

OCALA MARION TPO

# Congestion Management Plan

## Congestion Management Process and State of the System Report



Resolution  
No. 21-14

RESOLUTION OF THE OCALA/MARION COUNTY  
TRANSPORTATION PLANNING ORGANIZATION (TPO) ADOPTING THE  
2021 CONGESTION MANAGEMENT PLAN (CMP)

WHEREAS, the Ocala/Marion County Transportation Planning Organization, designated by the Governor of the State of Florida as the Metropolitan Planning Organization (MPO) and body responsible for the urban transportation planning process for the Ocala/Marion County area; and

WHEREAS, Florida State Statutes [F.S. 339.175 (6)(c)(1)] requires all MPO's in Florida to develop and maintain a congestion management system for the metropolitan area and cooperate with the Florida Department of Transportation (FDOT) in the development of all other transportation management systems required by state and federal law; and

WHEREAS, a Congestion Management Process is a management system and process conducted by the Ocala/Marion TPO to improve safety and reliability of traffic operations by providing strategies to reduce travel demand on the roadway network or providing improvements to the overall transportation network of Ocala/Marion County; and

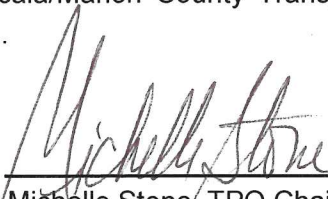
WHEREAS, The 2021 Congestion Management Plan was approved by the Ocala/Marion County Transportation Planning Organization on October 26, 2021.

NOW THEREFORE BE IT RESOLVED by the Ocala/Marion County Transportation Planning Organization adopts the 2021 Congestion Management Plan (CMP) to guide future transportation planning efforts and mitigate congestion and congestion related impacts to the transportation system of Ocala/Marion County.

CERTIFICATE

The undersigned duly qualified and acting Chair of the Ocala/Marion County Transportation Planning Organization hereby certifies that the foregoing is a true and correct copy of a Resolution adopted at a legally convened meeting of the Ocala/Marion County Transportation Planning Organization held on this 26th day of October 2021.

By:

  
Michelle Stone, TPO Chair

  
Rob Balmes, TPO Director





Prepared For:

Prepared By:

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## Chapter 1

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# Introduction

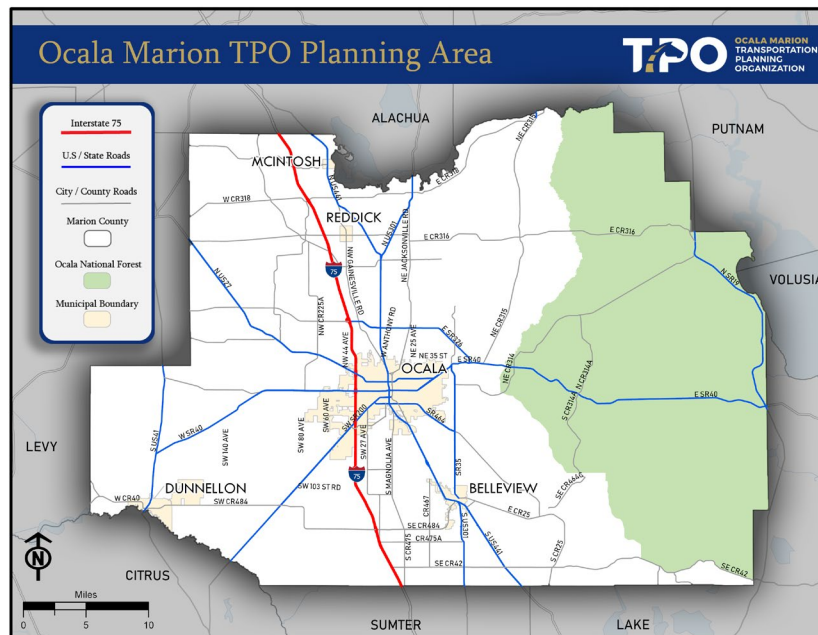




# Introduction

The Ocala Marion Transportation Planning Organization (TPO) is a federally-mandated public agency responsible for the planning and implementation of transportation projects, including highway, transit, freight, bicycle, pedestrian and paratransit. The TPO serves the cities of Belleview, Dunnellon, Ocala and Marion County. The TPO was established in 1981 after the 1980 Census determined the urbanized area of Ocala exceeded a threshold of 50,000 people. **Figure 1** illustrates TPO planning area which includes all of Marion County.

**Figure 1: Ocala Marion TPO Planning Area**



The Congestion Management Process (CMP) is a management system and process conducted by the Ocala Marion TPO to improve safety and reliability of traffic operations by providing strategies to reduce travel demand on the roadway network or providing improvements to the overall transportation network.

Per the Federal Highway Administration (FHWA), the CMP is, “a systematic approach collaboratively developed and implemented throughout a metropolitan region, that provides for the safe and effective management and operation of new and existing transportation facilities through the use of demand reduction and operational management strategies.”

The Ocala Marion TPO is required by Florida Law (Florida Statutes 339.175) to develop a CMP as part of its routine planning efforts. This Congestion Management Plan outlines the Policies and Procedures to address federal and state requirements and documents the State of the System Report for 2021. The Plan serves as a major update to the previously adopted Policy and Procedures Handbook and State of System Report adopted by the TPO in 2011.

Federal guidance includes an Eight-Step Congestion Management Process. These eight steps guide the contents of this document and are described at length in Chapter 2. Chapter 3 summarizes the State of the System for the Congestion Management Process network. The following provides a summary of the Congestion Management Plan contents.



## CHAPTER 2 - CMP POLICY AND PROCEDURES

The implementation of the Federal Eight-Step Congestion Management Process requirements is described in Chapter 2 which is broken up into the sections described below.

**Goals and Objectives:** A series of CMP goals are developed to guide the process of monitoring congestion and improving the mobility of persons and goods in Marion County. The CMP goals will be used as a tool for selecting strategies and performance measures for strategy monitoring and evaluation.

**Network Identification:** The geographic area of application and the transportation network for the Ocala Marion TPO CMP is described.

**Development of Performance Measures:** Identifying the performance measures to monitor the effectiveness of the transportation system in the CMP.

**System Performance Monitoring Plan:** The development of an ongoing system of monitoring and reporting that relies primarily on data already collected or planned to be collected.

**Congested Corridor Selection and CMP Strategies:** A summary of the implementation and management of the CMP strategies, including the process for selecting congested corridors for review and future projects for implementation.

**Monitor Strategy Effectiveness:** Describing provisions to monitor the performance of strategies implemented to address congestion to help determine whether operational or policy adjustments are needed to make the current strategies work better and provides information about how various strategies work in order to implement future approaches within the CMP study area.



## CHAPTER 3 - STATE OF THE SYSTEM REPORT

The purpose of State of the System Report is to report the performance of the transportation system in the TPO's planning area, and identify congested corridors. This chapter provides analysis of the major corridors within the TPO's planning area and is presented in the following sections:

**System Performance and Trends:** A summary of the overall system performance and trends relative to the performance measures identified in Chapter 2.

**Congested Corridors:** Identifies congested corridors within Marion County in 2021 and 2026.

## CHAPTER 4 - CONGESTED CORRIDOR EVALUATION

The Congested Corridor Evaluation chapter provides more information on corridors identified as part of the congested corridor network identification process (Phase 1) discussed in Chapter 3. Roadways that are congested today or forecasted to be congested in five years are considered. Corridors are identified as being “not congested,” “approaching congestion or minimally congested,” or “extremely congested”.

**Not Congested (currently or in five years with improvements):** Corridors that are not anticipated to operate below their adopted level of service standards in either the existing conditions or after committed improvements in the five-year program are implemented.

**Approaching Congestion:** Corridors that are not congested but have segments that have traffic volumes that consume more than 90% of the roadway’s capacity at the adopted level of service standard, but less than 100%, with either the existing conditions or forecasted five-year condition without improvement.

**Congested:** Existing corridors or corridor forecasted in five years to have traffic volumes that exceed the adopted level of service standard (over 100% of the roadway’s capacity at the adopted level of service standard) that do not exceed the physical capacity of the roadway.

**Extremely Congested:** Roadways in the Existing + Committed (E+C) five-year network that have forecast volumes that are greater than the physical capacity (typically occurs when using detailed analysis and the volume-to-capacity ratio is 1.08 or greater) of the roadway and are considered severely congested.

## Chapter 2

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# CMP Policy and Procedures



# CMP Policy and Procedures

## CMP OVERVIEW

The CMP is intended to provide benefit to the public by improving travel conditions with approaches that often may be implemented more quickly or at a lower cost than many capacity improvements such as adding travel lanes or creating new travel corridors. Longer-term solutions are also identified in the CMP with the intention that they will be considered in the TPO's Long Range Transportation Plan (LRTP), which is a document that plans for at least 20 years in the future.

A Transportation Management Area (TMA) is required to develop and implement a CMP as a part of the metropolitan planning process. A TMA is an urbanized area (UZA) with a population that exceeds 200,000 people, or any area where designation as a TMA has been requested. The area covered by the Ocala Marion TPO does not meet the criteria but has developed this CMP "to provide the information needed to make informed decisions regarding the proper allocation of transportation resources" as required by Florida law. It is anticipated that following the designation of Metropolitan Areas using the 2020 Census that portions of the Ocala Marion TPO and Lake~Sumter MPO planning areas will receive TMA designation.

## Causes of Congestion

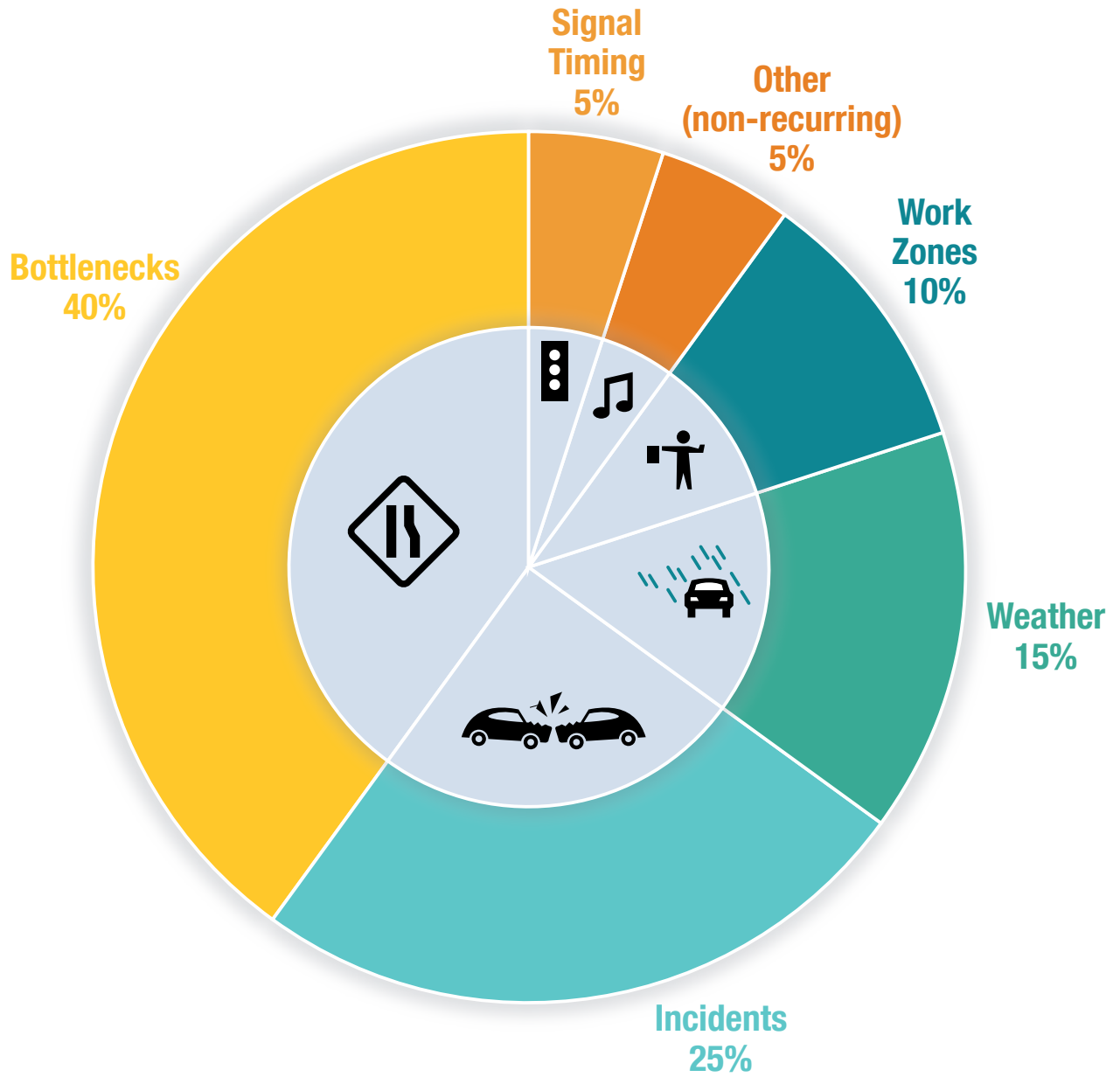
Congestion impacts nearly all aspects of a transportation system, which affects most of a community's residents and visitors. A study by FHWA identified six primary causes of congestion as is described below and depicted in **Figure 2**. This CMP uses these national data, which suggests that local causes are likely to be similar, with bottlenecks and traffic incidents typically being the top two causes of congestion.

