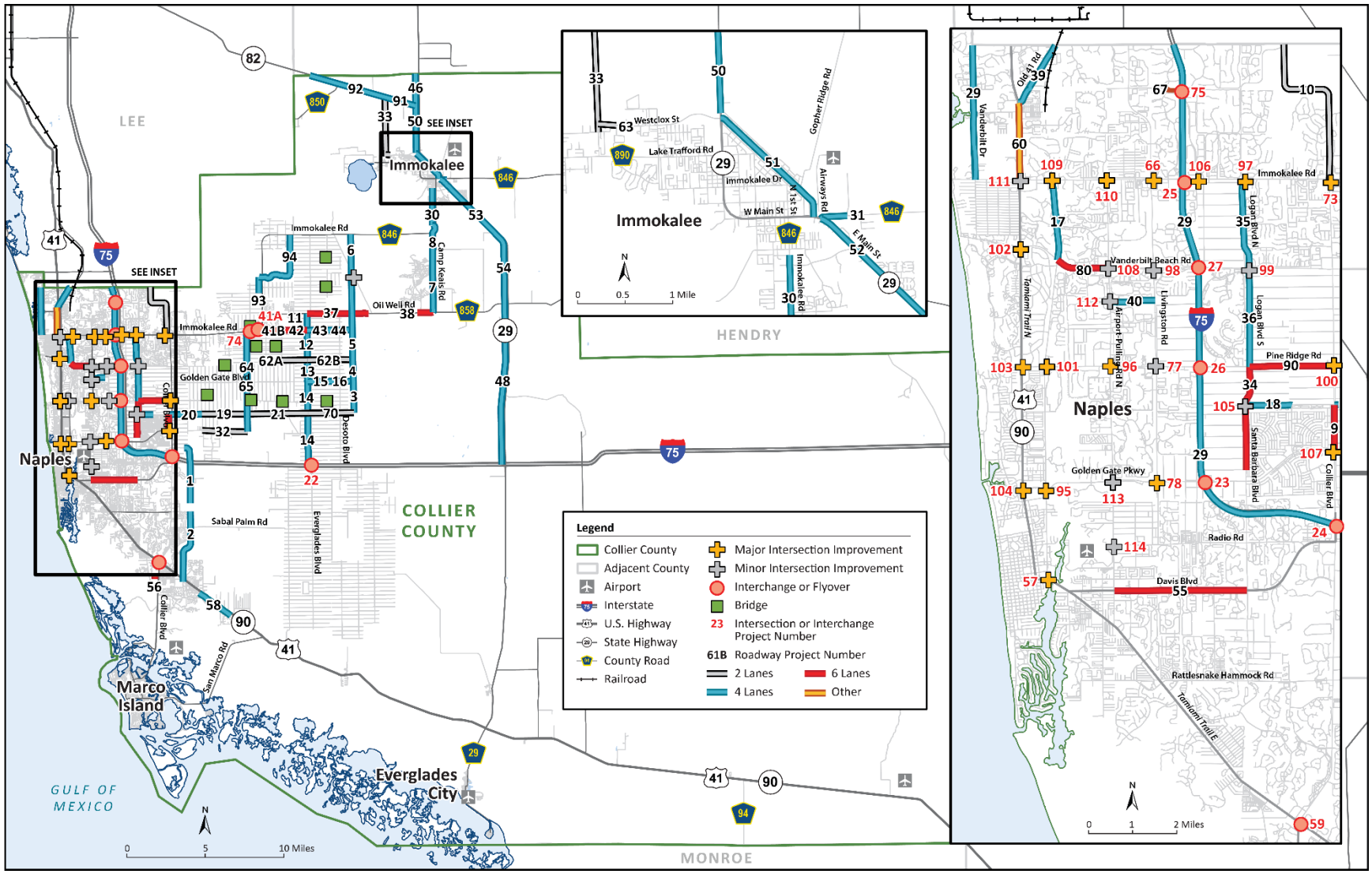


Table 4-6. 2045 Needs Plan List of Projects

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[a]	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[b]	85.3	26.0	1.7	1.3
Connector sidewalk[b]	65.0	18.5	11.4	4.5
Total miles	224.2	67.4	15.5	5.8

[a] Equity criterion established as block groups receiving a medium, high, or very high ranking from the Composite Equity Analysis.

[b] 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
Total Miles			**66.3**		

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 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[a]

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%
Totals	**871,805**	**1,023,406**	**151,601**	**17.4%**

[a] Based on T-BEST model

Source: 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
Proposed Realignment Changes		
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	• 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. • Remove service along Tamiami Trail
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	• Extend the North-South alignment north to Immokalee Rd. • East-West alignment would remain the same.
Route 27 (NS and EW)	15 and 12	• Extend the North-South alignment south along Collier Boulevard to Tamiami Trail. • Extend the East-West alignment east to provide service along Immokalee Rd. to the Publix shopping center at Immokalee Rd. and Oil Well Rd.

Table 4-12. 2045 Transit Needs Summary

Route Location	Rank	Improvement Description
Proposed Frequency Changes		
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.
Proposed Span Improvements		
Route 11, 13, 14, 17/18, 19/28, 24	1, 1, 1, 6, 4, 4	Extend service to 10:00 p.m.
Proposed New Service Routes		
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.

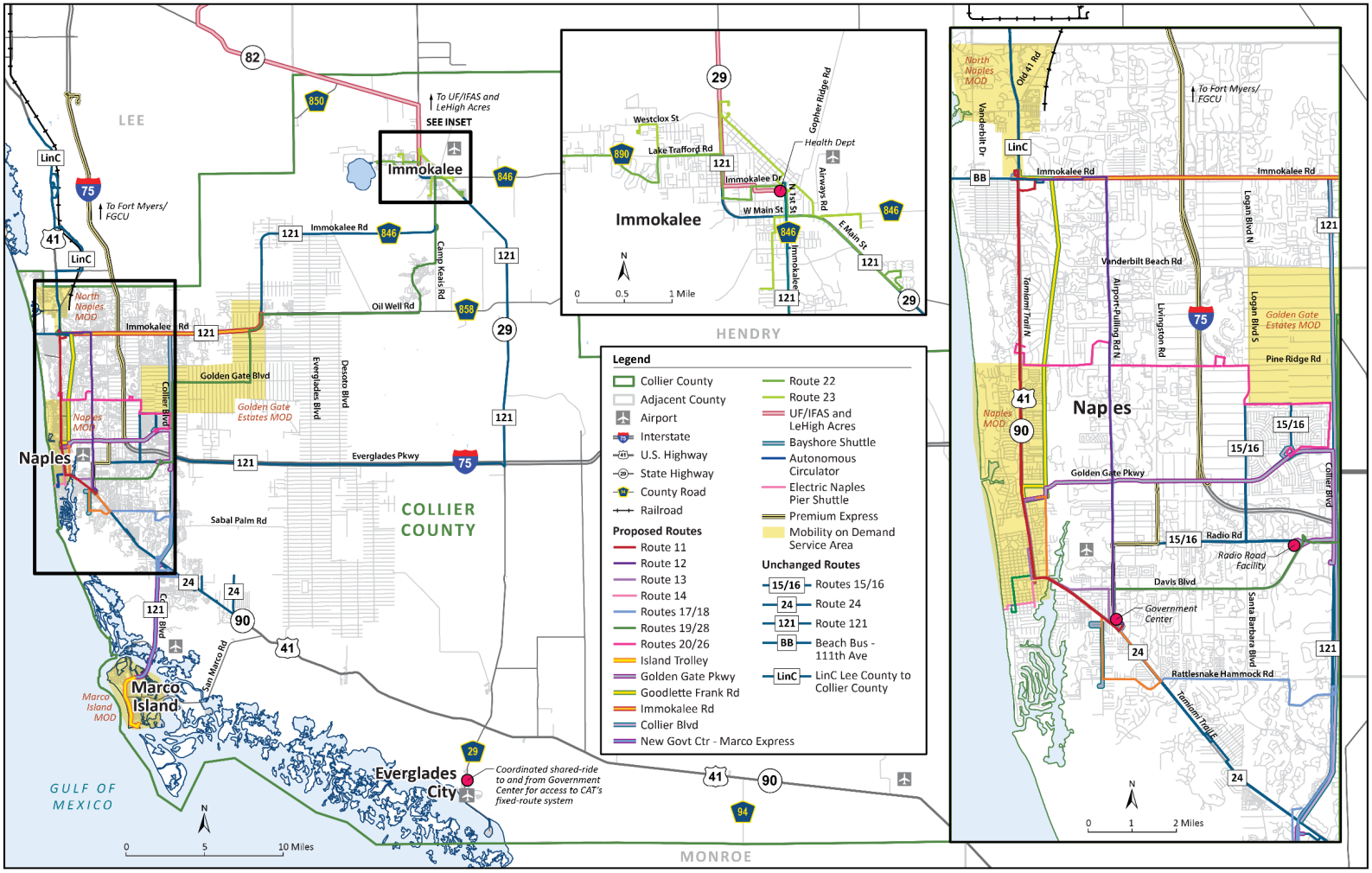
Table 4-12. 2045 Transit Needs Summary

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.
Capital Infrastructure		
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.

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.

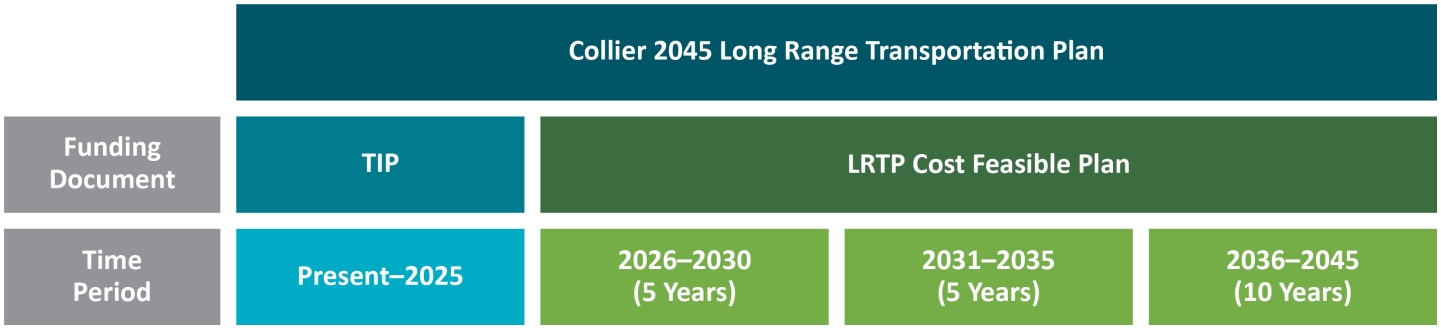
5-1 Overview

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)[1] 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)



[1] 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 it 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.

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.[2] 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.

[2] 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.

Table 5-1. 2045 LRTP Revenue Projections

Jurisdiction	Funding Source	Total 2026–2045 (YOE)
Revenues Dedicated to Transit Operations		
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
	Subtotal for Transit Operations	**$334,909,000**
Revenues Dedicated to Transit Capital Projects		
Federal	Transit Capital	$105,439,000
Federal & State	Transit Capital	$3,089,000
State	Transit Capital	$0
Local	Transit Capital	$21,925,000
	Subtotal for Transit Capital Projects	***$130,453,000***
	Total Transit Revenues	**$465,362,000**
Revenues Dedicated to Operations and Maintenance (Roadway)		
County	General Fund (Ad Valorem)	$240,000,000
County	Fuel Tax	$180,254,000
	Total Operations and Maintenance (Roadway)	**$420,254,000**
Revenues Remaining for Collier MPO 2045 LRTP Projects (Roadway)		
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
	Total for Collier MPO 2045 LRTP Projects (Roadway)	**$1,526,779,000**

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
	Total Revenues	$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).

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 Change 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).

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

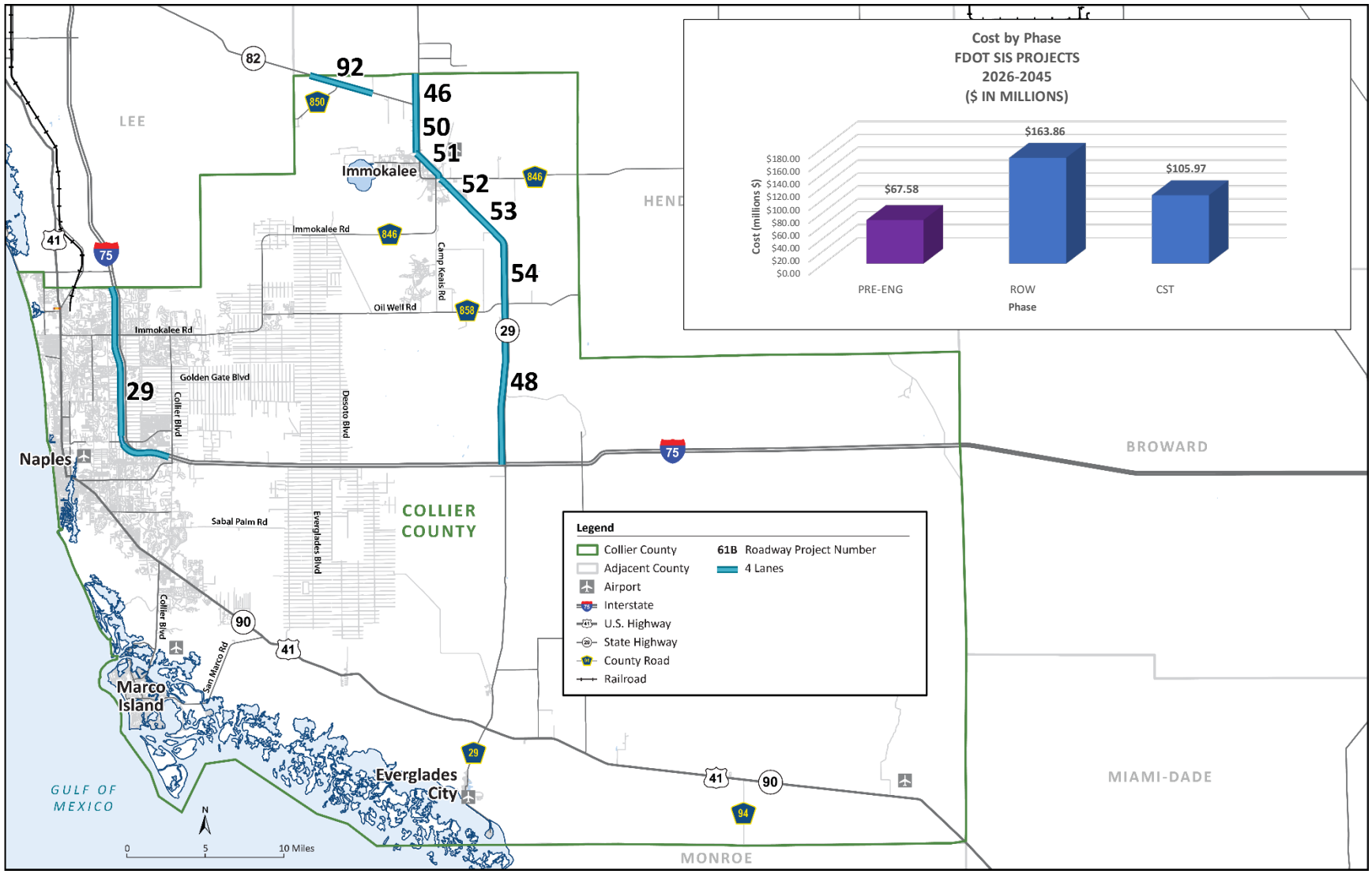


Table 6-2. Collier MPO 2045 LRTP Cost Feasible Plan Projects – FDOT Other Roads Projects and Local Roadway Projects

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)

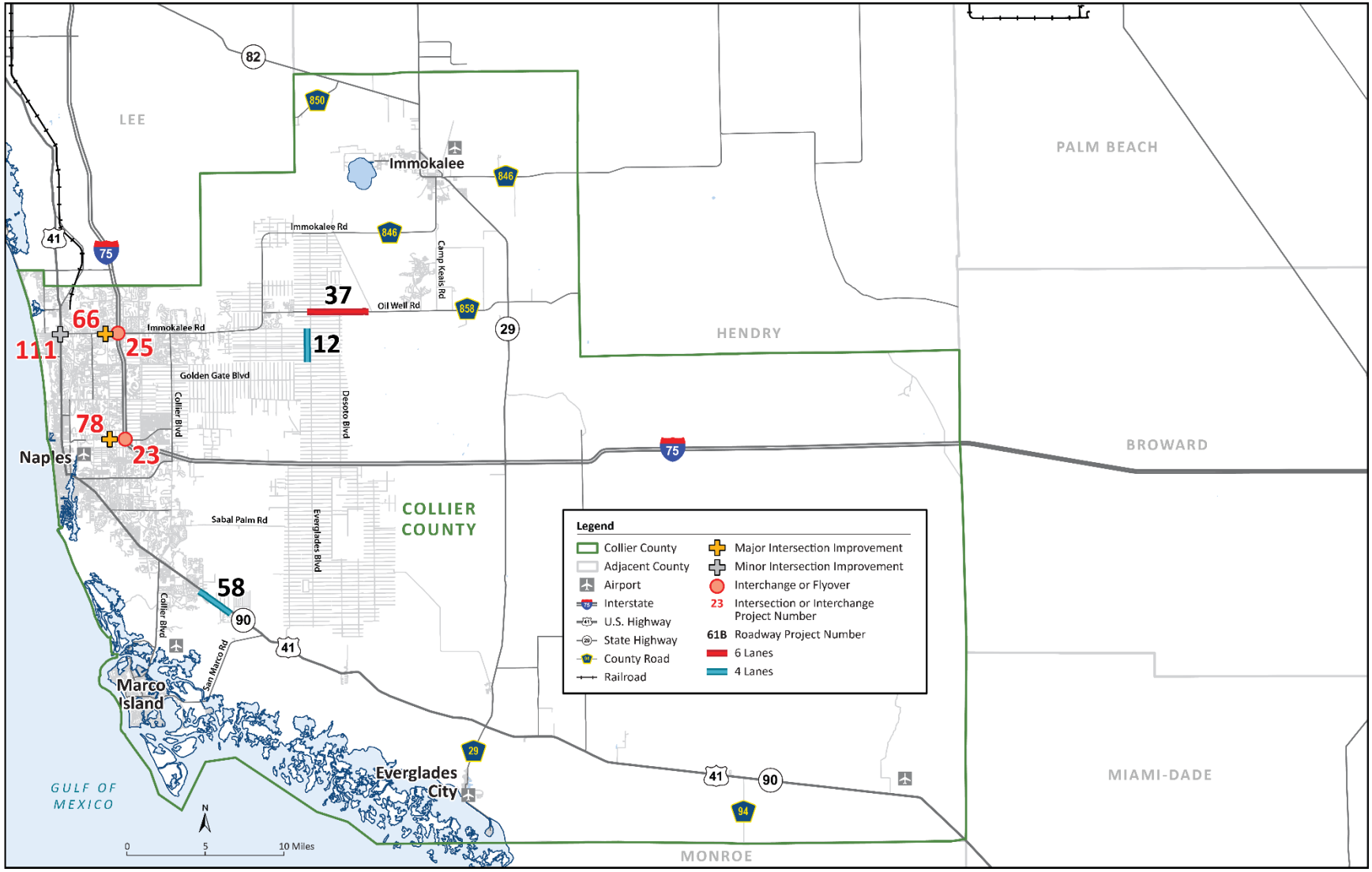


Figure 6-3. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map (FY2031–FY2035)

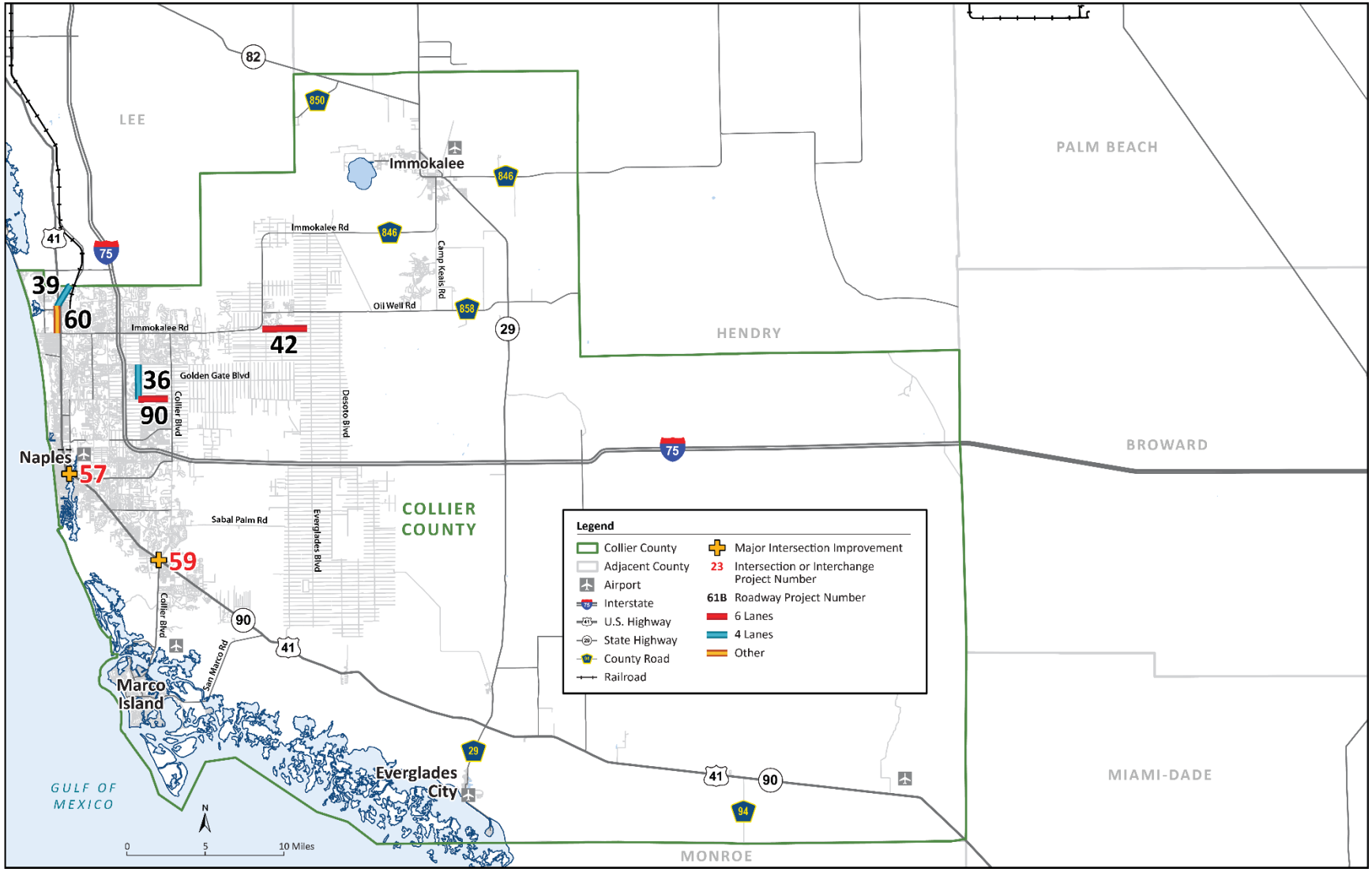


Figure 6-4. FDOT Other Roads and Local Roadway Projects Cost Feasible Plan Projects Map (FY2036–FY2045)

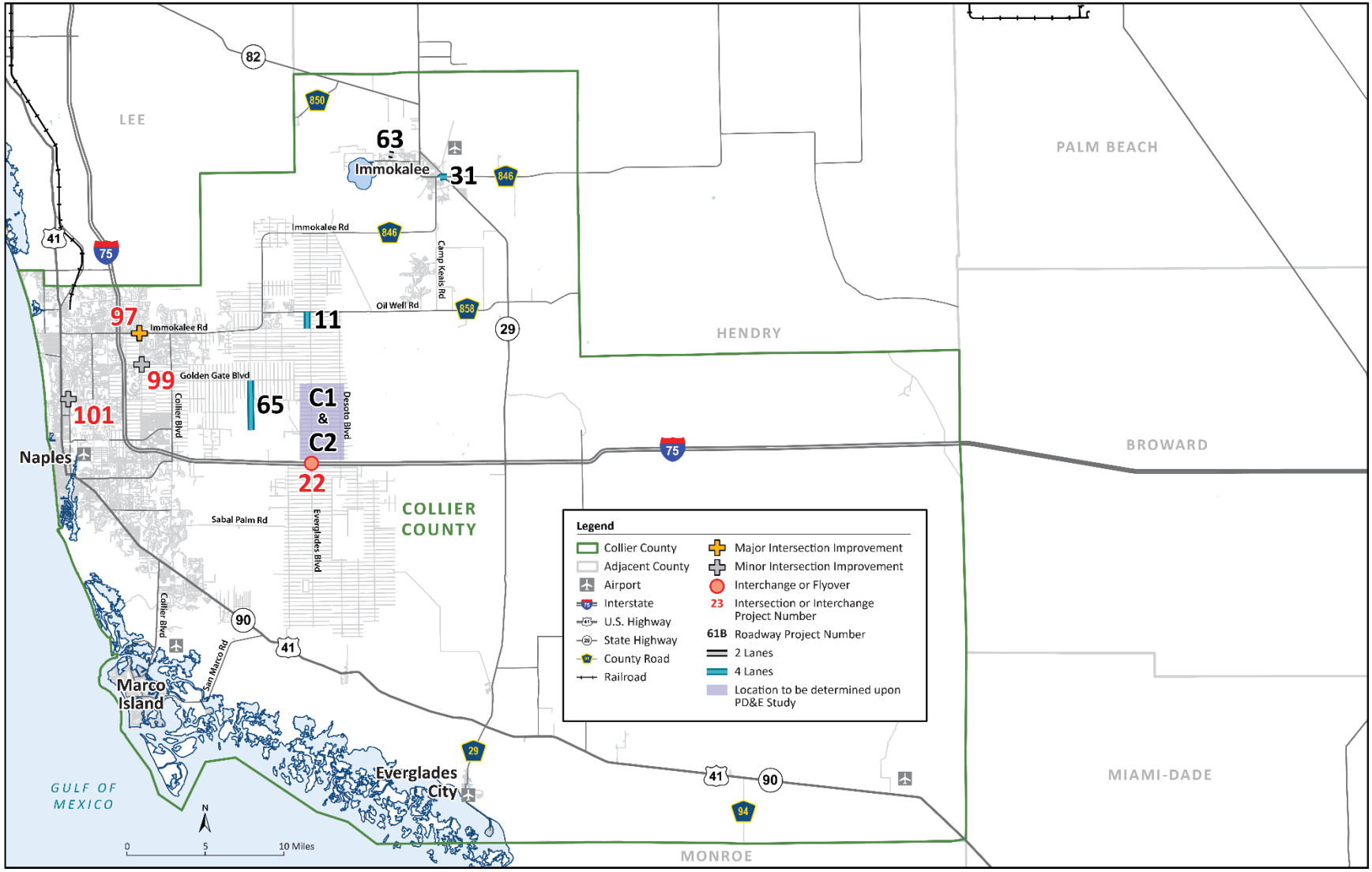


Table 6-3. Collier MPO 2045 LRTP Cost Feasible Plan Projects – Partially Funded Projects (FY2026–FY2045)

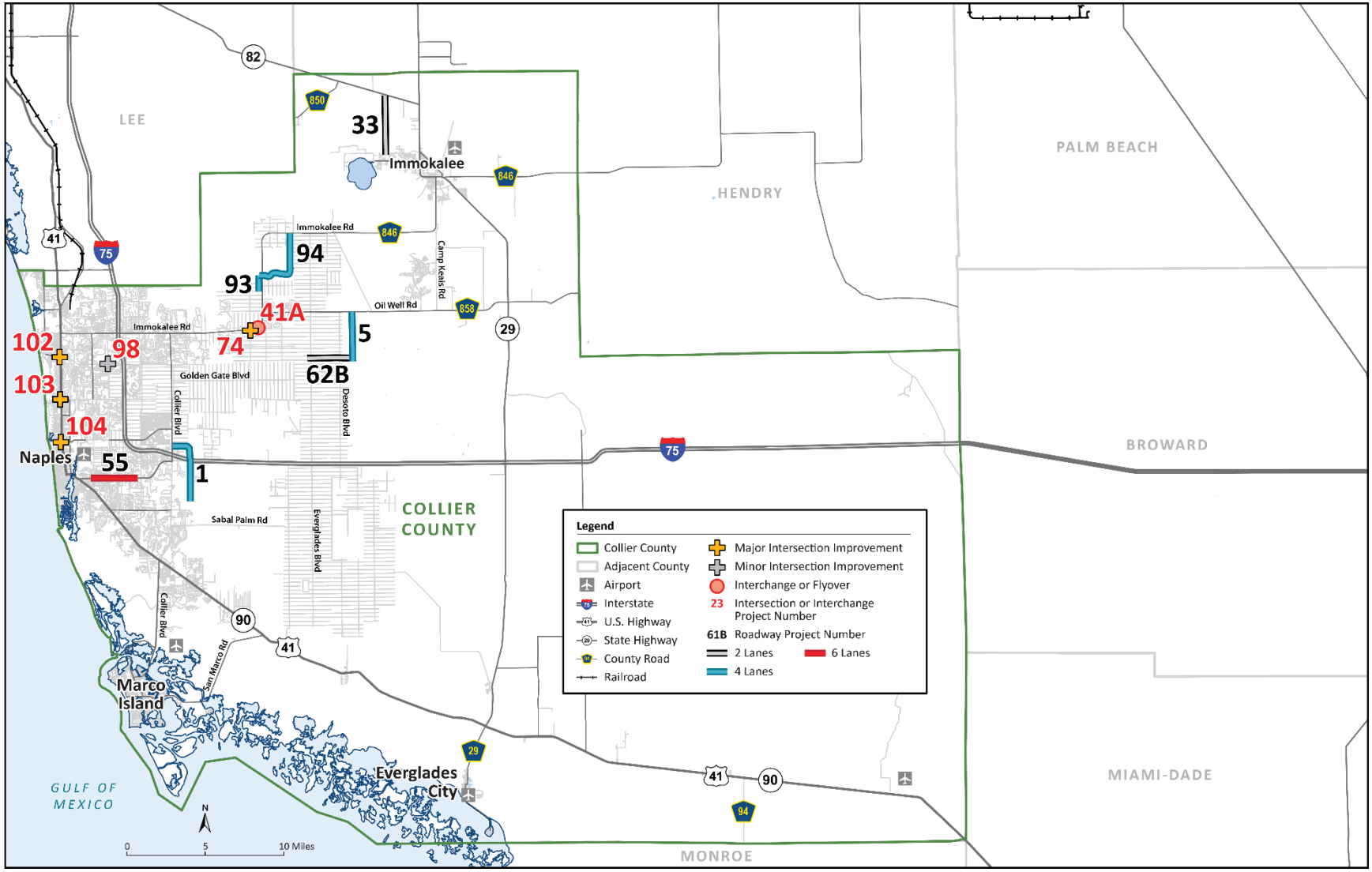
Draft 9/21/2020 (in millions $)

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 47the 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.

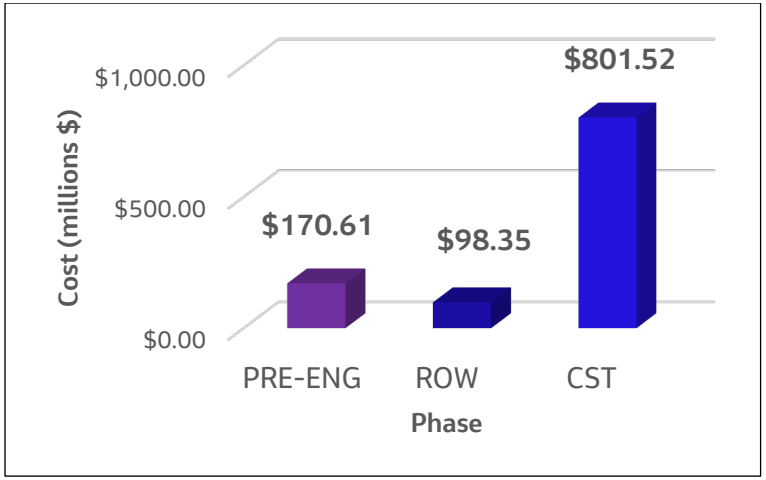


Figure 6-6. Total Costs by Project Phase for FDOT Other Roads and Local Roads Funded Projects 2026–2045
(YOE $ in millions)

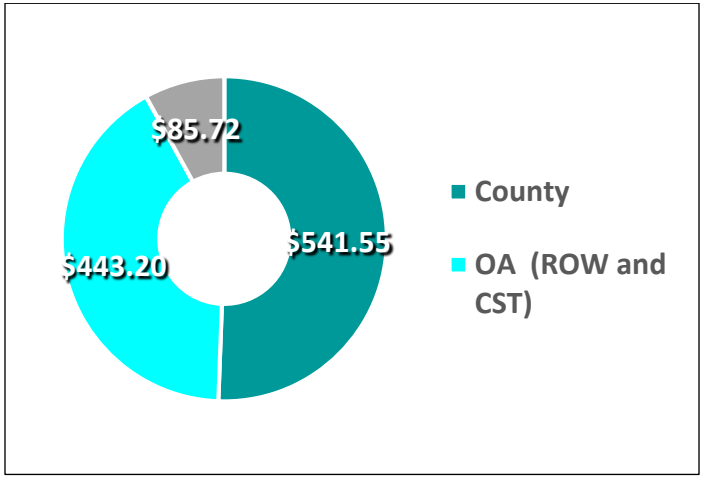


Figure 6-7. Total Costs by Funding Source 2026–2045
(YOE $ in millions)

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)
Proposed Realignment Changes				
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				
Proposed Frequency Changes				
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

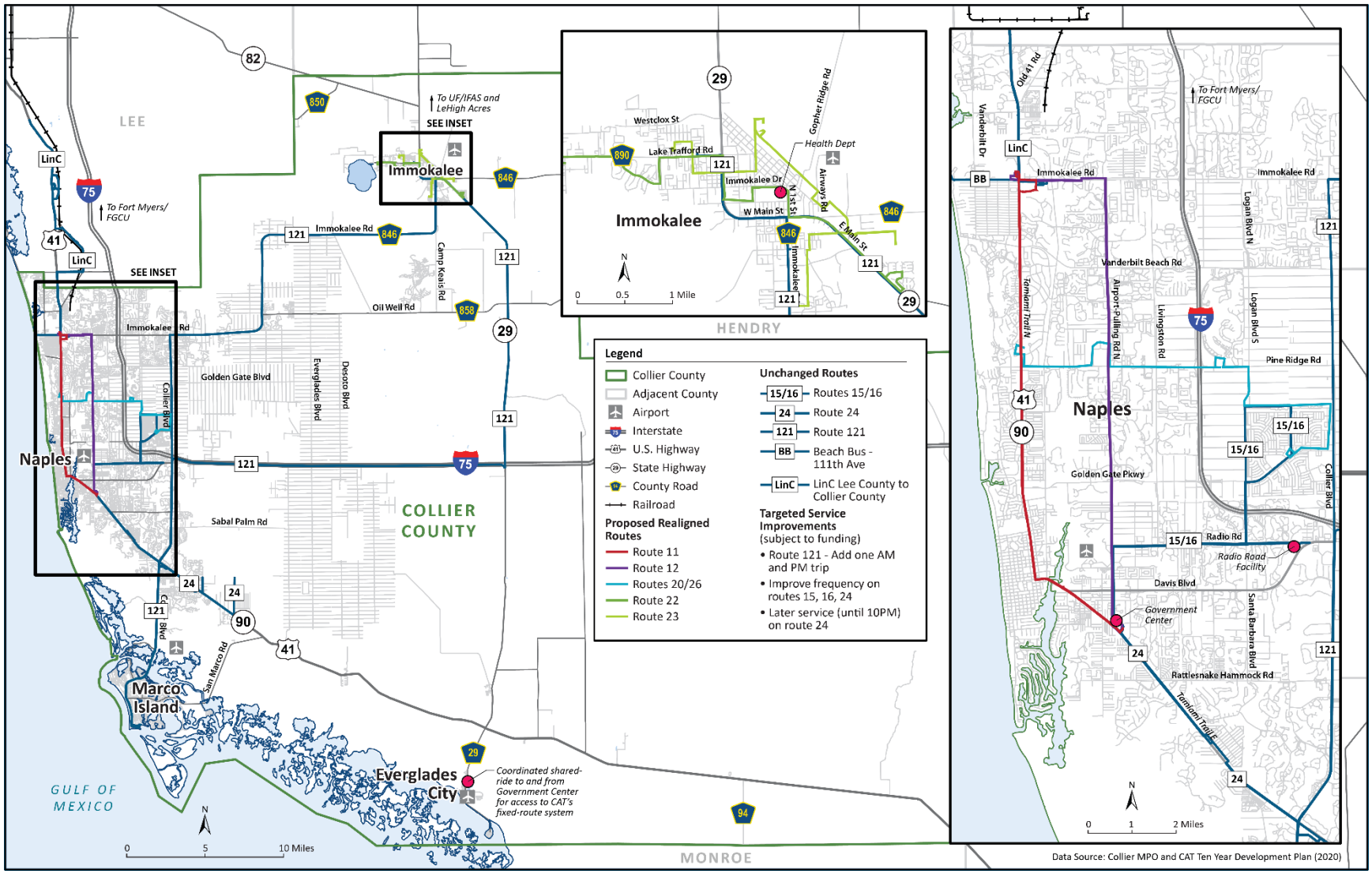
Route Location	TDP 2021–2030		LRTP 2031–2045	
	Funded	Operating/Capital Cost (YOE)	Funded	Operating/Capital Cost (YOE)
Route 23 – 60 min to 40 min	X	$3,805,909/$503,771		
Route 24- 85 min to 60 min	X	$2,045,921/$503,771		
Route 121 – Add two morning and evening trips during peak periods	X (Partial – one AM and one PM)	$1,632,384/$503,771		
Proposed Span Improvements				
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.				
Proposed New Service Routes				
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				
Capital Infrastructure				
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[a]	X	$0/$11,275,000		

[a] 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.[1] 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.

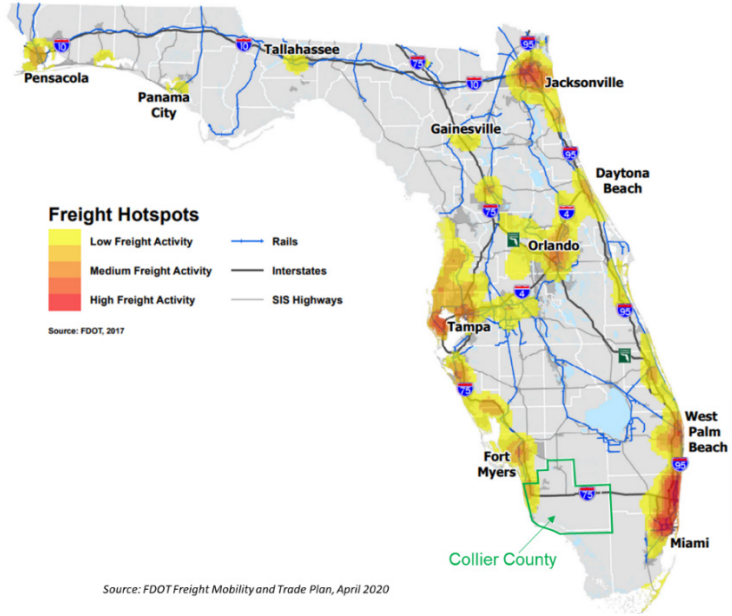


Figure 6-9. Freight Hotspot Locations

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.

[1] https://www.fdot.gov/rail/plandevel/freight-mobility-and-trade-plan

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.

7 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[1] 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)

[1] 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 *good* condition in 4 years
		<5% in *poor* condition in 4 years
	Condition of NHS Non-Interstate Pavement	≥40% in *good* condition in 2 & 4 years
		<5% in *poor* condition in 2 & 4 years
Bridge (PM2)	NHS Bridge Deck Area Condition	≥50% in *good* condition in 2 & 4 years
		<10% in *poor* 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

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

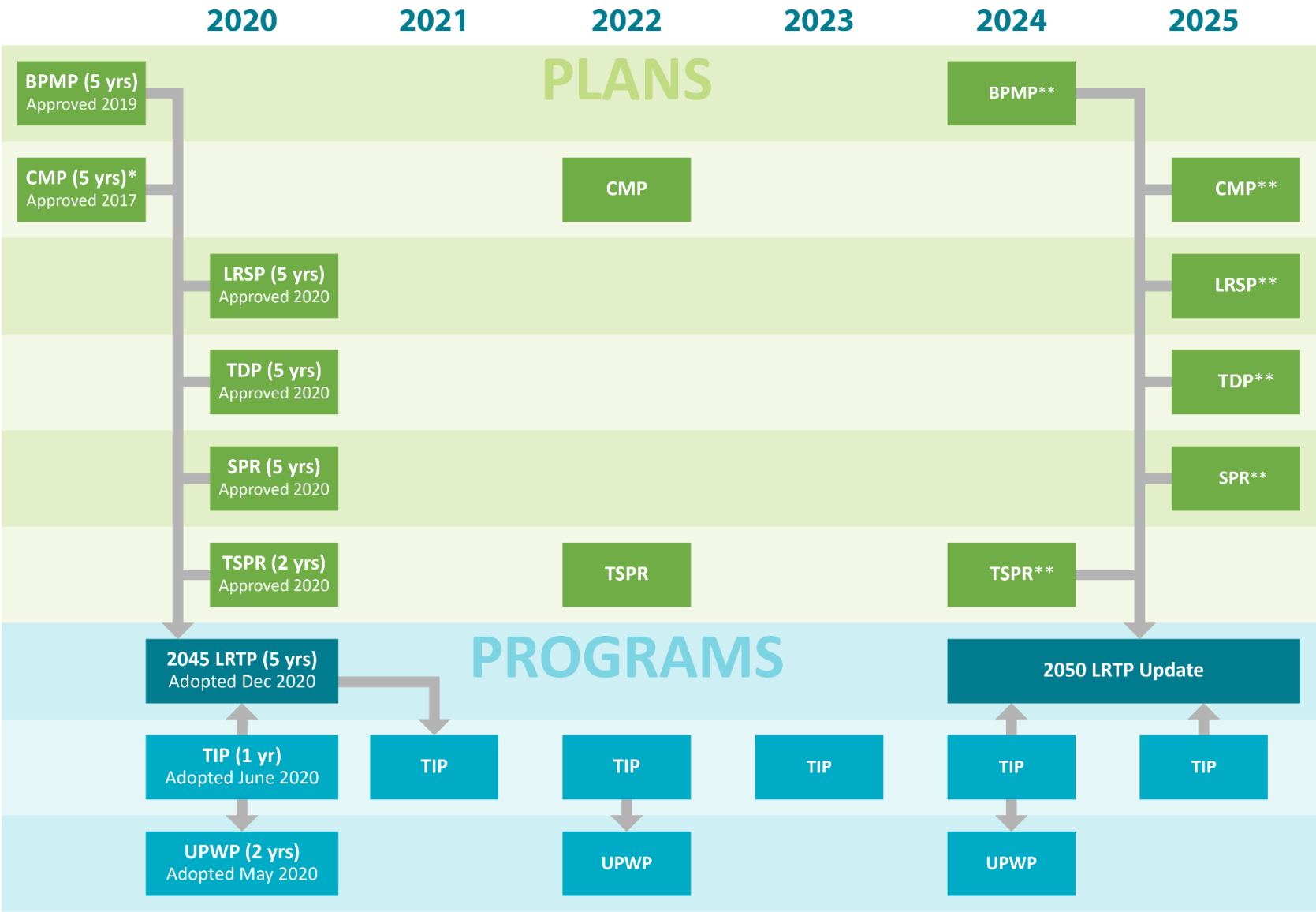
The Collier MPO implements the LRTP through short- and long-term transportation plans and through programs and projects, which is done in partnership with the County and associated municipalities that design, develop, and deliver policies, programs, and infrastructure projects identified in the LRTP.

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

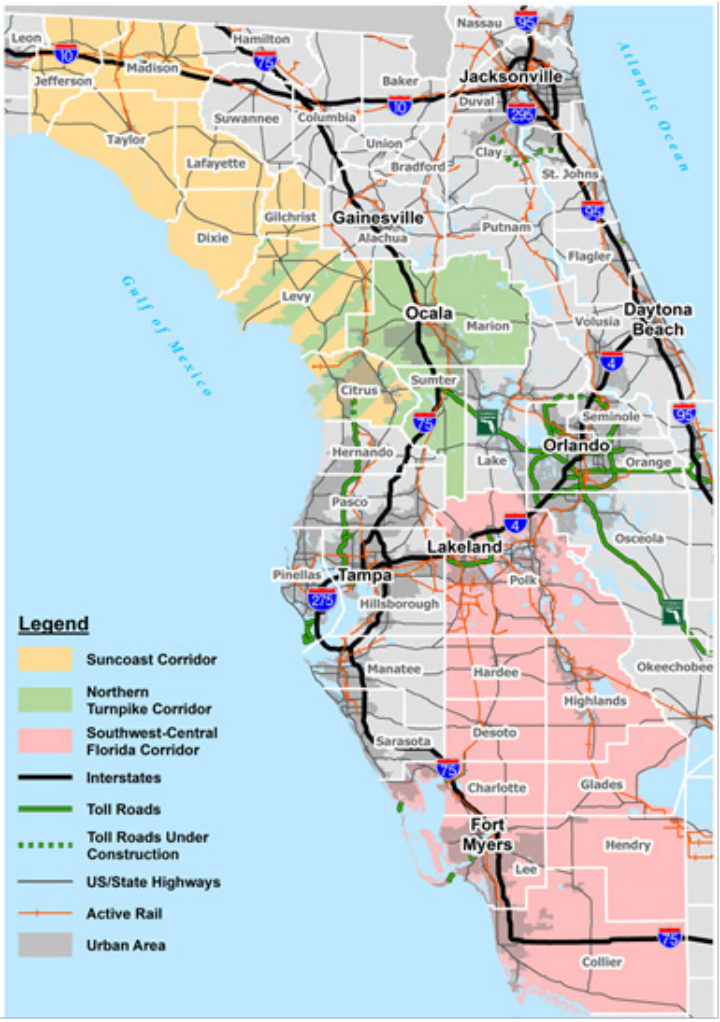
Created by Section 338.2278, F.S., the M-CORES Program seeks to revitalize rural communities, encourage job creation, and provide regional connectivity while leveraging technology, enhancing quality of life and public safety, and protecting the environment and natural resources. FDOT is responsible for 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

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.

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COLLIER MPO 2045 LONG RANGE TRANSPORTATION PLAN

APPENDICES

DECEMBER 2020

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COLLIER Metropolitan Planning Organization

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Appendix A
Federal and State LRTP Requirements

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Stakeholder Coordination and Input	
Specific Public Involvement Strategies: Develop a written plan to document the procedures, strategies, and outcomes of stakeholder involvement in the planning process for all MPO products and processes, including but not limited to, public/stakeholder input on the LRTP and its amendments.	- Chapter 2 – Plan Process, Section 2-4 - *Public Information Summary Report* (prepared under separate cover) - *Public Involvement Plan* (prepared under separate cover) - *Social Media Outreach Strategy*
Public Involvement/Tribal/Resource Agency Consultation: Consultation on the MPO's planning products (including the LRTP) with the appropriate Indian Tribal governments and Federal land management agencies (when the planning area includes such lands) is required to be documented. State and local agencies (including Tribal government resource agencies) responsible for land use management are required to be consulted during the development of the LRTP. The consultation process is required to be documented.	- Chapter 2 – Plan Process, Section 2-4 - *Public Information Summary Report* (prepared under separate cover)
Measures of Effectiveness: MPOs are required to periodically review the effectiveness of the procedures and strategies described within the public participation plan (PPP). The PPP is also required to contain the specific measures used, the timing of, and the process used to evaluate the MPO's outreach and PPP strategies. Ideally, once the LRTP is developed, the outreach is evaluated, and then any needed changes to the outreach process are incorporated and documented in the PPP prior to the next LRTP update.	The Collier MPO Public Participation Plan includes process for evaluating public participation effectiveness.
Fiscal Constraint	
Project Phases: Projects in LRTPs are required to be described in enough detail to develop cost estimates in the LRTP financial plan that show how the projects will be implemented. For a project in the cost feasible plan, the phase(s) being funded and the cost must be documented. Additionally, the source of funding for each phase must be documented in the first 10 years of the LRTP. The phases to be shown in LRTPs include Preliminary Engineering (PE), Right of Way (ROW) and Construction. PE includes both the Project Development and Environment (PD&E) and Design phases.	- Chapter 5 – Financial Resources - Chapter 6 – Cost Feasible Plan, Table 6-2
Full Time Span of LRTP (1st 5 Years): Plans are required to have at least a 20-year horizon. As such, the MPO is required to have an LRTP that includes projects from the date of adoption projected out at least 20 years from that date.	Chapter 6 – Cost Feasible Plan, Table 6-2

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Technical Topics	
SHSP Consistency: The goals, objectives, performance measures and targets of the Highway Safety Improvement Program (HSIP), which includes the Strategic Highway Safety Plan (SHSP), is required to be integrated into the LRTPs either directly or by reference.	Chapter 3 – 2045 LRTP Goals and Objectives
Freight: Changes to the planning requirements now also encourage the consultation of agencies and officials planning for freight movements. With the National Highway Freight Program a core funding category of federal funds, having a solid basis for incorporating freight needs and projecting the freight demands will be key to the LRTP's success for meeting its regional vision for the goods movement throughout the area. Additionally, the planning regulations now require the goals, objectives performance measures and targets of the State Freight Plan to be integrated into the LRTPs either directly or by reference.	- Chapter 4 – 2045 Needs Plan, Section 4-2 - Chapter 6 – Cost Feasible Plan, Section 6-4 - Chapter 7 – Implementation, Section 7-2
Environmental Mitigation/Consultation: For highway projects, the LRTP must include a discussion on the types of potential environmental mitigation activities and potential areas to carry out these activities. The environmental mitigation discussion in the LRTP must be developed in consultation with Federal, State and Tribal wildlife, land management and regulatory agencies.	Chapter 4 – 2045 Needs Plan, Section 4-2
Congestion Management Process: The MPO must demonstrate that the congestion management process is incorporated into the planning process. The process the MPO uses can be documented separately or in conjunction with the LRTP. The process is required to: 1) provide for the safe and effective integrated management and operations of the transportation network; 2) identify the acceptable level of performance; 3) identify methods to monitor and evaluate performance; 4) define objectives; 5) establish a coordinated data collection program; 6) identify and evaluate strategy benefits; 7) identity an implementation schedule; and 8) periodically assess the effectiveness of the strategies. The congestion management process should result in multimodal system measures and strategies that are reflected in the LRTP and TIP. The new planning requirements provide for the optional development of a Congestion Management Plan (CMP) that includes projects and strategies that will be considered in the TIP.	The Congestion Management Process was incorporated into the LRTP by reference. Chapter 6 – Cost Feasible Plan, Section 6-1 (Funding of Other Roadway Needs) includes projects identified as a result of the CMP.

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Americans with Disabilities Act (ADA) Transition Plans: Government agencies with 50 or more employees that have control over pedestrian rights of way (PROW) must have transition plans for ADA. MPOs that are a part of a public agency that has these responsibilities need to have a heightened awareness for these responsibilities and plans. MPOs that are a part of a public agency that has these responsibilities need to have a heightened awareness for these responsibilities and plans. All MPOs should at a minimum, serve as a resource for information and technical assistance in local government compliance with ADA.	It is the policy of the MPO to comply with all federal and state authorities requiring nondiscrimination, including but not limited to Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 (ADA), the Age Discrimination Act of 1975 and Executive Order 12898 (Environmental Justice) and 13166 (Limited English Proficiency). The MPO does not and will not exclude from participation in; deny the benefits of; or subject anyone to discrimination on the basis of race, color, national origin, sex, age, disability or income. In addition, the MPO complies with the Florida Civil Rights Act, and does not permit discrimination on the basis of religion or family status in its programs, services or activities.

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Administrative Topics	
LRTP Documentation/Final Board Approval: The date the MPO Board adopts the LRTP is the effective date of the plan. The contents of the product that the MPO adopts on that date includes at a minimum: 1) the current and projected demand of persons and goods; 2) existing and proposed facilities that serve transportation functions; 3) a description of performance measures and targets; 4) a system performance report; 5) operational and management strategies; 6) consideration of the results of the congestion management process; 7) assessment of capital investment and other strategies to preserve existing and future infrastructure; 8) transportation and transit enhancement activities; 9) description of proposed improvements in sufficient detail to develop cost estimates; 10) discussion of potential environmental mitigation strategies and areas to carry out the activities; 11) a cost feasible financial plan that demonstrates how the proposed projects can be implemented and includes system level operation and maintenance revenues and costs; and 12) pedestrian walkway and bicycle transportation facilities which are required to be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted. The final document(s) should be posted online and available through the MPO office no later than 90 days after adoption date.	1. Chapter 2 – Plan Process, Section 2-3 2. Chapter 4 – 2045 Needs Plan, Table 4-1 and Figure 4-3 3. Chapter 3 – 2045 LRTP Goals and Objectives, Table 3-1 and Chapter 7– Implementation, Table 7-1 4. Chapter 7 – Implementation, Section 7-1 and Appendix F 5. Chapter 6 – Cost Feasible Plan, Section 6-1, Funding of Other Roadway Needs 6. Chapter 6 – Cost Feasible Plan, Section 6-1, Funding of Other Roadway Needs, Tables 6-4, 6-5, and 6-6 7. Chapter 5 – Financial Resources 8. Chapter 6 – Cost Feasible Plan, Section 6-3 9. Chapter 4 – 2045 Needs Plan, Table 4-6 and Table 4-12 10. Chapter 4 – 2045 Needs Plan, Section 4-2 11. Chapter 6 – Cost Feasible Plan 12. Chapter 6 – Cost Feasible Plan, Section 6-2
LRTP & STIP/TIP Consistency: The STIP and TIPs must be consistent with the relevant LRTPs as they are developed. When STIP/TIP amendments are received by FHWA and FTA, they will be reviewed for consistency with the applicable LRTP. Projects with inconsistencies between the STIP/TIP and the respective LRTP will not be approved for use of federal funds or federal action until the issue is addressed.	The 2045 LRTP is consistent with the STIP and Collier MPO FY2021-2025 TIP (adopted June 2020), the current TIP at the time of adoption.
New Requirements	
New Planning Factors: The MPO is required to address several planning factors as a part of its planning processes. There are two new planning factors that need to be considered in the next LRTPs: 1) improving the resiliency and reliability of the transportation system and reducing or mitigating stormwater impacts of surface transportation; and 2) enhancing travel and tourism. Florida has a strong history of proactively addressing these transportation areas.	Chapter 3 – 2045 LRTP Goals and Objectives

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Transportation Performance Management: As funding for transportation capacity projects becomes more limited, increasing emphasis will be placed on maximizing the efficiency and effectiveness of our current transportation system and the resources that build and maintain the system. As such, a performance-based approach to transportation decision making will be required for the FDOT and MPOs. The next LRTPs (when updated or amended after May 27, 2018) will be required to describe the performance measures and the targets the MPO has selected for assessing the performance of the transportation system. A system performance report will also be required to be included in the LRTPs. Depending on the timing of the LRTP, the date of the target setting, and length of the evaluation cycle, the LRTPs initially amended/updated after May 27, 2018 may not have a full cycle of specific information to include. However, the LRTPs need to include the data that is available and discuss how the MPO plans to use the full information once it does become available. Depending on the timing of the LRTP, the date of the target setting, and length of the evaluation cycle, the LRTPs initially amended/updated after May 27, 2018 may not have a full cycle of specific information to include. However, the LRTPs need to include the data that is available and discuss how the MPO plans to use the full information once it does become available.	Chapter 7 – Implementation and Appendix F
Multimodal Feasibility: The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.	Chapter 6 – Cost Feasible Plan, Sections 6-2 and 6-3
Transit Asset Management: The MPO is required to set performance targets for each performance measure, per 23 CFR 450.306(d). Those performance targets must be established 180 days after the transit agency established their performance targets. Transit agencies are required to set their performance targets by January 1, 2017. If there are multiple asset classes offered in the metropolitan planning area, the MPO should set targets for each asset class.	Chapter 7 – Implementation and Appendix F

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Emerging Issues (Not Required)	
Mobility on Demand (MOD): Rapid advances in Mobility on Demand (MOD) technologies mean that these types of systems may be coming on line during the horizon of the next LRTPs. While these technologies when fully implemented will provide more opportunities to operate the transportation system better, the infrastructure needed to do so and the transition time for implementation is an area that the MPO can start to address in this next round of LRTP updates.	Chapter 4 – 2045 Needs Plan, Table 4-12
New Consultation: There are two new types of agencies that the MPO should consult with when developing the LRTPs: agencies that are responsible for tourism and those that are responsible for natural disaster risk reduction.	The Collier MPO Adviser Network includes the Tourist Development Council Collier County and the South Florida Water Management District which plans for regional resilience to natural disasters.
Summary of Public Involvement Strategies: The public involvement summary should be supported by more detailed information, such as the specific strategies used, feedback received and feedback responses, findings, etc. The detailed information should then be referenced and included in the form of a technical memorandum or report that can be appended to the LRTP, or included in a separate, standalone document that is also available for public review in support of the LRTP.	- Chapter 2 – Plan Process, Section 2-4 - Public Information Summary Report (prepared under separate cover)
Impact Analysis/Data Validation: In accordance with Title VI, MPOs need to have and document a proactive, effective public involvement process that includes outreach to low income, minorities and traditionally underserved populations, as well as all other citizens of the metropolitan area, throughout the transportation planning process. Using this process, the LRTP needs to document the overall transportation needs of the metropolitan area and be able to demonstrate how public feedback and input helped shape the resulting plan.	- Chapter 2 – Plan Process, Section 2-4 - Public Information Summary Report (prepared under separate cover)
FDOT Revenue Forecast: To help stakeholders understand the financial information and analysis that goes into identifying the revenues for the MPO, we recommend the MPO include FDOT's Revenue Forecast in the appendices that support the LRTP.	The FDOT Revenue Forecast is included as an attachment in the *Project Cost Development Methodology Technical Memorandum* (prepared under separate cover).

Table A-1. Federal Requirements from January 2018 FHWA Expectations Letter

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Sustainability and Livability in Context: We encourage the MPO to implement strategies that contribute to comprehensive livability programs and advance projects with multimodal connectivity. The MPOs are encouraged to identify and suggest contextual solutions for appropriate transportation corridors within their area and utilize the flexibilities provided in the federal funding programs to improve the transportation network for all users.	Chapter 4 – 2045 Needs Plan, Section 4-1
Scenario Planning: The new planning requirements describe using multiple scenarios for consideration by the MPO in the development of the LRTP. If the MPO chooses to develop these scenarios, they are encouraged to consider a number of factors including potential regional investment strategies, assumed distribution of population and employment, a scenario that maintains baseline conditions for identified performance measures, a scenario that improves the baseline conditions, revenue constrained scenarios, and include estimated costs and potential revenue available to support each scenario.	The *Scenario Network Modeling Technical Memorandum* (prepared under separate cover) details the revenue constrained scenarios.

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Projects in the LRTP - Recently we have been responding to several questions regarding types of projects that need to be included in the LRTP. As stated in 23 CFR 450.322(f), the LRTP is required to include the projected transportation demand in the planning area, the existing and proposed transportation facilities that function as an integrated system, operational and management strategies, consideration of the results of the Congestion Management Plan, strategies to preserve the existing and projected future transportation infrastructure, pedestrian and bicycle facilities, and transportation and transit enhancement activities. As noted in 23 CFR 450.104, a regionally significant project means a transportation project (other than projects that may be grouped in the TIP and/or STIP or exempt projects as defined in EPA's transportation conformity regulation (40 CFR part 93.126, 127 and 128)) that is on a facility which serves regional transportation needs (such as access to and from the area outside the region; major activity centers in the region; major planned developments such as new retail malls, sports complexes, or employment centers; or transportation terminals) and would normally be included in the modeling of the metropolitan area's transportation network. At a minimum, this includes all principal arterial highways and all fixed guideway transit facilities that offer a significant alternative to regional highway travel. If a project meets the definition of regionally significant, then the project must be included in the Cost Feasible LRTP regardless of the project's activities (i.e. construction, facility widening, ITS installations, etc.).	Regionally significant projects include those listed in Chapter 6 – Cost Feasible Plan, Table 6-1. Additionally, projects resulting from M-CORES referenced in Chapter 7 – Implementation will have regional significance.
Grouped Projects in the LRTP - Federal regulations allow a specifically defined type of project(s) to be grouped in the TIP. Similar groupings in the LRTP would be permissible. However, the ability to group project(s) depends on the regional significance of the project(s). Grouped projects in the TIP are typically ones that are not of an appropriate scale to be individually identified and can be combined with other projects which are similar in function, work type, and/or geographic area. Classifications of these grouped project types are listed under 23 CFR 771.117(c) and (d) and/or 40 CFR part 93. Examples are: activities which do not involve or lead directly to construction (such as planning and technical studies or grants for training and research programs); construction of non-regionally significant bicycle and pedestrian lanes, paths, and facilities; landscaping; installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur; rest areas and truck weigh stations; ridesharing activities; and highway safety or traffic operations improvement projects. Therefore, if grouping projects in the LRTP, the groups need to be specific enough to determine consistency between the LRTP and the TIP.	Group projects in the LRTP include the congestion management projects listed on Table 6-4 which will be funded with TMA Funds; and the bicycle/pedestrian projects listed on Table 6-7 which will be funded with TMA/TA Funds.

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Fiscal Constraint	
Operations & Maintenance - LRTP cost estimates need to be provided for the Operations and Maintenance (O&M) activities for the entire timeframe of the LRTP. System level estimates for O&M costs may be shown for each of the five-year cost bands or may be provided as a total estimate for the full LRTP timeframe. System level is interpreted to mean the system within the MPO planning boundaries. Local agencies, working with the MPO, need to provide cost estimates for locally-maintained facilities covered in the Plan. FDOT, working with the MPO, needs to provide cost estimates for the state-maintained facilities covered in the Plan. System level estimates at the FDOT District level are acceptable for the state-maintained facilities. The LRTP will also need to identify the general source of funding for the O&M activities. Since O&M costs and related revenues are not available to balance the fiscal constraint of capital investment projects, a clear separation of costs for operations and maintenance activities from other grouped and/or regionally significant projects will need to be shown in order to demonstrate fiscal constraint. (23 CFR 450.322(f)(10)(i)).	Chapter 6 – Cost Feasible Plan
Total Project Costs - For total project costs, all phases of a project must be described in sufficient detail to estimate and provide an estimated total project cost and explain how the project is expected to be implemented. Any project which will go beyond the horizon year of the LRTP must include an explanation of the project elements beyond the horizon year and what phases/work will be performed beyond the horizon year of the plan. The costs of work and phases beyond the horizon year of the plan must be estimated using Year of Expenditure (YOE) methodologies and the estimated completion date may be described as a band (i.e. Construction expected 2040-2050, $40M). If there is more than one phase remaining to be funded, these may be shown as a combined line item for the project (i.e. ROW/Construction expected 2040-2050, $50M). FHWA does not expect that this paragraph will apply to routine system preservation or maintenance activities. Total project costs will be shown for capacity expansion projects and for regionally significant projects. (23 CFR 450.322(f)).	Chapter 6 – Cost Feasible Plan
Cost Feasible Plan - Revenues to support the costs associated with the work/phase must be demonstrated. For a project to be included in the cost feasible plan, an estimate of the cost and source of funding for each phase of the project being funded (including the Project Development and Environment (PD&E) phase) must be included. The phases to be shown in LRTPs include Preliminary Engineering, ROW and Construction (FHWA and FTA support the option of combining PD&E and Design phases into "Preliminary Engineering"). Boxed funds can be utilized as appropriate to finance projects. However, the individual projects utilizing the box need to be listed, or at a minimum, described in bulk in the LRTP (i.e. PD&E for projects in Years 2016-2020). (23 CFR 450.322(f)(10)).	Chapter 6 – Cost Feasible Plan

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
New Revenue Sources - If the LRTP assumes a new revenue source as part of the cost feasible plan, the source must be clearly explained, why it is considered to be reasonably available, when it will be available, what actions would need to be taken for the revenue to be available, and what would happen with projects if the revenue source was not available. If, for example, the most recent action of a governing body or a referendum of the public defeated a similar revenue source, then the new revenue source may not be included in the Cost Feasible LRTP unless the MPO can justify the revenue source and explain the difference between the action that failed and the action being proposed (for further details, please see FHWA Guidance Financial Planning and Fiscal Constraint for Transportation Plans and Programs issued by Gloria Shepherd, Associate Administrator for Planning, Environment and Realty on April 17, 2009). This applies to all revenue sources in the LRTP (i.e. federal, state, local, private, etc.)	Chapter 5 – Financial Resources
Federal Revenue Sources - Federal and state participation on projects in the Cost Feasible LRTP can be shown as a combined source for the cost feasible projects. Projects within the first ten years of the Plan must be notated or flagged to identify which projects are planned to be implemented with federal funds. Beyond the first ten year period, the specific federal funding notation is not expected. The project funding, however, must be clearly labeled as a combined Federal/State source in the Cost Feasible LRTP. (23 CFR 450.322(10)f(iii)) For FTA funded projects, MAP-21 has repealed eight programs from SAFETEA-LU and shifted many of the eligible activities to formula programs. Repealed programs (or uses consolidated in other formula programs) include Clean Fuels (5308), Fixed Guideway Modernization (5309), Bus and Bus Facilities (5309), JARC (5316), New Freedom (5317), Paul Sarbanes Transit in the Parks (5320), Alternatives Analysis (5339) and Over the Road Bus (3038). Formula programs now include Metropolitan Planning and State Planning (5305); Urbanized Area Formula (5307); Enhanced Mobility of Seniors and Persons with Disability (5310); Rural Area Formula (5311) and RTAP (5311); Formula Grants for Public Transportation on Indian Reservations (5311); Research and Development, Demonstration and Deployment (5312), State of Good Repair (5337), Bus and Bus Facilities Formula Grants (5339). Eligible new uses which are notable include Safety Programs and Transit Asset Management, Operations in areas with 200,000 or more population with up to 100 buses; Transit Oriented Development Planning and Bus Rapid Transit demonstration projects; Core Capacity Improvements and several others. Discretionary awards that have been repealed under MAP-21 however, may have unspent funds awarded under SAFETEA-LU in the repealed programs that still must be shown in the LRTP, TIP and STIP to obligate the funds in FTA's TEAM system. Hence, project categories such as Bus Livability, Clean Fuels, Alternatives Analysis, Transit in the Parks, etc.) may still need to be described and/or pursued by the transit grantee within the LRTP for FFY 2011 and FFY 2012 funds remaining. However, MAP-21 greatly reduced the number and type of discretionary awards through FTA. As such, the MPO and the transit grantee may no longer need to consider how to account for the possibility of placing a discretionary transit	Chapter 5 – Financial Resources

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
project through a competitive award (as well as formula funds) as part of the cost feasible LRTP except for New Starts, Small Starts, Core Capacity, Bus Rapid Transit Demonstration or Transit Oriented Development Demonstration Planning programs. The purpose, need and perceived benefit of the transit project as well as geographic distribution of funds may play a role in project selection. As such, a transit needs plan with projects which may be unfunded when the LRTP is prepared may need to be considered, especially for major New Start/Small Start and other capital projects like the new Core Capacity program which must eventually be placed within the cost feasible LRTP to have funds awarded. Regardless, discretionary awards if any must also be eventually listed within the cost feasible LRTP for FTA to obligate the awarded funds in a grant to a transit grantee.	
Full Timespan of the LRTP - The LRTP is a document that has a planning horizon of at least 20 years. The LRTP is based upon the region's visioning of the future within the bounds of the financial resources that are available to the region during that timeframe. The LRTP is not a programming document, but rather a planning document that describes how the implementation of projects will help achieve the vision. Therefore, the MPOs will need to show all the projects and project funding for the entire time period covered by the LRTP, from the base year to the horizon year. (23 CFR 450.322(a))	Chapter 6 – Cost Feasible Plan
Environmental Mitigation - For highway projects, the LRTP must include a discussion on the types of potential environmental mitigation activities and opportunities which are developed in consultation with Federal, State and Tribal wildlife, land management and regulatory agencies. This discussion should occur at more of a system-wide level to identify areas where mitigation may be undertaken (perhaps illustrated on a map) and what kinds of mitigation strategies, policies and/or programs may be used. This discussion in the LRTP would identify broader environmental mitigation needs and opportunities that individual transportation projects might later take advantage of. MPOs should be aware that the use of ETDM alone is not environmental mitigation. That effort would be considered project screening and is not a system-wide review. Documentation of the consultation with the relevant agencies should be maintained by the MPO.(23 CFR 450.322(f)(7) and (g)) For transit capital projects, the environmental class of action is usually considered by FTA regional offices in concert with transit grantees as the projects are analyzed and developed. Transit maintenance and transfer facilities and major capacity projects like light, heavy or commuter rail, BRT, etc. may require a separate National Environmental Policy Act (NEPA) document while acquisition of vehicles, provision of repairs, planning studies, engineering, etc., would not require a document. As such, environmental mitigation issues would tend to be developed as part of the NEPA document for specific projects with a NEPA decision made prior to the award of FTA funds. Likewise, transit environmental benefits like	Chapter 4 – 2045 Needs Plan, Section 4-2

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
reduction in SOV trips and VMT, reduction in greenhouse gases, pedestrian and bicycle linkages, transit oriented/compact development (which is more walkable) may need to be stated within the broad parameters in the LRTP. Most FTA planning studies are required to be listed in the Unified Planning Work Program (UPWP) and not necessarily the TIP and STIP (although many MPO's still list the studies in the TIP and STIP). Preliminary engineering, final design, right of way, utility relocation, construction, etc. for transit capital projects would need to be listed in the LRTP, TIP and STIP.	
Linking Planning and NEPA - Since 2008, prior to FHWA approving an environmental document (Type-2 Categorical Exclusion, Finding of No Significant Impact, or Record of Decision) and thereby granting location design concept approval, the project must be determined to be consistent within the LRTP, the TIP and Statewide Transportation Improvement Program (STIP). The project consistency refers to the description (for example project name, termini and work activity) between the LRTP, the TIP and the STIP (23 CFR 450.216(k), 450.324(g) and 450.216(b)). The NEPA document must also describe how the project is going to be implemented and funded. The project implementation description in the NEPA document needs to be consistent with the implementation schedule in the LRTP and TIP/STIP as well.	Future projects (design and PD&E) listed with FDOT District One in Collier County are included in either the Cost Feasible Plan (Chapter 6) or the Collier MPO FY2021 – 2025 TIP.
LRTP Documentation/Final Board Approval - FHWA and FTA expect that at the time the MPO board adopts the LRTP, a substantial amount of LRTP analysis and documentation will have been completed, and all final documentation will be available for distribution no later than 90 days after the plan's adoption. The Board and its advisory committees, as well as the public should have periodically reviewed and commented on products from interim tasks and reports that culminate into the final Plan. Finalizing the LRTP and its supporting documentation should be the last activity in a lengthy process. All final documents should be posted online and available through the MPO office no later than 90 days after adoption. The MPOs' schedules for this round of LRTP development are expected to allow for the Board to adopt the final LRTP no later than 5 years from the MPOs' adoption of the previous LRTP.	The MPO is committed to make the LRTP documentation available for distribution within 90 days of the adoption of the 2045 LRTP.
Documented LRTP Modification Procedures - If not already in place, MPOs need established written and Board approved procedures that document how modifications to the LRTP are addressed after Board adoption. The procedures should specifically explain what qualifies as a modification as opposed to an amendment as defined in 23 CFR 450.104. These procedures can be included as part of the LRTP, the PPP, or provided elsewhere as appropriate. FHWA is currently beginning work with FDOT and the MPOs on an LRTP amendment process which will include statewide procedures and thresholds, similar to the STIP amendment process. This effort will assist the MPOs in determining when LRTP amendments are required.	LRTP amendment procedures are addressed in the FDOT MPO Program Management Handbook and in the Collier MPO's adopted PPP (adopted June 2020).

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
LRTP & STIP/TIP Amendment Consistency - The STIP and TIPs must be consistent with the relevant LRTPs. When amendments to the STIP/TIP are made, the projects must also be consistent with the LRTP from which they are derived. FHWA and FTA staff will be checking for this consistency. Projects with inconsistencies between the STIP/TIP and the respective LRTP will not be approved for use of federal funds or federal action until the issue is addressed. (23 CFR 450.328 and 23 CFR 450.216(b)) FHWA and FTA understand that when developing project cost estimates in an LRTP, the cost is an estimate which becomes more refined as a project advances. Projects being refined between plans will not be required to update their costs in the existing LRTP if new, more accurate information regarding project cost becomes available. However, it is expected that upon the next scheduled adoption of the LRTP, the latest project cost estimates shall be used.	The 2045 LRTP is consistent with the STIP and Collier MPO FY2021-2025 TIP (adopted June 2020), the current TIP at the time of adoption.
Transit Projects and Studies	
Major Transit Capital Projects - For LRTP development purposes, federal funding sources for major transit capital projects must be proposed and may not currently be identifiable (or currently allocated) for use in the urbanized area. The Federal Transit Administration funds projects such as New Start rail and BRT, as well as major capital facilities such as administrative buildings or maintenance facilities with formula and/or discretionary program dollars allocated on an annual basis. As mentioned, MAP-21 made changes to and reductions in transit discretionary programs. Therefore in order to plan for a transit "New Start" in the LRTP, the MPO must assume they will be successful in competing for discretionary FTA New Starts program dollars. A reasonable funding mix might be to assume 50% FTA/25% Local/25% State funding, as is currently the norm in Florida. Also, MAP-21 greatly expands the use of TIFIA loans. Grantees may be proposing use of a TIFIA loan or other loan to help bridge the gap in capital financing for a New Start which in some cases for large projects in multiple phases may take up to five years to design and build (per phase). With regard to the planning of a major capital transit facility other than a New Start, the assumption must be made that FTA program funds such as "State of Good Repair" or "Bus and Bus Facilities" will be awarded to the transit system based on formula. As mentioned, large discretionary awards will be fewer under MAP-21. In most cases, a likely funding mix for State of Good Repair or Bus and Bus Facilities might be 80% FTA/20% local, or up to 100% FTA matched with toll revenue credits.	Chapter 6 – Cost Feasible Plan, Section 6-3
Transit Facility - The transit grantee may propose a specific transit maintenance facility, transfer facility, multi-modal station, park n ride lot with transit service or other transit facility for rehabilitation, renovation or new construction. Generally, such facility improvements remain eligible for FTA 5307, 5309, 5337 (new State of Good Repair formula program), 5339 (new bus and bus facility formula program) funds from FTA, or for FLEX funds from FHWA flexed to FTA for the transit use by	Chapter 6 – Cost Feasible Plan, Section 6-3

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
the transit grantee. At a minimum, such facilities should be contained within the TIP, STIP and be "consistent with" the LRTP. For example, consistent with the LRTP might mean a general statement, paragraph, line item or section on the specific facilities and their general location if known. Inclusion might also mention feasibility studies, preliminary engineering, appraisals, final design, property acquisition and relocation (if any) and NEPA documents and perhaps the intent to seek local, state or federal funding for same. The award of such funds may require an LRTP amendment to show such funds in the constrained LRTP.	
Transit Service including Fixed Route Bus, Deviated Route, Para-transit, Enhanced or Express Bus - The transit grantee may propose a specific new transit service for a new area or corridor. Generally, such new service is eligible for 5307 or 5310 funds from FTA, or for L230 FLEX funds from FHWA to the transit grantee. At a minimum, such new service should be "consistent with" the LRTP. For example, consistent with the LRTP might mean a general statement, paragraph, line item or section on the specific service improvements to be undertaken (and the general location if known). Inclusion might also mention feasibility studies, operational plans, strategic plans and perhaps the intent to seek local, state or federal funding for same. The award of such funds may require an LRTP amendment to show such funds.	Chapter 6 – Cost Feasible Plan, Section 6-3
Transit Service Including Bus Rapid Transit (BRT), Light Rail Transit (LRT) Heavy Rail Transit (HRT), Commuter Rail Transit (CRT), Streetcar through the New Starts/Small Starts Program - The transit grantee may propose a specific new fixed guideway transit service (like BRT, LRT, HRT, CRT or Streetcar) to serve a new area or corridor as part of FTA's New Starts/Small Starts or Core Capacity Program. Generally, such new service is eligible for 5307 or 5309 funds from FTA, or for FLEX funds from FHWA to the transit grantee. At a minimum, such new service should be "consistent with" the LRTP. As such service may be a large capital expenditure, the project, termini and cost would need to be specified in the constrained LRTP. Inclusion might also mention feasibility studies, NEPA studies, preliminary engineering and final design, right of way acquisition, operational plans, modeling improvements, strategic plans and perhaps the intent to seek local, state or federal funding for same. The award of such funds would require an LRTP amendment to show such funds in the constrained LRTP.	There are no specific new fixed guideway transit service projects identified in the CFP.
Emerging Issues (Not Required)	
Safety and Transit Asset Management - MAP-21 also includes significant additions to safety planning and transit asset management on the part of transit grantees and the states. Federal Register guidance is expected on transit safety and transit asset management within the near future.	Chapter 6 – Cost Feasible Plan, Tables 6-5 and 6-6
Performance Measurement - FHWA and FTA encourage the MPOs to consider ways to incorporate performance measures/metrics for system-wide operation, as well as more localized measures/metrics into their LRTPs. As funding for	Chapter 7 – Implementation and Appendix F

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
transportation capacity projects becomes more limited, increasing emphasis will be placed on maximizing the efficiency and effectiveness of our current transportation system. Consequently, measures to assess the LRTP's effectiveness in increasing system performance will be needed. Per the recent passage of MAP-21, USDOT will establish performance measures in consultation with State DOTs, MPOs and other stakeholders within 18 months of MAP-21's enactment. Once performance measures are identified, the States will have up to one year to set state level targets. Once state level targets have been set, MPOs will have up to six-month to set local level targets that support the state targets. The process and schedule for performance measure implementation and LRTP documentation is expected to evolve over the next two years.	
Freight - The planning process is required to address the eight planning factors as described in 23 CFR 450.306(a). The degree to which each factor is addressed will vary depending upon the unique conditions of the MPO areas, but efforts should be made to think through and carefully consider how to address each factor. The importance of freight to the nation's economic wellbeing and global competitiveness, as well as its support and promotion of job creation and retention has heightened its status at the national and regional level. MPOs should be aware that discussions in MAP-21 have largely included a reference to the increasing importance of freight, including the development of Statewide Freight Plans. While this is part of one of the eight planning factors, special emphasis should be given to the freight factor, as it is anticipated to play a more prominent role in future planning requirements.	Chapter 4 – 2045 Needs Plan, Section 4-2
Sustainable Transportation and Context Sensitive Solutions - The MPOs are encouraged to identify and suggest contextual solutions for appropriate transportation corridors. For example, Context Sensitive Solutions (CSS) may be appropriate for historic parkways, historic districts, town centers, dense "walkable" neighborhood areas, arterial "gateways", greenway trails and pedestrian ways, environmentally sensitive areas or simply where right of way is not readily available. Under MAP-21, Transportation Alternatives like bicycle and pedestrian improvements and trails remain eligible under the formula programs while transportation enhancement set-asides have been removed and some uses like historic building renovation and scenic easements may be more restrictive. The value of the resources present may suggest the need for alternative or special treatments (or even accepting a level of congestion and lower speeds that respects the resources). In these instances, specific livability principles adopted by the MPO might be employed for improved pedestrian and transit access – especially to schools and even traffic calming. Also, spatial relationships that support public transit like transit oriented development and the "trip not taken" while reducing greenhouse gases might be recognized as characteristics of a town center or mixed use area with public transit access. Other livability planning goals might also need to be recognized like preserving affordable housing, improving/preserving special resources like parks, monuments and tourism areas, increasing floor area ratios and reducing parking	Chapter 4 – 2045 Needs Plan, Section 4-1