- **Bottlenecks** often occur where roadways narrow or where vehicles stack up (often at traffic signals). These are most frequent source of congestion and characteristically cause a roadway to operate below its adopted level of service standards.
- **Traffic incidents** includes crashes, stalled vehicles, debris on the road, etc. Comprising 25% of congestion issues.
- **Poor weather** cannot be influenced by any agency.
- **Work zones** account for 10% of congestion causes and is attributed primarily to activities involved with network construction and maintenance.
- **Signal timing** may cause congestion when the operations of the signal are not timed appropriately for the volume of traffic.
- **Nonrecurring events** are considered those events that do not occur on a regular basis such as weekday rush hour. Events such as sporting events or concerts may cause unusually high traffic volumes and changes in traffic patterns in locations that typically do not experience them.

As shown in **Figure 2**, bottlenecks are the largest cause of congestion nationally, followed by traffic incidents and bad weather. Bad weather cannot be controlled, but policies and improvements can be implemented to control traffic incidents and bottlenecks.



Figure 2: FHWA Causes of Congestion



Source: FHWA

# FEDERAL REQUIREMENTS

The initial federal requirements for congestion management were introduced by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and were continued under the successor law, the Transportation Equity Act for the 21st Century (TEA-21). The Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) passed into law in August 2005.

The requirements were further evolved under Moving Ahead for Progress in the 21st Century Act (MAP-21) signed into law on July 6, 2012. The Fixing America's Surface Transportation (FAST) Act of 2015 sustained these requirements and provides the guidelines and subsequent rule-making for this document. Additional information related to federal regulations related to congestion management can be found in Appendix E.

## National Goals

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

## Federal Eight-Step Process

Eight distinct actions are identified by the Federal Highway Administration as the primary elements of a successful CMP. These actions provide a clear sequence of activities to provide a robust and thorough CMP. **Figure 3** illustrates the Federal Eight-Step Congestion Management Process.

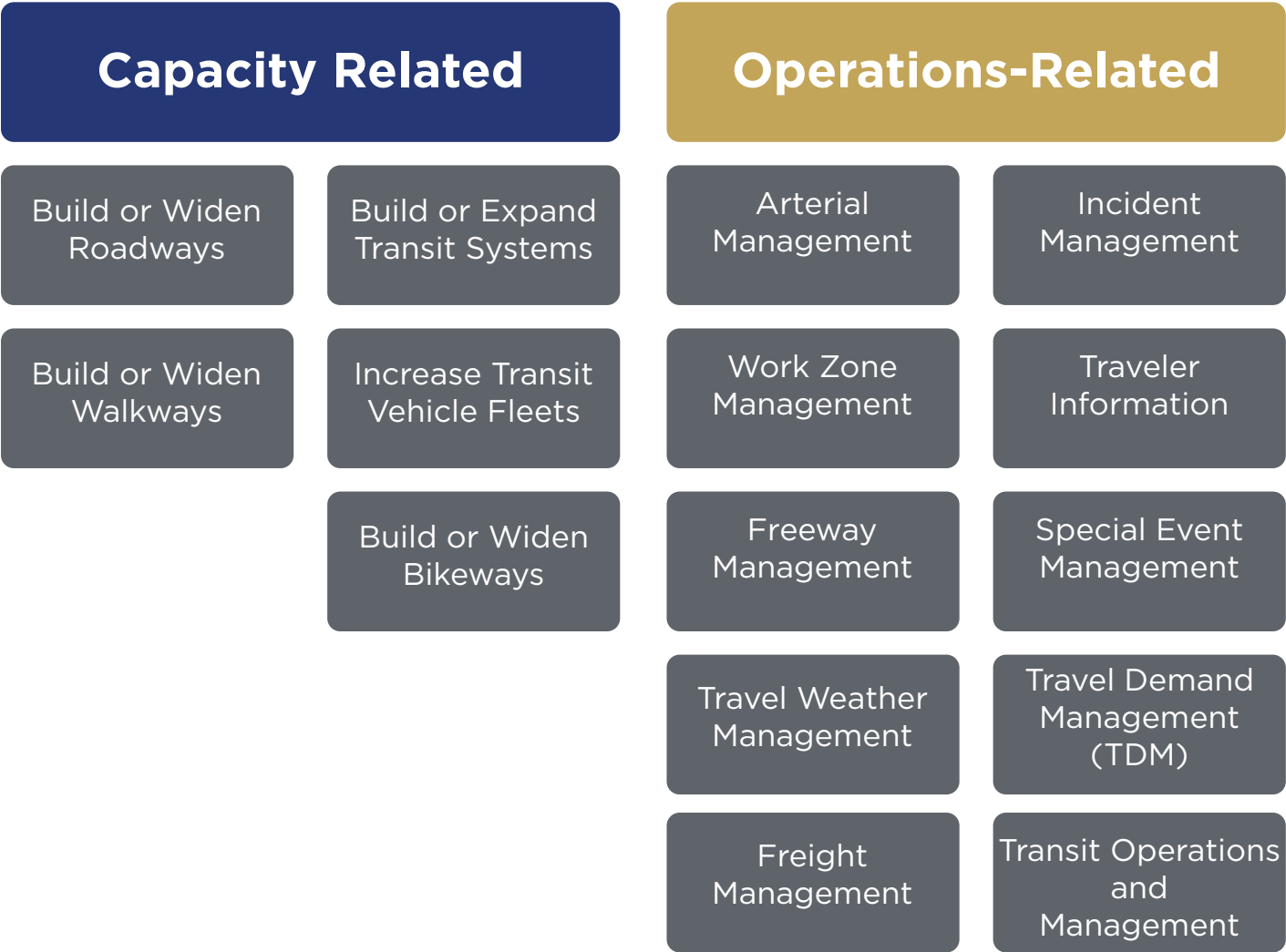
**Figure 3:** *Federal Eight-Step Congestion Management Process*





**Figure 4** lists strategies for travel time reliability which relate to and may be used in addressing congestion management.

*Figure 4: Capacity and Operations Strategies for Travel Time Reliability*

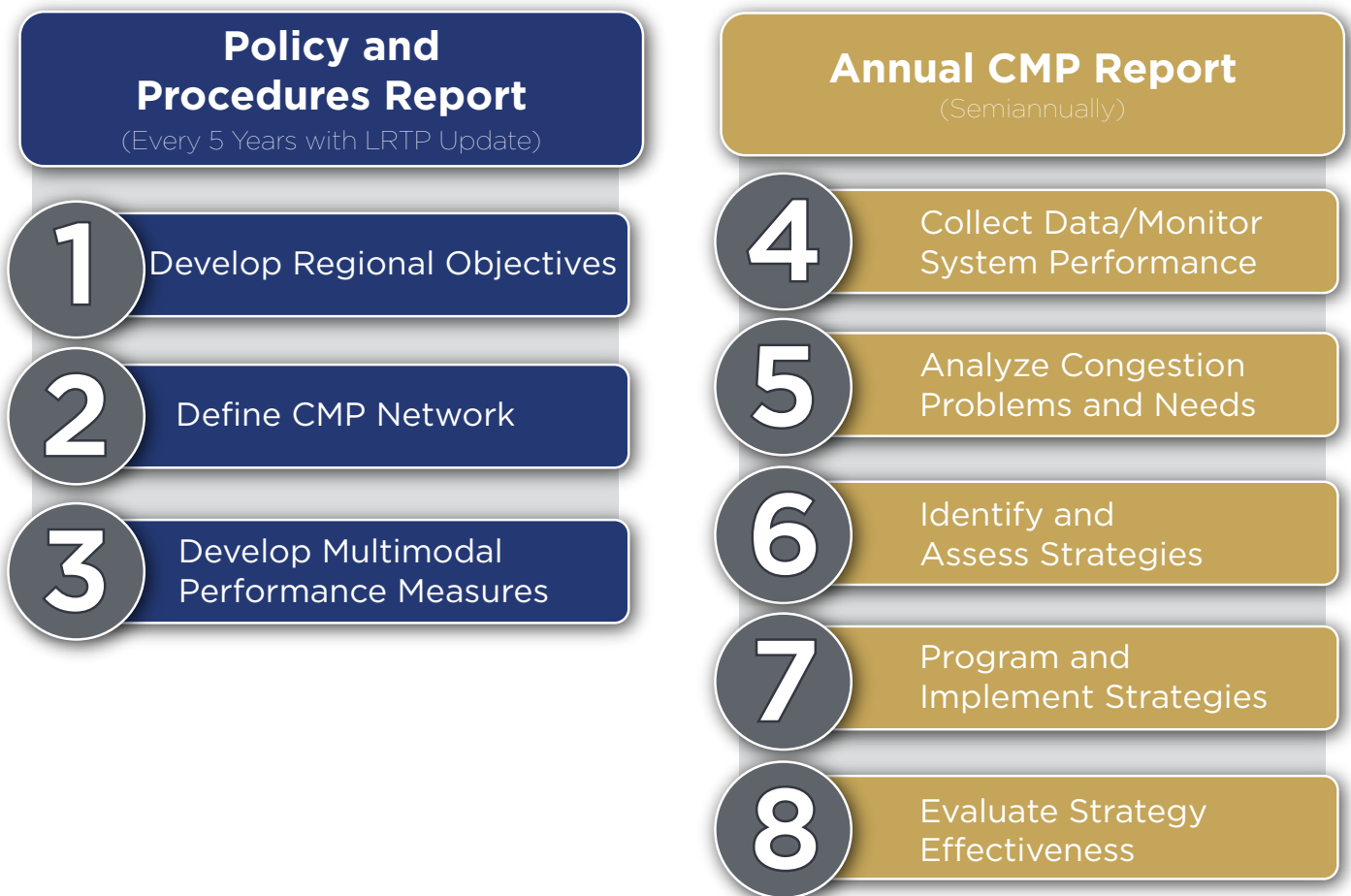


# Ocala Marion TPO Eight-Step Congestion Management Process

This section documents the revised Congestion Management Process for the Ocala Marion TPO that will be used to address the Federal requirements and unique local needs and opportunities of the communities in Marion County. This process closely matches the Federal Eight-Step Process and includes additional detail in specific sections where appropriate.

**Figure 5** demonstrates the Eight-Step Process that will be used by the TPO. As noted, the first three steps will typically be updated concurrent with each update of the LRTP which takes place every five years along with guidance on how Steps 4 to 8 will be implemented. Steps 4 to 8 will potentially be updated every two to three years. The remainder of this section details the eight steps and how they will be implemented.