Table A-2. Federal Requirements from FHWA/FTA (November 2012)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
minimums in select corridors to encourage walking trips and public transit, transportation demand management, etc.	
Proactive Improvements (Not Required)	
Linking Planning and NEPA - For highway projects, we are continually looking for strategies that improve the linkage between planning and environmental processes. For the inclusion of regionally significant projects in the Cost Feasible Plan of the LRTP, MPOs should strongly consider including a purpose and need statement for the project in the LRTP. This purpose and need statement will be carried into the National Environmental Policy Act (NEPA) process and will be one way to enhance the linkage between planning and NEPA. For example, this purpose and need statement could briefly provide the rationale as to why the project warranted inclusion in the LRTP. (450.324 (d); 450 Appendix A to Part 450, Section II Substantive Issues, 8)	Future projects (design and PD&E) listed with FDOT District One in Collier County are included in either the Cost Feasible Plan (Chapter 6) or the Collier MPO FY2021 – 2025 TIP.
Climate Change - MPOs may also wish to give consideration to climate change and strategies which minimize impacts from the transportation system. FHWA supports and recognizes the importance of exploring the effects of climate change on transportation, as well as the limited environmental resources and fuel alternatives. State legislation now encourages each MPO to consider strategies that integrate transportation and land use planning in their LRTP to provide for sustainable development and reduce greenhouse gas emissions, as well as include energy considerations in all state, regional and local planning. As a result, MPO LRTP Updates are encouraged to include discussions and strategies aimed at addressing this issue.	Chapter 4 – 2045 Needs Plan, Section 4-2, Climate Change Vulnerability and Risks
Scenario Planning - Pursuant to MAP-21, MPOs may elect to develop multiple scenarios for consideration in the development of the LRTP. If the MPO chooses to develop these scenarios, it is encouraged to consider a number of factors including potential regional investment strategies, assumed distribution of population and employment, a scenario that maintains baseline conditions for identified performance measures, revenue constrained scenarios, and estimated costs and potential revenue available to support each scenario.	Collier MPO 2045 LRTP Scenario Network Modeling Technical Memorandum (prepared under separate cover) explains the revenue constrained scenarios

Table A-3. Federal Requirements from FHWA/FTA (December 2008)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Plan Horizon - Plans are required to have at least a 20 year horizon. FHWA and FTA support Florida's efforts to standardize the horizon year and establish a uniform format to report the transportation needs of each MPO in their next LRTP updates that can also be used to compile and identify the regional and statewide transportation needs of Florida's metropolitan areas. FDOT and Florida's MPOs (via the MPOAC) have agreed to use 2035 as the horizon year. The base year for the next LRTP updates will be 2009. These efforts to standardize the MPOs' plans will provide consistency among plans and allow for better analysis and apples to apples comparisons, so unmet needs can be more accurately quantified and demonstrated. More information on this issue is provided in the "Financial Guidelines for MPO Long Range Plans" paper adopted by the MPOAC.	Plan is through 2045, reference Chapter 4 – 2045 Needs Plan and Chapter 6 – Cost Feasible Plan
Planning Factors - The planning process is required to address the eight planning factors as described in 23 CFR 450.306(a). The degree to which each factor is addressed will vary depending on the unique conditions of the area, but efforts should be made to think through and carefully consider how to address each factor. The Safety factor seems to create challenges for some MPOs as to how safety should be addressed. The LRTP should contain a safety element, as described in 23 CFR 450.322 (h). The planning process needs to be consistent with the State Strategic Highway Safety Plan (SHSP). Consequently, the MPO must be familiar with the Plan in order to identify MPO goals and strategies that would address safety, and integrate SHSP goals and strategies into the activities and planning efforts of the MPO. Suggestions for how this consistency can be accomplished can be obtained through discussions with, and examples provided by, FHWA, FDOT and other MPOs. A safety guide providing a menu of recommendations for MPO actions is being developed by FHWA Florida Division as a result of meetings with FDOT planning and safety personnel and MPO staff members from throughout the state over the past year. A draft document will be circulated for review by December 2008.	Chapter 3 – 2045 LRTP Goals and Objectives
Year of Expenditure - All LRTP Update financial plans shall be in Year of Expenditure (YOE) dollars and shall include estimates of all revenue sources that can reasonably be anticipated over the lifetime of the plan. Revenue and cost estimates for capacity and non-capacity projects and programs, including operations and maintenance costs (state and local) are to be included, consistent with the methodology presented in the financial guidance developed by FDOT in coordination with FHWA and the MPOs. The financial guidance should be included in the appendices of the LRTP. Note: The December 2007 interim YOE Compliance Process guidance previously developed by FDOT/FHWA/FTA to address LRTP amendments and modifications prior to LRTP Updates being completed is no longer applicable once the MPOs have adopted their LRTP Updates.	Chapter 5 – Financial Resources

Table A-3. Federal Requirements from FHWA/FTA (December 2008)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Fiscal Constraint - Projects in Long Range Transportation Plans (LRTPs) are required to be described in enough detail to develop cost estimates in the LRTP financial plan that show how the projects will be implemented. These estimates could reflect known costs of mitigation. The LRTP documentation of project costs will enable FHWA/FTA and FDOT to determine fiscal constraint of the document. For a project to be included in the cost feasible plan, the cost of and source of funding for each phase being funded (including the PD&E phase) must be documented. The source of funds for the PD&E phase can be shown as "boxed funds" reserved for "PD&E" in a state or local revenue forecast (e.g., a percentage of state/federal "Product Support" funds estimated to be available during a 5-year planning period) or be individually assigned to each project. Boxed funds should also be reserved for the Final Design phase as well or be individually assigned to each project. A third option is to use boxed funds entitled "PD&E and Final Design". Regardless of how the boxed funds are titled, the individual projects utilizing the box need to be listed, or at a minimum, described in bulk in the LRTP (i.e. PD&E for projects in Years 2016-2020). Please note that the FHWA guidance refers to Preliminary Engineering (PE). In most states this would include two of Florida phases: PD&E and Final Design. PD&E could also be referred to as "PE for NEPA".	Chapter 6 – Cost Feasible Plan
NEPA Approvals - Prior to FHWA approving an environmental document (Type-2 CE, EA-FONSI, or FEIS) and thereby granting location design concept approval, the project must be consistent with the LRTP and described in the STIP/TIP. The NEPA document must describe how the project is going to be implemented and funded. That description also needs to be reflected in the LRTP and STIP/TIP. For guidance related to NEPA approvals, see the "Guidance on Consistency Among Metropolitan Long Range Transportation Plans, the State Transportation Improvement Program, Metropolitan Transportation Improvement Programs and NEPA Approvals".	Future projects (design and PD&E) listed with FDOT District One in Collier County are included in either the Cost Feasible Plan (Chapter 6) or the Collier MPO FY2021 – 2025 TIP.
Environmental Mitigation - The LRTP must include a discussion on environmental mitigation that is developed in consultation with Federal, State and Tribal wildlife, land management and regulatory agencies. This discussion should occur at more of a system-wide level to identify areas where mitigation may be undertaken (perhaps illustrated on a map) and what kinds of mitigation strategies, policies and/or programs may be used. This discussion in the LRTP would identify broader environmental mitigation needs and opportunities that individual transportation projects might later take advantage of. For example, as a result of consultation with resource agencies, the plan might identify an expanse of degraded wetlands associated with a troubled body of water that represents a good candidate for establishing a wetlands bank or habitat bank for wildlife and waterfowl. The plan might identify locations where the purchase of Development rights would assist in preserving a historic battlefield or historic farmstead.	Chapter 4 – 2045 Needs Plan, Section 4-2

Table A-3. Federal Requirements from FHWA/FTA (December 2008)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Congestion Management Process - Since the passage of SAFETEA-LU in 2005, the emphasis on congestion management has been on the process, and how that process results in strategies that can be reflected in the LRTP and TIP. The CMP shall be developed, established and implemented as part of the metropolitan transportation planning process and should be integrated into project prioritization and performance evaluation of the multi-modal transportation system.	- Chapter 4 – 2045 Needs Plan, Section 4-2 - Chapter 6 – Cost Feasible Plan, Section 6-1 Chapter 7 – Implementation, Section 7-2
Environmental/Tribal Consultation - Consultation involving the appropriate Tribal governments, federal and state wildlife, land management and regulatory agencies should be documented in the public participation plan. This consultation shall involve comparisons of state conservation plans/maps, and inventories of natural or historical resources with transportation plans, as appropriate and available. Tribal governments and resource agencies should also be involved in the actual development of the Plan, as well as in the discussions of how their plans may affect the proposed transportation plan. The process for how tribal governments and resource agencies are involved in the planning process needs to be developed in collaboration with those agencies. Public Participation processes should also include the Tribal governments, federal and state wildlife, land management and regulatory agencies and should be documented, along with public participation activities and efforts with the other transportation partners and interested parties as required, in the public participation plan.	- Chapter 2 – Plan Process, Section 2-4 - *Public Information Summary Report* (prepared under separate cover)
LRTP Impact Analysis - In accordance with Title VI, MPOs need to have and document a proactive, effective public involvement process that includes outreach to low income, minorities and traditionally underserved populations, as well as all other citizens of the metropolitan area, throughout the transportation planning process. Using this process, the LRTP needs to document the overall transportation needs of the metropolitan area and be able to demonstrate how public feedback and input helped shape the resulting plan. MPOs may use a variety of strategies to demonstrate that their planning process is consistent with Title VI and other federal anti-discrimination provisions in the development of the LRTP. MPOs need to include this information in summary form in the LRTP. This information should be derived from the MPO's public involvement program elements. The summary of public involvement should be supported by more detailed information, such as the specific strategies used, feedback received and feedback responses, findings, etc. The detailed information should then be referenced and included in the form of a technical memorandum or report that can be appended to the LRTP, or included in a separate, stand-alone document that is also available for public review in support of the LRTP.	- Chapter 2 – Plan Process, Section 2-4 *Public Information Summary Report* (prepared under separate cover)

Table A-3. Federal Requirements from FHWA/FTA (December 2008)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Emerging Issues (Not Required)	
Indirect and Cumulative Impacts - A discussion of indirect and cumulative effects and an evaluation of the level of effect would be appropriate at the overall plan level, rather than just at the project level. This information could be expanded upon during the project development project phase, but the initial groundwork could be laid during LRTP development.	
Multimodal Feasibility - The analysis for utilizing other modes, particularly evaluating transit on a plan and system wide level, as opposed to project level, could and should be explored to provide more efficient and effective mobility and connectivity of the entire multimodal transportation system. This process is especially relevant given the current situation with limited resources for transportation being a major issue.	Chapter 6 – Cost Feasible Plan, Sections 6-2 and 6-3
Performance Measurement - As funding for transportation capacity projects becomes more limited, increasing emphasis will be placed on maximizing the efficiency and effectiveness of our current transportation system. As congestion management processes and operations strategies are evaluated to determine their effectiveness in improving system performance, it is likely to follow that LRTPs will also need to be evaluated on their ability to improve system performance. As MPOs begin the LRTP update process, performance measures to assess the LRTP's effectiveness in increasing system performance should be developed.	Chapter 7 – Implementation and Appendix F
Air Quality - Although Florida is currently in attainment for all pollutants, the Environmental Protection Agency (EPA) has recently proposed changes to lower the threshold for ground level ozone which will affect the attainment status of a number of MPO areas within Florida. Although the effects and the exact areas affected are not certain at this time, it is prudent to begin looking at what would be required to meet the new standards if/when they are implemented, which could be in the next few years. This is particularly important for those MPOs in areas that have been identified as potential areas that may not meet new standards. Discussions will be initiated with EPA, the Florida Department of Environmental Protection (DEP), FHWA and FDOT to decide how best address this issue. Training has been requested by FHWA for FDOT and the MPOs on Air Quality and Conformity for the coming year.	The Collier MPO geographic area is a designated attainment area for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act.

Table A-3. Federal Requirements from FHWA/FTA (December 2008)

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Climate Change - Much attention has been given by all levels of government to the issue of climate change and how it affects all aspects of life, including the transportation system. Legislation was recently passed in Florida that encourages each MPO to consider strategies that integrate transportation and land use planning in their LRTP to provide for sustainable development and reduce greenhouse gas emissions, as well as include energy considerations in all state, regional and local planning. As a result, it is anticipated that the MPO LRTP Updates will include discussions and strategies aimed addressing this issue. FHWA also supports and recognizes the importance of exploring the effects of climate change on transportation, as well as the limited environmental resources and fuel alternatives. FHWA's recently released report, "Integrating Climate Change Considerations into the Transportation Planning Process" (www.fhwa.dot.gov/hep/index.htm) serves as a good resource on this topic.	Chapter 4 – 2045 Needs Plan, Section 4-2, Climate Change Vulnerability and Risks

Table A-4. Other Federal Law and Requirements the LRTP Shall Include

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan. [23 C.F.R. 450.324(f)(1)]	Chapter 2 – Plan Process, Section 2-3
Emphasis should be given to those existing or proposed transportation facilities that serve important national and regional transportation functions over the period of the transportation plan, including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, non-motorized transportation facilities, and intermodal connectors. Additionally, the locally preferred alternative selected from an Alternative Analysis under the FTA Capital Investment Grant Program needs to be adopted as a part of the plan. [23 C.F.R. 450.324(f)(2)]	Chapter 6 – Cost Feasible Plan
A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with the required performance management approach. [23 C.F.R. 450.324(f)(3)]	Chapter 7 – Implementation, Section 7-1
A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the required performance targets, including progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and, for MPOs that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system, and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets. [23 C.F.R. 450.324(f)(4)]	Chapter 7 – Implementation and Appendix F
Operational and management strategies to improve the performance of existing transportation facilities in order to relieve vehicular congestion and maximize the safety and mobility of people and goods. [23 C.F.R. 450.324(f)(5)	Chapter 6 – Cost Feasible Plan, Section 6-1
Consideration of the results of the congestion management process in Transportation Management Areas (TMA), including the identification of single occupancy vehicle (SOV) projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide. [23 C.F.R. 450.324(f)(6)]	Chapter 6 – Cost Feasible Plan, Section 6-1
Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. May consider projects and strategies that address corridors or areas where congestion threatens the efficient functioning of the MPO's transportation system. [23 C.F.R. 450.324(f)(7)]	Chapter 6 – Cost Feasible Plan

Table A-4. Other Federal Law and Requirements the LRTP Shall Include

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
Include transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems. Activities would also include systems that are privately owned and operated. [23 C.F.R. 450.324(f)(8)]	Chapter 6 – Cost Feasible Plan, Section 6-3
Descriptions of proposed improvements in sufficient detail to develop cost estimates (e.g., design concept and design scope descriptions). [23 C.F.R. 450.324(f)(9)]	Chapter 4 – 2045 Needs Plan, Table 4-6 and Table 4-12
A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the LRTP. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation. [23 C.F.R. 450.324(f)(10)]	Chapter 4 – 2045 Needs Plan, Section 4-2
A financial plan that demonstrates how the adopted transportation plan can be implemented. Revenue and cost estimates must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s). For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available. [23 C.F.R. 450.324(f)(11)]	Chapter 6 – Cost Feasible Plan
Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g). [23 C.F.R. 450.324(f)(12)]	Chapter 6 – Cost Feasible Plan, Section 6-2
The plan shall include both long and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. [23 C.F.R. 450.324(b)]	Chapter 6 – Cost Feasible Plan
The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update. [23 C.F.R. 450.324(f)]	Chapter 2 – Plan Process, Section 2-3

Table A-4. Other Federal Law and Requirements the LRTP Shall Include

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
The MPO shall integrate priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the Highway Safety Improvement Program (HSIP), including the Strategic Highway Safety Plan (SHSP), or an Interim Agency Safety Plan, as in effect until completion of the Public Transportation Agency Safety Plan; and may incorporate or reference applicable emergency relief and disaster preparedness plans and strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and non-motorized users. [23 C.F.R. 450.324(h)]	Chapter 3 – 2045 LRTP Goals and Objectives

Source: FDOT – MPO Handbook, Chapter 4: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/metrosupport/resources/fdot-mpo-handbook99c4d55af487435394909e5f80818235.pdf?sfvrsn=861c81ff_27

Table A-5. Other State Requirements for the LRTP

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
LRTPs are to identify transportation facilities that should function as an integrated metropolitan transportation system, giving emphasis to facilities that serve important national, state, and regional transportation functions, including facilities on the Strategic Intermodal System (SIS) and facilities for which projects have been identified pursuant to Transportation Regional Incentive Program. [Section 339.175(1), F.S.]	Chapter 6 – Cost Feasible Plan, Section 6-1
The LRTP must address at least a 20-year planning horizon, include both long-range and short-range strategies, and comply with all other State and Federal requirements. The LRTP must also consider these prevailing principles: preserving the existing transportation infrastructure, enhancing Florida's economic competitiveness, and improving travel choices to ensure mobility. [Section 339.175(7), F.S.]	Chapter 6 – Cost Feasible Plan
The LRTP must be consistent, to the maximum extent feasible, with future land use elements and the goals, objectives, and policies of the approved local government comprehensive plans of the units of local government located within the jurisdiction of the MPO. [Section 339.175(7), F.S.]	Chapter 4 – 2045 Needs Plan, Section 4-1
Each MPO is encouraged to consider strategies that integrate transportation and land use planning in order to provide for sustainable development and reduce greenhouse gas emissions. [Section 339.175(7), F.S	Chapter 2 – Plan Process, Section 2-2
The approved LRTP must be considered by local governments in the development of the transportation elements in local government comprehensive plans and any amendments thereto. [Section 339.175(7), F.S.]	The 2045 LRTP will be provided to all local governments for development of their comprehensive plans.
The LRTP must identify transportation facilities, including, but not limited to, major roadways, airports, seaports, spaceports, commuter rail systems, transit systems, and intermodal or multimodal terminals that will function as an integrated metropolitan transportation system. [Section 339.175(7)(a), F.S.]	- Chapter 4 – 2045 Needs Plan - Chapter 6 – Cost Feasible Plan - Chapter 7 - Implementation
The LRTP must give emphasis to those transportation facilities that serve national, statewide, or regional functions; and must consider the goals and objectives identified in the Florida Transportation Plan. If a project is located within the boundaries of more than one MPO, the MPOs must coordinate plans regarding the project in their LRTPs. [Section 339.175(7)(a), F.S.]	Table 6-1 in Chapter 6 presents projects that are considered regionally or nationally significant. The Florida Transportation Plan is listed as a referenced document for the LRTP update, in Chapter 4 – 2045 Needs

Table A-5. Other State Requirements for the LRTP

Regulatory Requirement Summary	Where Requirements Are Addressed in the LRTP
	Plan, Section 4-1. The goals and objectives in the FTP were considered and are similar to the goals and objectives identified for the 2045 LRTP update. Coordination with Lee County MPO took place several times throughout the LRTP update.
The LRTP must assess capital investment and other measures necessary to ensure the preservation of the existing metropolitan transportation system, including requirements for the operation, resurfacing, restoration, and rehabilitation of major roadways and requirements for the operation, maintenance, modernization, and rehabilitation of public transportation facilities. [Section 339.175(7)(c)(1), F.S.]	Chapter 6 – Cost Feasible Plan
The LRTP must 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. [Section 339.175(7)(c)(2), F.S.]	Chapter 6 – Cost Feasible Plan
The LRTP must indicate, as appropriate, proposed transportation enhancement activities, including, but not limited to, pedestrian and bicycle facilities, scenic easements, landscaping, historic preservation, mitigation of water pollution due to highway runoff, and control of outdoor advertising. [Section 339.175(7)(d), F.S.]	At this time, the 2045 LRTP does not specifically address proposed transportation enhancement activities with the exception of pedestrian and bicycle facilities.
The LRTP must be approved by each MPO on a recorded roll-call vote or hand-counted vote of the majority of the MPO membership present. [Section 339.175(13), F.S.]	The Collier MPO is committed to the adoption of the LRTP during a recorded roll call vote or hand-counted vote of the majority of the MPO Board members.

Source: FDOT – MPO Handbook, Chapter 4: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/metrosupport/resources/fdot-mpo-handbook99c4d55af487435394909e5f80818235.pdf?sfvrsn=861c81ff_27

FDOT LRTP Review Checklist

Collier MP0 2045 LRTP

Section A- Federal Requirements		Where and How Addressed
23 C.F.R. Part 450 – Planning Assistance and Standards		
A-1	Does the plan cover a 20-year horizon from the date of adoption? Please see the "Administrative Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(a)	Yes. The plan covers 2025 through 2045.
A-2	Does the plan address the planning factors described in 23 C.F.R. 450.306(b)? Please see the "Fiscal Constraint" section of the 2018 FHWA LRTP Expectations Letter for guidance. Please see the "New Requirements" section of the 2018 FHWA LRTP Expectations Letter for guidance. Risk and Resiliency Does the plan improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation? Travel and Tourism Does that plan enhance travel and tourism? Please see the "Proactive Improvements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(a)	Yes. Reference Chapter 3 – 2045 LRTP Goals and Objectives. Yes. Chapter 3 – LRTP Goals and Objectives, Table 3-1 presents how projects identified in the Needs Plan were scored based on Goal #10. Yes. Chapter 3 – LRTP Goals and Objectives, Table 3-1 presents how projects identified in the Needs Plan were scored based on Goal #3.

	Section A- Federal Requirements	Where and How Addressed
A-3	Does the plan include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(b)	Yes. Reference Chapter 6 – Cost Feasible Plan.
A-4	Was the requirement to update the plan at least every five years met? Please see the "Administrative Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(c)	Yes. The last approved LRTP was the 2040 LRTP adopted in December 2015.
A-5	Did the MPO coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP)? 23 C.F.R. 450.324(d)	The Collier MPO geographic area is a designated attainment area for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act.
A-6	Was the plan updated based on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity? Please see the "Proactive Improvements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(e)	Yes. Reference Chapter 2 – Plan Process, Section 2-3.

	Section A- Federal Requirements	Where and How Addressed
A-7	Does the plan include the current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. Please see the "Administrative Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(1)	Yes. Reference Chapter 2 – Plan Process, Section 2-3.
A-8	Does the plan include existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities, and intermodal connectors that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan? 23 C.F.R. 450.324(f)(2)	Yes. Reference Chapter 6 – Cost Feasible Plan.
A-9	Does the plan include a description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with §450.306(d)? Please see the "New Requirements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(3)	Yes. Reference Chapter 7 – Implementation and Appendix F (System Performance Report).

	Section A- Federal Requirements	Where and How Addressed
A-10	Does the plan include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in §450.306(d), including progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data? Please see the "New Requirements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(4)(i)	Yes. Reference Chapter 7 – Implementation and Appendix F (System Performance Report).

	Section A- Federal Requirements	Where and How Addressed
A-11	Did the MPO integrate in the metropolitan transportation planning process, directly or by reference, the goals, objectives, performance measures, and targets described in other State transportation plans and transportation processes, as well as any plans developed under 49 U.S.C. chapter 53 by providers of public transportation, required as part of a performance-based program including: (i) The State asset management plan for the NHS, as defined in 23 U.S.C. 119(e) and the Transit Asset Management Plan, as discussed in 49 U.S.C. 5326; (ii) Applicable portions of the HSIP, including the SHSP, as specified in 23 U.S.C. 148; (iii) The Public Transportation Agency Safety Plan in 49 U.S.C. 5329(d); (iv) Other safety and security planning and review processes, plans, and programs, as appropriate; (v) The Congestion Mitigation and Air Quality Improvement Program performance plan in 23 U.S.C. 149(l), as applicable; (vi) Appropriate (metropolitan) portions of the State Freight Plan (MAP-21 section 1118); (vii) The congestion management process, as defined in 23 CFR 450.322, if applicable; and (viii) Other State transportation plans and transportation processes required as part of a performance-based program. Please see the "New Requirements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.306 (d)(4)	Yes. Reference Chapter 4 – 2045 Needs Plan, Section 4-2, referenced plans.

	Section A- Federal Requirements	Where and How Addressed
A-12	Does the plan include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(5)	Yes. Reference the following: -Chapter 4 – 2045 Needs Plan, Section 4-2 -Chapter 6 – Cost Feasible Plan, Section 6-1 -Chapter 7 – Implementation, Section 7-2
A-13	Does the plan include consideration of the results of the congestion management process in TMAs, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(6)	Yes. Chapter 6 – Cost Feasible Plan, Section 6-1. No single occupancy vehicle projects were identified as the Collier MPO geographic area is a designated attainment area for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act.
A-14	Does the plan include assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters? 23 C.F.R. 450.324(f)(7)	Yes. Reference Chapter 6 – Cost Feasible Plan and Chapter 4 – 2045 Needs Plan (Ranking the Needs).
A-15	Does the plan include transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a)? 23 C.F.R. 450.324(f)(8)	Yes. Reference Chapter 6 – Cost Feasible Plan, Section 6-3.

	Section A- Federal Requirements	Where and How Addressed
A-16	Does the plan describe all proposed improvements in sufficient detail to develop cost estimates? Please see the "Fiscal Constraint" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(9)	Yes. Reference Chapter 4 – 2045 Needs Plan, Table 4-6 and Table 4-12.
A-17	Does the plan include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(10)	Yes. Chapter 4 – 2045 Needs Plan, Section 4-2
A-18	Does the plan include a financial plan that demonstrates how the adopted transportation plan can be implemented? Please see the "Fiscal Constraint" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(11)	Yes. Reference Chapter 6 – Cost Feasible Plan.
A-19	Does the plan include system-level estimates of costs and revenue sources to adequately operate and maintain Federal-aid highways and public transportation? 23 C.F.R. 450.324(f)(11)(i)	Yes. Reference Chapter 5 – Financial Resources and Chapter 6 – Cost Feasible Plan.
A-20	Did the MPO, public transportation operator(s), and State cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under §450.314(a)? Please see the "Proactive Improvements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(f)(11)(ii)	Yes. Reference Chapter 5 – Financial Resources.

	Section A- Federal Requirements	Where and How Addressed
A-21	Does the financial plan include recommendations on additional financing strategies to fund projects and programs included in the plan, and, in the case of new funding sources, identify strategies for ensuring their availability? 23 C.F.R. 450.324(f)(11)(iii)	Yes. Reference Chapter 5 – Financial Resources
A-22	Does the plan's revenue and cost estimates use inflation rates that reflect year of expenditure dollars, based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s)? 23 C.F.R. 450.324(f)(11)(iv)	Yes. Reference Chapter 5 – Financial Resources and Chapter 6 – Cost Feasible Plan.
A-23	Does the financial plan address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP? 23 C.F.R. 450.324(f)(11)(vi)	The Collier MPO geographic area is a designated attainment area for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act. Therefore no specific financial strategies were required to ensure implementation of TCMs.
A-24	Does the plan include pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C.17(g)? 23 C.F.R. 450.324(f)(12)	Yes. Reference Chapter 6 – Cost Feasible Plan, Section 6-2.
A-25	Does the plan integrate the priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the HSIP, including the SHSP, the Public Transportation Agency Safety Plan, or an Interim Agency Safety Plan? Please see the "Technical Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(h)	Yes. Reference Chapter 3 – 2045 LRTP Goals and Objectives.
A-26	Does the plan identify the current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan? 23 C.F.R. 450.324(g)(1)	Yes. Reference Chapter 2 – Plan Process, Section 2-3.

	Section A- Federal Requirements	Where and How Addressed
A-27	Did the MPO provide individuals, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool program, vanpool program, transit benefit program, parking cashout program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under §450.316(a)? 23 C.F.R. 450.324(j)	Yes. Through coordination with the Collier MPO's committees, plan updates provided to the Collier MPO Advisor Network, and public outreach documented in Chapter 2 and the *Public Involvement Summary Report* (prepared under separate cover), the MPO provided individuals, affected public agencies, and all other agencies noted (with the exception of public ports), reasonable opportunity to comment on the 2045 LRTP.
A-28	Did the MPO publish or otherwise make readily available the metropolitan transportation plan for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web? Please see the "Stakeholder and Coordination Input" section of the 2018 FHWA LRTP Expectations Letter for guidance. Please see the "Administrative Topics" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.324(k), 23 C.F.R. 450.316(a)(1)(iv)	Yes. The MPO posted the Draft LRTP and the Final LRTP on their website for public comments.
A-29	Did the MPO provide adequate public notice of public participation activities and time for public review and comment at key decision points, including a reasonable opportunity to comment on the proposed metropolitan transportation plan? Please see the "Stakeholder and Coordination Input" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R 450.316(a)(1)(i)	Yes. Reference the *Public Involvement Summary Report* (prepared under separate cover).

	Section A- Federal Requirements	Where and How Addressed
A-30	In developing the plan, did the MPO seek out and consider the needs of those traditionally underserved by existing transportation systems such as low-income and minority households? Please see the "Stakeholder and Coordination Input" section of the 2018 FHWA LRTP Expectations Letter for guidance. Please see the "Proactive Improvements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R 450.316(a)(1)(vii)	Yes. Reference the *Public Involvement Summary Report* (prepared under separate cover).
A-31	Has the MPO demonstrated explicit consideration of and response to public input received during development of the plan? If significant written and oral comments were received on the draft plan, is a summary, analysis, and report on the disposition of the comments part of the final plan? Please see the "Stakeholder and Coordination Input" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.316(a)(1)(vi) & 23 C.F.R. 450.316(a)(2)	Yes. Reference the *Public Involvement Summary Report* (prepared under separate cover), where a summary of comments is presented. No significant comments were received on the draft plan.
A-32	Did the MPO provide an additional opportunity for public comment if the final plan differs significantly from the version that was made available for public comment and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts? Please see the "Stakeholder and Coordination Input" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R 450.316(a)(1)(viii)	The final plan and draft plan were not significantly different.

	Section A- Federal Requirements	Where and How Addressed
A-33	Did the MPO consult with agencies and officials responsible for other planning activities within the MPO planning area that are affected by transportation, or coordinate its planning process (to the maximum extent practicable) with such planning activities? Please see the "Proactive Improvements" section of the 2018 FHWA LRTP Expectations Letter for guidance. 23 C.F.R. 450.316(b)	Yes. Reference Chapter 2 – Plan Process, Table 2-2.
A-34	If the MPO planning area includes Indian Tribal lands, did the MPO appropriately involve the Indian Tribal government(s) in the development of the plan? 23 C.F.R 450.316(c)	Yes. Reference Chapter 2 – Plan Process, Table 2-2.
A-35	If the MPO planning area includes Federal public lands, did the MPO appropriately involve Federal land management agencies in the development of the plan? 23 C.F.R 450.316(d)	Yes. The MPO Advisor Network includes the National Park Service (Everglades National Park and Big Cypress National Preserve), US Fish and Wildlife Service (Florida Panther National Wildlife Refuge and Ten Thousand Islands National Wildlife Refuge). The MPO also coordinates with State and non-profit land management agencies.
A-36	In urbanized areas that are served by more than one MPO, is there written agreement among the MPOs, the State, and public transportation operator(s) describing how the metropolitan transportation planning processes will be coordinated to assure the development of consistent plans across the planning area boundaries, particularly in cases in which a proposed transportation investment extends across those boundaries? 23 C.F.R. 450.314(e)	Yes. Reference the Interlocal Agreement for Joint Regional Transportation Planning and Coordination Between the Collier and Lee County MPOs. https://www.colliermpo.org/wp-content/uploads/2018/11/Interlocal-Agreement-for-Joint-Regional-Transportation-Planning-and-Coordination-Between-the-Collier-and-Lee-County-MPOs-1.pdf

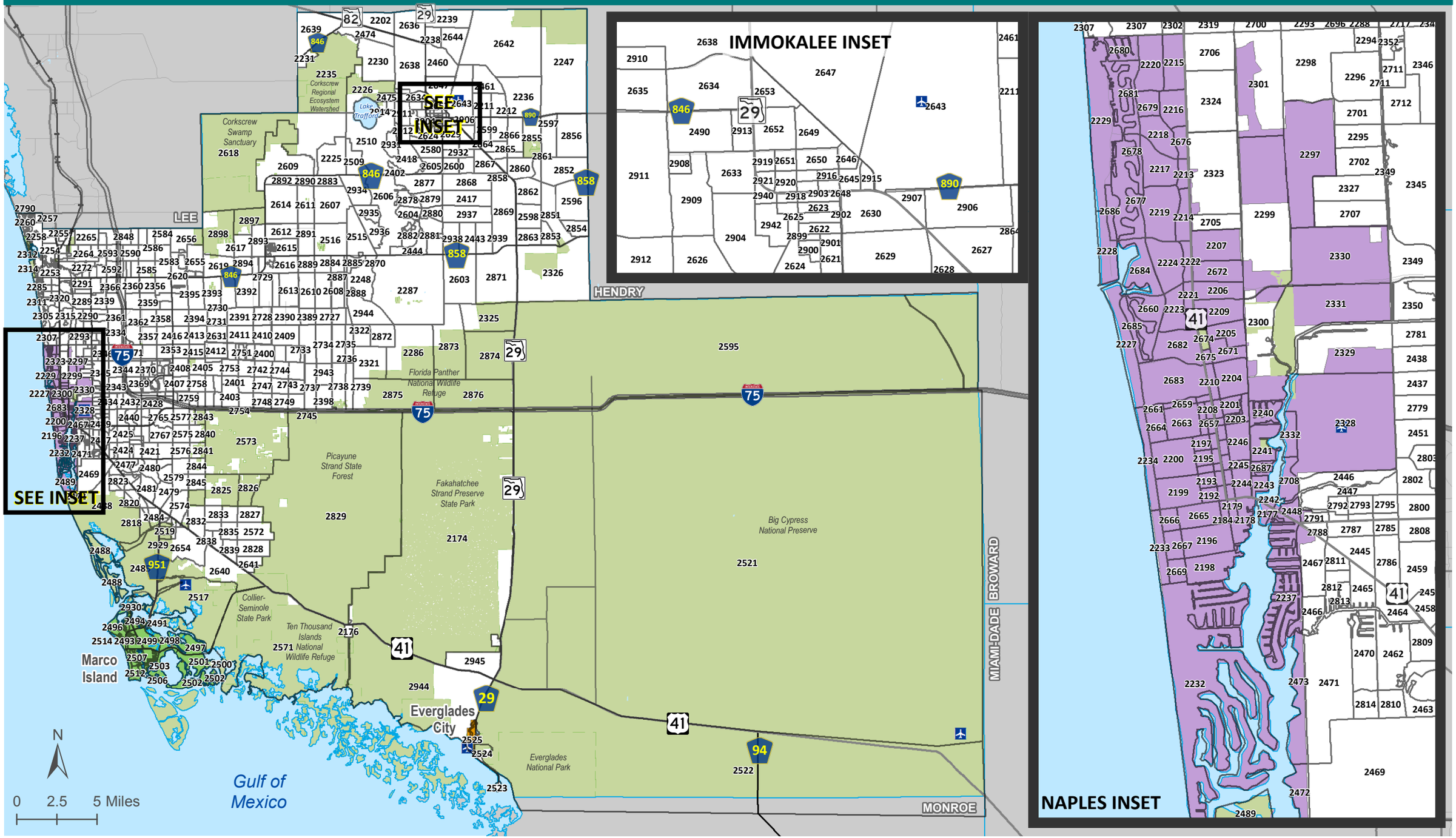
Section B- State Requirements		Where and How Addressed
Florida Statutes: Title XXVI – Public Transportation, Chapter 339, Section 175		
B-1	Are the prevailing principles in s. 334.046(1), F.S. – preserving the existing transportation infrastructure, enhancing Florida's economic competitiveness, and improving travel choices to ensure mobility – reflected in the plan? ss.339.175(1), (5) and (7), F.S.	Yes. Reference Chapter 3 – Goals and Objectives.
B-2	Does the plan give emphasis to facilities that serve important national, state, and regional transportation functions, including SIS and TRIP facilities? ss.339.175(1) and (7)(a), F.S.	Yes. Reference Chapter 2 – Plan Process and Chapter 3 – Goals and Objectives. The Collier 2045 LRTP is consistent with the local government comprehensive plans.
B-3	Is the plan consistent, to the maximum extent feasible, with future land use elements and the goals, objectives, and policies of the approved comprehensive plans for local governments in the MPO's metropolitan planning area? ss.339.175(5) and (7), F.S.	Yes. Reference the plan list in Chapter 4.
B-4	Did the MPO consider strategies that integrate transportation and land use planning to provide for sustainable development and reduce greenhouse gas emissions? ss.339.175(1) and (7) F.S.	Yes. Reference Chapter 3 - Goals and Objectives.
B-5	Were the goals and objectives identified in the Florida Transportation Plan considered? s.339.175(7)(a), F.S.	Yes. Reference plans listed in Chapter 4 – 2045 Needs Plan and the goals and objectives identified in Chapter 3 – Goals and Objectives.
B-6	Does the plan assess capital investment and other measures necessary to 1) ensure the preservation of the existing metropolitan transportation system, including requirements for the operation, resurfacing, restoration, and rehabilitation of major roadways and requirements for the operation, maintenance, modernization, and rehabilitation of public transportation facilities; and 2) make the most efficient use of existing transportation facilities to relieve vehicular congestion and maximize the mobility of people and goods? s.339.175(7)(c), F.S.	Yes. Reference Chapter 6 – Cost Feasible Plan.

	Section B- State Requirements	Where and How Addressed
B-7	Does the plan indicate, as appropriate, proposed transportation enhancement activities, including, but not limited to, pedestrian and bicycle facilities, scenic easements, landscaping, historic preservation, mitigation of water pollution due to highway runoff, and control of outdoor advertising? s.339.175(7)(d), F.S.	At this time, the 2045 LRTP does not specifically address proposed transportation enhancement activities with the exception of pedestrian and bicycle facilities.
B-8	Was the plan approved on a recorded roll call vote or hand-counted vote of the majority of the membership present? s.339.175(13) F.S.	Yes. The MPO is committed to the adoption of the LRTP during a recorded roll call vote or hand-counted vote of the majority of the MPO Board members.

	Section C- Proactive Recommendations	Where and How Addressed
C-1	Does the plan attempt to improve the resilience and reliability of the transportation system or mitigate the impacts of stormwater on surface transportation? 23 C.F.R 450.306(b)(9)	Yes. Reference Chapter 3 – Goals and Objectives and Chapter 4 – 2045 Needs Plan.
C-2	Does the plan proactively identify climate adaptation strategies including—but not limited to—assessing specific areas of vulnerability, identifying strategies to reduce emissions by promoting alternative modes of transportation, or devising specific climate adaptation policies to reduce vulnerability?	Yes. Reference the ranking of the needs in Chapter 4 – 2045 Needs Plan.
C-3	Do the plan consider the transportation system's accessibility, mobility, and availability to better serve an aging population?	Yes. Reference the ranking of the needs in Chapter 4 – 2045 Needs Plan.
C-4	Does the plan consider strategies to promote inter-regional connectivity to accommodate both current and future mobility needs?	Yes. Reference Chapter 6 – Cost Feasible Plan.
C-5	Is the MPO considering the short- and long-term effects of population growth and or shifts on the transportation network?	Yes. Reference Chapter 2 – Plan Process, Section 2-3, Forecasting Growth.