*Figure 5: Ocala Marion TPO's Approach to the Federal Eight-Step Process*



## CMP In the Metropolitan Planning Process

The CMP is a dynamic tool integrated into the steps the TPO will take when prioritizing projects in general and in the LRTP and TIP. The plan is objective-driven and performance-based, generating a strong evaluation process that leads to implementing appropriate and effective strategies.

Potential mitigation efforts, as identified in the CMP move into project development and into TIP programming for funding and implementation. Those projects that are executed are closely monitored to evaluate the effectiveness locally and regionally. In Marion County, CMP projects could be funded using boxed funds identified in the LRTP along with other local revenues. Funding the projects in this manner would enable the TPO to regularly add those of the highest priority and to expand funding levels as necessary to address local needs.

### *CMP Coordination with List of Priority Projects (LOPP) Process and Local Programs*

As part of the CMP, the Ocala Marion TPO will identify and use information about congested corridors to support the annual List of Priority Projects (LOPP) process, which is done annually by the TPO in collaboration with local governments in Marion County. Additionally, the CMP information will help support programming of local capital projects. By coordinating the identification of congested corridors with the programming of capital spending, it is anticipated that operational and system improvements will address congestion in the near-term, delaying the need for additional travel lanes. This will decrease the overall cost of implementing transportation solutions included later in this report.

Coordination with local government may also occur during the development of the initial Level of Service (LOS) evaluations. Coordination occurs again when the final LOS evaluations are produced, to identify longer-term congestion mitigation projects via Capital Improvements Plan (CIP) update. Action 6 of the CMP process will identify long-term recommendations would be made available for local government use.





## *Public Involvement Process*

The purpose of CMP public involvement activities is to provide the public with information about congestion monitoring activities in place in Marion County and planned congestion-mitigation strategies. The continuing goal is to develop congested corridors and alternative transportation improvement strategies to alleviate congestion and enhance the mobility of persons and goods.

Federal regulations warrant involvement of the public during key stages of transportation projects. As such, the Ocala Marion TPO will involve the public in key stages of transportation improvement projects within and beyond the CMP. Without the actively engaging the community, lack of public support and awareness may adversely impact the success of any potential transportation project. This outreach to the public includes developing and implementing a survey to gather congestion and safety related concerns from the public.



Proposed CMP improvement projects/strategies will be presented to the citizens of Marion County through the TPO's regular planning process. The CMP public involvement process includes various activities to inform the public and gather input and is integrated with activities conducted throughout the LRTP planning process.

Key elements of the CMP public involvement process include the following:

- Meetings with the Technical Advisory Committee (TAC)
- Meetings with the Citizens Advisory Committee (CAC)
- Presentations to TPO Board
- Information dissemination through various TPO public involvement opportunities such as postings to the website and newsletters

Other stakeholders may be included with the TAC as warranted. These stakeholders may include and are not limited to local law enforcement agencies, goods movement representatives, community traffic safety teams (CTST), etc. These additional members would generally serve on an ad hoc basis to address specific issues.

## *CMP Actions/Recommendations*

A set of CMP Actions/Recommendations to enhance the TPO planning process are included in Appendix E.

# CMP GOALS AND OBJECTIVES

A series of CMP goals are developed to guide the process of monitoring congestion and improving the mobility of persons and goods in Marion County. These were compiled based on the relevant goals and objectives established in the Ocala Marion TPO 2045 LRTP as well as CMP goals used by other communities in Florida and other states that would also be appropriate for Marion County.

The goals and objectives as established by the 2045 LRTP are presented below and were used as Guiding Principles for the development of the CMP Goals.

## Ocala Marion TPO 2045 LRTP Goals and Objectives

### **Goal 1: Promote Travel Choices that are Multimodal and Accessible**

**Objective 1.1:** Increase transit ridership by providing more frequent and convenient service

**Objective 1.2:** Increase bicycle and pedestrian travel by providing sidewalks, bike lanes, and multi-use trails throughout the county

**Objective 1.3:** Provide safe and reasonable access to transportation services and facilities for use by the transportation disadvantaged (TD) population

**Objective 1.4:** Provide desirable and user-friendly transportation options for all user groups regardless of socioeconomic status or physical ability

### **Goal 2: Provide Efficient Transportation that Promotes Economic Development**

**Objective 2.1:** Improve access to and from areas identified for employment development and growth

**Objective 2.2:** Foster greater economic competitiveness through enhanced, efficient movement of freight

**Objective 2.3:** Address mobility needs and reduce the roadway congestion impacts of economic growth

### **Goal 3: Focus on Improving Safety and Security of the Transportation System**

**Objective 3.1:** Provide safe access to and from schools

**Objective 3.2:** Increase the accessibility and mobility of people and freight within the region and to other areas

**Objective 3.3:** Improve security by enhancing the evacuation route network for natural events and protecting access to military asset

**Objective 3.4:** Reduce the number of fatal and severe injury crashes for all users

#### **Goal 4: Ensure the Transportation System Meets the Needs of the Community**

**Objective 4.1:** Provide opportunities to engage citizens, particularly traditionally underserved populations, and other public and private groups and organizations

**Objective 4.2:** Support community education and involvement in transportation planning

**Objective 4.3:** Coordinate with local government to consider local land use plans when identifying future transportation projects

**Objective 4.4:** Collaborate with various agencies including FDOT, Marion County School District, Marion County and its municipalities, SunTran, and providers of freight and rail travel to create strategies for developing a multimodal transportation system

#### **Goal 5: Protect Natural Resources and Create Quality Places**

**Objective 5.1:** Limit impacts to existing natural resources, such as parks, preserves, and protected lands

**Objective 5.2:** Avoid or minimize negative impacts of projects and disruption to residential neighborhoods

**Objective 5.3:** Improve the resiliency of the transportation system through mitigation and adaptation strategies to deal with catastrophic events

**Objective 5.4:** Enhance access to tourist destinations, such as trails, parks and downtowns

#### **Goal 6: Optimize and Preserve Existing Infrastructure**

**Objective 6.1:** Improve the performance of the transportation system through intersection modifications, access management strategies, Intelligent Transportation Systems (ITS) applications, and other emerging technologies

**Objective 6.2:** Emphasize the preservation of the existing transportation system and establish priorities to ensure optimal use

**Objective 6.3:** Maintain the transportation network by identifying and prioritizing infrastructure preservation and rehabilitation projects such as asset management and signal system upgrades

**Objective 6.4:** Plan for the future of Automated, Connected, Electric and Shared (ACES) vehicles and other emerging technologies into the transportation network

**Objective 6.5:** Improve the reliability of the transportation system through operational and incident management strategies



## CMP GOALS

The following CMP goals will be used as a tool for selecting strategies and performance measures for strategy monitoring and evaluation. The CMP goals are consistent with the LRTP goals and will be evaluated with each update to the CMP.

### Goal 1: Monitor System Performance

### Goal 2: Improve Safety

### Goal 3: Congestion Reduction

### Goal 4: Engage the Public

### Goal 5: System Preservation

## NETWORK IDENTIFICATION

This section of the CMP presents an overview of the geographic area of application and the transportation network.

### Area of Application

The CMP application area is inclusive of the Ocala Marion TPO metropolitan planning area and includes the multimodal transportation system being evaluated and monitored to identify congestion management policies and strategies.

### Transportation Network

Consistent with federal guidelines, the Ocala Marion CMP covers a multimodal transportation network. In addition to evaluating congestion on the roadway network, the Ocala Marion CMP evaluates appropriate transit, bicycle/pedestrian/multiuse path and freight movement networks within its designated area of application. The CMP roadway network is described below.

### Roadway CMP Network

The Ocala Marion TPO roadway network includes all existing functionally classified roadways and roads with construction funded in the next five years, known as the existing-plus-committed (E+C) network. **Figure 6** illustrates the existing plus five-year committed roadway network and includes roadway projects through 2026. This map represents the study area and network for the CMP.

# CMP Network - Introduction

The Ocala Marion TPO CMP roadway network includes three tiers of roadways:

**Tier 1** - Interstate National Highway System (NHS) Roadways

**Tier 2** - Non-Interstate NHS Roadways

**Tier 3** - Non-NHS Roadways

The map in **Figure 6** illustrates the Ocala Marion TPO CMP Network. This represents the study area and network for the Ocala Marion TPO CMP.

## *Interstate NHS Roadways (Tier 1 CMP Network)*

The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the Department of Transportation (DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). The NHS serves as the backbone of our nation's surface transportation system. Our regional, state, and national population has and will continue to grow. The intent of the NHS is to mirror the benefits that resulted from the Interstate Highway System to areas that are not served directly by it.

The Federal Highway Administration responded to the mandate of Congress and developed the concept of a national highway system as a way of focusing federal resources on the nation's most important roads. All of the roadways on the NHS are included in the Ocala Marion TPO's CMP Network. The TPO will be required to frequently report performance statistics on the NHS routes and were separated into the first tier of CMP network roadways to facilitate the update of these statistics. Within the Ocala Marion TPO, the only NHS Interstate Roadway is Interstate-75 (I-75).

## *Non-Interstate NHS Roadways (Tier 2 CMP Network)*

Tier 2 of the CMP network includes other NHS regional/major roadways: This represent other major regional roadways on the State Highway System and non-State Highway System roadways. The following roadway corridors represent the NHS Non-Interstate Tier 2 CMP Network roadways:

- US 27
- US 41
- US 301
- US 441
- SR 40
- SR 200
- SR 326
- SR 492



## *Non-NHS Roadways (Tier 3 CMP Network)*

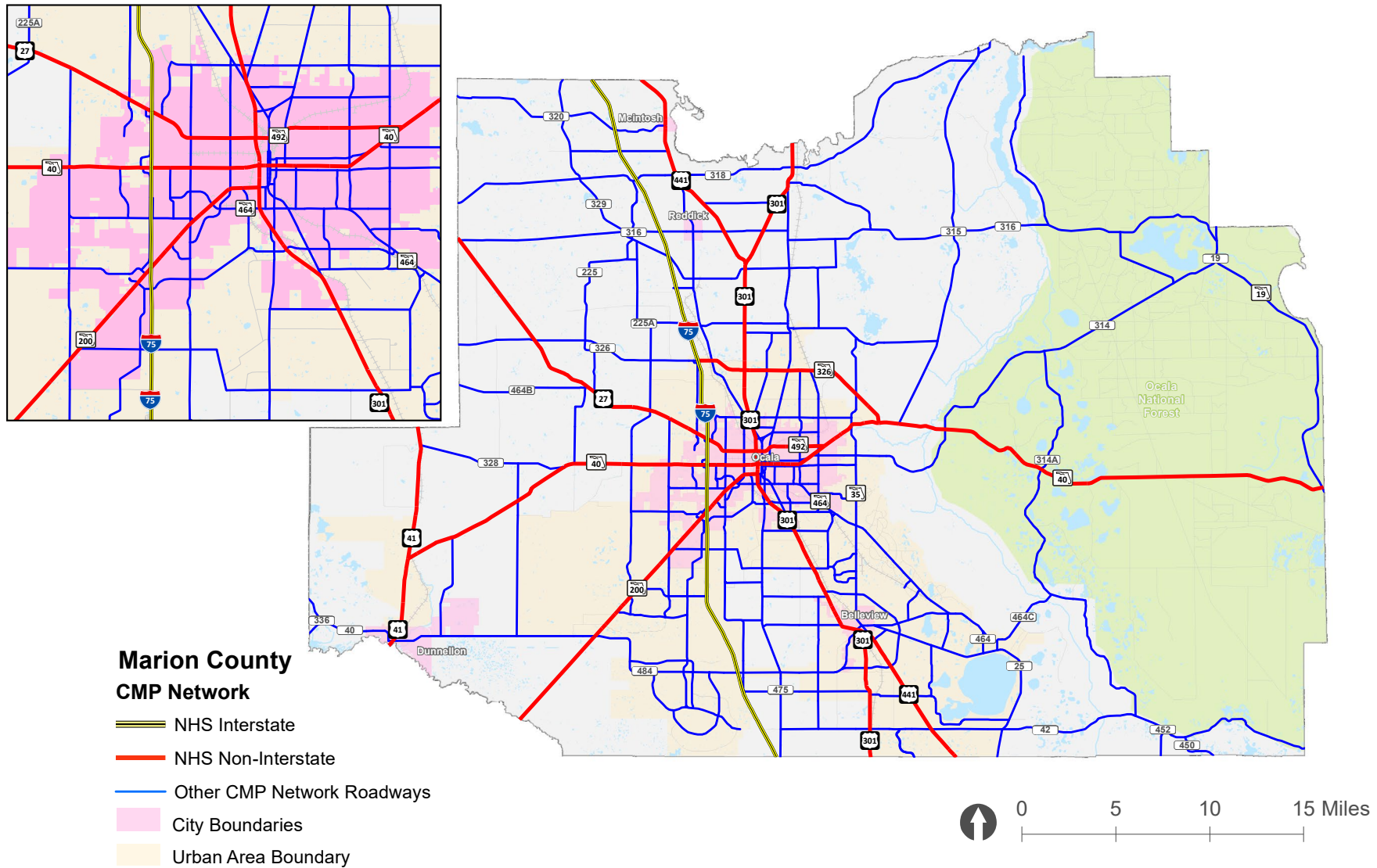
Tier 3 of the CMP network includes other regional/major roadways: on the State Highway System and non-State Highway System roadways. The following roadway corridors represent some of the non-NHS Tier 3 CMP Network roadways:

- SR 19
- SR 25
- SR 35
- SR 464
- CR 21
- CR 25
- CR 25A
- CR 35
- CR 40
- CR 42
- CR 200A / JACKSONVILLE RD
- CR 225
- CR 225A
- CR 312
- CR 314
- CR 314A
- CR 315
- CR 316
- CR 318
- CR 320
- CR 326
- CR 328
- CR 329
- CR 336
- CR 450
- CR 452
- CR 464
- CR 464A
- CR 464B
- CR 464C
- CR 467
- CR 475
- CR 475A
- CR 475B
- CR 484
- BAHIA RD
- BASELINE RD EXT
- BUENA VISTA BLVD
- CHESNUT RD
- E FORT KING ST
- EMERALD RD
- EMERALD RD EXT
- JUNIPER RD
- MAGNOLIA AV N
- MAGNOLIA AV S
- MARION OAKS
- MARION OAKS BLVD
- MARION OAKS CRSE
- MARION OAKS LN
- MARION OAKS MANOR EXT
- MARION OAKS MNR
- MARION OAKS TRL
- MIDWAY RD
- N BAHIA RD
- NE 1 AV
- NE 12 AV
- NE 127 ST RD
- NE 160 AV RD
- NE 17 AV
- NE 175 ST
- NE 19 AV
- NE 2 ST
- NE 203 AV
- NE 24 ST
- NE 25 AV
- NE 28 ST
- NE 3 ST
- NE 35 ST
- NE 36 AV
- NE 40 AV
- NE 44 AV
- NE 47 AV
- NE 49 ST
- NE 70 AV
- NE 8 AV
- NE 90 ST
- NE 95 ST
- NE 97 ST
- NE JACKSONVILLE RD
- NE WATULA AVE
- NW 100 ST
- NW 110 AV
- NW 110 ST
- NW 118 ST
- NW 120 ST
- NW 135 ST
- NW 150 AV
- NW 160 AV
- NW 165 ST
- NW 193 ST
- NW 21 ST
- NW 27 AV
- NW 3 ST
- NW 35 AV



- NW 35 ST
- NW 38 AV
- NW 40 AV
- NW 44 AV
- NW 44TH AVE
- NW 49 ST
- NW 60 AV
- NW 95 ST
- NW MARTIN L KING AV
- OAK RD
- PINE RD
- POWELL RD
- SE 1 AV
- SE 100 AV
- SE 108 TER RD
- SE 11 AV
- SE 110 ST
- SE 110 ST RD
- SE 114TH ST RD
- SE 132 ST RD
- SE 147 PL
- SE 17 ST
- SE 19 AV
- SE 22 AV
- SE 23 PL
- SE 24 RD
- SE 24 ST
- SE 25 AV
- SE 28 ST
- SE 3 AV
- SE 30 AV
- SE 31 ST
- SE 36 AV
- SE 38 ST
- SE 41 CT
- SE 44 AV
- SE 44 AV RD
- SE 47 AV
- SE 52 CT
- SE 52 ST
- SE 64 AVE RD
- SE 8 ST
- SE 80 ST
- SE 92 PL RD
- SE 92 PLACE LOOP
- SE 95 ST
- SE JUNIPER CIR
- SE MAGNOLIA EXT
- SE SUNSET HARBOR RD
- SE WATULA AVE
- SILVER RD
- SPRING RD
- SW 1 AV
- SW 10 ST
- SW 103 ST RD
- SW 13 ST
- SW 140 AV
- SW 17 ST
- SW 180 AV RD
- SW 19 AV
- SW 19 AV RD
- SW 20 ST
- SW 27 AV
- SW 3 ST
- SW 31 AV
- SW 32 AV/SW 34 ST
- SW 33 AV
- SW 37 AV
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- SW 38 ST
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- SW 42 ST
- SW 44 AV
- SW 46 AV
- SW 49 AV
- SW 49TH AVENUE
- SW 5 ST
- SW 60 AV
- SW 66 ST
- SW 67 AV RD
- SW 7 AV
- SW 7 RD
- SW 80 AV
- SW 80 ST
- SW 95 ST
- SW MARTIN L KING AVE
- W ANTHONY RD
- W FORT KING ST

Figure 6: Ocala Marion TPO CMP Network



# DEVELOPMENT OF PERFORMANCE MEASURES

Performance measures are used as tools to measure and monitor the effectiveness of the transportation system in the CMP. They assist in identifying, tracking and monitoring congestion. However, these measures are dependent upon the transportation network and the availability of data. They are typically used to measure the extent and severity of congestion and for the evaluation of the effectiveness of the implemented strategies.

As identified by FHWA, a set of good performance measures:

- Includes quantifiable data that is simple to present and interpret and has professional credibility;
- Describes existing conditions, can be used to identify problems and to predict changes;
- Can be calculated easily and with existing field data, techniques available for estimating the measure, achieves consistent results; and
- Applies to multiple modes, meaningful at varying scales and settings.

## Performance Measures

The performance measures for the CMP were selected to address the existing conditions for multi-modal transportation network in the area. The measures are also in compliance with the federal direction of using measures that cover multimodal networks. The measures are organized into seven major categories. These seven categories are:

1. Safety
2. Roadway Capacity
3. Roadway Reliability
4. Public Transit
5. Bicycle/Pedestrian/Multiuse Trail Facilities
6. Goods Movement
7. Transportation Demand Management



## Relationship of Performance Measures to the Goals and Objectives

**Table 1** illustrates an example of the relationship between the performance measures identified above and the Goals for the Congestion Management Process.

**Table 1. Relationship of Goals to Performance Measures**

		GOAL 1: MONITOR SYSTEM PERFORMANCE	GOAL 2: IMPROVE SAFETY	GOAL 3: CONGESTION REDUCTION	GOAL 4: ENGAGE THE PUBLIC	GOAL 5: SYSTEM PRESERVATION
Performance Measure						
Safety Performance Measures (% Year Rolling Average)	Number of Fatalities					
	Fatality Rate					
	Serious Injuries	○	●	○	○	
	Serious Injury Rate					
	Non-Motorized Safety (Fatalities + Serious Injuries)					
Roadway Capacity Performance Measures	Percent of VMT and Roadway Miles below adopted Level of Service Standard	○	○	●		
	V/C Ratio					
	V/MSV Ratio					
Travel Time Reliability Performance Measures	Percent of the Interstate System providing for Reliable Travel Times					
	Percent of the Non-Interstate NHS providing for Reliable Travel Times					
	Percent of the Interstate System where Peak Hour Travel Times meet expectations (Optional)	○	○	●		
	Percent of the non-Interstate NHS where Peak Hour Travel Times meet expectations (Optional)					
Goods Movement Performance Measures	Vehicle Miles Traveled (VMT) Below LOS Standard on Designated Truck Routes					
	Percent of the Interstate System Mileage Providing for Reliable Truck Travel Times	○	○	●		
	Percent of the Interstate System Mileage Uncongested					
	Number of Crashes Involving Heavy Vehicles					
Public Transit Performance Measures	Percent of Congested Roadway Centerline Miles with Transit Service					
	Passenger Trips per Revenue Hour	○	○	●		
	Average Peak Service Frequency					
	On-Time Performance					
Bike/ Pedestrian/ Trail Facility Performance Measures	Annual Ridership					
	Percent of Congested Roadway Centerline Miles with Bicycle and/or Sidewalk Facilities	○	○	●		
TDM	Miles of Multi-Use Trails					
	Number of Registered Carpools or Vanpools	○	○	●		
System Preservation (Optional - Non- CMP)	Percent of Interstate & Non-Interstate NHS Pavement in Good/Poor Condition	●				●
	Percent of NHS Bridges in Good/Poor Condition					

● Primary Relationship ○ Secondary Relationship



## **Safety Performance Measures (Based on 5-Year Rolling Average)**

- Number of fatalities
- Fatality rate
- Number of serious injuries
- Serious injury rate
- Non-motorized safety (number of non-motorized fatalities + serious injuries)

## **Roadway Capacity Performance Measures**

- Percent of Roadway Miles by LOS Type
- Percent of Vehicle Miles Traveled by LOS Type
- V/C ratio
- V/MSV ratio

## **Reliable Travel Time Performance Measures**

- Percent of the Interstate System providing for Reliable Travel Times
- Percent of the non-Interstate NHS providing for Reliable Travel Times
- Percent of the Interstate System where Peak Hour Travel Times meet expectations (Optional)
- Percent of the non-Interstate NHS where Peak Hour Travel Times meet expectations (Optional)

## **Public Transit Performance Measures**

- Percent of congested roadway centerline miles with transit service
- Average peak service frequency
- On-time performance
- Transit Ridership

## **Bicycle/Pedestrian/Multiuse Path Facility Performance Measures**

- Percent of Congested Roadway Centerline Miles with Bicycle Facilities
- Percent of Congested Roadway Centerline Miles with Sidewalk Facilities
- Miles of existing Multiuse Paths

## **Goods Movement Performance Measures**

- Vehicle Miles Traveled (VMT) Below LOS Standard on Designated Truck Routes
- Number of Crashes Involving Heavy Vehicles

## **Transportation Demand Management Performance Measures**

- Available information on registered vanpools/carpools and riders.

## **System Preservation (Optional – Non-CMP)**

- Percent of pavements of the Interstate System in Good condition
- Percent of pavements of the non-Interstate NHS in Good condition
- Percent of pavements of the Interstate System in Poor condition
- Percent of pavements of the non-Interstate NHS in Poor condition
- Percent of NHS Bridges Classified as in “Good” Condition
- Percent of NHS Bridges Classified as in “Poor” Condition

These performance measures were identified based on numerous monitoring activities currently conducted and/ or planned by various local and state agencies for Marion County. Detailed descriptions of each of these measures, together with an explanation of how the required data are or will be collected, are presented below. Developing additional performance measures resulting from implementation of MAP-21 and the FAST Act.

## **Safety Performance Measures (5 Year Rolling Average)**

Crashes at intersections and roadway segments are used as an indicator of congestion. Considered a measure of non-recurring congestion, this measure uses data that are widely available through the many local and state agencies that track them on an ongoing basis throughout the CMP application area. All data is collected and summarized in the form of a 5 year rolling average.

### **Number of Fatalities**

This is a summary of the number of fatalities from motor vehicle crashes. This is measured by the number of fatalities and not the number of fatality crashes.

### **Fatality Rate**

This is a summary of the number of fatalities from motor vehicle crashes normalized by exposure in the form of vehicle miles of travel (100 million). This is measured by the number of fatalities and not the number of fatality crashes.