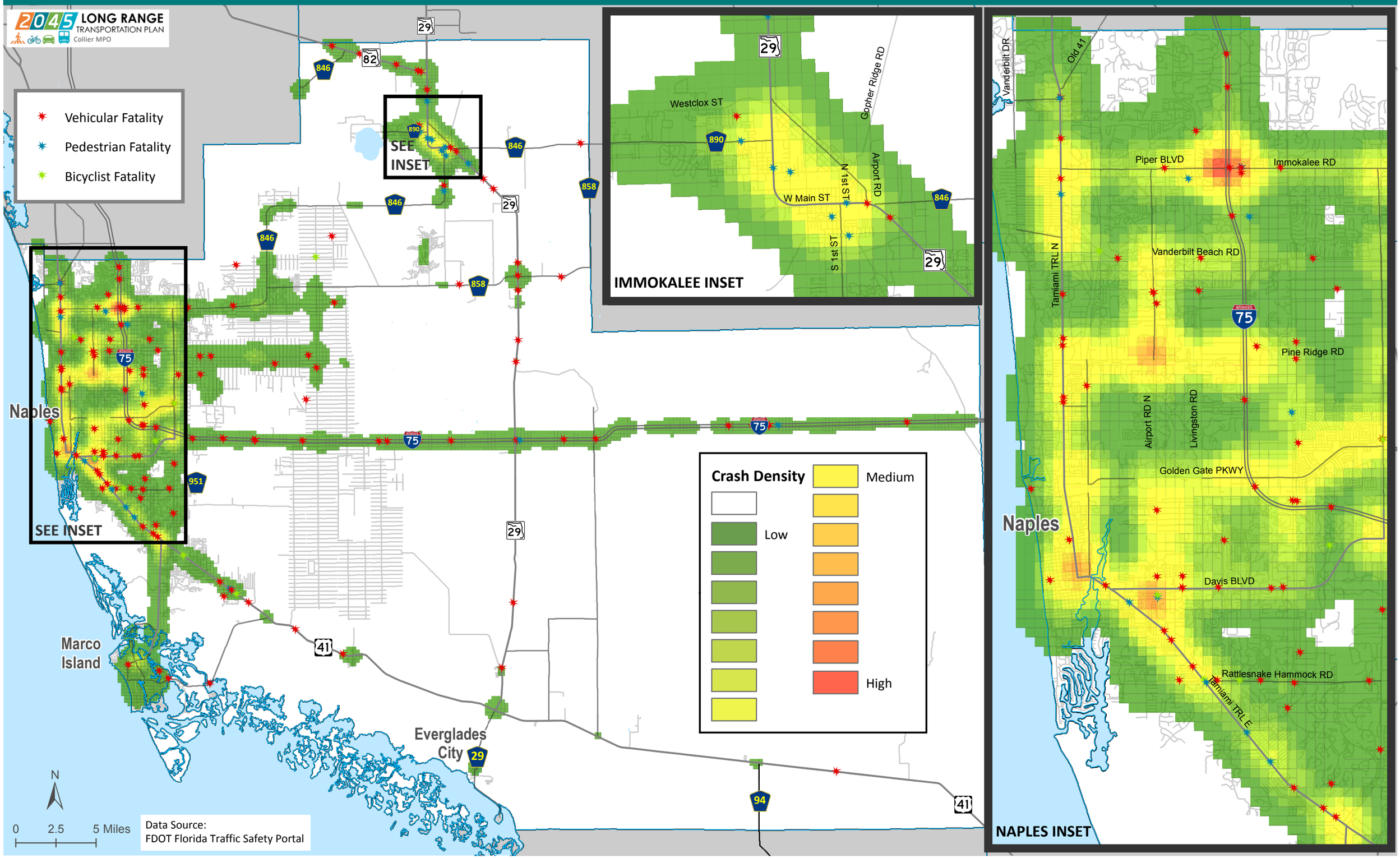
Appendix B
Collier County Traffic Analysis Zones

Traffic Analysis Zones

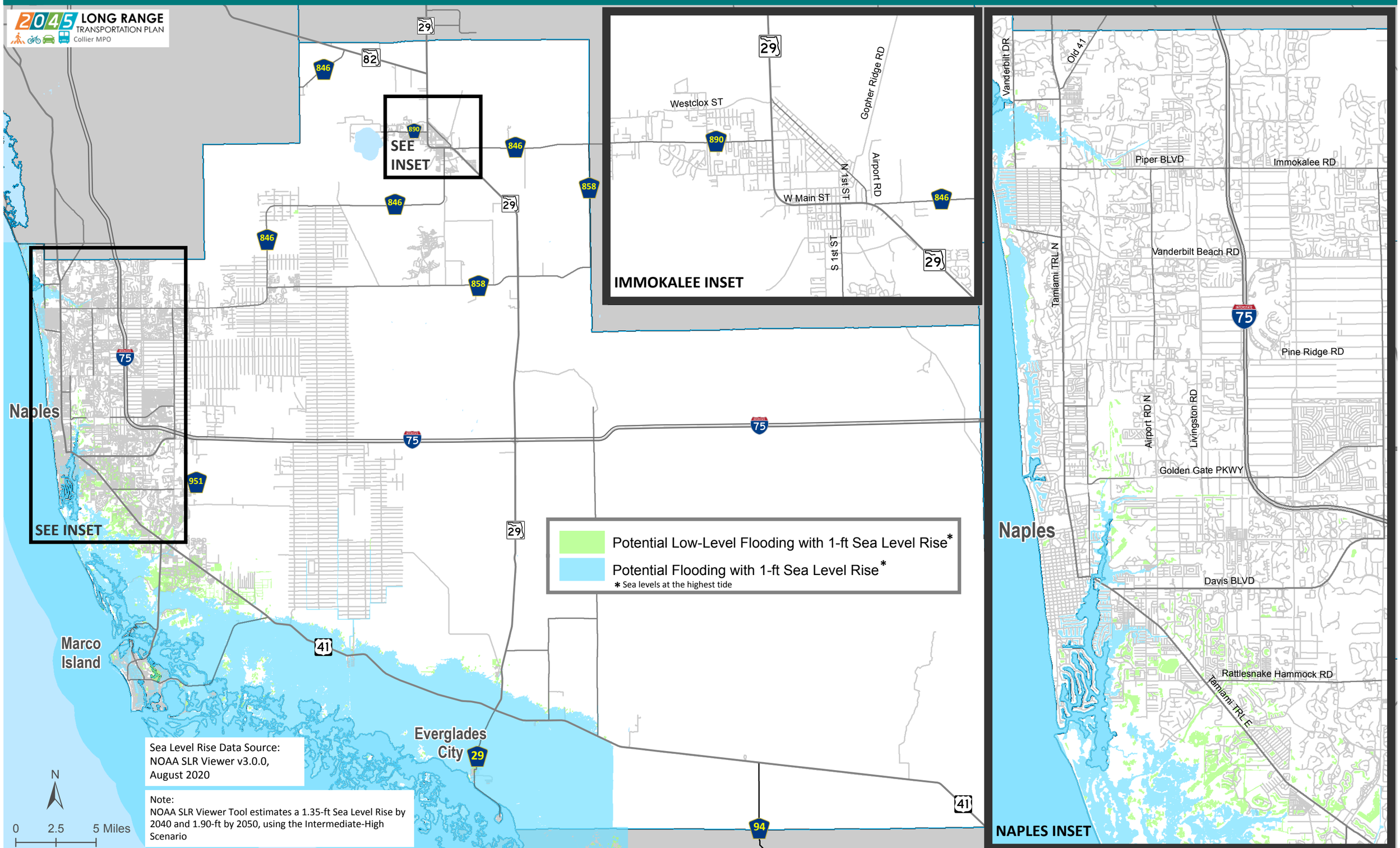


Appendix C
2045 Map Series

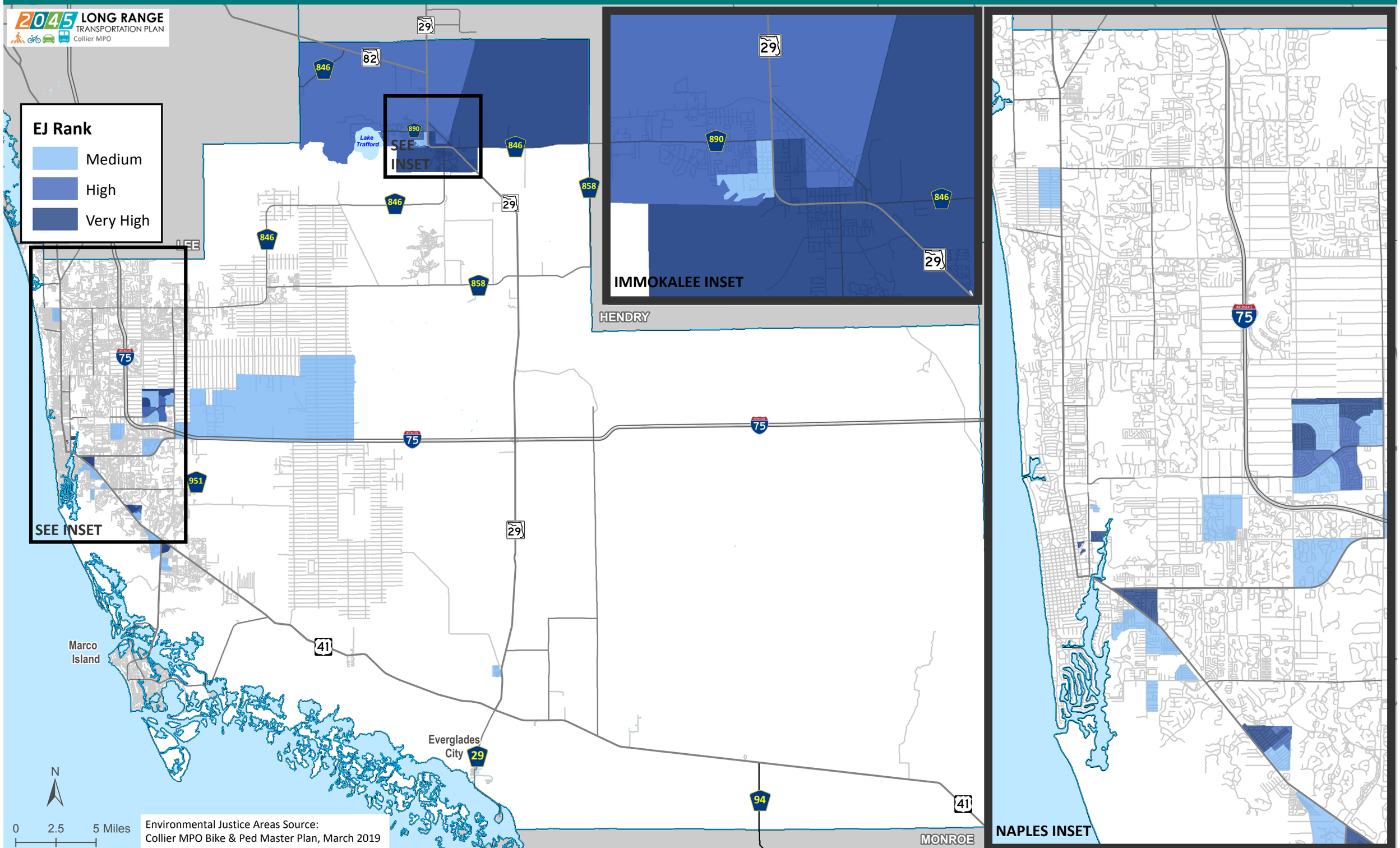
Mapping Analysis of Crash Data from 2014 to 2018



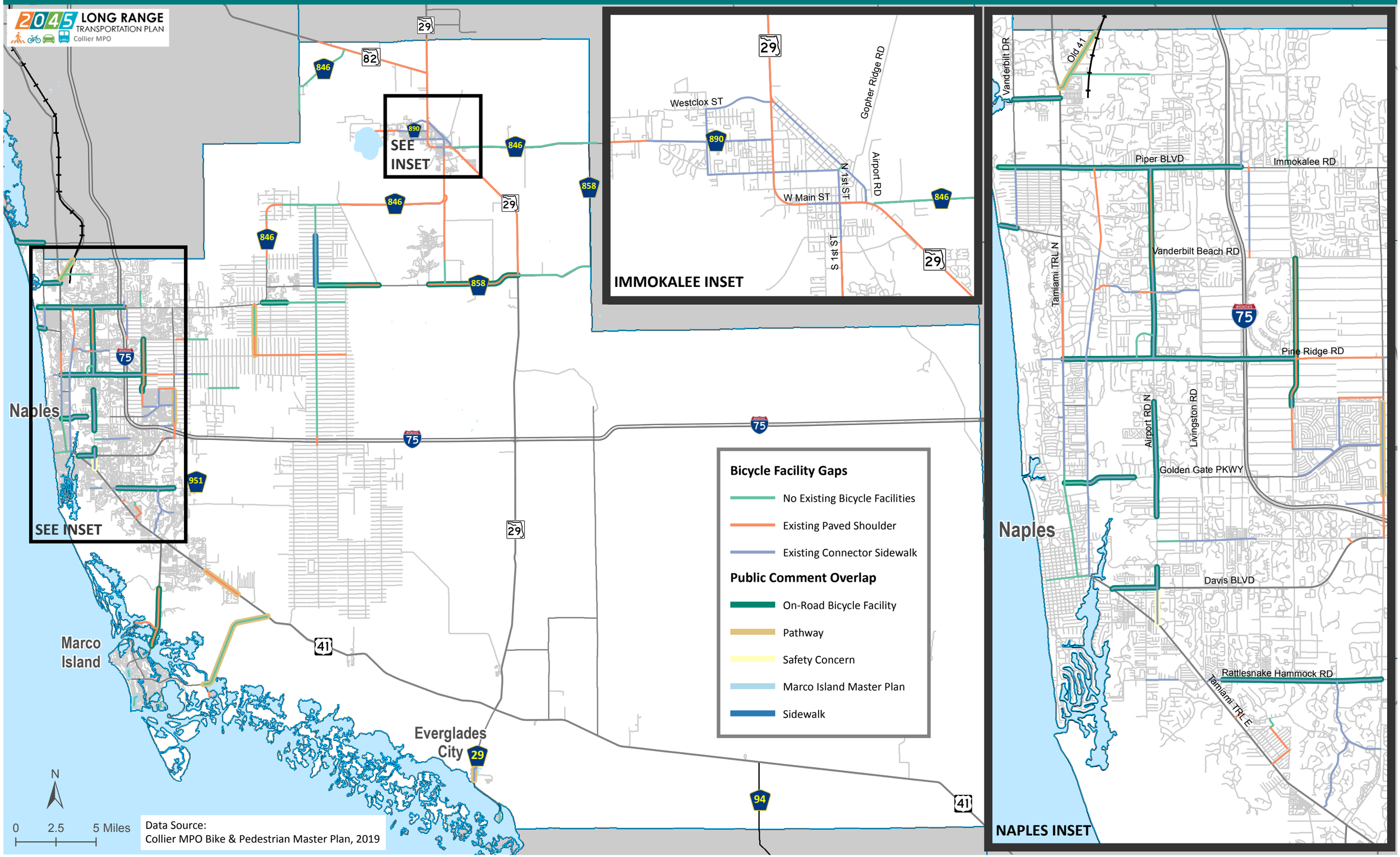
Map of 1-ft Sea Level Rise and Coastal Flooding



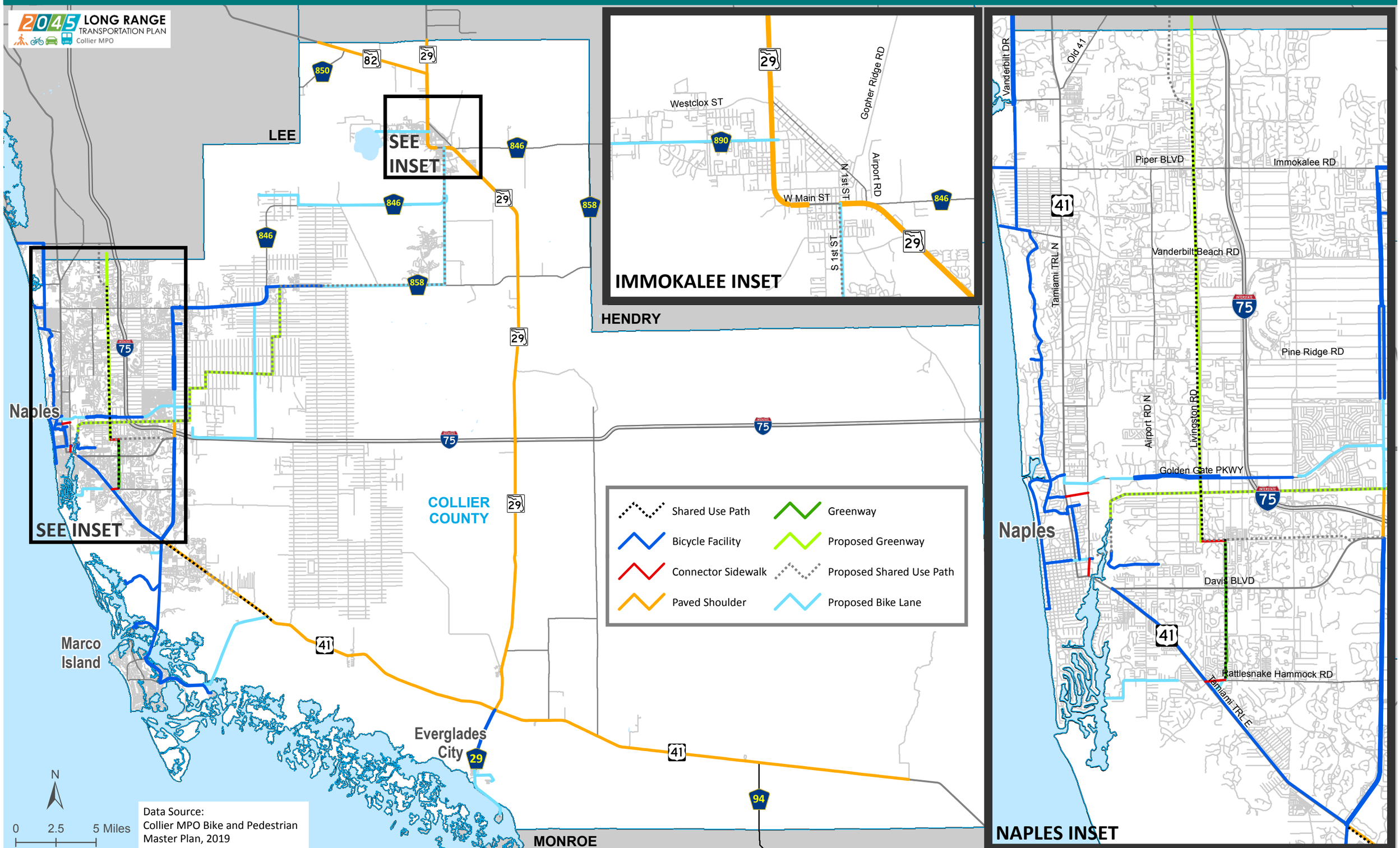
Map of Environmental Justice Areas



Map of Bicycle and Pedestrian Facility Gaps Overlapped with Public Comment

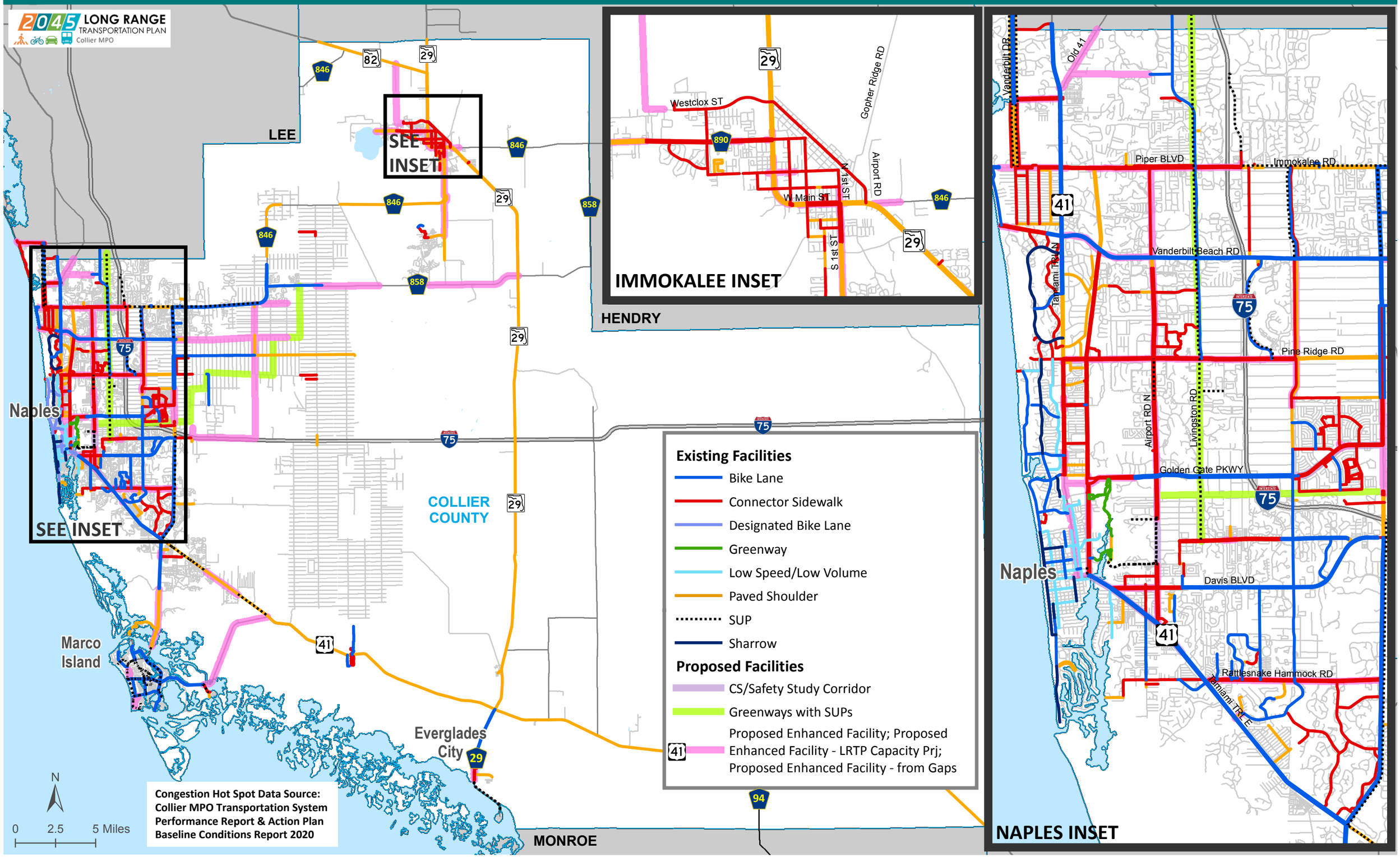


Map of SunTrail Alignments and Spine Pathway Corridors



Existing Plus Proposed Facilities

Bicycle and Pedestrian Facilities



Appendix D
Collier MPO FY 2021–FY 2025 TIP Summary

in $ YOE						FY 2020/2021					FY 2021/2022					FY 2022/2023					FY 2023/2024					FY 2024/2025					
FPN	Roadway	From	To	Description	Agency	ENV	PD&E	PE	ROW	CST	ENV	PD&E	PE	ROW	CST	ENV	PD&E	PE	ROW	CST	ENV	PD&E	PE	ROW	CST	ENV	PD&E	PE	ROW	CST	Total Project Costs
Highway Projects - Roadway																															
4175402	SR 29	Oil Well Rd	Sunniland Nursery Rd	Add lanes and Reconstruct	FDOT																$885,000		$7,440,000								8,325,000
4175403	SR 29	Sunniland Nursery Rd	S of Argicultural Way	Widen 2-4 lanes	FDOT											500,000															500,000
4175404	SR 29	S of Agricultural Way	CR 846 E	Add lanes and Reconstruct	FDOT											270,000															270,000
4175405	SR 29	CR 846 E	N of New Markey Rd	New Road CST	FDOT																			$975,253		$60,000			$5,708,149		6,743,402
4175406	SR 29	N of New Market Rd	SR 82	Add lanes and Reconstruct	FDOT											380,000								$1,091,754							1,471,754
4178784	SR 29	SR 82	Hendry C/L	Add lanes and Reconstruct	FDOT	15,000			1,298,542							50,000															1,363,542
4258432	I-75	SR 951		Ultimate Interchange Impro	FDOT				6,900,638							50,000		870,392			$100,000				$45,150					$96,221,815	104,187,995
4308481	SR 82	Hendry C/L	Gator Slough Ln	Add lanes and Reconstruct	FDOT				2,118,990		20,000					50,000									$41,143,813					$1,400,000	44,732,803
4351112	SR 951	Manatee Rd	N of Tower Rd	Add lanes and Reconstruct	FDOT				1,956,693																$15,385,189						17,341,882
4404411	Airport Pulling Rd	Vanderbilt Bch RD	Immokalee Rd	Add Thru Lanes	Collier			3,000,000												$9,856,200											12,856,200
4452962	I-75	Pine Ridge Rd		Interchnage Imporvement	FDOT															$5,450,000											5,450,000
4463231	Corkscrew Rd N	Wildcat Dr	E of Wildcat Dr	Widen/Resurface	Collier					1,478,586																					1,478,586
4463232	Corkscrew Rd S	Lee County Curve	Collier County Curve	Widen/Resurface	Collier																				$1,321,000						1,321,000
4463381	Vanderbilt Beach Rd	US 41	E of Goodlette-Frank R	Add lanes and Reconstruct	Collier																									$8,428,876	8,428,876
4463411	Goodlette Frank Rd	Vanderbilt Bch RD	Immokalee Rd	Add lanes and Reconstruct	Collier																				$5,500,000						5,500,000
4464121	CR 951 (Collier Blvd)	Golden Gate Canal	Green Blvd	Widen/Resurface	Collier																		$3,200,000								3,200,000
Bridge Projects																															
4318953	16th St Bridge NE	Golden Gate Blvd	Randall Blvd	New Bridge Cst	Collier										4,933,943																4,933,943
CMS/ITS Projects																															
4463171	Harbour Dr	at Crayton Rd		Roundabout	Naples																				$892,211						892,211
4463172	Mooring Line Dr	Crayton Rd		Roundabout	Naples																							$126,000			126,000
4464511	US 41	Golden Gate Parkway		Intersection	FDOT / NHS													270,000						$225,942							495,942
CIP Projects																															
60168	Vanderbilt Beach Rd	Collier Blvd	16th St	N/A	Collier					75,000,000											$10,000,000		$10,000,000		$10,000,000						105,000,000
60201	Pine Ridge Rd	Livingston Blvd	I-75	N/A	Collier																										0
60147	Randall Blvd	at Immokalee Rd		Intersection Improvements	Collier															8,800,000											8,800,000
60190	Airport Pulling Rd	Vanderbilt Beach Rd	Immokalee Rd	N/A	Collier															$14,500,000											14,500,000
60211	Orange Blossom	Airport Pulling Rd	Livingston	N/A	Collier		200,000																								200,000
60198	Veterans Memorial			N/A	Collier			1,800,000	1,800,000	8,800,000																					12,400,000
60199	Vanderbilt Beach Rd	US 41	E of Goodlette	N/A	Collier			250,000	250,000						8,900,000																9,400,000
60129	Benfield Ext	Lords Way	City Gate N	N/A	Collier				1,000,000	7,000,000				1,000,000					1,000,000					$1,000,000							11,000,000
60144	Oil Well Rd	Everglades	Oil Well Grade	N/A	Collier			908,000							300,000					300,000					$300,000						1,808,000
68057	Collier Blvd	Green Blvd	Golden Gate Main Can	N/A	Collier								3,200,000						7,000,000						$4,900,000						15,100,000
60065	Randall Blvd	Immokalee Rd	Oil Weell rd	N/A	Collier																				$1,500,000						1,500,000
TBD	Immokalee Rd	at Northbrook Dr/Tarpon Bay Dr		N/A	Collier										1,000,000																1,000,000
TBD	Goodlette Frank Rd	Vanderbilt Bch Rd	Immokalee Rd	N/A	Collier									2,000,000					5,500,000						$6,750,000						14,250,000
TBD	Green Blvd	Santa Barbara Blvd	Sunshine	N/A	Collier												500,000														500,000
60229	Wilson Blvd	Golden Gate Blvd	Immokalee Rd	N/A	Collier					2,000,000			10,000,000							$10,000,000											22,000,000
TBD	Vanderbilt Beach Rd	16th St	Everglades	N/A	Collier								2,000,000						11,250,000					$5,000,000							18,250,000
TBD	Immokalee Rd	Livingston Blvd	Logan Blvd	N/A	Collier							1,000,000																			1,000,000
																															236,708,000

Appendix E
Roadway Needs Evaluation Matrix and Backup Maps

Collier MPO 2045 Long Range Transportation Plan
Needs Assessment Plan

Table 1B.Draft Evaluation Matrix
DRAFT - July 2020; updated 9/3/2020

Goals	1.Ensure the Security of Transportation System for Users		2. Protect Environmental Resources			
Evaluation Criteria:	1A - Improves Evacuation Routes	1B - Provides Enhanced or potential new evacuation routes	2A - Amount of wetland encroachment based on NWI	2B - Proximity to protected natural areas (0.5 mile)	2C -Amount of habitat encroachment based on secondary panther habitat	2D - Amount o encroachment primary panth
Performance Measures:	Is the roadway a current evacuation route? Yes = 5 No = 0		No impact = 0 0 - 5 acres = -1 6 - 10 acres = -2 11 - 15 =- -3 15 - 20 =- -4 21 or more =- -5 (max)	Within 0.5 miles of Conservation Areas/Preserves lands? Yes = -1 No = 0	No impact = 0 0 - 10 acres = -1 11 - 20 acres = -2 21 - 30 =- -3 31 - 40 =- -4 40 or more =- -5 (max)	No impact = 0 0 - 10 acres = 11 - 20 acres = 21 - 30 =- -3 31 - 40 =- -4 40 or more =-
Weighting (out of 100):	4.00	4.00	4.00	4.00	-	

2045 Map ID	2045 RANK	2045 Weighted Score	Project	From	To	Description	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score
1	51	126	Benfield Road Extension	The Lords Way	City Gate Boulevard North	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-5	(20)	-1	(4)	-1	-	-5
2	41	138	Benfield Road	US 41 (SR 90) (Tamiami Trail East)	Rattlesnake-Hammock Ext	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-5	(20)	-1	(4)	-1	-	-5
3	72	75	Big Cypress Parkway	North of I-75	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-2	(8)	0	-	0	-	-3
4	70	83	Big Cypress Parkway	Golden Gate Blvd	Vanderbilt Beach Road Ext.	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-1	(4)	0	-	0	-	-2
5	71	81	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-2	(8)	0	-	0	-	-4
6	82	52	Big Cypress Parkway	Oil Well Road	Immokalee Rd	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-4	(16)	0	-	0	-	-3
7	62	100	Camp Keais Road	Pope John Paul Blvd	Oil Well Road	Widen from 2-Lane to 4 Lanes	0	-	5	20	-3	(12)	0	-	-4	-	-2
8	80	74	Camp Keais Road	Immokalee Road	Pope John Paul Blvd	Widen from 2-Lane to 4-Lanes	0	-	5	20	-2	(8)	0	-	-4	-	-2
9	1	286	Collier Blvd (CR 951)	Golden Gate Main Canal	Green Blvd	Widen from 4-Lanes to 6 Lanes	5	20	0	-	-1	(4)	0	-	0	-	0
10	21	182	CR 951 Extension (new)	Heritage Bay Entrance (Collier Blvd (CR 951) northern terminus)	Lee/Collier County Line	New 2-Lane Road	0	-	5	20	-4	(16)	0	-	0	-	-3
11	34	152	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	5	20	0	-	-1	(4)	-1	(4)	-2	-	0
12	35	152	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	5	20	0	-	-2	(8)	0	-	-3	-	0
13	54	121	Everglades Boulevard	Golden Gate Blvd	Vanderbilt Bch Rd Ext	Widen from 2-Lanes to 4-Lanes	5	20	0	-	-1	(4)	0	-	-2	-	0
14	63	99	Everglades Boulevard	I-75 (SR-93)	Golden Gate Blvd	Widen from 2-Lanes to 4-Lanes	5	20	0	-	-4	(16)	-1	(4)	-3	-	-4
15	37	147	Golden Gate Boulevard	Everglades Blvd	Desoto Boulevard	Widen from 2-Lanes to 4-Lanes	0	-	5	20	-1	(4)	0	-	-1	-	-1
16	58	105	Golden Gate Boulevard Ext	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	0	-	5	20	-1	(4)	0	-	0	-	-4
17	31	161	Goodlette-Frank Road	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	5	20	0	-	0	-	-1	(4)	0	-	0
18	66	91	Green Boulevard	Santa Barbara/ Logan Boulevard	Sunshine Boulevard	Widen from 2-Lane to 4-Lane	0	-	5	20	-1	(4)	0	-	0	-	0
19	27	166	Green Boulevard Ext / 16th Ave SW	23rd St SW	Wilson Blvd Ext	New 2-Lane (Future Study Area)	0	-	5	20	-1	(4)	0	-	0	-	0
20	33	154	Green Boulevard Ext / 16th Ave SW	CR 951	23rd Street SW	New 4-Lane (Future Study Area)	0	-	5	20	-3	(12)	-1	(4)	0	-	0
21	42	138	Green Boulevard Ext / 16th Ave SW	Wilson Blvd Ext	Everglades Boulevard	New 2-Lane Road	0	-	5	20	-1	(4)	0	-	-1	-	-2
22	60	102	Critical Needs Intersection @ I-75	Everglades Blvd		New Interchange	5	20	0	-	-5	(20)	-1	(4)	-1	-	-1
23	8	250	Critical Needs Intersection @ I-75	Golden Gate Parkway @ I-75		Interchange Improvement	5	20	0	-	0	-	0	-	0	-	0
24	2	285	Critical Needs Intersection @ I-75	Collier Blvd (SR 951) @ I-75		Interchange Improvement	5	20	0	-	0	-	0	-	0	-	0
25	22	180	Critical Needs Intersection @ I-75	Immokalee Rd @ I-75		Interchange Improvement	5	20	0	-	0	-	0	-	0	-	0
26	18	190	Critical Needs Intersection @ I-75	Pine Ridge Rd @ I-75		Interchange Improvement	5	20	0	-	0	-	0	-	0	-	0
27	40	146	I-75 (SR-93) Interchange (new)(not in SIS)	Vanderbilt Beach Rd		New Interchange - Partial (to / from the North)	5	20	0	-	-1	(4)	0	-	0	-	0
29	5	269	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd (CR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes	5	20	0	-	-2	(8)	0	-	0	-	0
30	7	251	Immokalee Rd (CR 846)	Camp Keais Rd	Carver St	Widen from 2-Lanes to 4 Lanes	5	20	0	-	-1	(4)	0	-	0	-	0
31	23	172	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	0	-	5	20	0	-	0	-	0	-	-2
32	81	72	Keane Avenue	Inez Rd	Wilson Blvd Ext.	New 2-Lane Road (Future Study Area)	0	-	0	-	-2	(8)	0	-	-3	-	0
33	50	127	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	0	-	5	20	-1	(4)	-1	(4)	0	-	0
34	65	92	Logan Boulevard	Green Boulevard	Pine Ridge Road	Widen from 4-Lanes to 6-Lanes	0	-	5	20	-1	(4)	-1	(4)	0	-	0
35	52	125	Logan Boulevard	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	0	-	5	20	0	-	0	-	0	-	0
36	67	89	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	0	-	5	20	0	-	-1	(4)	0	-	-3
37	38	147	Oil Well Road / CR 858	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	5	20	0	-	-4	(16)	-1	(4)	0	-	-2
38	46	131	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Road	Widen from 2-Lanes to 6-Lanes	5	20	0	-	-1	(4)	0	-	0	-	0
39	10	236	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	0	-	5	20	0	-	-1	(4)	0	-	0
40	45	135	Orange Blossom Drive	Airport Pulling Road	Livingston Road	Widen from 2-Lanes to 4-Lanes	0	-	5	20	0	-	0	-	0	-	0
42	39	147	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	0	-	5	20	-1	(4)	0	-	-1	-	-1
43	59	103	Randall Boulevard	Everglades Blvd	Desoto Blvd	Widen from 2-Lanes to 4-Lanes	0	-	5	20	-1	(4)	0	-	0	-	-2
44	61	101	Randall Boulevard Ext.	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	0	-	5	20	-1	(4)	0	-	0	-	0
45	44	136	Santa Barbara Boulevard	Painted Leaf Lane	Green Boulevard	Widen from 4-Lanes to 6-Lanes	0	-	5	20	-1	(4)	0	-	0	-	0
46	56	112	SR 29	SR 82	Collier/Hendry Line	Widen from 2-Lane to 4 Lanes	5	20	0	-	-1	(4)	0	-	-1	-	-1
48	49	128	SR 29	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	5	20	0	-	-1	(4)	-1	(4)	-1	-	-1
50	24	172	SR 29	New Market Road North	North of SR-82	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	-1	-	-1
51	13	212	SR 29/New Market Road W - New Road	Immokalee Rd (CR 846)	New Market Road North	Widen from 2-Lane to 4-Lane	0	-	5	20	-1	(4)	0	-	-1	-	-1
52	3	277	SR 29	Agriculture Way	CR 846 E	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	-1	-	-1
53	15	197	SR 29	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	-1	-	-1
54	16	197	SR 29	Oil Well Road	Sunniland Nursery Rd	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	-1	-	-1
55	6	263	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	0	-	0
56	9	242	Collier Blvd (SR 951)	South of Manatee Rd	North of Tower Rd	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	-1	(4)	0	-	0
57	4	275	Critical Needs Intersection @ US 41	Goodlette Rd @ US 41		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	0
58	12	219	US 41	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4-Lane	5	20	0	-	-1	(4)	0	-	-1	-	-1
59	11	232	Critical Needs Intersection @ US 41	Collier Blvd (SR 951) @ US 41		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	0
60	14	201	US 41	Immokalee Road	Old US 41	Widen from 2-Lane to 4-Lane	5	20	0	-	0	-	-1	(4)	0	-	0
62	73	75	Vanderbilt Beach Road Ext	16th St	Big Cypress Parkway	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-5	(20)	0	-	0	-	0
63	53	122	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	0	-	5	20	-1	(4)	-1	(4)	-1	-	0
64	30	162	Wilson Blvd	Golden Gate Boulevard	Immokalee Rd	Widen from 2-Lanes to 4-Lanes	0	-	5	20	-1	(4)	0	-	0	-	-1
65	32	156	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-Lanes)	0	-	5	20	-1	(4)	0	-	0	-	0
66	17	195	Immokalee Rd intersection	Livingston Rd		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	0
67	57	106	Veterans Memorial Blvd Extension	Strand Blvd	I-75	New 4-Lane Road	0	-	5	20	-1	(4)	0	-	0	-	0
68	83	45	Big Cypress Parkway intersection (new)	Oil Well Grade Rd		New At-Grade Intersection	0	-	5	20	0	-	0	-	0	-	0
70	68	86	Green Boulevard Extension	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road	0	-	5	20	-1	(4)	0	-	0	-	0
73	20	190	Immokalee Rd (CR 846) intersection	Collier Blvd (CR 951)		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	0
74	28	165	Immokalee Rd (CR 846) intersection	Wilson Blvd		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	0
75	55	115	I-75 (SR-93) Interchange (new) (not in SIS)	Veterans Memorial Blvd		New Partial Interchange	5	20	0	-	0	-	0	-	0	-	0
76	43	137	Vanderbilt Drive	Immokalee Rd	Woods Edge Parkway	Widen from 2-Lanes to 4-Lanes	0	-	5	20	-1	(4)	-1	(4)	0	-	0
77	25	170	Pine Ridge Rd intersection	Livingston Rd		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	
78	29	165	Golden Gate Parkway intersection	Livingston Rd		Intersection Improvement	5	20	0	-	0	-	0	-	0	-	
80	47	131	Vanderbilt Beach Road	Goodlette-Frank Road	Airport Pulling Road	Widen from 4-Lanes to 6-Lanes	0	-	5	20	-1	(4)	0	-	0	-	0
81	74	75	Bridge @ 47th Avenue NE	West of Everglades Boulevard		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
82	75	75	Bridge @ Wilson Boulevard	South of 33rd Avenue NE		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
83	69	85	Bridge @ 18th Ave NE	between Wilson Boulevard N and 8th Street NE		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
84	76	75	Bridge @ 18th Ave NE	between 8th Street NE and 16th Street NE		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
85	64	95	Bridge @ 13th Street NW	north end at proposed Vanderbilt Beach Road Extension		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
86	77	75	Bridge @ 16th Street SE	South end		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
87	78	75	Bridge @ Location TBD - Assume 10th Avenue SE	East of Everglades Blvd		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
88	48	130	Bridge @Wilson Boulevard South, south end			New Bridge over Canal	0	-	5	20	0	-	0	-	0	-	0
89	79	75	Bridge @ 62nd Avenue NE	West of 40th Street NE		New Bridge over Canal	0	-	0	-	0	-	0	-	0	-	0
90	26	167	Pine Ridge Rd	Logan Blvd S	Collier Blvd (CR 951)	Widen from 4-Lanes to 6-Lanes	5	20	0	-	-1	(4)	-1	(4)	0	-	-5
93	32	157	Immokalee Rd (CR 846)	43rd Ave NE/Shady Hollow Blvd E	North of 47th Avenue NE/Immokalee	Widen from 2-Lanes to 4-Lanes	5	20		-	-1	(4)	-1	(4)	-1	(1)	-1
94	57	113	Immokalee Road Rural Village Blvd (new)	Immokalee Rd (CR 846)	Immokalee Rd (CR 846)	New 4-Lane Road	0	-	5	20	-2	(8)	0	-	-5	(5)	-1
41A	19	190	Critical Needs Intersection @ Immokalee Rd	Immokalee Road @ Randall Blvd		Ultimate Intersection Improvement: Overpass	5	20	0	-	0	-	0	-	0	-	0
41B	36	151	Randall Boulevard	Immokalee Road	8th St NE	Widen from 2-Lanes to 6-Lanes	0	-	5	20	-1	(4)	0	-	-2	-	0