### **Serious Injuries**

This is a summary of the number of incapacitating injuries from motor vehicle crashes. This is measured by the number of persons receiving incapacitating injuries and not the number of incapacitating injury crashes.

### **Serious Injury Rate**

This is a summary of the number of incapacitating injuries from motor vehicle crashes normalized by exposure in the form of vehicle miles of travel (100 million). This is measured by the number of persons receiving incapacitating injuries and not the number of incapacitating injury crashes.

### **Non-Motorized Safety (Fatalities + Serious Injuries)**

This is a summary of the number of fatalities and incapacitating injuries from motor vehicle crashes that involve pedestrians or bicyclists. This is measured by the sum of the number of fatalities and incapacitating injuries and not the number of fatality or incapacitating injury crashes.

**Data Collection/Availability** – Crash data in Marion County is collected by the TPO from the University of Florida Signal Four Analytics database and also received from FDOT on an annual basis.

## **Additional Resources**

In March 2021 FDOT published an updated Strategic Highway Safety Plan (SHSP). This newest plan establishes a focus toward achieving “Vision Zero”, a goal of zero traffic fatalities. The plan identifies four approaches to improve safety:

- Engineering
- Enforcement
- Education
- Emergency Response

The plan also identifies the need for quality Information Intelligence, Innovation, Insight Into Communities, and Investments and Policies to achieve Vision Zero.

These overarching approaches address the following 11 SHSP Emphasis Areas withing the Roadways, Road Users, and User Behavior categories:

Each year the TPO is required to update safety targets for five safety performance measures established by MAP-21. The TPO Governing Board decides annually if these targets may differ from the statewide targets established by FDOT.

## **Roadway Performance Measures**

Percent of Vehicle Miles of Travel (VMT) and Roadway Miles Below the Adopted Level of Service (LOS) Standard. This measure summarizes the proportion of vehicle miles of travel and roadway miles below the adopted level of service standard to help quantify the level of congestion within the County.

**Data Collection/Availability** – The City of Ocala, Marion County, and FDOT collect traffic data annually. FDOT updates capacity data and performs LOS analysis on an annual basis for various planning purposes. The Maximum Service Volume (MSV) and LOS are generally based on FDOT Quality/Level of Service (Q/LOS) methodology.

## **V/C Ratio and V/MSV Ratio**

The volume-to-capacity (V/C) ratio is used as the major tool in measuring roadway conditions and is a measure of the amount of traffic on a given roadway in relation to the amount of traffic the roadway was designed to handle. The volume to maximum service volume (V/MSV) is used to measure the amount of traffic on a roadway in relation to the adopted acceptable amount of traffic the roadway should be able to handle.

The City of Ocala, Marion County, and FDOT collect traffic volume data annually. The Ocala Marion TPO publishes the traffic counts in a Geographic Information System (GIS) platform and published report. FDOT updates capacity data and performs LOS analysis on an annual basis for various planning purposes.

## **Reliable Travel Time Performance Measures**

FDOT has an established a Mobility Performance Measures Program based on a benchmarking technique and is referred to as the Florida Reliability Method. The Florida Reliability Method was derived from the Department’s definition of reliability of a highway system as the percent of travel on a corridor that takes no longer than the expected travel time plus a certain acceptable additional time. In this context, it is necessary to define the three major components of reliability:

1. **Travel time** – The time it takes a typical commuter to move from the beginning to the end of a corridor. Since speed is determined along each segment as the traveler moves through the corridor, this travel time is a function of both time and distance. This is representative of the typical commuter's experience in the corridor.
2. **Expected travel time** – The median travel time across the corridor during the time-period being analyzed. The median is used rather than the mean so that the value of the expected travel time is not influenced by any unusual major incidents that may have occurred during the sampling period. These major incidents will be accounted for in the percentage of how often the travel takes longer than expected but will not change the baseline to which that unusually high travel time is being compared.
3. **Acceptable additional time** – The amount of additional time, beyond the expected travel time, that a commuter would find acceptable during a commute. The acceptable additional time is expressed as a percentage of the expected travel time during the period being analyzed.

### **Percent of the Interstate System providing for Reliable Travel Times**

Percent of the Interstate System providing reliable travel times.

### **Percent of the non-Interstate NHS providing for Reliable Travel Times**

Percent of the non-Interstate NHS System providing reliable travel times. This will typically only be measured on the State Highway system and a limited number of non-State Highway System facilities.

## **Public Transit Performance Measures**

### **Average Service Frequency and Number of Routes**

This measure summarizes the number of routes in Marion County (fixed-route local bus service), including the average service frequency.

**Data Collection/Availability** – Ocala and Marion County's transit system, SunTran, maintains databases of various transit service and operational data including route networks. This data is typically available in GIS or spreadsheet formats and used regularly by SunTran for service planning purposes.

### **Passenger Trips (Annual Ridership)**

Annual ridership summarizes the total number of un-linked passenger trips from all transit routes that operates in the CMP application area in Marion County. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.

**Data Collection/Availability** – The ridership data is considered one of the key performance indicators for any transit systems and are collected regularly. Transit ridership data is maintained and summarized by SunTran in various transit and related documents.



## **Passenger Trips per Revenue Hour**

Passenger Trips per Revenue Hour summarizes the total number of un-linked passenger trips from all transit routes that operates in the CMP application area in Marion County divided by the total revenue hours. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination. The total revenue hours are provided by SunTran.

**Data Collection/Availability** – SunTran regularly collects this data, which are reported in various day- to-day operations reports and annual reports such as the National Transit Database (NTD).

## **Bicycle/Pedestrian/Multiuse Path Facility Performance Measures**

### **Percent of Congested CMP Roadway Centerline Miles with Bicycle Facilities**

This measure identifies the proportion of congested CMP centerline miles, where some type of bicycle facility exists, as defined by the respective planning agencies. Some communities consider paved shoulders and wide curb lanes to be bicycle facilities, excepting interstates and toll facilities.

**Data Collection/Availability** – The data are regularly collected and maintained by Ocala Marion TPO and summarized in various local plans.

### **Percent of Congested CMP Roadway Centerline Miles with Sidewalk Facilities**

The proportion of congested CMP roadway network centerline miles on which a sidewalk is available is measured.

**Data Collection/Availability** – The data are regularly collected and maintained by the TPO and summarized in various local plans.

### **Miles of Multiuse Paths**

This measure summarizes the total number of miles of multiuse path facilities in Marion County. Multiuse path facilities usually are off-street facilities designated for the exclusive use of nonmotorized travel. They may be used by pedestrians, cyclists, wheelchair users, joggers, and other non-motorized users.

**Data Collection/Availability** – The data are regularly collected and maintained by the TPO and summarized in various local plans.

## **Goods Movement Performance Measures**

### **Vehicle Miles Traveled (VMT) Below LOS Standard on Designated Truck Routes**

Measures the total vehicle miles of travel below the adopted LOS standard in Marion County on the NHS. The VMT for a roadway segment is calculated by multiplying the Annual Average Daily Traffic (AADT) of that segment by the length of the segment in miles.

**Data Collection/Availability** – The VMT performance data is calculated with the update of the State of the System Report.

### **Percent of the Interstate System Mileage providing for Reliable Truck Travel Times**

Percent of the Interstate System providing reliable truck travel times.

**Data Collection/Availability** – Truck Travel Time Reliability Data will be summarized by FDOT for the Interstate System.

## **Percent of the Interstate System Mileage Uncongested**

This measures the total vehicle miles of travel below the adopted LOS standard in Marion County on Interstate 75.

**Data Collection/Availability** – Level of service performance data is calculated with the update of the State of the System Report.

## **Number of Crashes Involving Heavy Vehicles**

These crashes involve heavy vehicles. It is considered a measure of nonrecurring congestion that is often more significant when it involves heavy vehicles. This measure uses data that are widely available through the many local and state agencies that track these data on an ongoing basis throughout the CMP application area.

**Data Collection/Availability** – Crash data is derived from the University of Florida Signal Four Analytics database.

## **TDM Performance Measures**

### **Number of Registered Carpools or Vanpools**

TDM Performance Measures could include the annual number of registered carpools and vanpools in CMP application area. A carpool is defined as a group of two or more people who commute to work or other destinations together in a private vehicle, while a vanpool is typically a prearranged group of 5 to 15 people who share their commute to work.

**Data Collection/Availability** – FDOT's reThink Your Commute, through a contracted operator, provides carpool/ vanpool services in Marion County and neighboring areas. reThink Your Commute maintains data on the number of carpools and vanpools operating in Marion County on an annual basis. The organization also maintains a list of registered carpool/vanpool users to match to carpools and vanpools.

### **System Preservation (Optional – Non-CMP)**

Federal legislation (MAP-21 & FAST Act) requires the reporting of pavement conditions and bridge conditions on the National Highway System. While this is not a CMP related performance measure, it is appropriate to include these performance measures in the CMP Annual State of the System report.

- Percent of pavements of the Interstate System in Good condition
- Percent of pavements of the non-Interstate NHS in Good condition
- Percent of pavements of the Interstate System in Poor condition
- Percent of pavements of the non-Interstate NHS in Poor condition
- Percent of NHS Bridges Classified as in "Good" Condition
- Percent of NHS Bridges Classified as in "Poor" Condition

**Data Collection/Availability** – Pavement condition data for the Interstate and Non-Interstate National Highway System roadways will be provided by FDOT. Non-State NHS pavement condition data will need to be provided by the appropriate jurisdiction and data availability may be limited. Bridge condition information will be provided by the FDOT for all NHS bridges.

# SYSTEM PERFORMANCE MONITORING PLAN

The FHWA identifies congestion monitoring as just one of several aspects of transportation system performance that leads to more effective investment decisions for transportation improvements. Safety, physical condition, environmental quality, economic development, travel time reliability, quality of life, and customer satisfaction are among the aspects of performance that also require monitoring.

The goal of the Ocala Marion TPO CMP system monitoring plan, as presented in **Table 2**, is to develop an ongoing system of monitoring and reporting that relies primarily on data already collected or planned to be collected.

The components of the monitoring plan include roadways, public transit/rideshare, bicycle/pedestrian/multiuse path, transportation demand management (TDM), and goods movement where:

- Roadways are monitored through annual LOS analysis using traffic counts and other related data constantly collected throughout the region;
- Crashes are monitored to help measure safety and nonrecurring congestion;
- Transit performance is monitored continuously through various operating and capital plans;
- Bicycle/pedestrian/multiuse path inventory data are monitored and updated in various city and county databases;
- TDM-related data monitoring is done primarily by the reThink Your Commute Commuter Assistance Program, which maintains an array of databases and coordinates programs to find alternatives for single occupant vehicle (SOV) trips in Marion County and other counties in Central Florida;
- Significant goods movement corridors are evaluated to address mobility needs of the goods movement providers.



Table 2. System Performance Monitoring Plan

CATEGORY	PERFORMANCE MEASURES	MONITORING ACTIVITY	RESPONSIBLE AGENCY	CURRENT STATUS	GEOGRAPHIC AREA COVERED
Level of Service	Percent of Miles/VMT by LOS Type	Level of Service Analysis	Ocala Marion TPO	Ongoing	Ocala Marion TPO Roadway Network
	V/C Ratio				
	V/MSV Ratio				
Safety	Total Crashes	Crash Data Analysis	Ocala Marion TPO	Ongoing	FDOT, Marion County
	Crash Frequency				
	Crashes involving heavy vehicles				
Transit	Passenger Trips	National Transportation Database Report/ Transit Development Plan	Ocala Marion TPO/ Cities/FDOT	Ongoing	Ocala Marion TPO Roadway Network
	Passenger Trips per Revenue Hour				
	Number of Routes & Service				
Bicycle and Pedestrian	Miles of Multiuse Path Facilities	Bicycle/ Pedestrian/ Multiuse Path Plans, LRTP and Databases	Ocala Marion TPO	Ongoing	Marion County
	Percent Congested Miles on Ped. and Bike facilities				
Carpooling	Number of Registered Carpools or Vanpools	Annual Reports and Interim Summaries by reThink Your Commute	reThink Your Commute	Ongoing	Marion County
Truck Traffic	Percent of VMT on Designated Truck Route Corridors on congested roadways	Roadway Databases and LRTP	Ocala Marion TPO / FDOT	Ongoing	Marion County

The TPO, as part of the system monitoring plan, will update the State of the System Report to coordinate with the LRTP, the Marion County Comprehensive Plans and Mobility Fee Update. Since traffic conditions typically do not change drastically from one year to the next, the TPO will update the policies and process of the CMP to coincide with the adoption of the LRTP. It is anticipated that the State of the System Report would then be updated every two years.