Note: Does not include Critical Needs Intersections [#95 through #114]; it was necessary to rank or prioritize

Collier MPO 2045 Long Range Transportation Plan
Needs Assessment Plan

Table 1B.Draft Evaluation Matrix
DRAFT - July 2020; updated 9/3/2020

								3. Improve System Continuity and Connectivity				4. Reduce Roadway Congestion - TBD				5. Promote Freight Movement		
							f habitat based on er habitat	3A - Improvements to existing infrastructure		3B - The project is a new facility that improves connectivity		Reduce existing congestion 4A - Improvement to an existing deficient facility, or improvement to a new or neighboring facility intended to relieve an existing deficient facility		Reduce existing congestion 4B - To what extent will poor LOS intersections, and roadway segments be improved?		5 -Project enhances the facility identified as a major freight route		6A - Enhanc transportatior
							-1 -2 -5 (max)	Does the project improve mobility in an existing roadway facility (i.e. widening, intersection improvements, etc.)? Yes = 5 No = 0		Does the project improve connectivity with a new roadway facility (all extensions are gaps in that they connect to a future or existing road)? Yes = 5 No = 0		Does the project increase capacity or provide relief to a parallel facility (i.e. new facilities, bridges over canals, etc.)? Yes = 5 No = 0		Did capacity ratio (AADT/LOS D service volumes) decrease? (compare 2045 E+C to Alt 2 traffic model plots) Yes = 5 No = 0		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		Yes No
							4.00	5.00		5.00		9.00		9.00		6.00		
2045 Map ID	2045 RANK	2045 Weighted Score	Project	From	To	Description	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score
1	51	126	Benfield Road Extension	The Lords Way	City Gate Boulevard North	New 2-Lane Road (Expandable to 4-Lanes)	(20)	0	-	5	25	5	45	0	-	0	-	5
2	41	138	Benfield Road	US 41 (SR 90) (Tamiami Trail East)	Rattlesnake-Hammock Ext	New 2-Lane Road (Expandable to 4-Lanes)	(20)	0	-	5	25	5	45	0	-	0	-	5
3	72	75	Big Cypress Parkway	North of I-75	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	(12)	0	-	5	25	5	45	0	-	0	-	0
4	70	83	Big Cypress Parkway	Golden Gate Blvd	Vanderbilt Beach Road Ext.	New 2-Lane Road (Expandable to 4-Lanes)	(8)	0	-	5	25	5	45	0	-	0	-	0
5	71	81	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-Lanes)	(16)	0	-	5	25	5	45	0	-	0	-	0
6	82	52	Big Cypress Parkway	Oil Well Road	Immokalee Rd	New 2-Lane Road (Expandable to 4-Lanes)	(12)	0	-	0	-	5	45	0	-	0	-	0
7	62	100	Camp Keais Road	Pope John Paul Blvd	Oil Well Road	Widen from 2-Lane to 4 Lanes	(8)	5	25	0	-	5	45	0	-	0	-	5
8	80	74	Camp Keais Road	Immokalee Road	Pope John Paul Blvd	Widen from 2-Lane to 4-Lanes	(8)	0	-	0	-	5	45	0	-	0	-	5
9	1	286	Collier Blvd (CR 951)	Golden Gate Main Canal	Green Blvd	Widen from 4-Lanes to 6 Lanes	-	5	25	0	-	5	45	5	45	5	30	0
10	21	182	CR 951 Extension (new)	Heritage Bay Entrance (Collier Blvd (CR 951) northern terminus)	Lee/Collier County Line	New 2-Lane Road	(12)	0	-	5	25	5	45	0	-	5	30	0
11	34	152	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	5	45	0	-	5
12	35	152	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	5	45	0	-	5
13	54	121	Everglades Boulevard	Golden Gate Blvd	Vanderbilt Bch Rd Ext	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	5	45	5	45	0	-	5
14	63	99	Everglades Boulevard	I-75 (SR-93)	Golden Gate Blvd	Widen from 2-Lanes to 4-Lanes	(16)	0	-	0	-	5	45	5	45	0	-	5
15	37	147	Golden Gate Boulevard	Everglades Blvd	Desoto Boulevard	Widen from 2-Lanes to 4-Lanes	(4)	0	-	0	-	5	45	5	45	5	30	5
16	58	105	Golden Gate Boulevard Ext	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	(16)	0	-	5	25	5	45	0	-	5	30	0
17	31	161	Goodlette-Frank Road	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	5	45	5	45	0	-	5
18	66	91	Green Boulevard	Santa Barbara/ Logan Boulevard	Sunshine Boulevard	Widen from 2-Lane to 4-Lane	-	0	-	0	-	5	45	0	-	0	-	5
19	27	166	Green Boulevard Ext / 16th Ave SW	23rd St SW	Wilson Blvd Ext	New 2-Lane (Future Study Area)	-	0	-	5	25	5	45	5	45	0	-	5
20	33	154	Green Boulevard Ext / 16th Ave SW	CR 951	23rd Street SW	New 4-Lane (Future Study Area)	-	0	-	5	25	5	45	5	45	0	-	0
21	42	138	Green Boulevard Ext / 16th Ave SW	Wilson Blvd Ext	Everglades Boulevard	New 2-Lane Road	(8)	0	-	5	25	5	45	5	45	0	-	0
22	60	102	Critical Needs Intersection @ I-75	Everglades Blvd		New Interchange	(4)	5	25	0	-	0	-	0	-	0	-	0
23	8	250	Critical Needs Intersection @ I-75	Golden Gate Parkway @ I-75		Interchange Improvement	-	5	25	0	-	0	-	5	45	0	-	5
24	2	285	Critical Needs Intersection @ I-75	Collier Blvd (SR 951) @ I-75		Interchange Improvement	-	5	25	0	-	5	45	5	45	5	30	5
25	22	180	Critical Needs Intersection @ I-75	Immokalee Rd @ I-75		Interchange Improvement	-	0	-	0	-	0	-	0	-	5	30	5
26	18	190	Critical Needs Intersection @ I-75	Pine Ridge Rd @ I-75		Interchange Improvement	-	0	-	0	-	0	-	0	-	5	30	5
27	40	146	I-75 (SR-93) Interchange (new)(not in SIS)	Vanderbilt Beach Rd		New Interchange - Partial (to / from the North)	-	0	-	5	25	0	-	0	-	0	-	0
29	5	269	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd (CR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes	-	0	-	5	25	5	45	5	45	5	30	0
30	7	251	Immokalee Rd (CR 846)	Camp Keais Rd	Carver St	Widen from 2-Lanes to 4 Lanes	-	5	25	0	-		-	5	45	5	30	5
31	23	172	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	(8)	5	25	0	-		-	0	-	0	-	5
32	81	72	Keane Avenue	Inez Rd	Wilson Blvd Ext.	New 2-Lane Road (Future Study Area)	-	0	-	5	25	5	45	0	-	0	-	0
33	50	127	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	-	0	-	5	25	5	45	0	-	0	-	0
34	65	92	Logan Boulevard	Green Boulevard	Pine Ridge Road	Widen from 4-Lanes to 6-Lanes	-	0	-	5	25	5	45	0	-	0	-	0
35	52	125	Logan Boulevard	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	0	-	0	-	5
36	67	89	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	(12)	5	25	0	-	5	45	0	-	0	-	5
37	38	147	Oil Well Road / CR 858	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	(8)	5	25	0	-	5	45	5	45	5	30	0
38	46	131	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Road	Widen from 2-Lanes to 6-Lanes	-	5	25	0	-	5	45	0	-	5	30	0
39	10	236	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	5	45	5	30	5
40	45	135	Orange Blossom Drive	Airport Pulling Road	Livingston Road	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	0	-	0	-	5
42	39	147	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	(4)	5	25	0	-	5	45	5	45	0	-	0
43	59	103	Randall Boulevard	Everglades Blvd	Desoto Blvd	Widen from 2-Lanes to 4-Lanes	(8)	5	25	0	-	5	45	0	-	0	-	5
44	61	101	Randall Boulevard Ext.	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	0	-	5	25	5	45	0	-	0	-	0
45	44	136	Santa Barbara Boulevard	Painted Leaf Lane	Green Boulevard	Widen from 4-Lanes to 6-Lanes	-	0	-	5	25	5	45	0	-	0	-	0
46	56	112	SR 29	SR 82	Collier/Hendry Line	Widen from 2-Lane to 4 Lanes	(4)	5	25	0	-	0	-		-	5	30	5
48	49	128	SR 29	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	(4)	5	25	0	-	0	-	0	-	5	30	5
50	24	172	SR 29	New Market Road North	North of SR-82	Widen from 2-Lane to 4-Lane	(4)	5	25	0	-	0	-	5	45	5	30	5
51	13	212	SR 29/New Market Road W - New Road	Immokalee Rd (CR 846)	New Market Road North	Widen from 2-Lane to 4-Lane	(4)	0	-	5	25	5	45	0	-	5	30	0
52	3	277	SR 29	Agriculture Way	CR 846 E	Widen from 2-Lane to 4-Lane	(4)	5	25	0	-	5	45	5	45	5	30	5
53	15	197	SR 29	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lane to 4-Lane	(4)	5	25	0	-	5	45	5	45	5	30	5
54	16	197	SR 29	Oil Well Road	Sunniland Nursery Rd	Widen from 2-Lane to 4-Lane	(4)	5	25	0	-	5	45	5	45	5	30	5
55	6	263	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 2-Lane to 4-Lane	-	5	25	0	-	5	45	0	-	5	30	0
56	9	242	Collier Blvd (SR 951)	South of Manatee Rd	North of Tower Rd	Widen from 2-Lane to 4-Lane	-	5	25	0	-	5	45	0	-	5	30	0
57	4	275	Critical Needs Intersection @ US 41	Goodlette Rd @ US 41		Intersection Improvement	-	5	25	0	-	0	-	5	45	0	-	5
58	12	219	US 41	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4-Lane	(4)	5	25	0	-	0	-	5	45	5	30	5
59	11	232	Critical Needs Intersection @ US 41	Collier Blvd (SR 951) @ US 41		Intersection Improvement	-	0	-	5	25	0	-	5	45	5	30	0
60	14	201	US 41	Immokalee Road	Old US 41	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	5	45	5	30	0
62	73	75	Vanderbilt Beach Road Ext	16th St	Big Cypress Parkway	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	5	25	5	45	0	-	0	-	0
63	53	122	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	-	0	-	5	25	5	45	0	-	0	-	0
64	30	162	Wilson Blvd	Golden Gate Boulevard	Immokalee Rd	Widen from 2-Lanes to 4-Lanes	(4)	5	25	0	-	5	45	5	45	0	-	5
65	32	156	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	5	25	5	45	5	45	0	-	0
66	17	195	Immokalee Rd intersection	Livingston Rd		Intersection Improvement	-	0	-	5	25	0	-	5	45	5	30	0
67	57	106	Veterans Memorial Blvd Extension	Strand Blvd	I-75	New 4-Lane Road	-	0	-	5	25	5	45	0	-	0	-	0
68	83	45	Big Cypress Parkway intersection (new)	Oil Well Grade Rd		New At-Grade Intersection	-	5	25	0	-	0	-	0	-	0	-	0
70	68	86	Green Boulevard Extension	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road	-	0	-	5	25	5	45	0	-	0	-	0
73	20	190	Immokalee Rd (CR 846) intersection	Collier Blvd (CR 951)		Intersection Improvement	-	0	-	5	25	0	-	5	45	5	30	0
74	28	165	Immokalee Rd (CR 846) intersection	Wilson Blvd		Intersection Improvement	-	0	-	5	25	0	-	5	45	5	30	0
75	55	115	I-75 (SR-93) Interchange (new) (not in SIS)	Veterans Memorial Blvd		New Partial Interchange	-	5	25	0	-	0	-	0	-	0	-	0
76	43	137	Vanderbilt Drive	Immokalee Rd	Woods Edge Parkway	Widen from 2-Lanes to 4-Lanes	-	5	25	0	-	5	45	0	-	0	-	5
77	25	170	Pine Ridge Rd intersection	Livingston Rd		Intersection Improvement	-	5	25	0	-	0	-	0	-	5	30	5
78	29	165	Golden Gate Parkway intersection	Livingston Rd		Intersection Improvement	-	0	-	5	25	0	-	5	45	0	-	0
80	47	131	Vanderbilt Beach Road	Goodlette-Frank Road	Airport Pulling Road	Widen from 4-Lanes to 6-Lanes	-	5	25	0	-	5	45	0	-	0	-	0
81	74	75	Bridge @ 47th Avenue NE	West of Everglades Boulevard		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
82	75	75	Bridge @ Wilson Boulevard	South of 33rd Avenue NE		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
83	69	85	Bridge @ 18th Ave NE	between Wilson Boulevard N and 8th Street NE		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
84	76	75	Bridge @ 18th Ave NE	between 8th Street NE and 16th Street NE		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
85	64	95	Bridge @ 13th Street NW	north end at proposed Vanderbilt Beach Road Extension		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
86	77	75	Bridge @ 16th Street SE	South end		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
87	78	75	Bridge @ Location TBD - Assume 10th Avenue SE	East of Everglades Blvd		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
88	48	130	Bridge @Wilson Boulevard South, south end			New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
89	79	75	Bridge @ 62nd Avenue NE	West of 40th Street NE		New Bridge over Canal	-	0	-	5	25	5	45	0	-	0	-	0
90	26	167	Pine Ridge Rd	Logan Blvd S	Collier Blvd (CR 951)	Widen from 4-Lanes to 6-Lanes	(20)	5	25	0	-	5	45	0	-	5	30	0
93	32	157	Immokalee Rd (CR 846)	43rd Ave NE/Shady Hollow Blvd E	North of 47th Avenue NE/Immokalee	Widen from 2-Lanes to 4-Lanes	(4)	5	25	0	-	5	45	0	-	5	30	5
94	57	113	Immokalee Road Rural Village Blvd (new)	Immokalee Rd (CR 846)	Immokalee Rd (CR 846)	New 4-Lane Road	(4)	0	-	5	25	5	45	0	-	5	30	0
41A	19	190	Critical Needs Intersection @ Immokalee Rd	Immokalee Road @ Randall Blvd		Ultimate Intersection Improvement: Overpass	-	5	25	0	-	5	45	5	45	0	-	5
41B	36	151	Randall Boulevard	Immokalee Road	8th St NE	Widen from 2-Lanes to 6-Lanes	-	5	25	0	-	5	45	5	45	0	-	0

Note: Does not include Critical Needs Intersections [#95 through #114]; it was necessary to rank or prioritize

Collier MPO 2045 Long Range Transportation Plan
Needs Assessment Plan

Table 1B.Draft Evaluation Matrix
DRAFT - July 2020; updated 9/3/2020

							6. Increase the Safety of Transportation System Users							7.				
							es safety of a system users	6B - Improves facility or intersection identified as having a high crash occurrence or a fatality		6C- Traffic calming		6D - Safety improvements that improve or reduce vehicular conflicts with bicycles and pedestrians		7A - Trail improvements		7B - Multimodal improvement near health care, educational, recreational, and/or cultural facilities		7C - Mu improvem socioec neighborho >1(
							= 5 = 0	High crash location or segment? Yes = 5 No = 0		Yes = 5 No = 0		High crash location or segment for bike/pedestrian conflicts? Yes = 5 No = 0		New or improved trail/greenways = 5 No new or improved trail = 0		Improvement W/I 0.25 miles=5 Improvement not w/I 0.25 mile=0		Improvem No improve
							2.00	4.00		2.00		2.00		2.00		2.00		
2045 Map ID	2045 RANK	2045 Weighted Score	Project	From	To	Description	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score
1	51	126	Benfield Road Extension	The Lords Way	City Gate Boulevard North	New 2-Lane Road (Expandable to 4-Lanes)	10	0	-	0	-	0	-	5	10	0	-	5
2	41	138	Benfield Road	US 41 (SR 90) (Tamiami Trail East)	Rattlesnake-Hammock Ext	New 2-Lane Road (Expandable to 4-Lanes)	10	0	-	0	-	0	-	5	10	0	-	5
3	72	75	Big Cypress Parkway	North of I-75	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-	0
4	70	83	Big Cypress Parkway	Golden Gate Blvd	Vanderbilt Beach Road Ext.	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-	0
5	71	81	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	5	10	0	-	0
6	82	52	Big Cypress Parkway	Oil Well Road	Immokalee Rd	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	5	10	0	-	0
7	62	100	Camp Keais Road	Pope John Paul Blvd	Oil Well Road	Widen from 2-Lane to 4 Lanes	10	0	-	0	-	0	-	5	10	0	-	0
8	80	74	Camp Keais Road	Immokalee Road	Pope John Paul Blvd	Widen from 2-Lane to 4-Lanes	10	0	-	0	-	0	-	5	10	0	-	0
9	1	286	Collier Blvd (CR 951)	Golden Gate Main Canal	Green Blvd	Widen from 4-Lanes to 6 Lanes	-	5	20	0	-	5	10	0	-	0	-	5
10	21	182	CR 951 Extension (new)	Heritage Bay Entrance (Collier Blvd (CR 951) northern terminus)	Lee/Collier County Line	New 2-Lane Road	-	0	-	0	-	0	-	5	10	0	-	5
11	34	152	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	0	-	0
12	35	152	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	0	-	0
13	54	121	Everglades Boulevard	Golden Gate Blvd	Vanderbilt Bch Rd Ext	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	0	-	0
14	63	99	Everglades Boulevard	I-75 (SR-93)	Golden Gate Blvd	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	5	10	0
15	37	147	Golden Gate Boulevard	Everglades Blvd	Desoto Boulevard	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	0	-	0
16	58	105	Golden Gate Boulevard Ext	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-	0
17	31	161	Goodlette-Frank Road	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	5	10	0
18	66	91	Green Boulevard	Santa Barbara/ Logan Boulevard	Sunshine Boulevard	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	5	10	0
19	27	166	Green Boulevard Ext / 16th Ave SW	23rd St SW	Wilson Blvd Ext	New 2-Lane (Future Study Area)	10	0	-	0	-	0	-	5	10	0	-	0
20	33	154	Green Boulevard Ext / 16th Ave SW	CR 951	23rd Street SW	New 4-Lane (Future Study Area)	-	0	-	0	-	0	-	0	-	5	10	5
21	42	138	Green Boulevard Ext / 16th Ave SW	Wilson Blvd Ext	Everglades Boulevard	New 2-Lane Road	-	0	-	0	-	0	-	5	10	0	-	0
22	60	102	Critical Needs Intersection @ I-75	Everglades Blvd		New Interchange	-	5	20	0	-	5	10	0	-	0	-	5
23	8	250	Critical Needs Intersection @ I-75	Golden Gate Parkway @ I-75		Interchange Improvement	10	5	20	0	-	0	-	5	10	5	10	5
24	2	285	Critical Needs Intersection @ I-75	Collier Blvd (SR 951) @ I-75		Interchange Improvement	10	5	20	0	-	0	-	5	10	0	-	5
25	22	180	Critical Needs Intersection @ I-75	Immokalee Rd @ I-75		Interchange Improvement	10	5	20	0	-	0	-	5	10	5	10	5
26	18	190	Critical Needs Intersection @ I-75	Pine Ridge Rd @ I-75		Interchange Improvement	10	5	20	0	-	0	-	5	10	0	-	0
27	40	146	I-75 (SR-93) Interchange (new)(not in SIS)	Vanderbilt Beach Rd		New Interchange - Partial (to / from the North)	-	0	-	0	-	0	-	5	10	5	10	5
29	5	269	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd (CR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes	-	5	20	0	-	0	-	5	10	5	10	0
30	7	251	Immokalee Rd (CR 846)	Camp Keais Rd	Carver St	Widen from 2-Lanes to 4 Lanes	10	0	-	0	-	0	-	5	10	5	10	5
31	23	172	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	10	0	-	0	-	0	-	5	10	5	10	5
32	81	72	Keane Avenue	Inez Rd	Wilson Blvd Ext.	New 2-Lane Road (Future Study Area)	-	0	-	0	-	0	-	5	10	0	-	0
33	50	127	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	-	0	-	0	-	0	-	0	-	5	10	5
34	65	92	Logan Boulevard	Green Boulevard	Pine Ridge Road	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-	0
35	52	125	Logan Boulevard	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	0	-	5
36	67	89	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	0	-	0
37	38	147	Oil Well Road / CR 858	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	10	0	-	0
38	46	131	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Road	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	10	0	-	0
39	10	236	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	0	-	0
40	45	135	Orange Blossom Drive	Airport Pulling Road	Livingston Road	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	5	10	5
42	39	147	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	10	0	-	0
43	59	103	Randall Boulevard	Everglades Blvd	Desoto Blvd	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	0	-	0
44	61	101	Randall Boulevard Ext.	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	0	-	0	-	0	-	5	10	0	-	0
45	44	136	Santa Barbara Boulevard	Painted Leaf Lane	Green Boulevard	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	5	10	5	10	5	10	5
46	56	112	SR 29	SR 82	Collier/Hendry Line	Widen from 2-Lane to 4 Lanes	10	0	-	0	-	0	-	0	-	0	-	5
48	49	128	SR 29	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	10	0	-	0	-	0	-	0	-	5	10	5
50	24	172	SR 29	New Market Road North	North of SR-82	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	5	10	5
51	13	212	SR 29/New Market Road W - New Road	Immokalee Rd (CR 846)	New Market Road North	Widen from 2-Lane to 4-Lane	-	5	20	0	-	0	-	5	10	5	10	5
52	3	277	SR 29	Agriculture Way	CR 846 E	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	5	10	5	10	5
53	15	197	SR 29	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	0	-	0
54	16	197	SR 29	Oil Well Road	Sunniland Nursery Rd	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	0	-	0
55	6	263	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 2-Lane to 4-Lane	-	5	20	0	-	5	10	5	10	5	10	5
56	9	242	Collier Blvd (SR 951)	South of Manatee Rd	North of Tower Rd	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	5	10	0	-	5
57	4	275	Critical Needs Intersection @ US 41	Goodlette Rd @ US 41		Intersection Improvement	10	5	20	0	-	5	10	0	-	0	-	5
58	12	219	US 41	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	5	10	0	-	5
59	11	232	Critical Needs Intersection @ US 41	Collier Blvd (SR 951) @ US 41		Intersection Improvement	-	5	20	0	-	0	-	5	10	5	10	5
60	14	201	US 41	Immokalee Road	Old US 41	Widen from 2-Lane to 4-Lane	-	5	20	0	-	5	10	5	10	5	10	0
62	73	75	Vanderbilt Beach Road Ext	16th St	Big Cypress Parkway	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-	0
63	53	122	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	-	0	-	0	-	0	-	0	-	5	10	5
64	30	162	Wilson Blvd	Golden Gate Boulevard	Immokalee Rd	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	5	10	5	10	0
65	32	156	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	5	10	5	10	0
66	17	195	Immokalee Rd intersection	Livingston Rd		Intersection Improvement	-	5	20	0	-	0	-	5	10	0	-	0
67	57	106	Veterans Memorial Blvd Extension	Strand Blvd	I-75	New 4-Lane Road	-	0	-	0	-	0	-	5	10	0	-	0
68	83	45	Big Cypress Parkway intersection (new)	Oil Well Grade Rd		New At-Grade Intersection	-	0	-	0	-	0	-	0	-	0	-	0
70	68	86	Green Boulevard Extension	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road	-	0	-	0	-	0	-	0	-	0	-	0
73	20	190	Immokalee Rd (CR 846) intersection	Collier Blvd (CR 951)		Intersection Improvement	-	5	20	0	-	0	-	0	-	0	-	5
74	28	165	Immokalee Rd (CR 846) intersection	Wilson Blvd		Intersection Improvement	-	0	-	0	-	0	-	5	10	0	-	0
75	55	115	I-75 (SR-93) Interchange (new) (not in SIS)	Veterans Memorial Blvd		New Partial Interchange	-	0	-	0	-	0	-	5	10	0	-	5
76	43	137	Vanderbilt Drive	Immokalee Rd	Woods Edge Parkway	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	5	10	0
77	25	170	Pine Ridge Rd intersection	Livingston Rd		Intersection Improvement	10	5	20	0	-	0	-	5	10	5	10	5
78	29	165	Golden Gate Parkway intersection	Livingston Rd		Intersection Improvement	-	5	20	0	-	0	-	5	10	5	10	0
80	47	131	Vanderbilt Beach Road	Goodlette-Frank Road	Airport Pulling Road	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	10	5	10	0
81	74	75	Bridge @ 47th Avenue NE	West of Everglades Boulevard		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
82	75	75	Bridge @ Wilson Boulevard	South of 33rd Avenue NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
83	69	85	Bridge @ 18th Ave NE	between Wilson Boulevard N and 8th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	5	10	0	-	0
84	76	75	Bridge @ 18th Ave NE	between 8th Street NE and 16th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
85	64	95	Bridge @ 13th Street NW	north end at proposed Vanderbilt Beach Road Extension		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
86	77	75	Bridge @ 16th Street SE	South end		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
87	78	75	Bridge @ Location TBD - Assume 10th Avenue SE	East of Everglades Blvd		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
88	48	130	Bridge @Wilson Boulevard South, south end			New Bridge over Canal	-	0	-	0	-	0	-	5	10	0	-	0
89	79	75	Bridge @ 62nd Avenue NE	West of 40th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-	0
90	26	167	Pine Ridge Rd	Logan Blvd S	Collier Blvd (CR 951)	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	5	10	0
93	32	157	Immokalee Rd (CR 846)	43rd Ave NE/Shady Hollow Blvd E	North of 47th Avenue NE/Immokalee	Widen from 2-Lanes to 4-Lanes	10	0	-	0	-	0	-	0	-	0	-	0
94	57	113	Immokalee Road Rural Village Blvd (new)	Immokalee Rd (CR 846)	Immokalee Rd (CR 846)	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-	0
41A	19	190	Critical Needs Intersection @ Immokalee Rd	Immokalee Road @ Randall Blvd		Ultimate Intersection Improvement: Overpass	10	0	-	0	-	0	-	5	10	0	-	0
41B	36	151	Randall Boulevard	Immokalee Road	8th St NE	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	10	0	-	0

Note: Does not include Critical Needs Intersections [#95 through #114]; it was necessary to rank or prioritize

Collier MPO 2045 Long Range Transportation Plan
Needs Assessment Plan

Table 1B.Draft Evaluation Matrix
DRAFT - July 2020; updated 9/3/2020

							Promote Multimodal Solutions							8. Promote the Integrated Plannir				
							ltimodal ent to low onomic ods (poverty 0%)	7D - Transit improvements outside of current service area(SA) or within a CRA		7E - Bicycle or pedestrian improvement to transit access		7F - Bicycle/pedestrian infrastructure separation from vehicle travel lanes		8A - Improve access to regional travel (e.g. Interstates, Airports, Ports, and SIS)		8B - Improve access to tourist destinations		8C - Suppo redevelopm (multimodal a improve
							ent W/I=5 ment W/I=0	Outside the TSA (bus route) = 5 Inside a CRA = 5 No improvement = 0		Improve Access = 5 No improvement = 0		Improvement = 5 No improvement = 0		Improves access=5 Does not improve access=0		Improves access=5 Does not improve access=0		Yes No
							2.00	1.00		2.00		1.00		4.00		2.00		
2045 Map ID	2045 RANK	2045 Weighted Score	Project	From	To	Description	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score
1	51	126	Benfield Road Extension	The Lords Way	City Gate Boulevard North	New 2-Lane Road (Expandable to 4-Lanes)	10	5	5	0	-	0	-	0	-	0	-	0
2	41	138	Benfield Road	US 41 (SR 90) (Tamiami Trail East)	Rattlesnake-Hammock Ext	New 2-Lane Road (Expandable to 4-Lanes)	10	5	5	0	-	0	-	0	-	0	-	0
3	72	75	Big Cypress Parkway	North of I-75	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	-	5	5	0	-	0	-	0	-	0	-	0
4	70	83	Big Cypress Parkway	Golden Gate Blvd	Vanderbilt Beach Road Ext.	New 2-Lane Road (Expandable to 4-Lanes)	-	5	5	0	-	0	-	0	-	0	-	0
5	71	81	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-Lanes)	-	5	5	0	-	0	-	0	-	0	-	0
6	82	52	Big Cypress Parkway	Oil Well Road	Immokalee Rd	New 2-Lane Road (Expandable to 4-Lanes)	-	5	5	0	-	0	-	0	-	0	-	0
7	62	100	Camp Keais Road	Pope John Paul Blvd	Oil Well Road	Widen from 2-Lane to 4 Lanes	-	5	5	0	-	0	-	0	-	0	-	0
8	80	74	Camp Keais Road	Immokalee Road	Pope John Paul Blvd	Widen from 2-Lane to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-	0
9	1	286	Collier Blvd (CR 951)	Golden Gate Main Canal	Green Blvd	Widen from 4-Lanes to 6 Lanes	10	0	-	5	10	0	-	5	20	5	10	0
10	21	182	CR 951 Extension (new)	Heritage Bay Entrance (Collier Blvd (CR 951) northern terminus)	Lee/Collier County Line	New 2-Lane Road	10	5	5	0	-	0	-	5	20	0	-	0
11	34	152	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
12	35	152	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
13	54	121	Everglades Boulevard	Golden Gate Blvd	Vanderbilt Bch Rd Ext	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
14	63	99	Everglades Boulevard	I-75 (SR-93)	Golden Gate Blvd	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
15	37	147	Golden Gate Boulevard	Everglades Blvd	Desoto Boulevard	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
16	58	105	Golden Gate Boulevard Ext	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	5	5	0	-	0	-	0	-	0	-	0
17	31	161	Goodlette-Frank Road	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	5	10	0
18	66	91	Green Boulevard	Santa Barbara/ Logan Boulevard	Sunshine Boulevard	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	0	-	5	10	0
19	27	166	Green Boulevard Ext / 16th Ave SW	23rd St SW	Wilson Blvd Ext	New 2-Lane (Future Study Area)	-	5	5	0	-	0	-	0	-	5	10	0
20	33	154	Green Boulevard Ext / 16th Ave SW	CR 951	23rd Street SW	New 4-Lane (Future Study Area)	10	5	5	0	-	0	-	0	-	5	10	0
21	42	138	Green Boulevard Ext / 16th Ave SW	Wilson Blvd Ext	Everglades Boulevard	New 2-Lane Road	-	5	5	0	-	0	-	0	-	0	-	0
22	60	102	Critical Needs Intersection @ I-75	Everglades Blvd		New Interchange	10	0	-	0	-	0	-	5	20	0	-	0
23	8	250	Critical Needs Intersection @ I-75	Golden Gate Parkway @ I-75		Interchange Improvement	10	0	-	5	10	0	-	5	20	0	-	0
24	2	285	Critical Needs Intersection @ I-75	Collier Blvd (SR 951) @ I-75		Interchange Improvement	10	0	-	5	10	0	-	5	20	5	10	0
25	22	180	Critical Needs Intersection @ I-75	Immokalee Rd @ I-75		Interchange Improvement	10	0	-	5	10	0	-	5	20	5	10	0
26	18	190	Critical Needs Intersection @ I-75	Pine Ridge Rd @ I-75		Interchange Improvement	-	0	-	5	10	0	-	5	20		-	0
27	40	146	I-75 (SR-93) Interchange (new)(not in SIS)	Vanderbilt Beach Rd		New Interchange - Partial (to / from the North)	10	5	5	5	10	0	-	5	20	5	10	0
29	5	269	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd (CR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes	-	0	-	0	-	0	-	5	20	5	10	0
30	7	251	Immokalee Rd (CR 846)	Camp Keais Rd	Carver St	Widen from 2-Lanes to 4 Lanes	10	5	5	5	10	0	-	5	20	5	10	5
31	23	172	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	10	5	5	0	-	5	5	5	20	5	10	5
32	81	72	Keane Avenue	Inez Rd	Wilson Blvd Ext.	New 2-Lane Road (Future Study Area)	-	0	-	0	-	0	-	0	-	0	-	0
33	50	127	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	10	5	5	0	-	0	-	0	-	5	10	5
34	65	92	Logan Boulevard	Green Boulevard	Pine Ridge Road	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	5	10	0
35	52	125	Logan Boulevard	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	10	5	5	0	-	0	-	0	-	5	10	0
36	67	89	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
37	38	147	Oil Well Road / CR 858	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-	0
38	46	131	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Road	Widen from 2-Lanes to 6-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
39	10	236	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	5	5	0	-	0	-	0
40	45	135	Orange Blossom Drive	Airport Pulling Road	Livingston Road	Widen from 2-Lanes to 4-Lanes	10	5	5	0	-	0	-	0	-	0	-	0
42	39	147	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
43	59	103	Randall Boulevard	Everglades Blvd	Desoto Blvd	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	0	-	0	-	0
44	61	101	Randall Boulevard Ext.	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	5	5	0	-	0	-	0	-	0	-	0
45	44	136	Santa Barbara Boulevard	Painted Leaf Lane	Green Boulevard	Widen from 4-Lanes to 6-Lanes	10	0	-	0	-	0	-	0	-	5	10	0
46	56	112	SR 29	SR 82	Collier/Hendry Line	Widen from 2-Lane to 4 Lanes	10	0	-	0	-	0	-	5	20	0	-	0
48	49	128	SR 29	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	10	0	-	0	-	0	-	5	20	5	10	0
50	24	172	SR 29	New Market Road North	North of SR-82	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	5	20	0	-	5
51	13	212	SR 29/New Market Road W - New Road	Immokalee Rd (CR 846)	New Market Road North	Widen from 2-Lane to 4-Lane	10	5	5	0	-	0	-	5	20	5	10	5
52	3	277	SR 29	Agriculture Way	CR 846 E	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	5	20	5	10	5
53	15	197	SR 29	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	5	20	0	-	5
54	16	197	SR 29	Oil Well Road	Sunniland Nursery Rd	Widen from 2-Lane to 4-Lane	-	5	5	0	-	0	-	5	20	0	-	0
55	6	263	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 2-Lane to 4-Lane	10	0	-	5	10	0	-	0	-	5	10	5
56	9	242	Collier Blvd (SR 951)	South of Manatee Rd	North of Tower Rd	Widen from 2-Lane to 4-Lane	10	0	-	5	10	0	-	5	20	5	10	0
57	4	275	Critical Needs Intersection @ US 41	Goodlette Rd @ US 41		Intersection Improvement	10	0	-	5	10	0	-	5	20	5	10	5
58	12	219	US 41	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	5	20	0	-	0
59	11	232	Critical Needs Intersection @ US 41	Collier Blvd (SR 951) @ US 41		Intersection Improvement	10	0	-	5	10	0	-	5	20	5	10	0
60	14	201	US 41	Immokalee Road	Old US 41	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	5	20	5	10	0
62	73	75	Vanderbilt Beach Road Ext	16th St	Big Cypress Parkway	New 2-Lane Road (Expandable to 4-Lanes)	-	5	5	0	-	0	-	0	-	0	-	0
63	53	122	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	10	0	-	0	-	0	-	0	-	5	10	5
64	30	162	Wilson Blvd	Golden Gate Boulevard	Immokalee Rd	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-	0
65	32	156	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-	0
66	17	195	Immokalee Rd intersection	Livingston Rd		Intersection Improvement	-	0	-	5	10	0	-	5	20	5	10	0
67	57	106	Veterans Memorial Blvd Extension	Strand Blvd	I-75	New 4-Lane Road	-	0	-	0	-	0	-	0	-	5	10	0
68	83	45	Big Cypress Parkway intersection (new)	Oil Well Grade Rd		New At-Grade Intersection	-	0	-	0	-	0	-	0	-	0	-	0
70	68	86	Green Boulevard Extension	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road	-	0	-	0	-	0	-	0	-	0	-	0
73	20	190	Immokalee Rd (CR 846) intersection	Collier Blvd (CR 951)		Intersection Improvement	10	0	-	5	10	0	-	5	20	0	-	0
74	28	165	Immokalee Rd (CR 846) intersection	Wilson Blvd		Intersection Improvement	-	0	-	5	10	0	-	5	20	0	-	0
75	55	115	I-75 (SR-93) Interchange (new) (not in SIS)	Veterans Memorial Blvd		New Partial Interchange	10	5	5	0	-	0	-	5	20	0	-	0
76	43	137	Vanderbilt Drive	Immokalee Rd	Woods Edge Parkway	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	5	10	0
77	25	170	Pine Ridge Rd intersection	Livingston Rd		Intersection Improvement	10	0	-	5	10	0	-	5	20	0	-	0
78	29	165	Golden Gate Parkway intersection	Livingston Rd		Intersection Improvement	-	0	-	5	10	0	-	5	20	0	-	0
80	47	131	Vanderbilt Beach Road	Goodlette-Frank Road	Airport Pulling Road	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-	0
81	74	75	Bridge @ 47th Avenue NE	West of Everglades Boulevard		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
82	75	75	Bridge @ Wilson Boulevard	South of 33rd Avenue NE		New Bridge over Canal	-	5	5	0	-	0	-		-	0	-	0
83	69	85	Bridge @ 18th Ave NE	between Wilson Boulevard N and 8th Street NE		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
84	76	75	Bridge @ 18th Ave NE	between 8th Street NE and 16th Street NE		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
85	64	95	Bridge @ 13th Street NW	north end at proposed Vanderbilt Beach Road Extension		New Bridge over Canal	-	5	5	0	-	0	-	5	20	0	-	0
86	77	75	Bridge @ 16th Street SE	South end		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
87	78	75	Bridge @ Location TBD - Assume 10th Avenue SE	East of Everglades Blvd		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
88	48	130	Bridge @Wilson Boulevard South, south end			New Bridge over Canal	-	5	5	0	-	0	-	5	20	0	-	0
89	79	75	Bridge @ 62nd Avenue NE	West of 40th Street NE		New Bridge over Canal	-	5	5	0	-	0	-	0	-	0	-	0
90	26	167	Pine Ridge Rd	Logan Blvd S	Collier Blvd (CR 951)	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	5	20	0	-	0
93	32	157	Immokalee Rd (CR 846)	43rd Ave NE/Shady Hollow Blvd E	North of 47th Avenue NE/Immokalee	Widen from 2-Lanes to 4-Lanes	-	5	5	5	10	5	5	5	20	0	-	0
94	57	113	Immokalee Road Rural Village Blvd (new)	Immokalee Rd (CR 846)	Immokalee Rd (CR 846)	New 4-Lane Road	-	0	-	5	10	0	-	0	-	0	-	0
41A	19	190	Critical Needs Intersection @ Immokalee Rd	Immokalee Road @ Randall Blvd		Ultimate Intersection Improvement: Overpass	-	0	-	5	10	0	-	5	20	0	-	0
41B	36	151	Randall Boulevard	Immokalee Road	8th St NE	Widen from 2-Lanes to 6-Lanes	-	5	5	0	-	0	-	0	-	0	-	0

Note: Does not include Critical Needs Intersections [#95 through #114]; it was necessary to rank or prioritize

Collier MPO 2045 Long Range Transportation Plan
Needs Assessment Plan

Table 1B.Draft Evaluation Matrix
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							ng of Transportation and Land Use					9. Promote Sustainability in the Planning of Transportation and Land Use		10. Consider Climate Change Vulnerability and Risk in Transportation Decision Making		11. Consider Autonomous and Connected Vehicles (A/V) Technology in the Future	
							rt Targeted ents or CRAs and/or vehicle ements)	8D - Identified as a priority in partner agency plans (City, Transit, MPO, etc.)		8E - Vehicle or freight improvement to an intermodal facility		Project benefits low income areas and improves sustainability and equity through increased housing choices and reduced auto dependency		Project promotes transportation infrastructure resiliency in the face of climate change and sea level rise		Utilize technological improvements (Intelligent Transportation Systems, Transit Signal Priority, etc.)	
							=5 =0	Connections to other municipalities or counties Yes = 5 No = 0		Does the project improve vehicle or freight movement to intermodal facilities (i.e. airport, bus transfer station, freight center, park-n-ride etc.) Yes = 5 No = 0		Does the project bring better mobility to a low income areas and CRA's (i.e., bike/ped, improvement along a bus route or stop, etc.) Project in target area=5 Project not in target area=0		If project within 0.25 miles of 1 ft SLR Flooding =5 If project within 0.25 miles of 1 ft SLR Low Lying Area = 3 Not in high risk area=0		travel modes improved=5 travel modes not improved=0	
							2.00	1.00		1.00		8.00		4.00		4.00	
2045 Map ID	2045 RANK	2045 Weighted Score	Project	From	To	Description	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
1	51	126	Benfield Road Extension	The Lords Way	City Gate Boulevard North	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	5	5	5	40	0	-	0	-
2	41	138	Benfield Road	US 41 (SR 90) (Tamiami Trail East)	Rattlesnake-Hammock Ext	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	5	5	5	40	3	12	0	-
3	72	75	Big Cypress Parkway	North of I-75	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-
4	70	83	Big Cypress Parkway	Golden Gate Blvd	Vanderbilt Beach Road Ext.	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-
5	71	81	Big Cypress Parkway	Vanderbilt Beach Road Ext.	Oil Well Road	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-
6	82	52	Big Cypress Parkway	Oil Well Road	Immokalee Rd	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-
7	62	100	Camp Keais Road	Pope John Paul Blvd	Oil Well Road	Widen from 2-Lane to 4 Lanes	-	0	-	5	5	0	-	0	-	0	-
8	80	74	Camp Keais Road	Immokalee Road	Pope John Paul Blvd	Widen from 2-Lane to 4-Lanes	-	0	-	5	5	0	-	0	-	0	-
9	1	286	Collier Blvd (CR 951)	Golden Gate Main Canal	Green Blvd	Widen from 4-Lanes to 6 Lanes	-	0	-	5	5	5	40	0	-	0	-
10	21	182	CR 951 Extension (new)	Heritage Bay Entrance (Collier Blvd (CR 951) northern terminus)	Lee/Collier County Line	New 2-Lane Road	-	5	5	0	-	5	40	0	-	0	-
11	34	152	Everglades Boulevard	Randall Blvd	South of Oil Well Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
12	35	152	Everglades Boulevard	Vanderbilt Bch Rd Ext	Randall Blvd	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
13	54	121	Everglades Boulevard	Golden Gate Blvd	Vanderbilt Bch Rd Ext	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
14	63	99	Everglades Boulevard	I-75 (SR-93)	Golden Gate Blvd	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
15	37	147	Golden Gate Boulevard	Everglades Blvd	Desoto Boulevard	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
16	58	105	Golden Gate Boulevard Ext	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-
17	31	161	Goodlette-Frank Road	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	-	0	-	5	5	0	-	5	20	0	-
18	66	91	Green Boulevard	Santa Barbara/ Logan Boulevard	Sunshine Boulevard	Widen from 2-Lane to 4-Lane	-	0	-	0	-	0	-	0	-	0	-
19	27	166	Green Boulevard Ext / 16th Ave SW	23rd St SW	Wilson Blvd Ext	New 2-Lane (Future Study Area)	-	0	-	0	-	0	-	0	-	0	-
20	33	154	Green Boulevard Ext / 16th Ave SW	CR 951	23rd Street SW	New 4-Lane (Future Study Area)	-	0	-	0	-	0	-	0	-	0	-
21	42	138	Green Boulevard Ext / 16th Ave SW	Wilson Blvd Ext	Everglades Boulevard	New 2-Lane Road	-	0	-	0	-	0	-	0	-	0	-
22	60	102	Critical Needs Intersection @ I-75	Everglades Blvd		New Interchange	-	5	5	0	-	0	-	0	-	5	20
23	8	250	Critical Needs Intersection @ I-75	Golden Gate Parkway @ I-75		Interchange Improvement	-	5	5	5	5	5	40	0	-	5	20
24	2	285	Critical Needs Intersection @ I-75	Collier Blvd (SR 951) @ I-75		Interchange Improvement	-	5	5	5	5	0	-	0	-	5	20
25	22	180	Critical Needs Intersection @ I-75	Immokalee Rd @ I-75		Interchange Improvement	-	5	5	5	5	0	-	0	-	5	20
26	18	190	Critical Needs Intersection @ I-75	Pine Ridge Rd @ I-75		Interchange Improvement	-	5	5	5	5	5	40	0	-	5	20
27	40	146	I-75 (SR-93) Interchange (new)(not in SIS)	Vanderbilt Beach Rd		New Interchange - Partial (to / from the North)	-	5	5	5	5	0	-	0	-	5	20
29	5	269	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd (CR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes	-	5	5	5	5	0	-	3	12	5	20
30	7	251	Immokalee Rd (CR 846)	Camp Keais Rd	Carver St	Widen from 2-Lanes to 4 Lanes	10	0	-	0	-	5	40	0	-	0	-
31	23	172	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	10	0	-	5	5	5	40	0	-	0	-
32	81	72	Keane Avenue	Inez Rd	Wilson Blvd Ext.	New 2-Lane Road (Future Study Area)	-	0	-	0	-	0	-	0	-	0	-
33	50	127	Little League Rd. Ext.	SR-82	Westclox St.	New 2-Lane Road	10	0	-	0	-	0	-	0	-	0	-
34	65	92	Logan Boulevard	Green Boulevard	Pine Ridge Road	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-
35	52	125	Logan Boulevard	Vanderbilt Beach Road	Immokalee Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
36	67	89	Logan Boulevard	Pine Ridge Road	Vanderbilt Beach Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
37	38	147	Oil Well Road / CR 858	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-
38	46	131	Oil Well Road / CR 858	Ave Maria Entrance	Camp Keais Road	Widen from 2-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-
39	10	236	Old US 41	US 41 (SR 45)	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	5	40	0	-	0	-
40	45	135	Orange Blossom Drive	Airport Pulling Road	Livingston Road	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
42	39	147	Randall Boulevard	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	-	0	-	5	5	0	-	0	-	0	-
43	59	103	Randall Boulevard	Everglades Blvd	Desoto Blvd	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
44	61	101	Randall Boulevard Ext.	Desoto Blvd	Big Cypress Parkway	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-
45	44	136	Santa Barbara Boulevard	Painted Leaf Lane	Green Boulevard	Widen from 4-Lanes to 6-Lanes	-	0	-	0	-	0	-	0	-	0	-
46	56	112	SR 29	SR 82	Collier/Hendry Line	Widen from 2-Lane to 4 Lanes	-	5	5	0	-	0	-	0	-	0	-
48	49	128	SR 29	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	-	5	5	0	-	0	-	0	-	0	-
50	24	172	SR 29	New Market Road North	North of SR-82	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	0	-
51	13	212	SR 29/New Market Road W - New Road	Immokalee Rd (CR 846)	New Market Road North	Widen from 2-Lane to 4-Lane	10	0	-	5	5		-	0	-	0	-
52	3	277	SR 29	Agriculture Way	CR 846 E	Widen from 2-Lane to 4-Lane	10	0	-	0	-	5	40	0	-	0	-
53	15	197	SR 29	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lane to 4-Lane	10	0	-	0	-	0	-	0	-	0	-
54	16	197	SR 29	Oil Well Road	Sunniland Nursery Rd	Widen from 2-Lane to 4-Lane	-	5	5	0	-	0	-	0	-	0	-
55	6	263	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 2-Lane to 4-Lane	10	0	-	5	5	5	40	3	12	0	-
56	9	242	Collier Blvd (SR 951)	South of Manatee Rd	North of Tower Rd	Widen from 2-Lane to 4-Lane	-	5	5	5	5	5	40	5	20	0	-
57	4	275	Critical Needs Intersection @ US 41	Goodlette Rd @ US 41		Intersection Improvement	10	0	-	5	5	5	40	5	20	5	20
58	12	219	US 41	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4-Lane	-	0	-	5	5	5	40	3	12	0	-
59	11	232	Critical Needs Intersection @ US 41	Collier Blvd (SR 951) @ US 41		Intersection Improvement	-	5	5	5	5	0	-	3	12	0	-
60	14	201	US 41	Immokalee Road	Old US 41	Widen from 2-Lane to 4-Lane	-	5	5	5	5	0	-	5	20	0	-
62	73	75	Vanderbilt Beach Road Ext	16th St	Big Cypress Parkway	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	0	-	0	-	0	-	0	-
63	53	122	Westclox Street Extension	Little League Road	West of Carson Road	New 2-Lane Road	10	0	-	0	-	0	-	0	-	0	-
64	30	162	Wilson Blvd	Golden Gate Boulevard	Immokalee Rd	Widen from 2-Lanes to 4-Lanes	-	0	-	5	5	0	-	0	-	0	-
65	32	156	Wilson Blvd	Keane Ave	Golden Gate Boulevard	New 2-Lane Road (Expandable to 4-Lanes)	-	0	-	5	5	0	-	0	-	0	-
66	17	195	Immokalee Rd intersection	Livingston Rd		Intersection Improvement	-	0	-	5	5	0	-	0	-	0	-
67	57	106	Veterans Memorial Blvd Extension	Strand Blvd	I-75	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-
68	83	45	Big Cypress Parkway intersection (new)	Oil Well Grade Rd		New At-Grade Intersection	-	0	-	0	-	0	-		-	0	-
70	68	86	Green Boulevard Extension	Everglades Blvd	Big Cypress Parkway	New 2-Lane Road	-	0	-		-	0	-	0	-	0	-
73	20	190	Immokalee Rd (CR 846) intersection	Collier Blvd (CR 951)		Intersection Improvement	-	5	5	5	5	0	-	0	-	0	-
74	28	165	Immokalee Rd (CR 846) intersection	Wilson Blvd		Intersection Improvement	-	0	-	5	5	0	-	0	-	0	-
75	55	115	I-75 (SR-93) Interchange (new) (not in SIS)	Veterans Memorial Blvd		New Partial Interchange	-	5	5	0	-	0	-	0	-	5	20
76	43	137	Vanderbilt Drive	Immokalee Rd	Woods Edge Parkway	Widen from 2-Lanes to 4-Lanes	-	5	5	0	-	0	-	5	20	0	-
77	25	170	Pine Ridge Rd intersection	Livingston Rd		Intersection Improvement	-	5	5	0	-	0	-	0	-	0	-
78	29	165	Golden Gate Parkway intersection	Livingston Rd		Intersection Improvement	-	5	5	0	-	0	-	0	-	0	-
80	47	131	Vanderbilt Beach Road	Goodlette-Frank Road	Airport Pulling Road	Widen from 4-Lanes to 6-Lanes	-	0	-	5	5	0	-	5	20	0	-
81	74	75	Bridge @ 47th Avenue NE	West of Everglades Boulevard		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
82	75	75	Bridge @ Wilson Boulevard	South of 33rd Avenue NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
83	69	85	Bridge @ 18th Ave NE	between Wilson Boulevard N and 8th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
84	76	75	Bridge @ 18th Ave NE	between 8th Street NE and 16th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
85	64	95	Bridge @ 13th Street NW	north end at proposed Vanderbilt Beach Road Extension		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
86	77	75	Bridge @ 16th Street SE	South end		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
87	78	75	Bridge @ Location TBD - Assume 10th Avenue SE	East of Everglades Blvd		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
88	48	130	Bridge @Wilson Boulevard South, south end			New Bridge over Canal	-	0	-	5	5	0	-	0	-	0	-
89	79	75	Bridge @ 62nd Avenue NE	West of 40th Street NE		New Bridge over Canal	-	0	-	0	-	0	-	0	-	0	-
90	26	167	Pine Ridge Rd	Logan Blvd S	Collier Blvd (CR 951)	Widen from 4-Lanes to 6-Lanes	-	5	5	0	-	5	40	0	-	0	-
93	32	157	Immokalee Rd (CR 846)	43rd Ave NE/Shady Hollow Blvd E	North of 47th Avenue NE/Immokalee	Widen from 2-Lanes to 4-Lanes	-	0	-	0	-	0	-	0	-	0	-
94	57	113	Immokalee Road Rural Village Blvd (new)	Immokalee Rd (CR 846)	Immokalee Rd (CR 846)	New 4-Lane Road	-	0	-	0	-	0	-	0	-	0	-
41A	19	190	Critical Needs Intersection @ Immokalee Rd	Immokalee Road @ Randall Blvd		Ultimate Intersection Improvement: Overpass	-	0	-	5	5	0	-	0	-	0	-
41B	36	151	Randall Boulevard	Immokalee Road	8th St NE	Widen from 2-Lanes to 6-Lanes	-	0	-	5	5	0	-	0	-	0	-

Note: Does not include Critical Needs Intersections [#95 through #114]; it was necessary to rank or prioritize

Table 1A.2045 Needs Plan List of Projects					
Map ID	Needs Ranking	Project	From	To	Description
1	51	Benfield Rd. Ext.	The Lords Way	City Gate Blvd. N	New Two-Lane Road (Expandable to Four Lanes)
2	41	Benfield Rd.	US 41 (SR 90) (Tamiami Trail E)	Rattlesnake Hammock Ext.	New Two-Lane Road (Expandable to Four Lanes)
3	72	Big Cypress Pkwy.	Green Blvd.	Golden Gate Blvd.	New Two-Lane Road (Expandable to Four Lanes)
4	70	Big Cypress Pkwy.	Golden Gate Blvd.	Vanderbilt Beach Road Ext.	New Two-Lane Road (Expandable to Four Lanes)
5	71	Big Cypress Pkwy.	Vanderbilt Beach Rd. Ext.	Oil Well Rd.	New Two-Lane Road (Expandable to Four Lanes)
6	82	Big Cypress Pkwy.	Oil Well Rd.	Immokalee Rd.	New Two-Lane Road (Expandable to Four Lanes)
7	62	Camp Keais Rd.	Pope John Paul Blvd.	Oil Well Rd.	Widen from Two to Four Lanes
8	80	Camp Keais Rd.	Immokalee Rd.	Pope John Paul Blvd.	Widen from Two to Four Lanes
9	1	Collier Blvd. (CR 951)	Golden Gate Main Canal	Green Blvd.	Widen from Four to Six Lanes
10	21	CR 951 Ext.	Collier Blvd. (CR 951) (northern terminus)	Lee/Collier County Line	New 2-Lane Road
11	34	Everglades Blvd.	Randall Blvd.	South of Oil Well Road	Widen from Two to Four Lanes
12	35	Everglades Blvd.	Vanderbilt Beach Rd. Ext.	Randall Blvd.	Widen from Two to Four Lanes
13	54	Everglades Blvd.	Golden Gate Blvd.	Vanderbilt Beach Rd. Ext.	Widen from Two to Four Lanes
14	63	Everglades Blvd.	I-75 (SR-93)	Golden Gate Blvd.	Widen from Two to Four Lanes
15	37	Golden Gate Blvd.	Everglades Blvd.	Desoto Blvd.	Widen from Two to Four Lanes
16	58	Golden Gate Blvd. Ext.	Desoto Blvd.	Big Cypress Pkwy.	New Four-Lane Road
17	31	Goodlette-Frank Rd.	Vanderbilt Beach Rd.	Immokalee Rd.	Widen from Two to Four Lanes
18	66	Green Blvd.	Santa Barbara Blvd./ Logan Blvd.	Sunshine Blvd.	Widen from Two to Four Lanes
19	27	Green Boulevard Ext. (16th Ave. SW)	23rd St. SW	Wilson Blvd. Ext.	New Two-Lane (Future Study Area)
20	33	Green Boulevard Ext. (16th Ave. SW)	Collier Blvd. (CR 951)	23rd St. SW	New Four-Lane (Future Study Area)
21	42	Green Boulevard Ext. (16th Ave. SW)	Wilson Blvd. Ext	Everglades Blvd.	New Two-Lane Road
22	60	I-75 (SR-93) Interchange	Everglades Blvd.		New Interchange
23	8	I-75 (SR-93) Interchange (modified)	Golden Gate Pkwy.		Interchange Improvement
24	2	I-75 (SR-93) Interchange (modified)	Collier Blvd. (CR 951)		Interchange Improvement
25	22	I-75 (SR-93) Interchange (modified)	Immokalee Rd.		Interchange improvement (DDI proposed)
27	40	I-75 (SR-93) Interchange (new)	Vanderbilt Beach Rd.		New Interchange - Partial (to/from the north)
29	5	I-75 (SR-93) Managed (Toll) Lanes	Collier Blvd. (CR 951)	Collier/Lee County Line	New Ten-Lane Express (Toll) Lanes
30	7	Immokalee Rd. (CR 846)	Camp Keais Rd.	Carver St.	Widen from Two to Four Lanes
31	23	CR 846 E	SR 29	Airpark Blvd.	Widen from Two to Four Lanes
32	81	Keane Ave.	Inez Rd.	Wilson Blvd. Ext.	New Two-Lane Road (Future Study Area)
33	50	Little League Rd. Ext.	SR 82	Westclox St.	New Two-Lane Road
34	65	Logan Blvd.	Green Blvd.	Pine Ridge Rd.	Widen from Four to Six Lanes
35	52	Logan Blvd.	Vanderbilt Beach Rd.	Immokalee Rd.	Widen from Two to Four Lanes
36	67	Logan Blvd.	Pine Ridge Rd.	Vanderbilt Beach Rd.	Widen from Two to Four Lanes
37	38	Oil Well RoadCR 858	Everglades Blvd.	Oil Well Grade Rd.	Widen from Two to Six Lanes
38	46	Oil Well RoadCR 858	Ave Maria Entrance	Camp Keais Rd.	Widen from Two to Six Lanes
39	10	Old US 41	US 41 (Tamiami Trail E)	Lee/Collier County Line	Widen from Two to Four Lanes
40	45	Orange Blossom Drive	Airport Pulling Rd.	Livingston Rd.	Widen from Two to Four Lanes
41A	19	Randall Blvd. Intersection (flyover)	Immokalee Rd.		Ultimate Intersection Improvement: Overpass
41B	36	Randall Blvd.	Immokalee Rd.	8th St. NE	Widen from Two to Six Lanes
42	39	Randall Blvd.	8th St. NE	Everglades Blvd.	Widen from Two to Six Lanes
43	59	Randall Blvd.	Everglades Blvd.	Desoto Blvd.	Widen from Two to Four Lanes
44	61	Randall Blvd.	Desoto Blvd.	Big Cypress Pkwy.	New Four-Lane Road
45	44	Santa Barbara Blvd.	Painted Leaf Ln.	Green Blvd.	Widen from Four to Six Lanes
46	56	SR 29	SR 82	Collier/Hendry Line	Widen from Two to Four Lanes
48	49	SR 29	I-75 (SR 93)	Oil Well Rd.	Widen from Two to Four Lanes
50	24	SR 29	New Market Road North/Westclox Street	North of SR 82	Widen from Two to Four Lanes
51	13	SR 29/New Market Rd. W (New Road)	CR 846 E	New Market Rd. N	New Four-Lane Road
52	3	SR 29	Agriculture Way	CR 846 E	Widen from Two to Four Lanes
53	15	SR 29	Sunniland Nursery Rd.	Agriculture Way	Widen from Two to Four Lanes
54	16	SR 29	Oil Well Rd.	Sunniland Nursery Rd.	Widen from Two to Four Lanes
55	6	SR 84 (Davis Blvd.)	Airport Pulling Rd.	Santa Barbara Blvd.	Widen from Four to Six Lanes

Table 1A. 2045 Needs Plan List of Projects					
Map ID	Needs Ranking	Project	From	To	Description
56	9	Collier Blvd. (SR 951)	South of Manatee Rd.	North of Tower Rd.	Widen from Four to Six Lanes
57	4	US 41 (SR 90) (Tamiami Trail E) intersection	Goodlette-Frank Rd.		Major Intersection Improvement
58	12	US 41 (SR 90) (Tamiami Trail E)	Greenway Rd.	6 L Farm Rd	Widen from Two to Four Lanes
59	11	US 41 (SR 90) (Tamiami Trail E) intersection	Collier Blvd. (SR 951)		Major Intersection Improvement
60	14	US 41 (SR 90) (Tamiami Trail E)	Immokalee Rd.	Old US 41	Further Study Required
62A	73	Vanderbilt Beach Rd. Ext.	16th St.	Everglades Blvd.	New Two-Lane Road (Expandable to Four Lanes)
62B	73	Vanderbilt Beach Rd. Ext.	Everglades Blvd.	Big Cypress Pkwy.	New Two-Lane Road (Expandable to Four Lanes)
63	53	Westclox Street Ext.	Little League Rd.	West of Carson Rd.	New Two-Lane Road
65	32	Wilson Blvd.	Keane Ave.	Golden Gate Blvd.	New Two-Lane Road (Expandable to Four Lanes)
66	17	Immokalee Rd. (Intersection)	Livingston Rd.		Major Intersection Improvement
67	57	Veterans Memorial Blvd. Ext.	Strand Blvd.	I-75	New Four-Lane Road
68	83	Big Cypress Pkwy. Intersection (new)	Oil Well Grade Rd.		New At-Grade Intersection
69	N/A	Everglades Blvd	Oil Well Rd / CR 858	Immokalee Rd	Widen from Two to Four Lanes
70	68	Green Blvd. Ext.	Everglades Blvd.	Big Cypress Pkwy.	New Two-Lane Road
73	20	Immokalee Rd. (CR 846) Intersection	Collier Blvd. (CR 951)		Major Intersection Improvement
74	28	Immokalee Rd. (CR 846) Intersection	Wilson Blvd.		Major Intersection Improvement
75	55	I-75 (SR-93) Interchange (new)	Veterans Memorial Blvd.		New Partial Interchange
76	43	Vanderbilt Dr.	Immokalee Rd.	Woods Edge Pkwy.	Widen from Two to Four Lanes
78	29	Golden Gate Pkwy. Intersection	Livingston Rd.		Major Intersection Improvement
81	74	Bridge @ 47th Ave NE	West of Everglades Blvd.		New Bridge over Canal
82	75	Bridge @ Wilson Blvd.	South of 33rd Avenue NE		New Bridge over Canal
83	69	Bridge @ 18th Ave. NE	Between Wilson Blvd. N and 8th St. NE		New Bridge over Canal
84	76	Bridge @ 18th Ave NE	Between 8th St. NE and 16th St. NE		New Bridge over Canal
85	64	Bridge @ 13th St. NW	North Terminus at Vanderbilt Beach Rd. Ext.		New Bridge over Canal
86	77	Bridge @ 16th St. SE	South Terminus		New Bridge over Canal
87	77	Bridge @ Location TBD - Assume 10th Ave. SE	East of Everglades Blvd.		New Bridge over Canal
88	48	Bridge @Wilson Blvd. S	South Terminus		New Bridge over Canal
89	79	Bridge @ 62nd Ave NE	West of 40th St NE		New Bridge over Canal
115	N/A	Bridge @ 23rd St. SW	South of Golden Gate Blvd.		New Bridge over Canal
90	26	Pine Ridge Rd.	Logan Blvd.	Collier Blvd.	Widen from Four to Six Lanes
92	N/A	SR 82	Hendry County Line	Gator Slough Ln.	Widen from Two to Four Lanes
93	32	Immokalee Rd.	Shady Hollow Blvd. E	Rural Village Rd. (new)	Widen from Two Four Lanes
94	57	Rural Village Rd. (new)	Immokalee Rd.	Immokalee Rd.	New Four-Lane Road
95	N/A	Golden Gate Pkwy. (Intersection)	Goodlette-Frank Rd.		Major Intersection Improvement
96	N/A	Pine Ridge Rd. (Intersection)	Airport Pulling Rd.		Minor intersection improvements
97	N/A	Immokalee Rd. (Intersection)	Logan Blvd.		Major Intersection Improvement
98	N/A	Vanderbilt Beach Rd. (Intersection)	Livingston Rd.		Minor intersection improvements
99	N/A	Vanderbilt Beach Rd. (Intersection)	Logan Blvd.		Minor intersection improvements
100	N/A	Collier Blvd. (Intersection)	Pine Ridge Rd.		Major Intersection Improvement
101	N/A	Pine Ridge Rd. (Intersection)	Goodlette-Frank Rd.		Minor intersection improvements
102	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Vanderbilt Beach Rd.		Major Intersection Improvement
103	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Pine Ridge Rd.		Major Intersection Improvement
104	N/A	US 41 (SR 90) (Tamiami Trail E) intersection	Golden Gate Pkwy.		Major Intersection Improvement
107	N/A	Golden Gate Pkwy.	Collier Blvd.		Major Intersection Improvement
108	N/A	Vanderbilt Beach Rd.	Airport Pulling Rd.		Intersection Innovation/Improvements
109	N/A	Immokalee Rd.	Goodlette-Frank Rd.		Intersection Innovation/Improvements
110	N/A	Immokalee Rd.	Airport Pulling Rd.		Intersection Innovation/Improvements
111	N/A	US 41	Immokalee Rd.		Intersection Innovation/Improvements
112	N/A	Airport Pulling Rd.	Orange Blossom Dr.		Intersection Innovation/Improvements
113	N/A	Airport Pulling Rd.	Golden Gate Pkwy.		Intersection Innovation/Improvements
114	N/A	Airport Pulling Rd.	Radio Rd.		Intersection Innovation/Improvements