# CONGESTED CORRIDOR SELECTION AND CMP STRATEGIES

## Introduction

The process of completing CMP Steps 4 to 8 are focused on the identification of congestion, potential strategies to address congestion that lead to implementation, and evaluating the impact of implemented congestion strategies on the transportation system. This section summarizes the identification of potential CMP strategies. This includes the process for selecting new corridors and future projects for implementation and may also include an implementation schedule, responsibilities, costs, and possible funding sources for each strategy currently proposed for implementation.

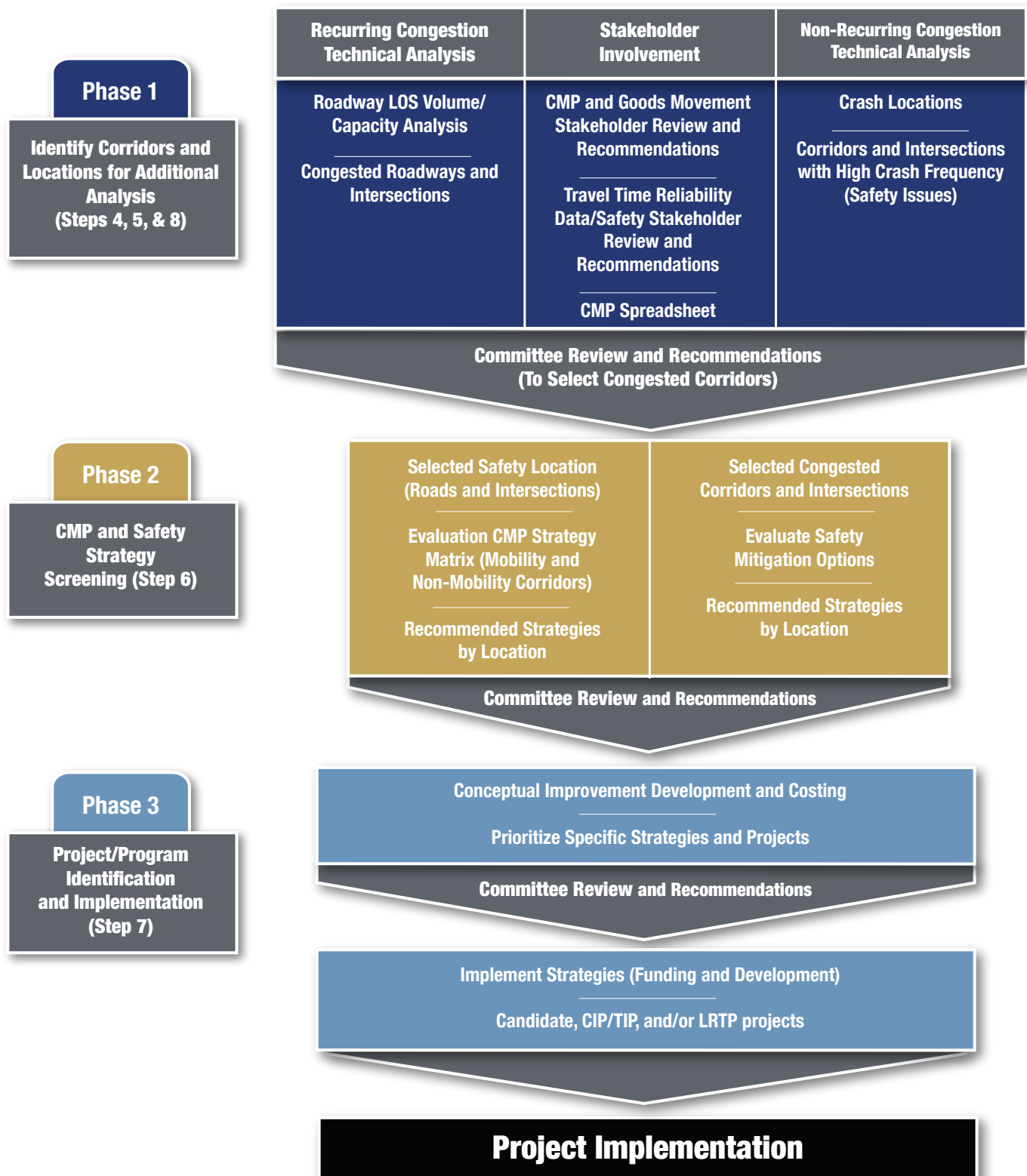
## Congested Corridor Selection and Project Selection Process

The purpose of the CMP is to identify implementable projects. The list of known congestion issues maintained by the TPO should continue to be used as a primary source in identifying opportunities. However, continued monitoring of the transportation system will provide additional information regarding new congestion where solutions will be needed. The 3-phase CMP process outlined in **Figure 7** involves identifying and screening congested corridors to identify potential projects/programs that may be implemented.

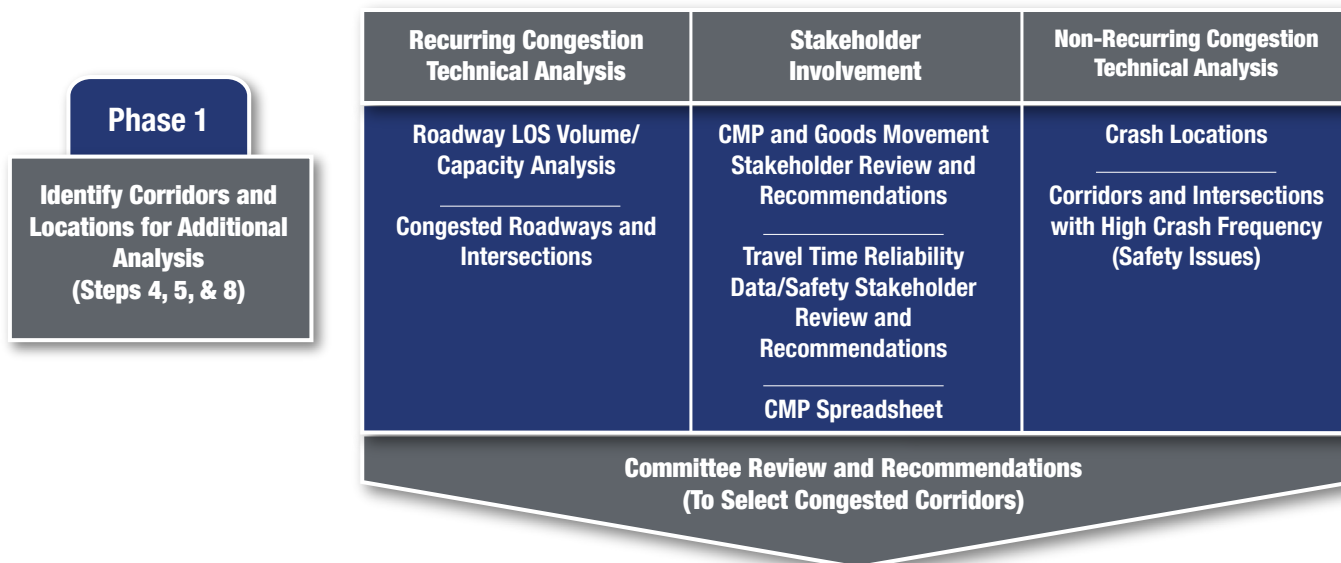
The process follows three phases and complements the federal eight-step process described in Chapter 2. Corridors to be evaluated are selected by coordinated efforts of TPO committees.



Figure 7: Corridor/Strategy Selection Process



The following pages provide additional details on each phase of the corridor and strategy selection process.



## Identify Congested Corridors and Locations for Additional Analysis (Phase 1) - Steps 4, 5, & 8

Monitoring efforts are used to review the level of service on the roadway network to identify recurring congestion. Roadways that are congested today or forecasted to be congested in five years are considered for review through the CMP screening process. The TPO uses a tiered approach in identifying potential projects for implementation in the CMP. This approach includes a series of conditions or criteria for evaluating congestion and identifying the appropriate solution.

- **Not Congested (currently or in five years without improvements):** Corridors that are not anticipated to operate below their adopted level of service standards in either the existing conditions or after committed improvements in the five-year program are implemented.
- **Approaching Congestion or Minimally Congested:** Corridors that are approaching congestion or are minimally congested based on one of the following three criteria (projects on these corridors may have the greatest impact):
  - » **Approaching Congestion** – Corridors that are not congested but have segments that have traffic volumes that consume more than 90% of the roadway’s capacity at the adopted level of service standard with either the existing conditions or forecasted five-year condition without improvement.
  - » **Congested Today** – Existing corridors with traffic volumes that exceed the adopted level of service standard that do not exceed the physical capacity of the roadway.
  - » **Congestion in 5 Years** – Corridors forecasted in five years to have traffic volumes that exceed the adopted level of service standard that do not exceed the physical capacity of the roadway.
- **Extremely Congested:** Roadways in the Existing + Committed (E+C) five-year network that have forecast volumes that are greater than the physical capacity (typically occurs when using detailed analysis and the volume-to-capacity ratio is 1.08 or greater) of the roadway and are considered severely congested.

Crash data management procedures also are used to identify corridors or intersections with a high frequency of crashes that result in non-recurring congestion. Safety improvements not only reduce the potential harm to persons in our communities but also can reduce congestion.

Generally, non-congested corridors do not need to be addressed by the CMP; however, the other two categories may require one or more congestion-relieving strategies. Extremely congested corridors typically will require either capacity improvements or a shift to other mobility strategies that rely significantly on public transportation or reductions in travel demand. In some cases, extremely congested corridors may respond favorably to the implementation of operational improvements; these would be considered on a case-by-case basis where appropriate. The corridors approaching congested or minimally congested will generally be the most responsive to CMP improvement strategies.

After the congested network and corridors have been identified, two to three corridors are selected for detailed analysis and identification of recommended strategies. The TPO's committees review the selection of corridors.

Once corridors are selected and evaluated, they typically will not be reevaluated for three to five years. Corridors are selected based on the following:

1. If they are not in the 5-year work program or identified as projects in the 10-year plan and the corridors are forecasted to operate below their adopted level of service standard.
2. Corridors that would receive the greatest mobility or operational benefit from the CMP process.

The evaluation of the 5 year systemwide level of service analysis with programmed improvements addresses the requirement to evaluate strategy effectiveness (Step 8).