Exhibit 1 - 2045 Needs Plan Projects

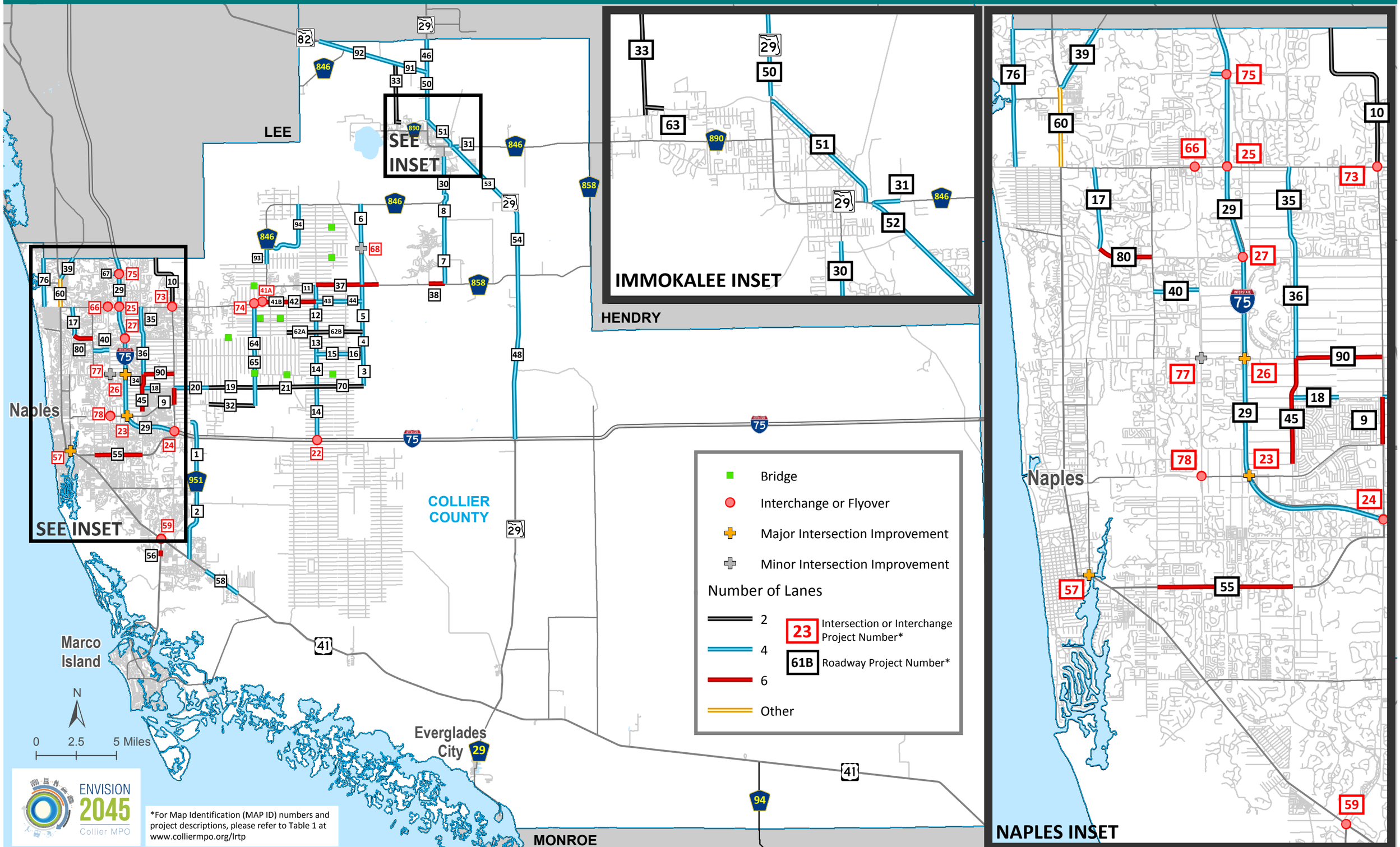


Exhibit 2 - Evacuation Routes

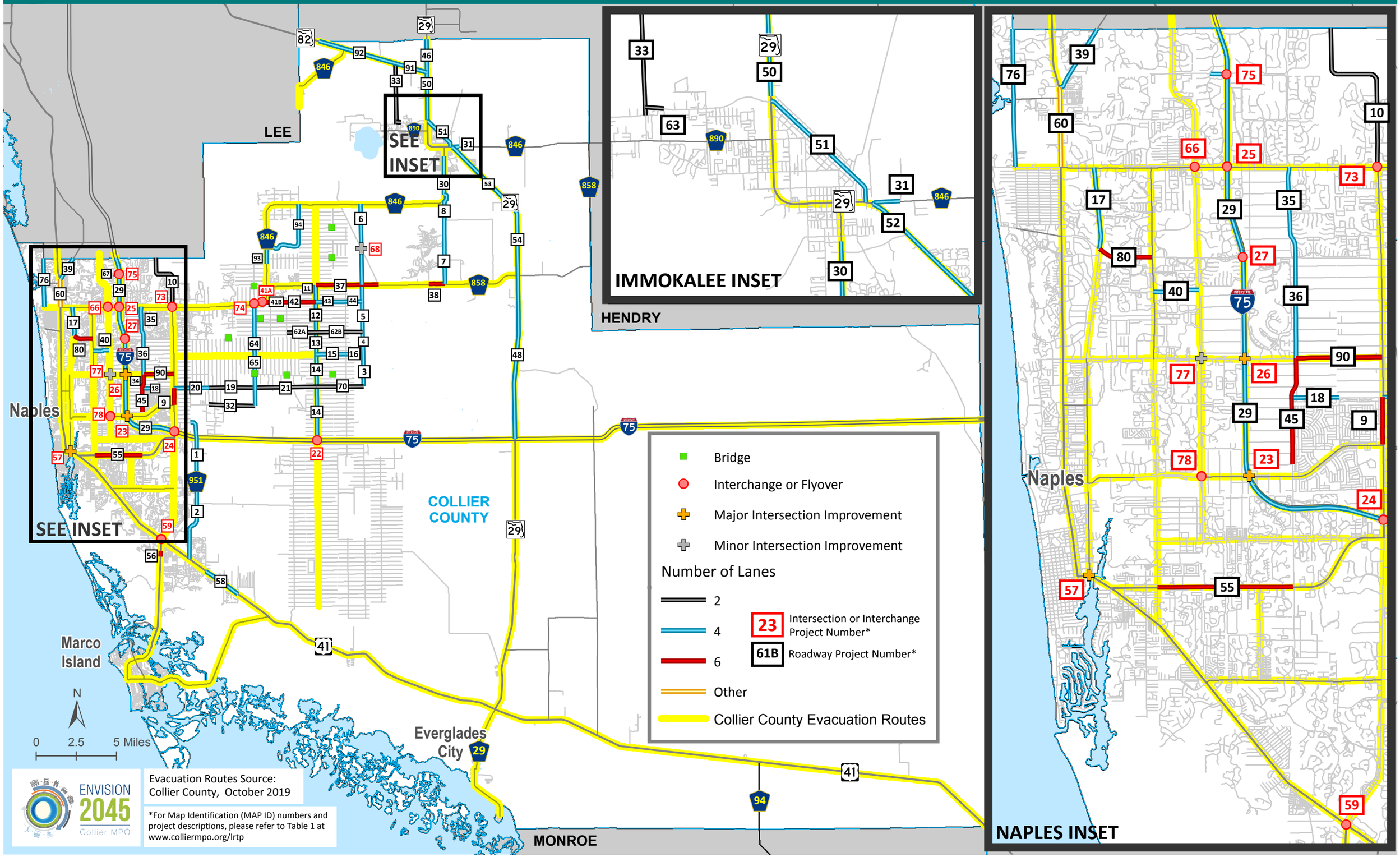


Exhibit 3 - Wetland Areas

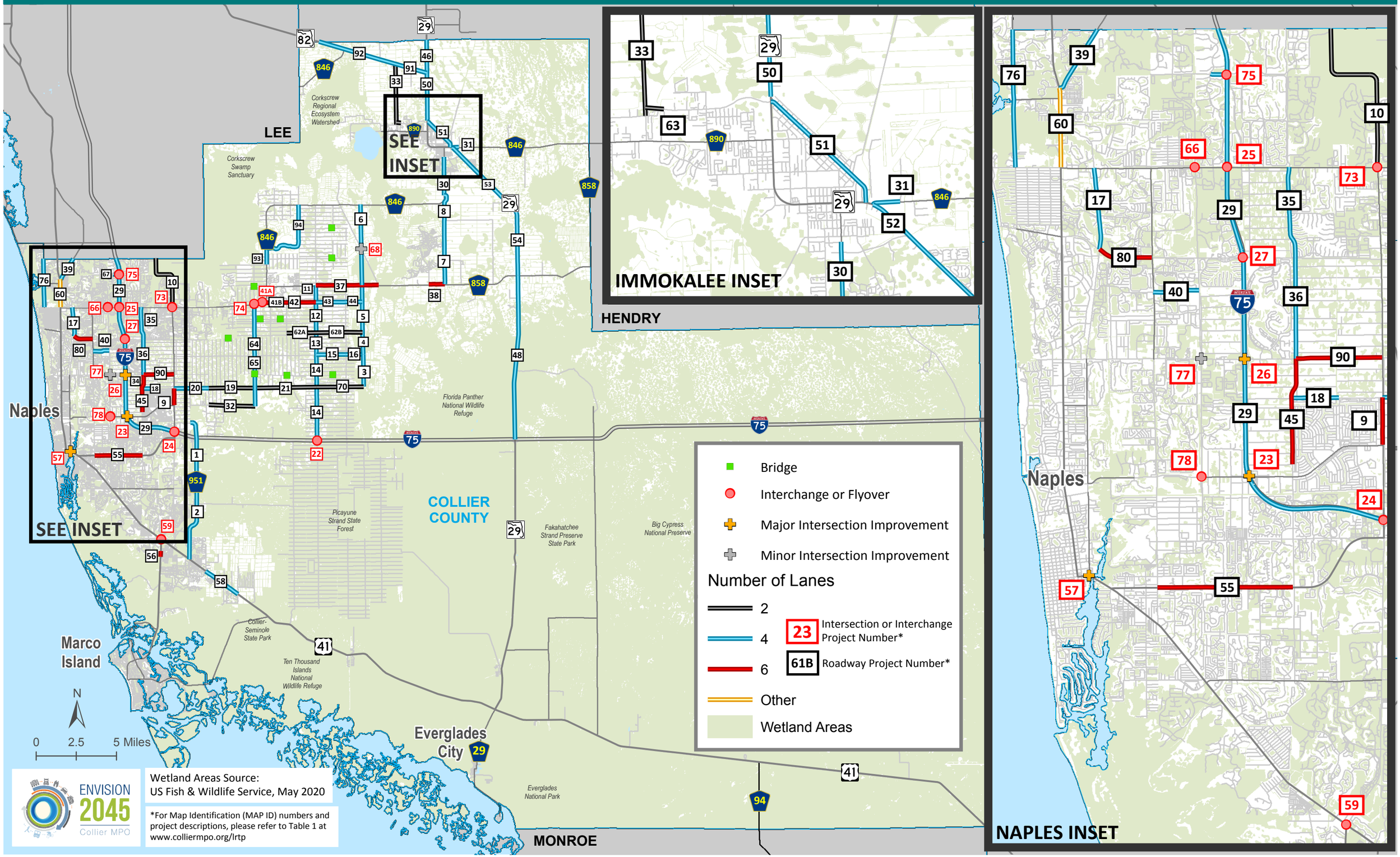


Exhibit 4 - Conservation Areas

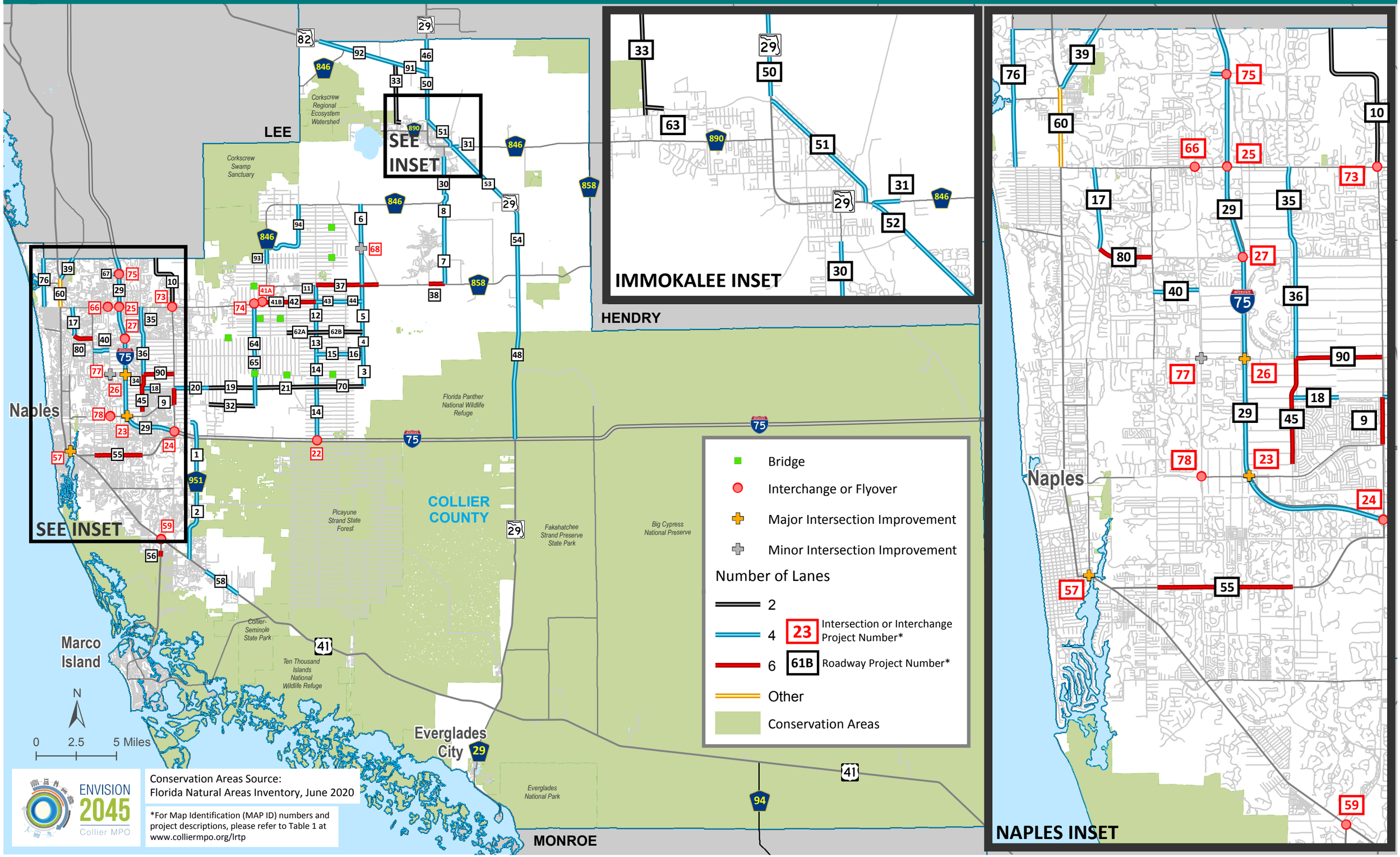


Exhibit 5 - Florida Panther Habitats

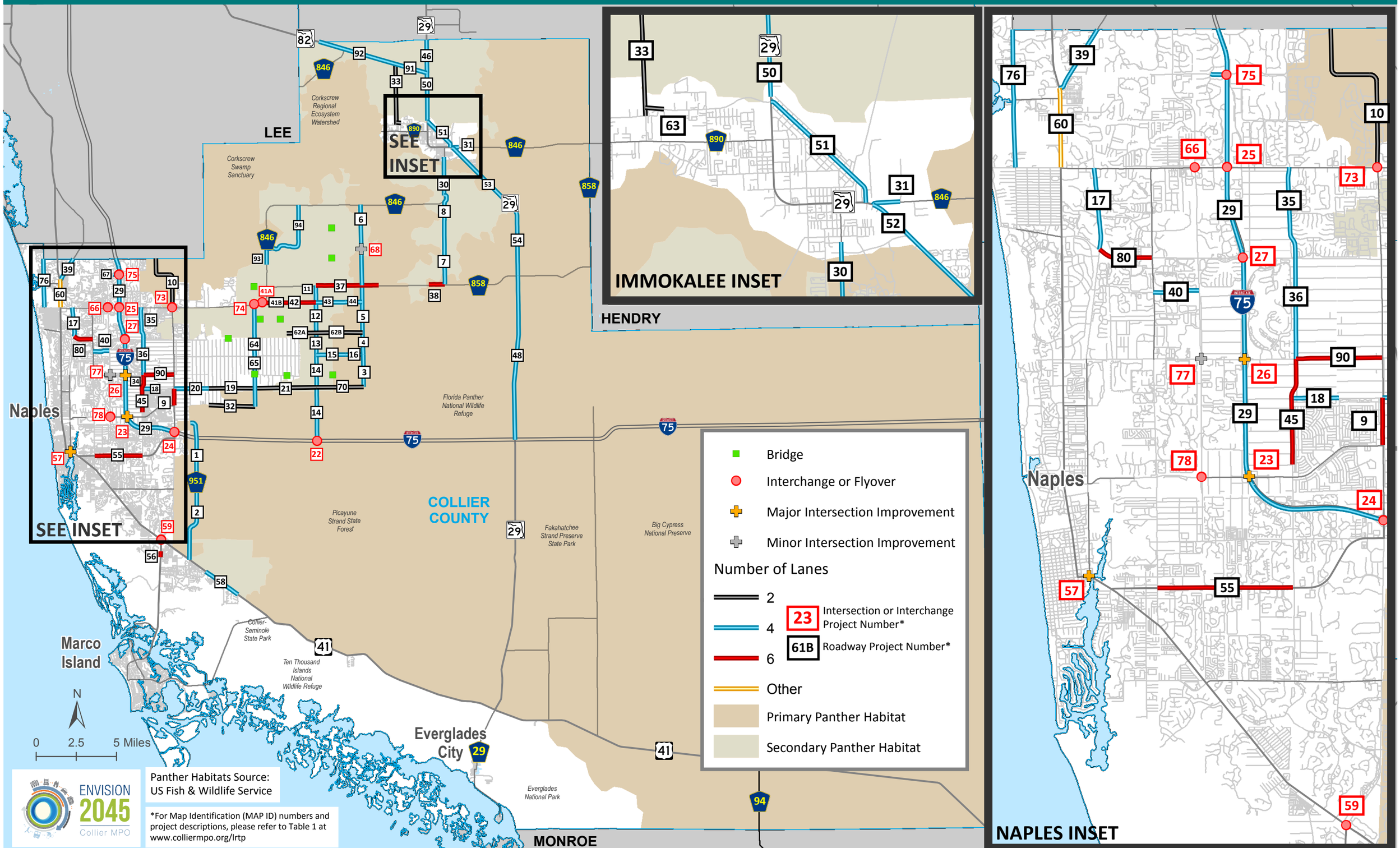


Exhibit 6 - Fatal Crash Occurrences

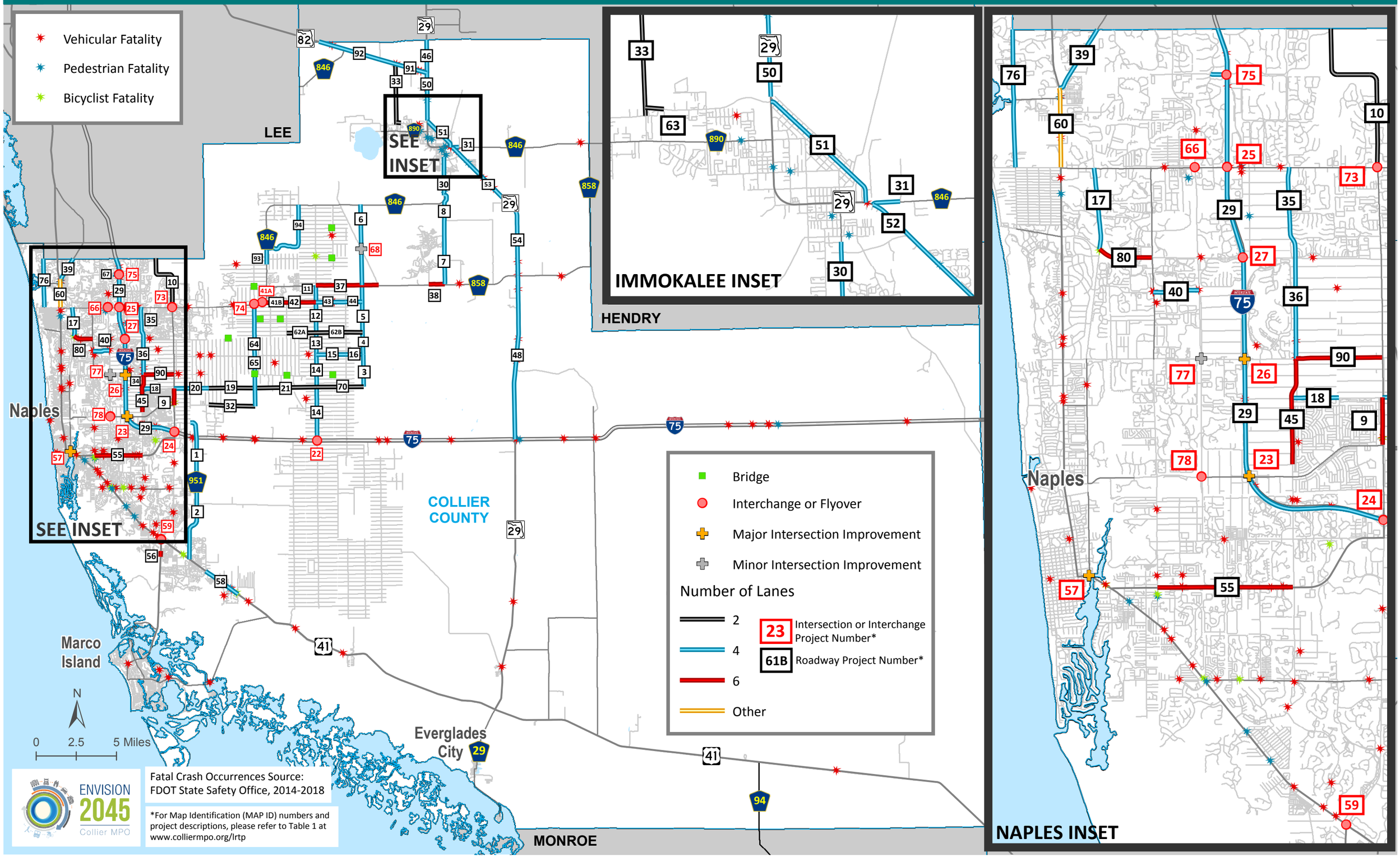
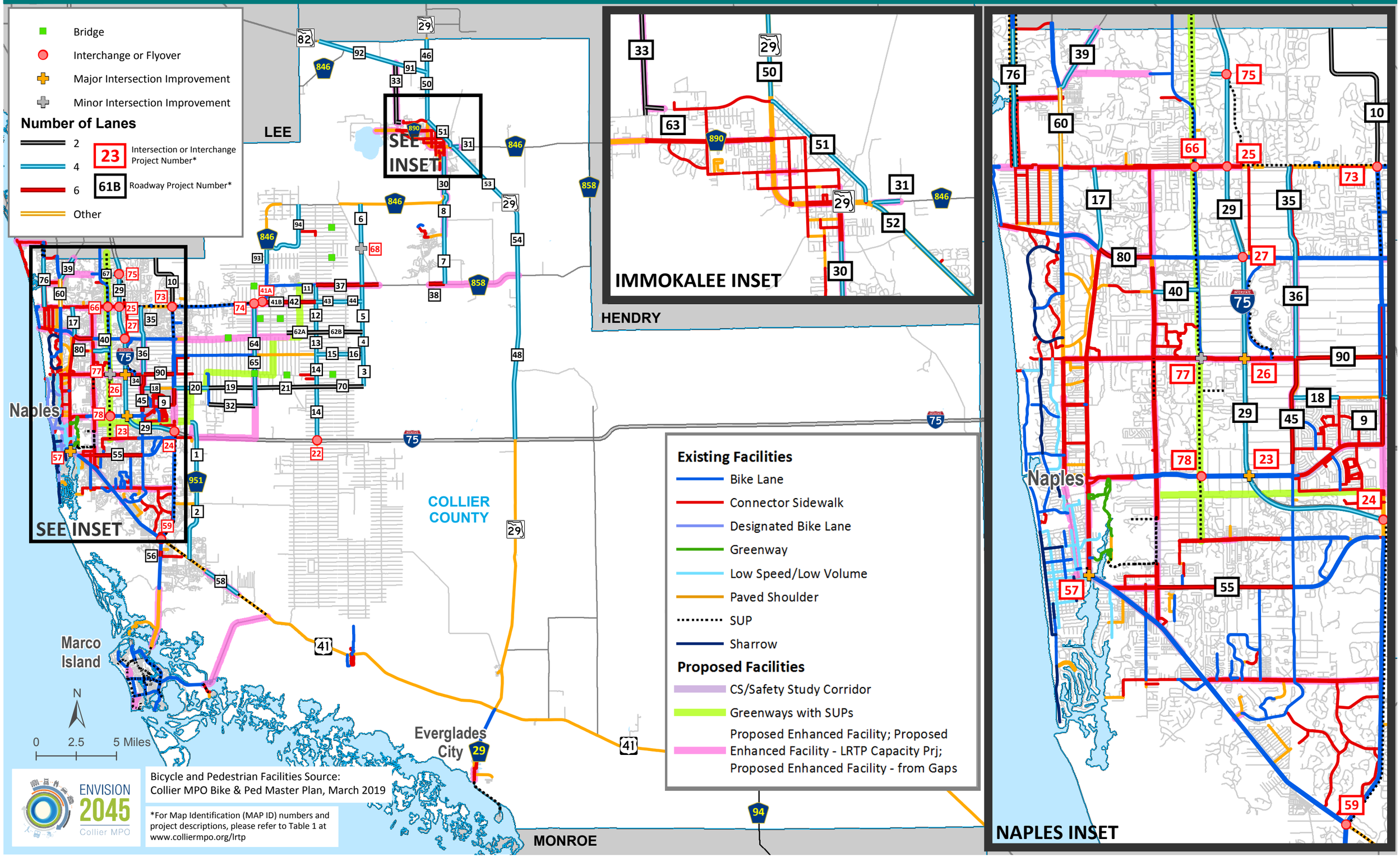


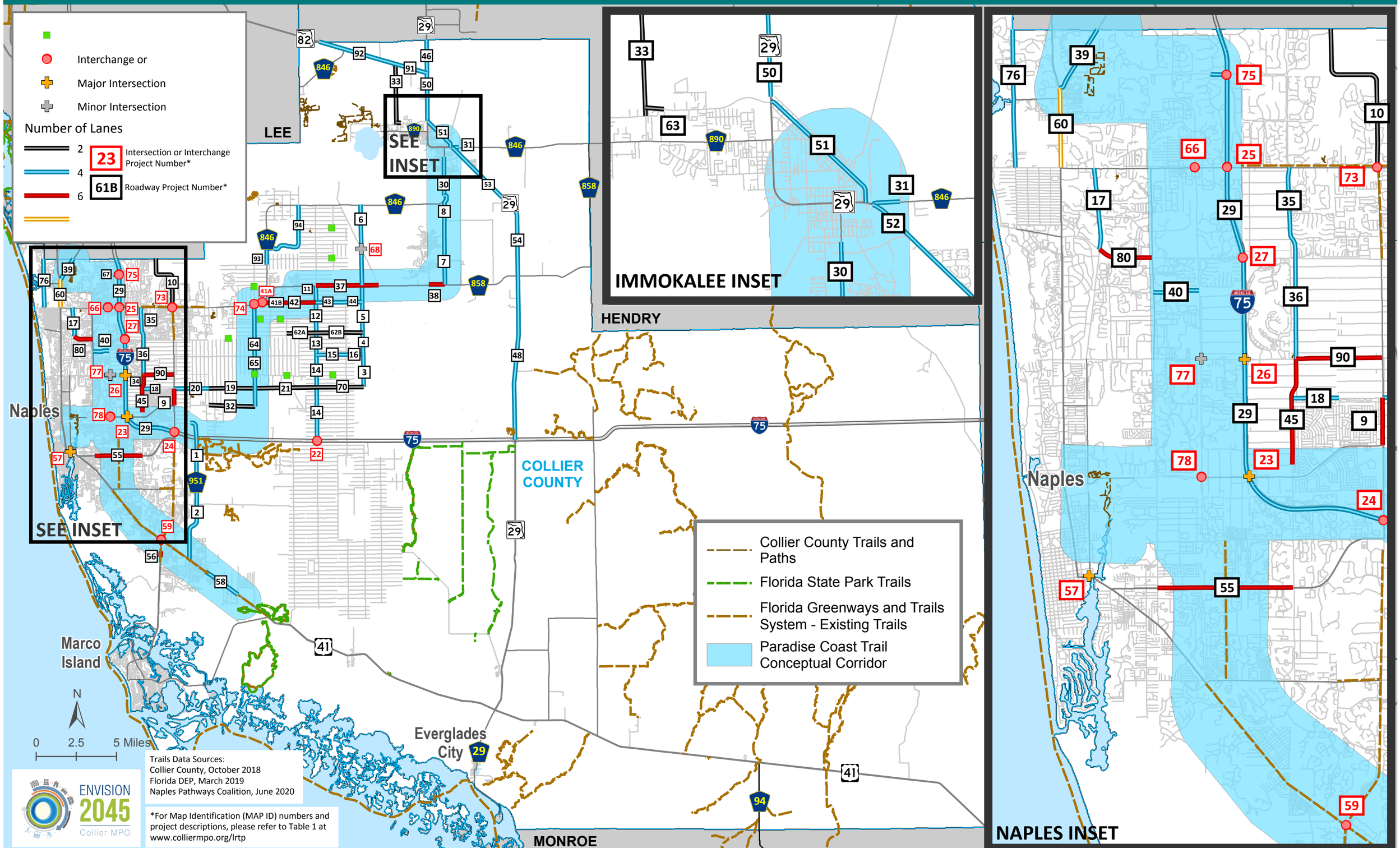
Exhibit 7 - Bicycle and Pedestrian Facilities



Bicycle and Pedestrian Facilities Source: Collier MPO Bike & Ped Master Plan, March 2019

*For Map Identification (MAP ID) numbers and project descriptions, please refer to Table 1 at www.colliermpo.org/lrtp

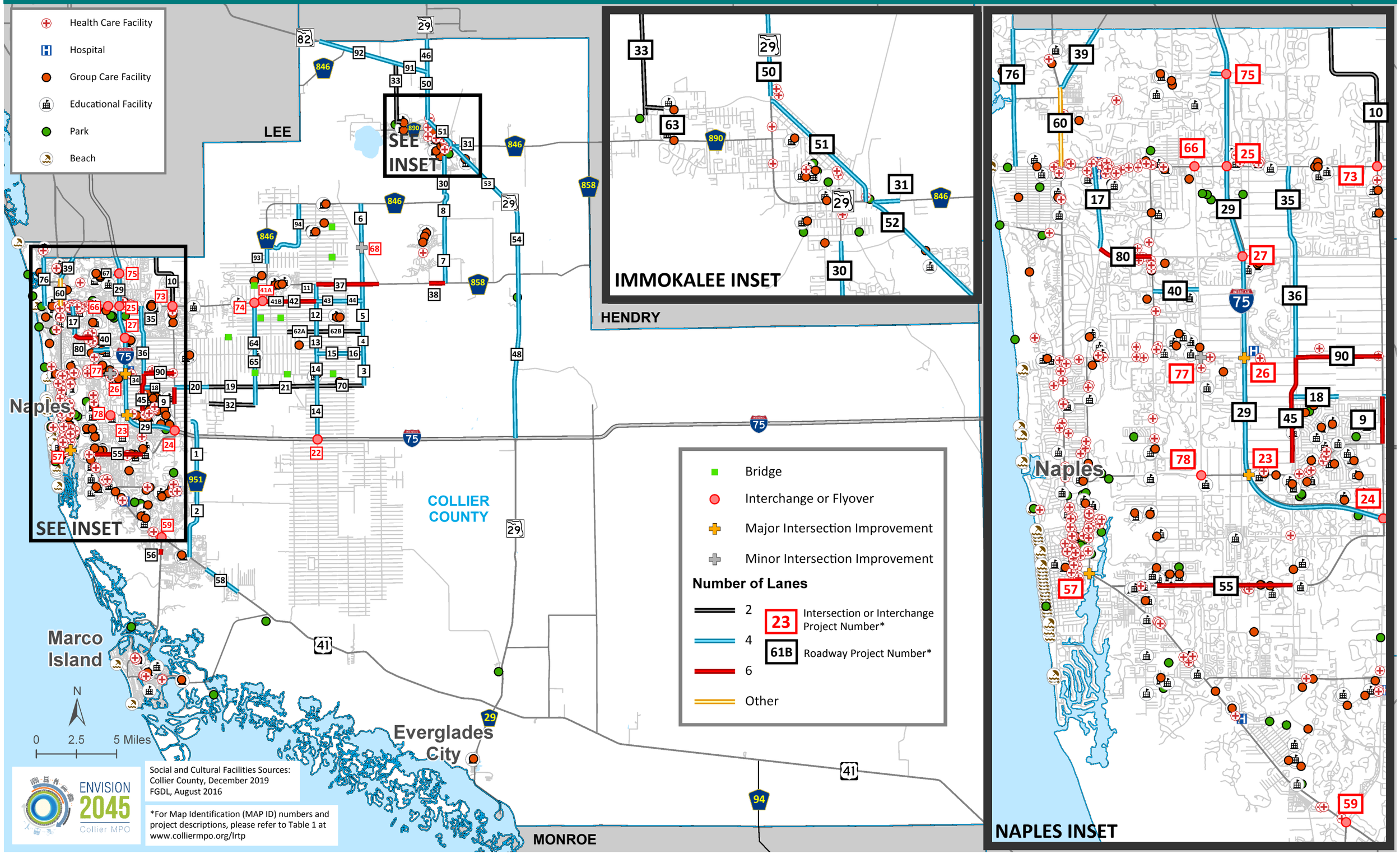
Exhibit 8 - Trails



Trails Data Sources:
Collier County, October 2018
Florida DEP, March 2019
Naples Pathways Coalition, June 2020

*For Map Identification (MAP ID) numbers and project descriptions, please refer to Table 1 at www.colliermpo.org/lrtp

Exhibit 9 - Social and Cultural Facilities



Social and Cultural Facilities Sources:
Collier County, December 2019
FGDL, August 2016

*For Map Identification (MAP ID) numbers and project descriptions, please refer to Table 1 at www.colliermpo.org/lrtp

Exhibit 10 - Low-Income Areas

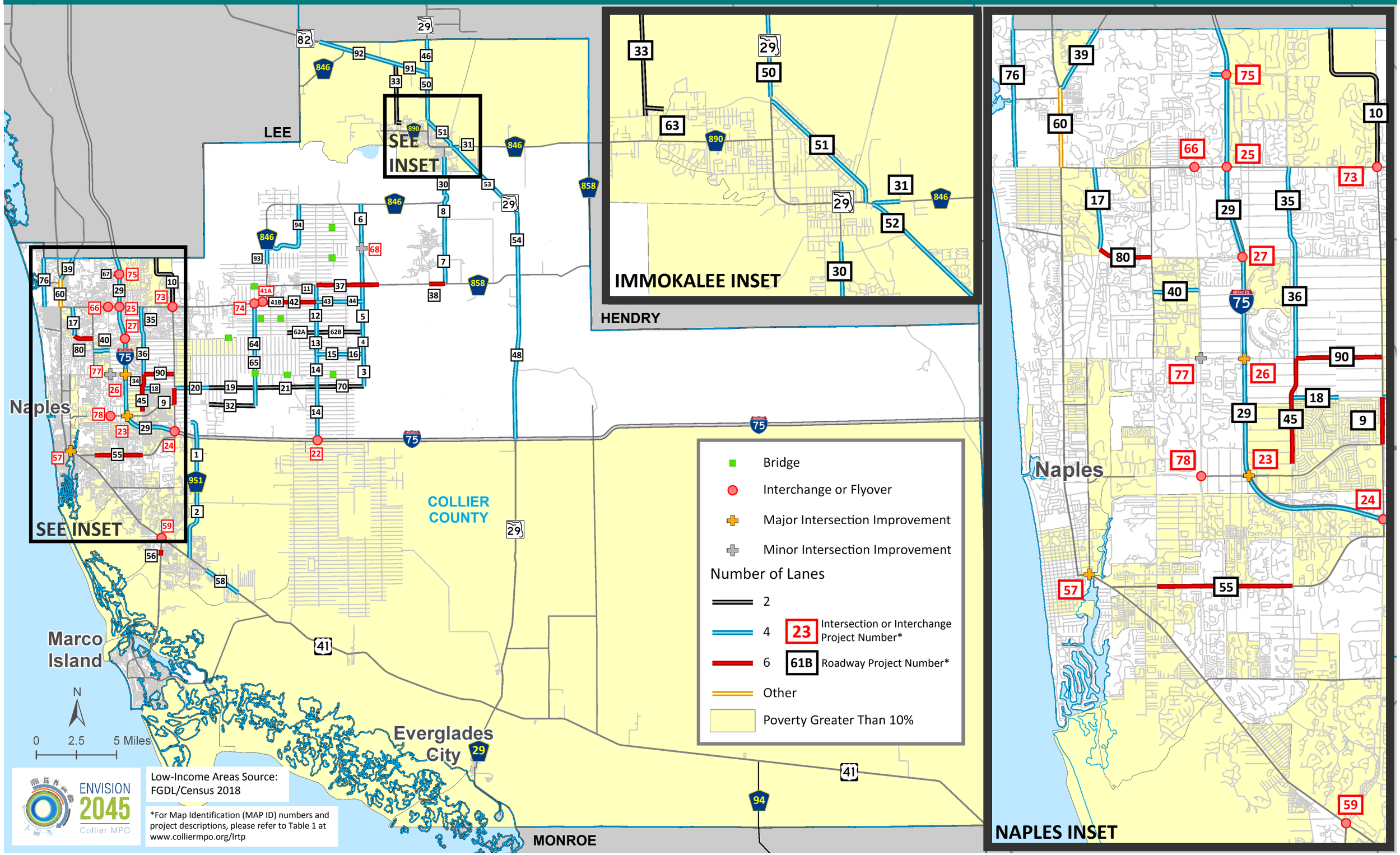


Exhibit 11 - Community Redevelopment Areas (CRAs)

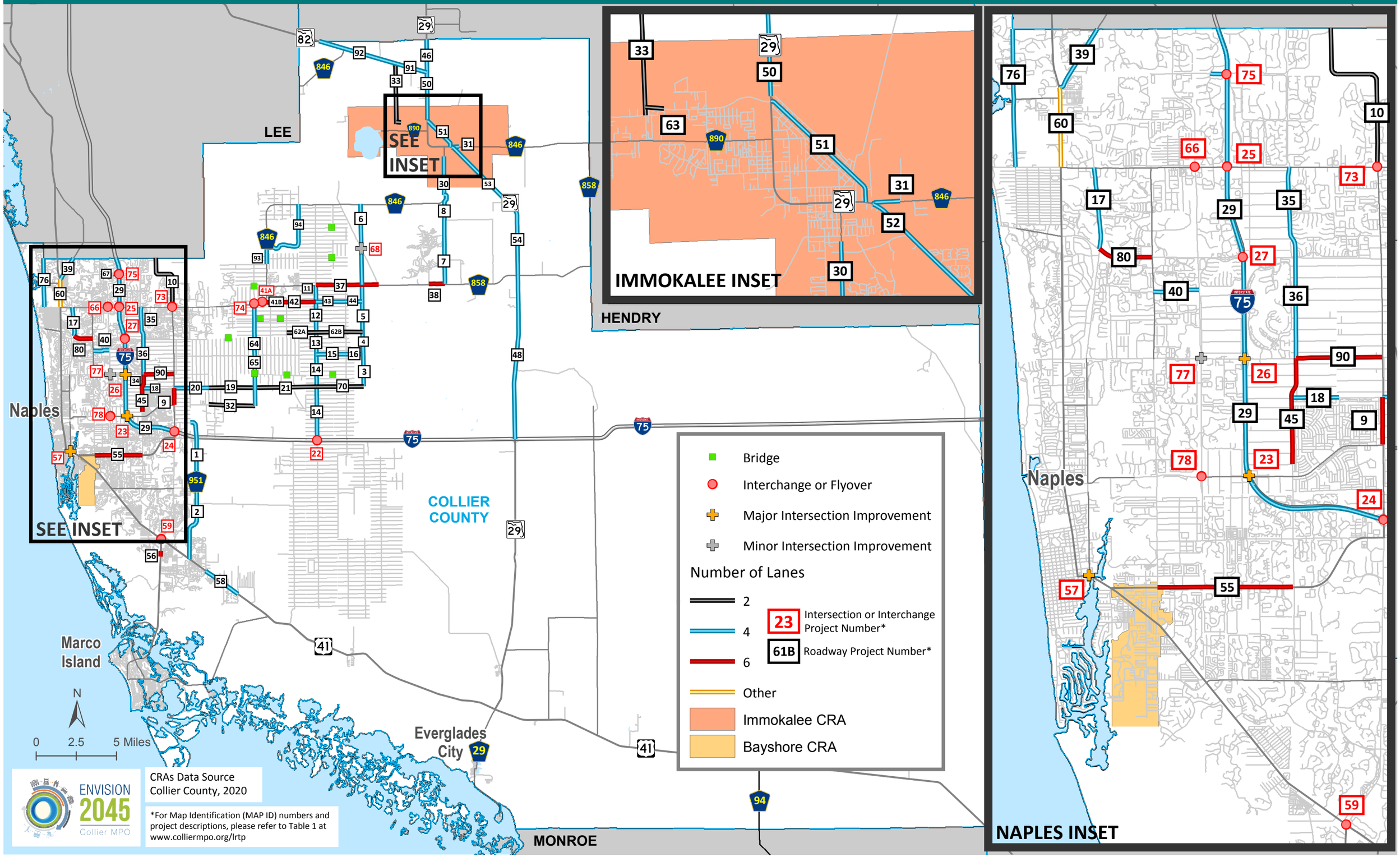


Exhibit 12 - Potential Sea Level Rise Flood Risk by 2045

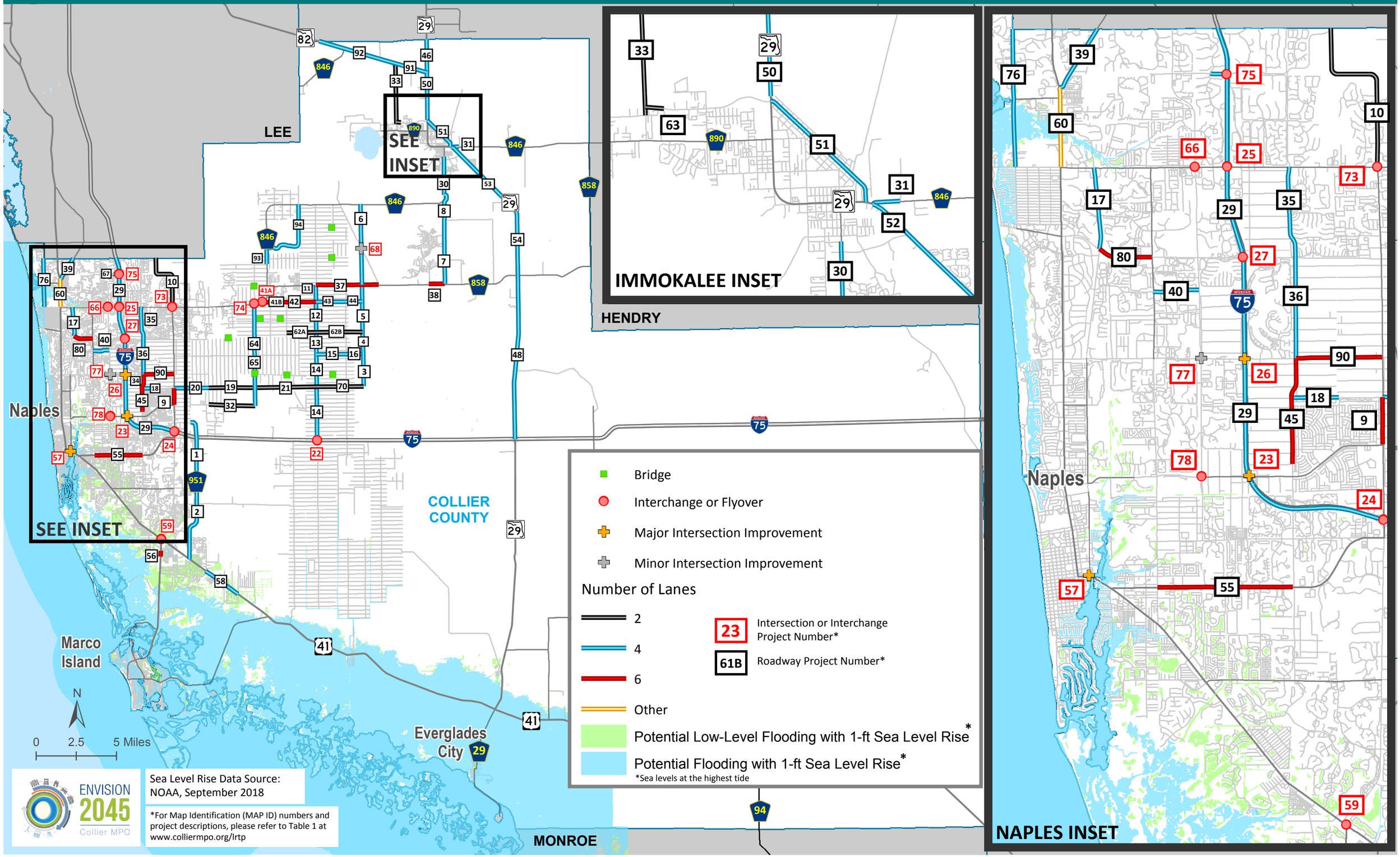
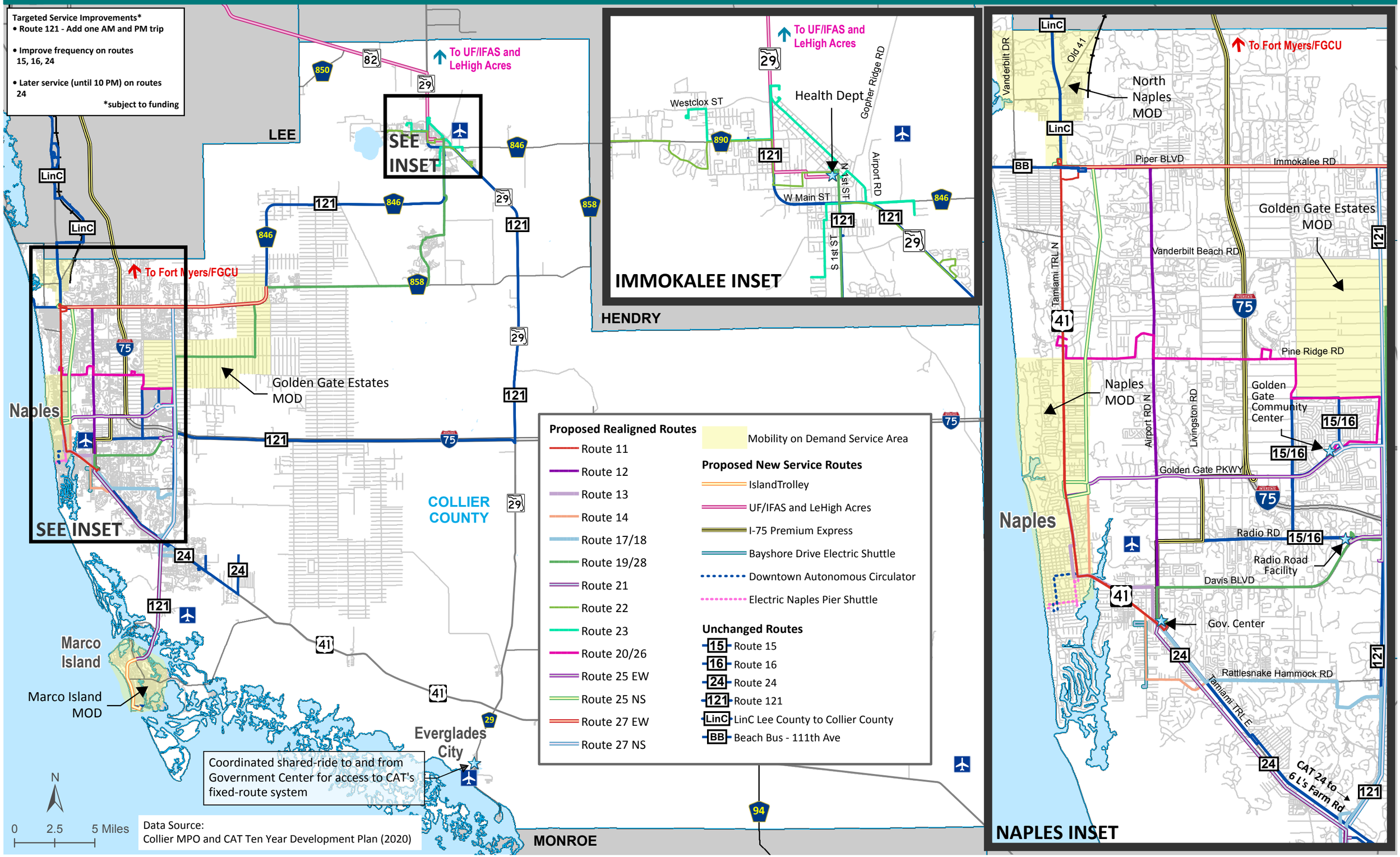


Exhibit 13 - Transit Needs (2020-2045)



Appendix F
Draft Collier 2020 System Performance Report

Draft 10-30-20

Collier Metropolitan Planning Organization
2045 Long-Range Transportation Plan
System Performance Report

Office of Policy Planning

Florida Department of Transportation

December 2020

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1 - PURPOSE

This document provides language that Florida's metropolitan planning organizations (MPO) may incorporate in Long-Range Transportation Plan (LRTP) System Performance Reports to meet the federal transportation performance management rules. Updates or amendments to the LRTP must incorporate a System Performance Report that addresses these measures and related information no later than:

- May 27, 2018 for Highway Safety measures (PM1);
- October 1, 2018 for Transit Asset Management measures;
- May 20, 2019 for Pavement and Bridge Condition measures (PM2);
- May 20, 2019 for System Performance measures (PM3); and
- July 20, 2021 for Transit Safety measures.

MPOs may incorporate this template language and adapt it as needed as they update their LRTPs. In most sections, there are two options for the text, to be used by MPOs supporting statewide targets or MPOs establishing their own targets. Areas that require MPO input are highlighted in grey. Input will range from simply adding the MPO name and adoption dates to providing MPO-specific information such as descriptions of strategies and processes.

The document is consistent with the Transportation Performance Measures Consensus Planning Document developed jointly by the Florida Department of Transportation (FDOT) and the Metropolitan Planning Organization Advisory Council. This document outlines the minimum roles of FDOT, the MPOs, and the public transportation providers in the MPO planning areas to ensure consistency to the maximum extent practicable in satisfying the transportation performance management requirements promulgated by the United States Department of Transportation in Title 23 Parts 450, 490, 625, and 673 of the Code of Federal Regulations (23 CFR).

The document is organized as follows:

- Section 2 provides a brief background on transportation performance management;
- Section 3 covers the Highway Safety measures (PM1);
- Section 4 covers the Pavement and Bridge Condition measures (PM2);
- Section 5 covers System Performance measures (PM3);
- Section 6 covers Transit Asset Management (TAM) measures; and
- Section 7 covers Transit Safety measures.

2 - BACKGROUND

Pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21) Act enacted in 2012 and the Fixing America's Surface Transportation Act (FAST Act) enacted in 2015, state departments of transportation (DOT) and metropolitan planning organizations (MPO) must apply a transportation performance management approach in carrying out their federally required transportation planning and programming activities. The process requires the establishment and use of a coordinated, performance-based approach to transportation decision-making to support national goals for the federal-aid highway and public transportation programs.

On May 27, 2016, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued the Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning Final Rule (The Planning Rule).[1] This rule details how state DOTs and MPOs must implement new MAP-21 and FAST Act transportation planning requirements, including the transportation performance management provisions.

In accordance with the Planning Rule, the Collier MPO must include a description of the performance measures and targets that apply to the MPO planning area and a System Performance Report as an element of its LRTP. The System Performance Report 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. For MPOs that elect to develop multiple scenarios, the System Performance Report also must include an analysis of how the preferred scenario has improved the performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified targets.[2]

There are several milestones related to the required content of the System Performance Report:

- In any LRTP adopted on or after May 27, 2018, the System Performance Report must reflect Highway Safety (PM1) measures;
- In any LRTP adopted on or after October 1, 2018, the System Performance Report must reflect Transit Asset Management measures;
- In any LRTP adopted on or after May 20, 2019, the System Performance Report must reflect Pavement and Bridge Condition (PM2) and System Performance (PM3) measures; and
- In any LRTP adopted on or after July 20, 2021, the System Performance Report must reflect Transit Safety measures.

Per the Planning Rule, the System Performance Report for the Collier MPO is included for the required Highway Safety (PM1), Bridge and Pavement (PM2), System Performance (PM3), Transit Asset Management, and Transit Safety targets (adopted by the MPO Board on September 11, 2020).

[1] The Final Rule modified the Code of Federal Regulations at 23 CFR Part 450 and 49 CFR Part 613.

[2] Guidance from FHWA/FTA for completing the preferred scenario analysis is expected in the future. As of June 2020, no guidance has been issued.

3 - HIGHWAY SAFETY MEASURES (PM1)

Effective April 14, 2016, the FHWA established five highway safety performance measures[3] to carry out the Highway Safety Improvement Program (HSIP). These performance measures are:

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

The Florida Department of Transportation (FDOT) publishes statewide safety performance targets in the HSIP Annual Report that it transmits to FHWA each year. Current safety targets address calendar year 2020. For the 2020 HSIP annual report, FDOT established statewide at "0" for each performance measure to reflect Florida's vision of zero deaths.

The Collier MPO adopted safety performance targets on November 8, 2019. Table 3.1 indicates the areas in which the MPO is expressly supporting the statewide target developed by FDOT, as well as those areas in which the MPO has adopted a target specific to the MPO planning area.

Table 3.1. Highway Safety (PM1) Targets

Performance Target	Collier MPO agrees to plan and program projects that contribute toward the accomplishment of the FDOT safety target of zero
Number of fatalities	✓
Rate of fatalities per 100 million VMT	✓
Number of serious injuries	✓
Rate of serious injuries per 100 million VMT	✓
Number of non-motorized fatalities and non-motorized serious injuries.	✓

Statewide system conditions for each safety performance measure are included in Table 3.2, along with system conditions in the Collier MPO metropolitan planning area. System conditions reflect baseline performance (2013-2017). The latest safety conditions will be updated annually on a rolling five-year window and reflected

[3] 23 CFR Part 490, Subpart B

within each subsequent system performance report, to track performance over time in relation to baseline conditions and established targets.

Table 3.2. Highway Safety (PM1) Conditions and Performance

Performance Measures	Florida Statewide Baseline Performance (Five-Year Rolling Average) 2012-2016	2013-2017	2014-2018	Calendar Year 2020 Florida Performance Targets
Number of Fatalities	2,688.2	2,825.4	2,972.0	0
Rate of Fatalities per 100 Million VMT	1.33	1.36	1.39	0
Number of Serious Injuries	20,844.2	20,929.2	20,738.4	0
Rate of Serious Injuries per 100 Million VMT	10.36	10.13	9.77	0
Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries	3,294.4	3,304.2	3,339.6	0

Baseline Conditions

After FDOT set its Safety Performance Measures targets in 2018, both FDOT and the Collier MPO established 2017 Baseline Safety Performance Measures. To evaluate baseline Safety Performance Measures, the MPO used the most recent five-year rolling average (2013-2017) of crash data and VMT. Table 3-2 presents the Baseline Safety Performance Measures for Florida and Collier MPO.

Table 3.2 – Baseline Safety Performance Measures – 2013-2017 Rolling Five-Year Average

Performance Measure	Florida	Collier MPO
Number of Fatalities	2,979.0	36.2
Number of Serious Injuries	20,653.6	186.2
Fatality Rate per 100 million Vehicle Miles Traveled (VMT)	1.398	1.038
Serious Injury Rate per 100 million Vehicle Miles Traveled (VMT)	9.732	5.263
Total number of non-motorized fatalities and serious injuries	3,267.0	39.2

Trends Analysis

The process used to develop the MPO's Long-Range Transportation Plan includes analysis of safety data trends, including the location and factors associated with crashes with emphasis on fatalities and serious

injuries. These data are used to help identify regional safety issues and potential safety strategies for the LRTP and TIP.

The MPO uses crash data tracking fatalities and serious injuries in Collier County to analyze past trends and identify regional safety issues. Tracking these measures will help to estimate the effectiveness of future MPO transportation investment, as reflected

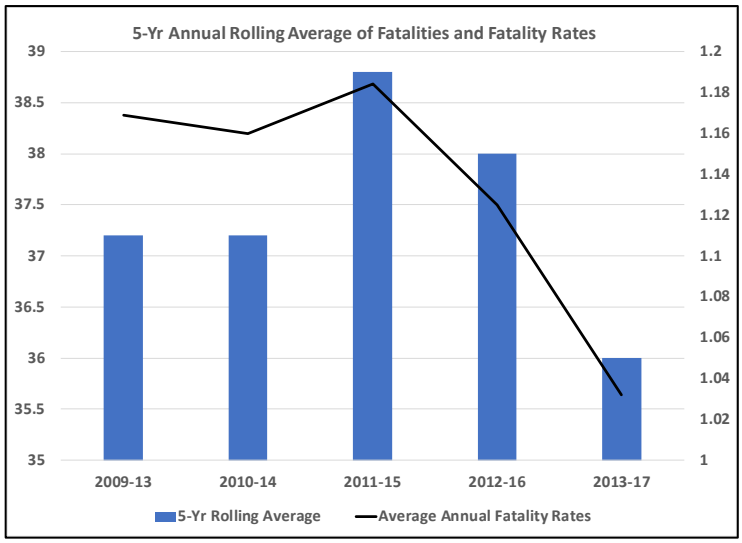
in the TIP. Table 3-3 shows the changes in Safety Performance Measures for Collier MPO from 2009 through 2017. The measures shown in Table 3-3 were calculated by following the same methodology as that used to calculate the baseline conditions.

Table 3-3 Safety Performance Measure Trends in Collier County

Performance Measure	2009-2013	2010-2014	2011-2015	2012-2016	2013-2017
Number of Fatalities	37.2	37.2	38.8	38.0	36.2
Number of Serious Injuries	184.0	174.0	175.2	177.2	186.2
Fatality Rate per 100 million Vehicle Miles Traveled (VMT)	1.169	1.160	1.184	1.125	1.038
Serious Injury Rate per 100 million Vehicle Miles Traveled (VMT)	5.790	5.445	5.388	5.252	5.263
Total number of non-motorized fatalities and serious injuries	37.2	38.6	37.6	40.0	39.2

Coordination with Statewide Safety Plans and Processes

The Collier MPO recognizes the importance of linking goals, objectives, and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, the Collier MPO 2045 LRTP reflects the goals, objectives, performance measures, and targets as they are available and described in other state and public transportation plans and processes; specifically the Florida Strategic Highway Safety Plan (SHSP), the Florida Highway Safety Improvement Program (HSIP), and the Florida Transportation Plan (FTP).



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

LRTP Safety Priorities

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

The LRTP identifies safety needs within the metropolitan planning area and provides funding for targeted safety improvements. The Collier MPO has developed a project selection process that incorporates safety in its Project Selection Criteria (reference Collier MPO 2045 LRTP, Chapter 3, Page 3-7, Goal #6). The 2045 LRTP includes a goal to increase the safety of the transportation system for all users, presented as follows.

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.

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

The Collier MPO 2045 LRTP will provide information from the FDOT HSIP annual reports to track the progress made toward the statewide safety performance targets. The MPO will document the progress on any safety performance targets established by the MPO for its planning area.

4 - PAVEMENT AND BRIDGE CONDITION MEASURES (PM2)

Pavement and Bridge Condition Performance Measures and Targets Overview

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pavement and Bridge Condition Baseline Performance and Established Targets

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

Table 4.1 presents baseline performance for each PM2 measure for the State and for the MPO planning area as well as the two-year and four-year targets established by FDOT for the State.

Table 4.1. Pavement and Bridge Condition (PM2) Performance and Targets

Performance Measures	Statewide (2017 Baseline)	Statewide 2019 Actual	Statewide 2-year Target (2019)	Statewide 4-year Target (2021)	Collier MPO 2017 Baseline	Collier MPO 2018 Baseline	Collier MPO 2019 Actual
Percent of Interstate pavements in good condition	66.0%		n/a	≥60%	36.2%	38.1%	69%
Percent of Interstate pavements in poor condition	0.1%		n/a	<5%	0%	0%	0%
Percent of non-Interstate NHS pavements in good condition	76.4%		≥40%	≥40%	50.2%	47.1%	39.4%
Percent of non-Interstate NHS pavements in poor condition	3.6%		<5%	<5%	0%	0%	0%
Percent of NHS bridges (by deck area) in good condition	67.7%		≥50%	≥50%	83.58%	82.21%	xx.x%
Percent of NHS bridges (by deck area) in poor condition	1.2%		<10%	<10%	0%	0%	x.x%

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

In addition, MAP-21 requires FDOT to develop a Transportation Asset Management Plan (TAMP) for all NHS pavements and bridges within the state. The TAMP must include investment strategies leading to a program of projects that would make progress toward achievement of the state DOT targets for asset condition and performance of the NHS. FDOT's TAMP was updated to reflect MAP-21 requirements in 2018 and the final TAMP was approved on June 28, 2019.

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

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

The Collier MPO agreed to support FDOT's pavement and bridge condition performance targets on October 12, 2018. By adopting FDOT's targets, the Collier MPO agrees to plan and program projects that help FDOT achieve these targets.

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

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

The Collier MPO 2045 LRTP seeks to address system preservation, identifies infrastructure needs within the metropolitan planning area, and provides funding for targeted improvements. The Collier MPO 2045 LRTP incorporates the planning priority of the Statewide and Metropolitan Planning Factors as shown on Page 3-2 to "*emphasize the preservation of the existing transportation system*."

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

5 - SYSTEM PERFORMANCE, FREIGHT, AND CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM MEASURES (PM3)

System Performance/Freight/CMAQ Performance Measures and Targets Overview

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

National Highway Performance Program (NHPP)

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

National Highway Freight Program (NHFP)

3. Truck Travel Time Reliability index (TTTR);

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

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

In Florida, only the two LOTTR performance measures and the TTTR performance measure apply. Because all areas in Florida meet current NAAQS, the last three measures listed measures above pertaining to the CMAQ Program do not currently apply in Florida.

LOTTR is defined as the ratio of longer travel times (80th percentile) to a normal travel time (50th percentile) over all applicable roads during four time periods (AM peak, Mid-day, PM peak, and weekends) that cover the hours of 6 a.m. to 8 p.m. each day. The LOTTR ratio is calculated for each roadway segment, essentially comparing the segment with itself. Segments with LOTTR ≥ 1.50 during any of the above time periods are considered unreliable. The two LOTTR measures are expressed as the percent of person-miles traveled on the Interstate or non-Interstate NHS system that are reliable. Person-miles consider the number of people traveling in buses, cars, and trucks over these roadway segments. To obtain person miles traveled, the vehicle miles traveled (VMT) for each segment are multiplied by the average vehicle occupancy for each type of vehicle on the roadway. To calculate the percent of person miles traveled that are reliable, the sum of the number of reliable person miles traveled is divide by the sum of total person miles traveled.

TTTR is defined as the ratio of longer truck travel times (95th percentile) to a normal travel time (50th percentile) over the Interstate during five time periods (AM peak, Mid-day, PM peak, weekend, and overnight)

that cover all hours of the day. TTTR is quantified by taking a weighted average of the maximum TTTR from the five time periods for each Interstate segment. The maximum TTTR is weighted by segment length, then the sum of the weighted values is divided by the total Interstate length to calculate the Travel Time Reliability Index.

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

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

- Two-year and four-year statewide targets for percent of person-miles on the Interstate system that are reliable;
- Four-year targets for the percent of person-miles on the non-Interstate NHS that are reliable[4]; and
- Two-year and four-year targets for truck travel time reliability

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

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

PM3 Baseline Performance and Established Targets

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

Table 5.1 presents baseline performance for each PM3 measure for the state and for the MPO planning area as well as the two-year and four-year targets established by FDOT for the state

[4] Beginning with the second performance period covering January 1, 2022 to December 31, 2025, two-year targets will be required in addition to four-year targets for the percent of person-miles on the non-Interstate NHS that are reliable measure.

Table 5.1. System Performance and Freight (PM3) - Performance and Targets

Performance Measures	Statewide (2017 Baseline)	Statewide 2019 Actual	Statewide 2-year Target (2019)	Statewide 4-year Target (2021)	Collier MPO 2017 Baseline	Collier MPO 2018 Actual	Collier MPO 2019 Actual
Percent of person-miles on the Interstate system that are reliable	82.2%		≥75.0%	≥70.0%	100%	100%	
Percent of person-miles on the non-Interstate NHS that are reliable	84.0%		n/a	≥50.0%	97%	98%	
Truck travel time reliability index (TTTR)	1.43		≤1.75	≤2.00	1.12	1.15	

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

The Collier MPO agreed to support FDOT's PM3 targets on October 12, 2018. By adopting FDOT's targets, the Collier MPO agrees to plan and program projects that help FDOT achieve these targets.

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

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

The Collier MPO 2045 LRTP seeks to address system reliability and congestion mitigation through various means, including capacity expansion and operational improvements. The 2045 LRTP incorporates Goal #4: Reduce Roadway Congestion (reference Chapter 3, Page 3-6):"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.

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 Selection 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

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

6 - TRANSIT ASSET MANAGEMENT MEASURES

Transit Asset Performance

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

Table 6.1 below identifies performance measures outlined in the final rule for transit asset management.

Table 6.1. FTA TAM Performance Measures

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

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

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

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

When establishing transit asset management targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional transit asset management targets for the MPO planning area. In cases where two or more providers operate in an MPO planning area and establish different targets for a given measure, the MPO has the option of coordinating with the providers to establish a single target for the MPO planning area, or establishing a set of targets for the MPO planning area that reflects the differing transit provider targets.

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

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

A total of 20 transit providers participated in the FDOT Group TAM Plan and continue to coordinate with FDOT on establishing and reporting group targets to FTA through the National Transit Database (NTD) (Table 6.2). The participants in the FDOT Group TAM Plan are comprised of the Section 5311 Rural Program and open-door Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities FDOT subrecipients. The Group TAM Plan was adopted in October 2018 and covers fiscal years 2018-2019 through 2021-2022. Updated targets were submitted to NTD in 2019.

Table 6.2. Florida Group TAM Plan Participants

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

Collier Area Transit (CAT), a Tier II provider, is the only transit provider within the MPO region. CAT does not participate in the FDOT Group TAM Plan as it has too few busses to meet the criteria. On November 9, 2018, the Collier MPO agreed to support the Collier County Board of County Commissioners (BCC) / Collier Area Transit (CAT) transit asset management targets which were adopted on October 23, 2018, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the transit provider targets. Table 6.3 displays the TAM performance measures targets for CAT and the current conditions within the Collier MPO.

The transit asset management targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities. The targets reflect the most recent data available on the number, age, and condition of transit assets, and expectations and capital investment plans for improving these assets. Table 6.3 summarizes both existing conditions for the most recent year available, and the targets.

Table 6.3. FTA TAM Targets for Collier Area Transit (CAT)

Asset Category	FDOT and MPO Transit Targets	Current Conditions within Collier MPO	Met or Exceed Target
Equipment	10% have met or exceeded their Useful Like Benchmark (ULB)	0% exceed ULB	Yes
Rolling Stock	10% have met or exceeded their ULB	50% exceed ULB	No
Infrastructure	n/a	n/a	n/a
Facilities	25% of facilities less than 3.0 on the TERM scale	0% at or above 3.0 TERM	Yes

TAM Performance

The Collier MPO recognizes the importance of linking goals, objectives, and investment priorities to stated performance objectives, and that establishing this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, the LRTP directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including the System-wide Transit Needs Assessment, which builds upon the Collier County FY 2020 Transit Development Plan (TDP) Major Update, the Collier 2040 LRTP, and the 2013 Collier Area Transit Comprehensive Operations Analysis (COA), public input, regional model ridership projections and transit market assessments.

To support progress towards TAM performance targets, transit investment and maintenance funding in the 2045 LRTP Transit Cost Feasible Plan totals approximately $377.8 million(reference Table 5-1, Page 5-3), approximately 24 percent of total LRTP funding. and 100% percent of requested CAT funding for transit preservation. Improving the State of Good Repair (SGR) of capital assets is an overarching goal of this process.

7 - TRANSIT SAFETY PERFORMANCE

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

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

Transit Safety Performance Measures

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

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

CAT has established safety performance targets based on the safety performance measures reported under the National PTASP. The safety performance targets were adopted by the Collier County BCC on May 12, 2020 and the Collier MPO Board on September 11, 2020. Table 7.1 summarizes the PTASP targets and the five years of past performance between 2015 and 2019. These measures will be evaluated periodically to determine when action must be taken to address inadequate safety performance. A bi-annual meeting will take place between FDOT, Collier MPO, and CAT to review and discuss the safety activities that impact performance targets. The safety performance target review will include discussion about whether the targets are being met and if not, what steps will be required to better meet the established targets. An evaluation of the targets will also consider whether the targets are realistic and attainable. If the targets are determined to not be attainable, recommendations for medication or replacement of the target will be considered. On or around June 30th of each year, CAT will transmit the safety performance targets to FDOT and Collier MPO.

Table 7.1 Collier MPO Annual Transit Safety Performance Targets

SPT Category	2015		2016		2017		2018		2019		5-Year Average		Target	
	MB	DR	MB	DR	MB	DR	MB	DR	MB	DR	MB	DR	MB	DR
Total Number of Fatalities	0	0	0	0	0	0	0	0	0	0	**0.0**	**0.0**	**0.0**	**0.0**
Fatality Rate per 100,000 VRM	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	**0.0**	**0.0**	**0.0**	**0.0**
Total Number of Injuries	5	0	5	1	3	2	5	1	3	2	**4.2**	**1.2**	**3.0**	**1.0**
Injury Rate per 100,000 VRM	0.38	0	0.38	0	0.23	0	0.39	0	0.22	0	**0.3**	**0.1**	**0.0**	**0.0**
Total Number of Safety Events	5	0	5	1	3	2	2	1	3	3	**3.6**	**1.4**	**2.0**	**1.0**
Safety Event Rate per 100,000 VRM	0.38	0	0.38	0	0.23	0	0.16	0	0.22	0	**0.3**	**0.1**	**0.0**	**0.0**
Total Number of Major Mechanical System Failures	31	30	23	26	94	87	98	82	15	9	**52.2**	**46.8**	**20.0**	**20.0**
Vehicle Failures Per 100,000 VRM)	2.35	3.15	1.74	2.49	7.31	7.69	7.72	6.49	1.09	0.64	**4.0**	**4.1**	**2.0**	**2.0**
Annual VRM	1,320,547	952,694	1,318,931	1,044,873	1,285,354	1,131,859	1,268,696	1,263,684	1,378,866	1,406,149	**1,314,479**	**1,159,852**	**1,200,000**	**1,200,000**

Source: Collier Area Transit September 2020

In Florida, each Section 5307 and 5311 transit provider must develop a System Safety Program Plan (SSPP) under Chapter 14-90, Florida Administrative Code. FDOT technical guidance recommends that Florida's transit agencies revise their existing SSPPs to be compliant with the new FTA PTASP requirements.

Transit Provider Coordination with States and MPOs

Key considerations for MPOs and transit agencies:

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

Over the course of 2020-2021, the Collier MPO will coordinate with public transportation providers in the planning area on the development and establishment of transit safety targets. LRTP amendments or updates after July 20, 2021 will include the required details about transit safety performance data and targets.

2045

LONG RANGE TRANSPORTATION PLAN

Collier MPO

COLLIER Metropolitan Planning Organization

Jacobs

November 2020

MPO, BPAC, & CMC LRTP Update

Agenda

Draft LRTP

- Chapters 1-7 overview
- Updates Since Draft Chapters 1-6
- Pending Changes
- Schedule
- Next Steps

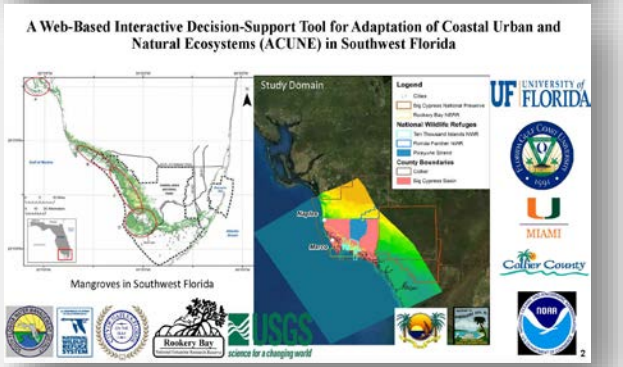
2045 LRTP Draft

2045 LRTP Draft – October 16, 2020

NEW

2045 Draft LRTP Recent Updates

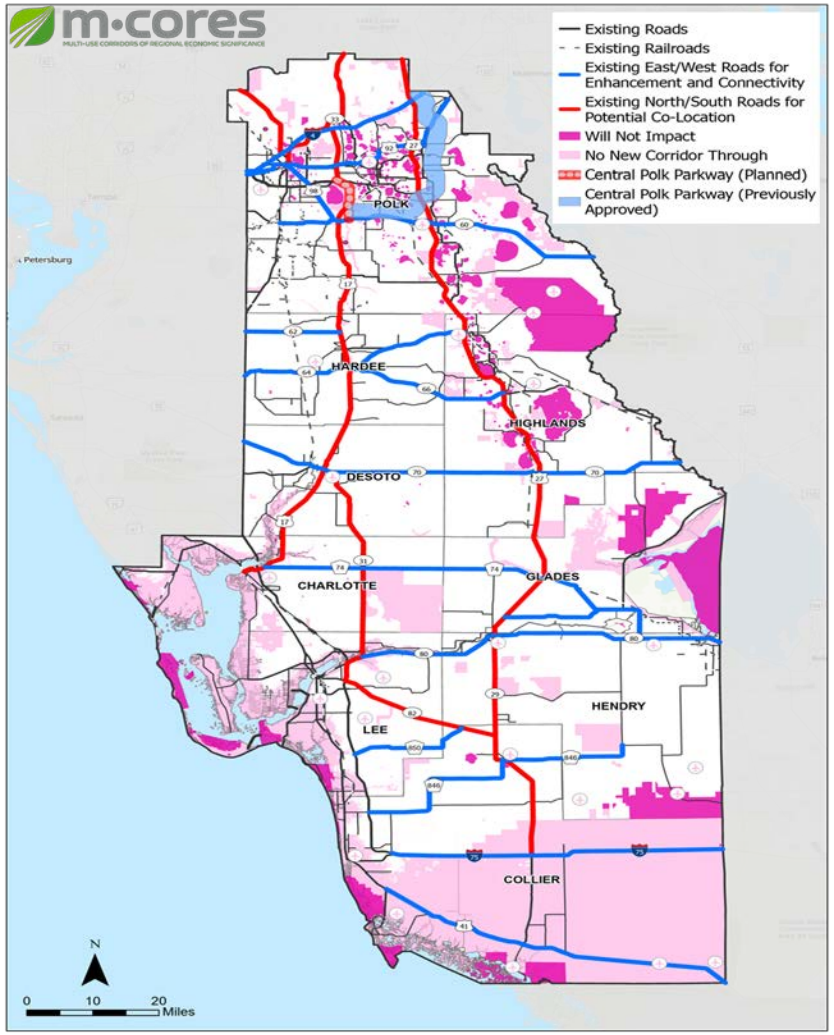
- New Chapter 7 – Implementation
- Local Road Safety Plan (LRSP) (Chapter 6)
  - Congestion management priorities
- CAT Bus and Maintenance Building (Chapter 6)
  - CAT Bus and Maintenance Building (FTA Grant)
  - Draft TIP FY 2020/21 - FY 2024/25 amendment
  - Transit 2045 Cost Feasible Plan
- USACE Collier County Coastal Storm Risk Management Feasibility Study (Chapter 4)
- FDOT Implementation of Connected and Automated Vehicles (CAV) methodology (Chapter 4)



2045 Draft LRTP Recent Updates

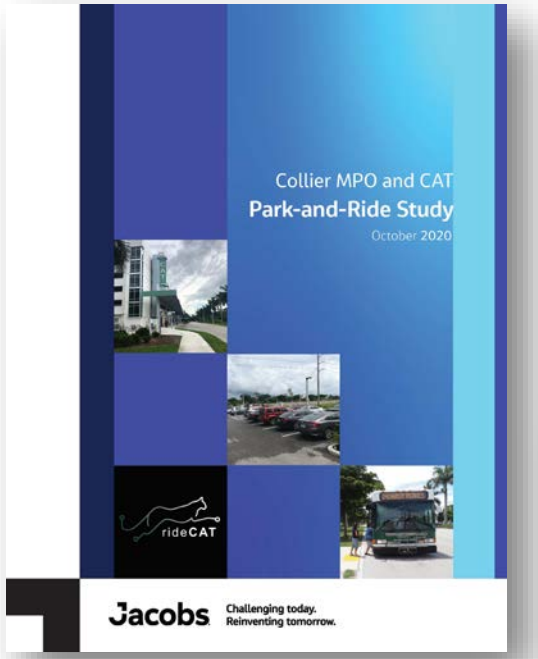
- M-CORES

  (Chapter 7, page 7-7)
- I-75 Southwest Connect PD&E Study (Chapter 7, page 7-9)
- Appendices including FHWA and FDOT Checklists



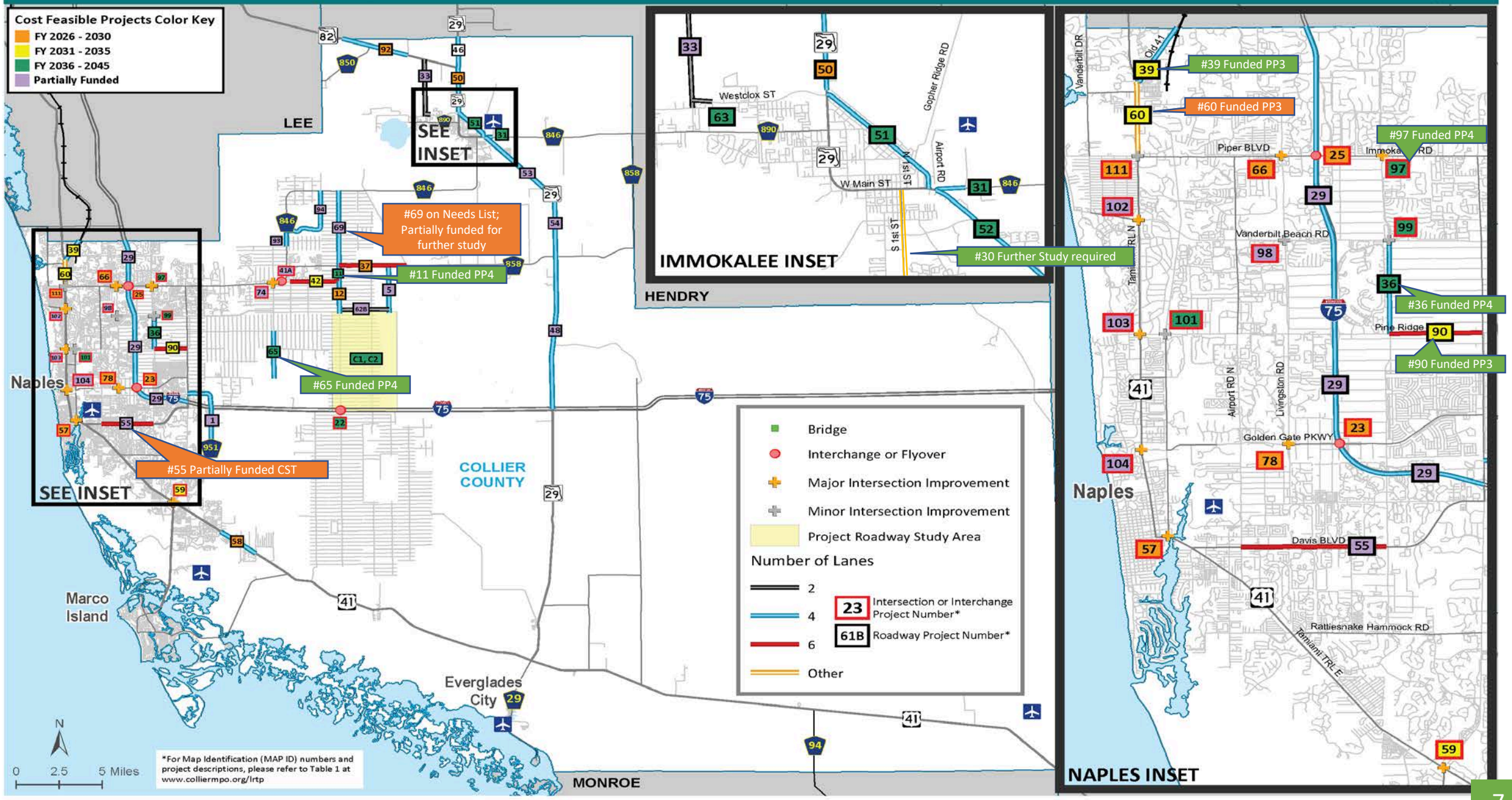
2045 Draft LRTP – Expected Changes

- Park-and-Ride Study
- Final Transit Development Plan
- Ongoing Stakeholder and Public Outreach
  - Seminole Tribe of Florida
  - Miccosukee Tribe
  - Freight
  - WikiMap comments
  - Online comments
- Technical Reports and Memos
- Cost Feasible Plan Revisions



cat COLLIER AREA TRANSIT

Exhibit 1 - Cost Feasible Plan Projects (2026-2045)

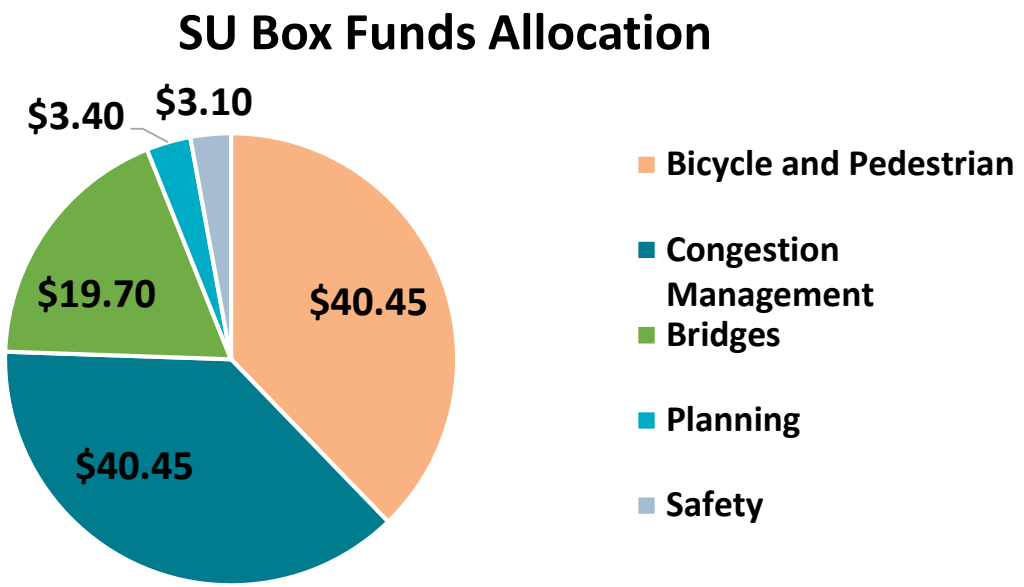


2045 LRTP CFP Changes - Transit

Improvement	FY 2020–2025 (TDP)	FY 2026–2030 (TDP)	FY 2031–2045 (LRTP)
Route Network Modifications	Route 11 - Extend into Walmart Shopping Ctr Route 12 - Extend into Walmart Shopping Ctr Route 17/18 - Combine/Realign Route 19/28 - Combine/Realign Route 20/26 - Combine Route 21 – Realign to create Marco Express Route 22 – Realign, Route 23 - Realign	Golden Gate Pkwy - Split Route 25 creating EW Route	Maintenance of existing and new fixed routes and paratransit
Increase Frequency	Route 23 - 60 to 40-min headway Route 24 - 85 to 60-min headway	Maintenance of existing and new fixed routes and paratransit	Maintenance of existing and new fixed routes and paratransit
Service Expansion	Route 121 - add one AM and one PM trip	Route 11, Route 13, Route 14, Route 17/18 - Extended hours to 10 pm	Maintenance of existing and new fixed routes and paratransit
Other Improvements	Santa Barbara Corridor Study UF/IFAS and Leigh Acres Route Study I-75 Managed Lanes Express Study Bus Replacements, Bus Shelters Everglades City Vanpool Study Fares Study Mobility on Demand Study Safety/Security Program and Driver Protection Barriers Technology Investments	Safety/Security Program Bus Replacements Bus Shelters	Bus Replacements Bus Shelters Technology Investments

2045 LRTP Pending Changes – SU Box Funds

- Safety and Transit Asset Management Plan updates
- Use of SU Box Funds
  - Bicycle and Pedestrian = $40.45M
  - Congestion Management = $40.45M
  - Bridges = $19.70M
  - Planning =$3.40M
  - Safety = $3.10M
- Airports



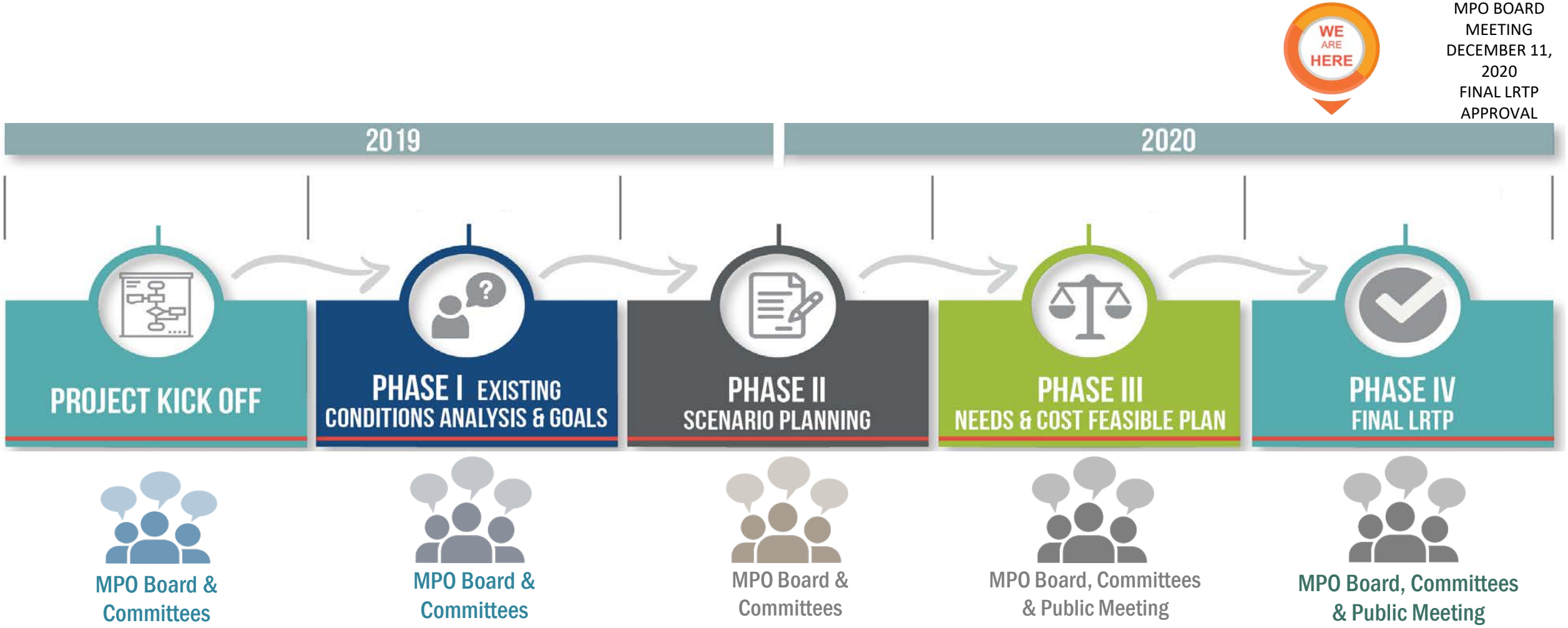
		Planning Period 2 in LRTP 2026-2030			Planning Period 3 in LRTP 2031-2035			Planning Period 4 in LRTP 2036-2045			Total Costs 2026-2045	
		PE	ROW	CST	PE	ROW	CST	PRE-ENG	ROW	CST		
NEW	MPO Supplemental Planning Funds	$0.70			$0.80			$1.90			$3.40	SU
NEW	Bicycle Pedestrian Box Funds			$10.17			$10.13			$20.15	$40.45	SU/TALU
NEW	Congestion Management/Intelligent Transportation Box Funds			$10.17			$10.13			$20.15	$40.45	SU
NEW	Bridge Box Funds			$4.96			$4.94			$9.80	$19.70	SU
NEW	Safety			$0.80			$0.80			$1.50	$3.10	SU

Overall LRTP Revenue Forecast for 2026-2045

TOTAL REVENUE FORECAST $2.518 B

- Highway = $1.609B
  - Federal = $107.1M
  - State = $540.7M
  - County = $541.5M
  - Local Operations and Maintenance = $420.2M
- Transit = $465.3M
  - Transit Operations = $334.9M
  - Transit Capital = $130.4M
- FDOT SIS Funding = $337.4M
- Use of SU Box Funds = $107.1M
  - MPO Planning Funds (SU) = $3.40M
  - Bicycle & Pedestrian (SU/TALU) = $40.45M
  - Congestion Management (SU) = $40.45M
  - Bridges (SU) = $19.70M
  - Safety (SU) = $3.10M
- Airports

LRTP Schedule



Next Steps in the LRTP Process

Expanding Advisory Committee Reviews to include LCB, BPAC, CMC in addition to TAC and CAC

Present Draft LRTP to Board on November 13th

Final Plan Adoption December 11th , 2020

ENVISION 2045

Collier MPO

Contact Information

Visit us at https://www.colliermpo.org/lrtp/ or scan the QR code with your smart phone to access our website.

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EXECUTIVE SUMMARY
Committee Distribution
Item A

Draft 2021 MPO Calendar

OBJECTIVE: For the Committee to receive a copy of the 2021 MPO Calendar

CONSIDERATIONS: The 2021 MPO Calendar is being distributed to advisory committees and the Board in November and December 2020 (**See Attachment 1**.) Subsequent changes will be noted and distributed on an as-needed basis.

STAFF RECOMMENDATION: For the Committee to receive a copy of the 2021 MPO Calendar.

Prepared By: Anne McLaughlin, MPO Director

Attachment 1: Draft 2021 MPO Calendar

2021 Meeting Schedule

Collier Metropolitan Planning Organization (MPO)
2885 S. Horseshoe Drive, Naples, FL 34104
www.CollierMPO.com
(239) 252-5814

DRAFT

~~STRIKETHROUGH~~ = CANCELLED MEETING
DATES IN RED = ADDED MEETING

Metropolitan Planning Organization (MPO) – Monthly at 9:00 a.m.

All MPO Board Meetings are held on the second Friday of the month. MPO Board Meetings will be held at the Board of County Commissioners Chambers, 3299 E. Tamiami Trail, Naples, unless otherwise noted.

February 12, 2021	March 12, 2021	*April 9, 2021	May 14, 2021
June 11, 2021	September 10, 2021	October 8, 2021	October 15, 2021**
November 12, 2021	December 10, 2021		
* This is the Collier MPO road-show meeting held at 10:00 a.m. in Immokalee			
** This a JOINT MEETING with Lee MPO, **location TBD**			

Technical Advisory Committee (TAC) – Monthly at 9:30 a.m.

All TAC Meetings are held on the last Monday of the month. TAC Meetings will be held at the Collier Growth Management Department, Planning & Regulation Building Conference Rooms 609/610, 2800 North Horseshoe Drive, Naples, unless noted below.

January 25, 2021	February 22, 2021	March 29, 2021	April 26, 2021
May 24, 2021	August 30, 2021	September 27, 2021	October 25, 2021
** October XX, 2021	November 29, 2021		
** This a JOINT MEETING with Lee MPO, location TBD			

Citizen Advisory Committee (CAC) – Monthly at 2:00 p.m.

All CAC Meetings are held on the last Monday of the month. CAC Meetings will be held at the Collier Growth Management Department Construction and Maintenance Building, Main Conference Room, 2885 South Horseshoe Drive, Naples, unless noted below.

January 25, 2021	February 22, 2021	March 29, 2021	April 26, 2021
May 24, 2021	August 30, 2021	September 27, 2021	October 25, 2021
** October XX, 2021	November 29, 2021		
*This is a JOINT MEETING with Lee CAC, **location and date TBD**			

Bicycle/Pedestrian Advisory Committee (BPAC) – Monthly at 9:00 a.m.

All BPAC Meetings are held on the third Tuesday of the month. BPAC Meetings will be held at the Collier County Growth Management Division, Planning & Regulation Building Conference Rooms 609/610, 2800 North Horseshoe Drive, Naples, unless noted below.

January 19, 2021	February 16, 2021	March 16, 2021	April 20, 2021
May 18, 2021	August 17, 2021	*August XX, 2021	September 21, 2021
October 19, 2021	November 16, 2021		
*This is a JOINT MEETING with Lee BPCC, **location and date TBD**			

Congestion Management Committee (CMC) – Bi-Monthly at 2:00 p.m.

All CMC Meetings are held on the third Wednesday of every other month. CMC Meetings will be held at the Collier County Growth Management Department Main Conference Room, 2885 South Horseshoe Drive, Naples, unless noted below.

January 20, 2021	March 17, 2021	May 19, 2021	July 21, 2021
September 15, 2021	November 17, 2021		

Local Coordinating Board (LCB) for the Transportation Disadvantaged – Quarterly at 1:30 p.m.

All LCB Meetings are held quarterly on the first Wednesday of the corresponding month. LCB Meetings will be held at the Collier County Government Center Building F, Information Technology Training Room 5th Floor, 3299 E. Tamiami Trail, Naples, unless noted below.

March 3, 2021	May 5, 2021	September 1, 2021	December 1, 2021