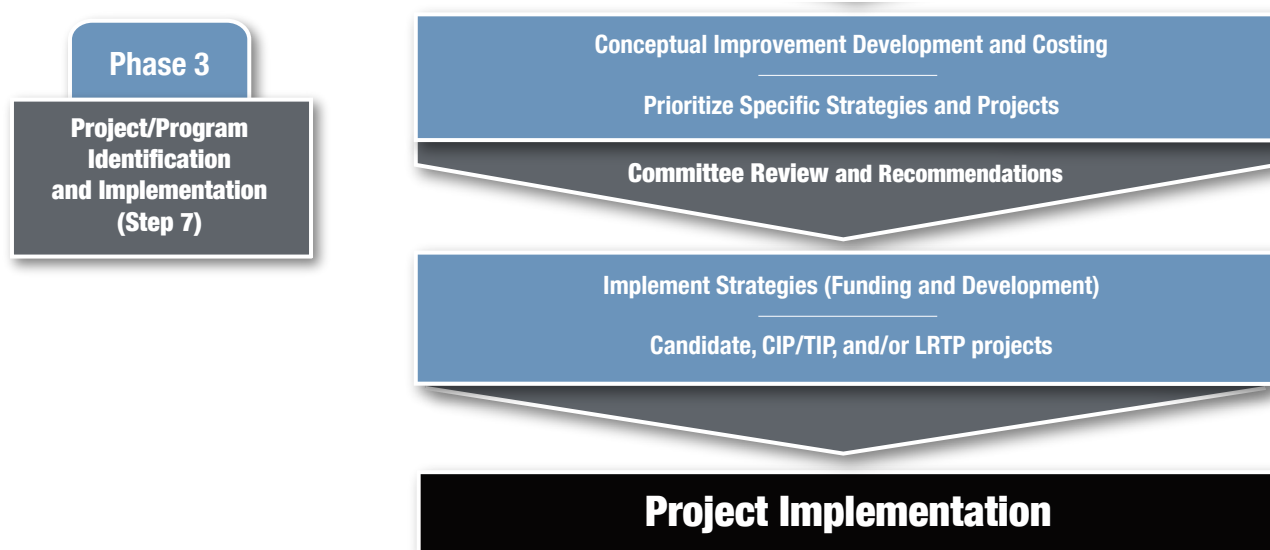


## *CMP and Safety Strategy Screening (Phase 2) - Step 6*

Once congested corridors are selected for review, they are screened to identify mitigation strategies to reduce congestion or improve safety and reduce crashes. The Congestion Mitigation Process Strategy Matrix (found in Appendix B) is used to address recurring congestion, and the Safety Mitigation Strategy Matrix (found in Appendix C) is used to address nonrecurring congestion. The matrix includes strategies in five tiers as identified in the Ocala Marion CMP Strategy Toolbox, as illustrated later in this section. The CMP Strategy Matrix typically is used in a workshop setting to quickly review a corridor, and the Safety Mitigation Strategy Matrix is applied based on a review of crash data.



Because this phase is typically the most time-consuming and data-intensive, it is not always necessary to screen the congested corridors if previous analysis or evaluation has been conducted. In the case of the list maintained by the TPO, congestion issues may have already been identified or documented through citizen comment and observation making it simpler to identify the appropriate strategy to address the congestion issue.



### *Evaluate Project or Program for Implementation (Phase 3)* *- Step 7*

The congestion or safety mitigation strategies that are identified as having the greatest potential benefit are then evaluated in greater detail based on committee and/or technical recommendations. During this phase, additional analysis is performed on potential projects and programs to identify the specific improvement, implementation issues, and costs. Recommendations for implementation are then made for approved projects or programs. This may result in a need to refocus existing resources, such as existing rideshare programs or local maintenance crews where possible, programming improvements in the local agency capital improvement programs or transportation improvement program, or using boxed-funds controlled by the TPO, and finally may be identified as candidate projects for implementation in future LRTPs. This identification of projects and programs is coordinated with the TPO committees, and information is provided to the local government staff for future consideration during the capital budgeting process.

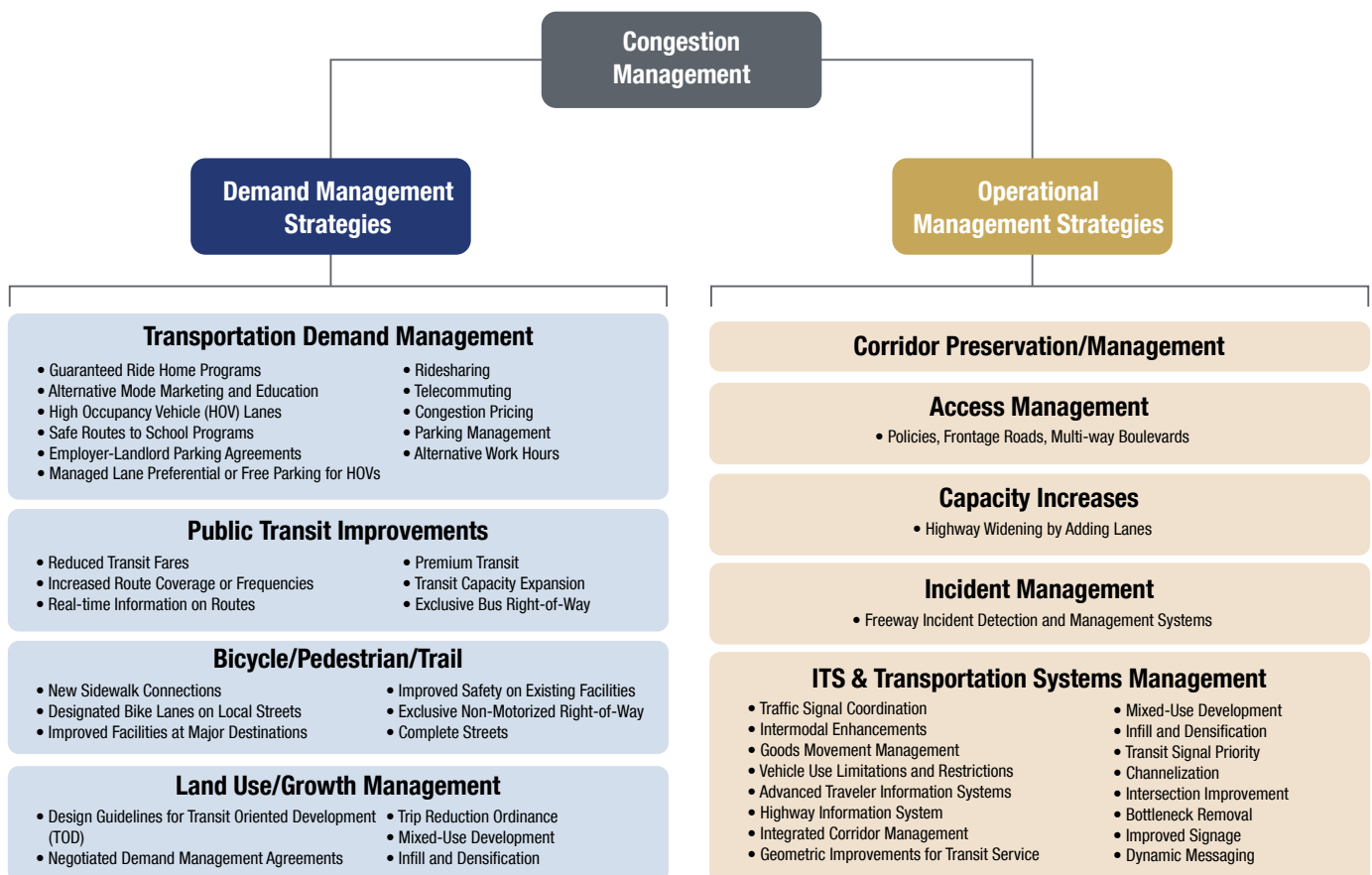
# CONGESTION MANAGEMENT STRATEGIES

This section of the CMP Update identifies and evaluates the strategies intended for mitigating existing and future congestion in the CMP roadway network. A Toolbox of Strategies is presented to help decision makers and planners in effectively using these congestion reduction strategies. The Final Rule on Statewide and Metropolitan Transportation Planning published on February 14, 2007, states that, “development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and the Transportation Improvement Program (TIP).”

A full range of potential strategies has been identified for the multimodal CMP network. These strategies are included in the full CMP Toolbox of Strategies found in Appendix E.

**Figure 8** summarizes the demand and operational management strategies included in the Ocala Marion TPO CMP Toolbox of Strategies. A full range of demand and operational management strategies are identified for the TPO to assist in efforts to mitigating existing and future congestion.

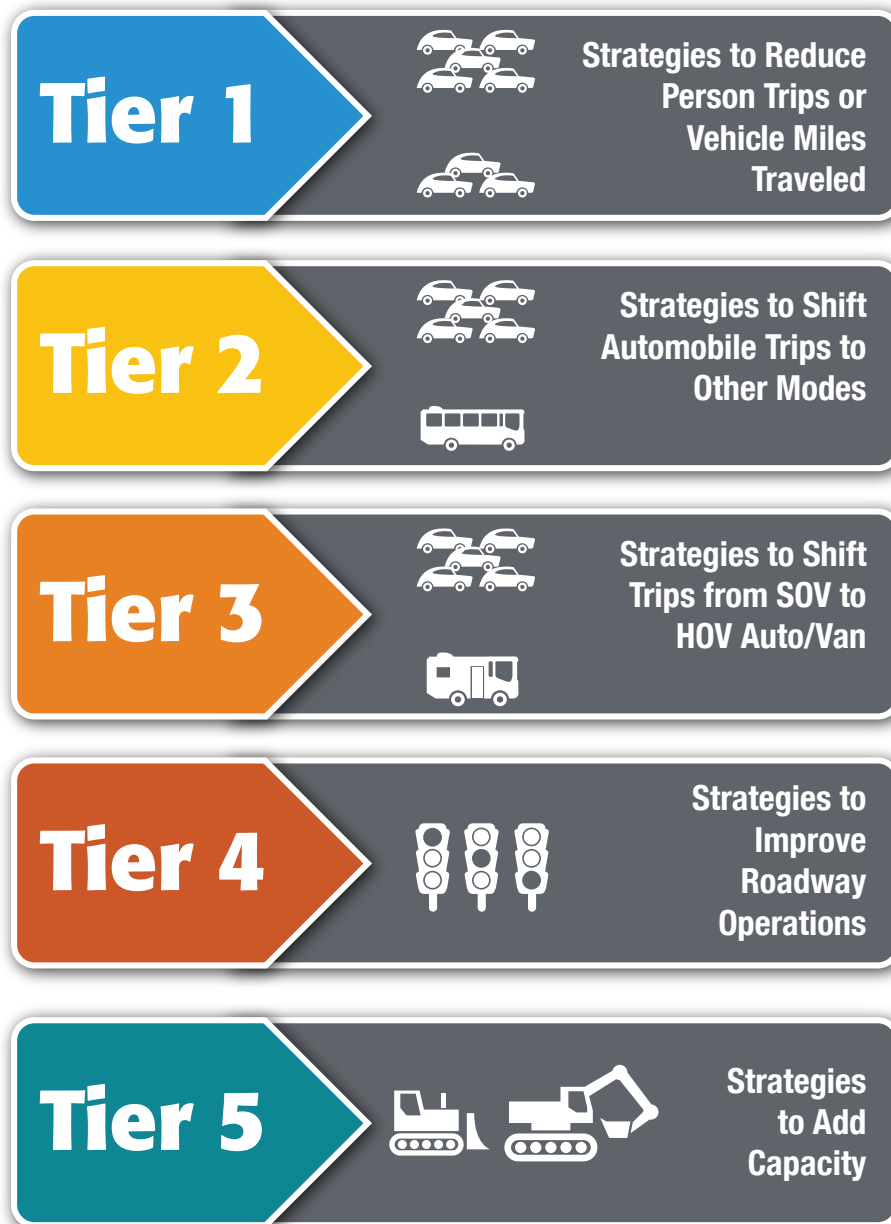
Figure 8: Congestion Management Strategies



# CMP TOOLBOX OF STRATEGIES

The CMP uses a strategy toolbox with multiple tiers of strategies to support the congestion strategy or strategies for congested corridors. Following an approach used by other TPOs and promoted by FHWA, the toolbox of congestion mitigation strategies is arranged so that the measures at the top take precedence over those at the bottom. The toolbox is presented below in **Figure 9**.

*Figure 9: Ocala Marion TPO CMP Toolbox of Strategies*



The “top-down” approach promotes the growing sentiment in today’s transportation planning arena and follows FHWA’s clear direction to consider all available solutions before recommending additional roadway capacity. is divided by tiers, strategies, and specific examples. Appendix C includes specific examples, while Appendix E includes outlines the tiers and strategies in the toolbox.

# CONGESTION MITIGATION MATRIX

The CMP Strategy Matrix is used to address recurring congestion. The matrix is included in Appendix B. The matrix includes strategies in five tiers as identified in the CMP Strategy Toolbox. The CMP Strategy Matrix typically is used in a workshop setting with agency stakeholders to quickly screen through the strategies to identify appropriate strategies that may provide a benefit within the corridor. Following the screening of a corridor using the matrix, strategies which were identified as having a high level of potential benefit or medium level of potential benefit are considered for additional analysis where appropriate. The CMP Strategy Matrix identifies the general level of applicability by mode given the different trip types as follows:

- **Regional Trips:** Long distance trips and/or pass-through trips through the county. Typically these trips are auto dependent unless served by premium transit modes.
- **Regional Access Trips:** Moderate distance trips that have at least one trip end (origin or destination) within the corridor. Typically, these trips are auto dependent unless served by a mix of premium or fixed route transit.
- **Local Access Trips:** These are shorter trips with at least one trip end within the corridor. Typically transit and bicycle modes can compete favorably with the auto modes of travel relative to travel time.
- **Local Circulation Trips:** These are very short trips where both trip ends likely occur within close proximity to the corridor. Typically, walking and bicycling have travel times comparable to auto usage. Public transportation is typically not viable in the absence of frequent local circulator transit service since walking times are of relatively short duration.

# CMP SAFETY MITIGATION MATRIX

The Ocala Marion TPO CMP process also includes a “CMP Safety Mitigation Matrix” for use in streamlining the identification of potential safety issues identified in the identification of congested corridors by making use of crash data produced by FDOT. FDOT produces maps and reports by crash type or cause which can be used to identify safety issues on the major roadway network for both congested and non-congested roadways. Reducing the number of crashes that occur on major roadways can reduce nonrecurring congestion. While the delay incurred resulting from crashes cannot be determined easily, it is a significant contribution of delay on major roadways. To support the integration of crash reduction as a means to reduce non-reoccurring congestion, a CMP Safety Mitigation Matrix was developed.

The CMP Safety Migration Matrix is provided in Appendix C. This Matrix is similar to the CMP Strategy Matrix in that it should be used to screen and identify potential strategies that would reduce congestion caused by specific crash types. The Matrix identifies crash types and the typical strategies that could be implemented to improve safety and reduce these crashes for the Safety Emphasis Areas identified in the State of Florida Strategic Highway Safety Plan. In most cases, additional detailed study will be required to identify the specific safety strategy or strategies to be implemented for a specific location.

# MONITOR STRATEGY EFFECTIVENESS

The FHWA guidelines call for CMPs to include provisions to monitor the performance of strategies implemented to address congestion. Regulations require, “a process for periodic assessment of the efficiency and effectiveness of implemented strategies, in terms of the area’s established performance measures.” This step of the process helps determine whether operational or policy adjustments are needed to make the current strategies work better and provides information about how various strategies work in order to implement future approaches within the CMP study area.





## Chapter 3

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# State of the System Report



# State of the System Report

## INTRODUCTION

As a key tool in the Ocala Marion TPO CMP, a State of the System Report will be developed to track the effectiveness of the implemented strategies, to the extent possible with the available project level data, and conditions of the multimodal transportation system as a whole. The same set of quantifiable performance measures established for the CMP will be used to measure system performance at corridor and system levels. The measures that will be utilized in the State of the System Report include:

- **Roadway Performance Measures** including percent of roadway miles and VMT by LOS Type as well as roadway traffic volume to capacity and volume to maximum service volume ratios.
- **Transit Performance Measures**, including passenger trips per revenue hour, passenger trips, and the number of routes.
- **Bicycle/Pedestrian/Multiuse Path Performance Measures**, including percent of congested CMP roadway centerline miles with bicycle facilities, percent of congested CMP roadway centerline miles with sidewalk facilities, and miles of multiuse paths.
- **TDM Performance Measures**, including the number of registered carpools or vanpools in the CMP study area
- **Goods Movement Performance Measures**, including the % of total VMT on truck routes on congested roadways.

## ORGANIZATION OF THE CHAPTER

This chapter provides an updated analysis of the major corridors within the TPO's planning area and is presented in the following sections:

- Summary of **system performance and trends** relative to the performance measures identified in Chapter 2
- Identification of the **congested corridors** in Marion County in 2021 and 2026
- Summary

## SYSTEM PERFORMANCE TRENDS

This section examines the performance of the system, first in a summary format and then in a more detailed form based on the specific performance measures for the CMP. This evaluation, together with the other components of the CMP, is intended to provide a better understanding of the performance of the transportation system in order to select and implement congestion mitigation and mobility strategies.



### **Safety Performance Measures**

- The number of fatal crashes over the last five years has steadily increased from 70 crashes in 2016 to 108 crashes in 2020.
- The number of severe injury crashes has decreased significantly from 372 crashes in 2016 down to 304 crashes in 2020.
- Non-motorized fatalities and serious injuries have remained relatively steady since 2016, except for a peak of 62 in 2019.

### **Roadway Capacity Performance Measures**

- Less than 5% of centerline miles on the CMP network are congested today (2021), and less than 7% are expected to be congested with the existing plus committed network by 2026.
- Approximately 16% of vehicle-miles of travel on the CMP network are considered congested today (2021), and approximately 38% are expected to be congested with the existing plus committed network by 2026. More than 85% of the congested vehicle-miles of travel in horizon year 2026 are expected to be on I-75.

### **Goods Movement Performance Measures**

- More than 15% of the centerline miles for truck routes (which make up the CMP network) are considered congested.
- More than 25% of the vehicle miles of travel are considered congested.

### **Transit Performance Measures**

- Based on the latest roadway capacity performance measures and the existing SunTran routes within Marion County, transit service is provided on just 2.8% of (non-Interstate) roadways identified as Congested or Extremely Congested.
- The peak service frequency along existing SunTran routes within Marion County is 70 min, or approximately 0.86 buses per hour, according to the latest available data (Fiscal Year 2020) from SunTran.
- In Fiscal Year 2020, SunTran reported that 76% of transit service provided within Marion County was deemed on-time.
- SunTran reports that annual ridership in the latest available data (Fiscal Year 2020) was 256,510 passengers and the service overall provided 8.84 passenger trips per revenue hour.

### **Bicycle/Pedestrian/Trail Facility Performance Measures**

- There are currently at least 39 miles of multi-use trails within Marion County with plans to expand and provide additional connections within the network.
- Approximately 65% of non-Interstate congested roadways have sidewalk on at least one side of the roadway, but just 6.8% have bicycle facilities.

### **TDM Performance Measures**

- Currently there are only 2 registered carpools and 12 registered vanpools in the region.

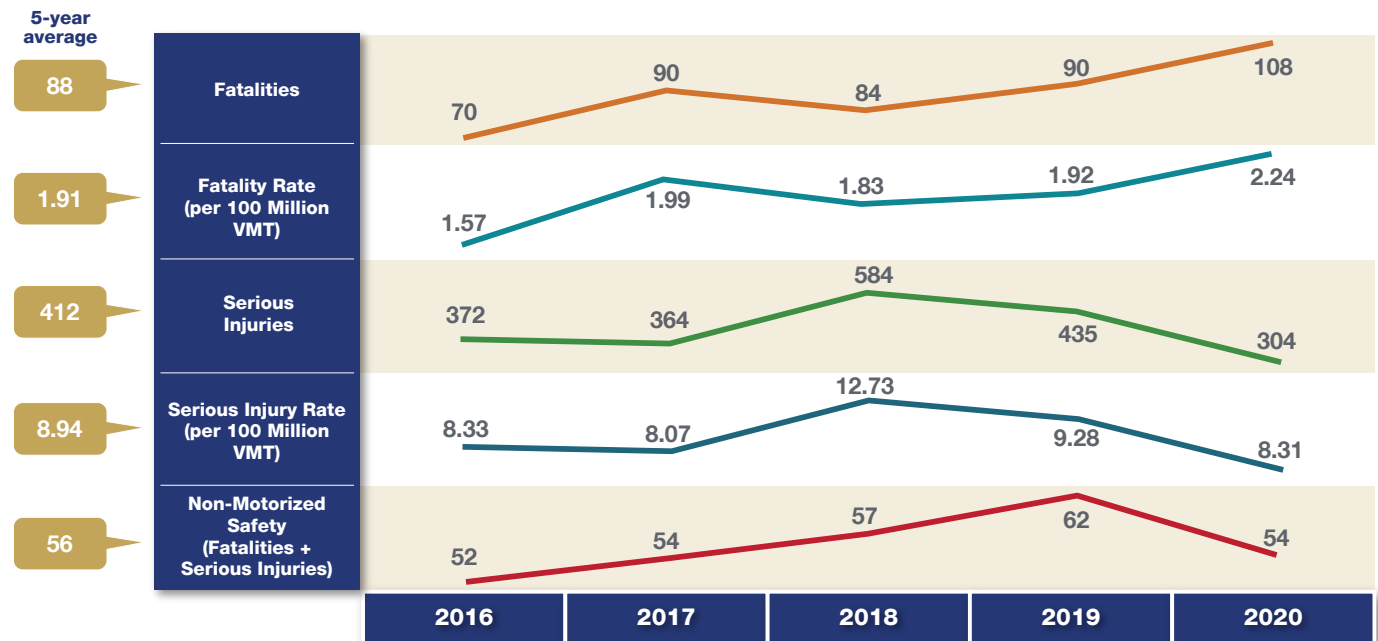
### **Public Involvement Performance Measures**

- Stakeholders were involved throughout the CMP process. Five (5) Technical Advisory Committee (TAC) meetings, five (5) Citizens Advisory Committee (CAC), and four (4) Ocala Marion TPO Board meetings were held during development and adoption of the CMP. A public survey was conducted in March 2021 to identify public concerns about congestion in the County.

# SAFETY PERFORMANCE MEASURES

The most recent five years of complete available crash data (2016 – 2020) indicate a downward trend in overall crashes, but an upward trend in fatal crashes. Crashes resulting in serious injury peaked in 2018, with 584, and have since decreased. The following includes information on crash severity by year within Marion County. Figure 10 depicts trend lines over the last five years related to fatalities, fatality rates, severe injuries, serious injury rate, and non-motorized safety.

Figure 10: Ocala Marion Region - Five-Year Safety Performance Summary



There are two primary safety statistics: total fatalities and fatality rate. Total fatalities is the sum of traffic-related deaths in the region without any adjustment. From 2016 to 2020 total fatalities in the region increased by more than 50 percent. A standard safety measure is to calculate a crash rate since it considers the increased opportunities for crashes to occur resulting from the increase in travel in an area. Crash rates are calculated by taking the number of fatal crashes and dividing by the vehicle-miles of travel (VMT) and are reported as fatalities per 100 million VMT. The fatality crash rate in the Ocala Marion region has increased from 1.57 in 2016 to 2.24 in 2020. Together both the total fatalities and fatality crash rate represent a troubling trend.

Marion County is experiencing a troubling trend of increased fatalities, but serious injury crashes and the associated serious injury crash rate have decreased significantly since peaking in 2018. As travel increases in an area due to population growth or increased economic activity, it is not uncommon for the frequency of traffic crashes to increase. The rate of non-motorized (bicycle and pedestrian) fatal and serious injury crashes had steadily increased between 2016 and 2019 before decreasing in 2020.

# ROADWAY CAPACITY PERFORMANCE MEASURES

As part of the State of the System Report, the roadway performance was analyzed for the three tiers of the CMP network, including NHS roadways and major non-NHS roadways. Monitoring the overall roadway performance each year provides an illustration of the general level of congestion. Below are the findings for existing (2021) conditions and for the five-year horizon year (2026) summarized both by centerline miles and by annual vehicle-miles of travel.

**Table 3: Congested Centerline Miles - Ocala Marion TPO CMP Network**

Existing (2021) Conditions - Miles				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
NHS Interstate (I-75)	8.53	11.22	17.73	0.00
NHS Non-Interstate	144.39	7.00	7.65	6.94
Non-NHS CMP Roadways	560.72	9.28	3.64	0.53
<b>Countywide</b>	<b>731.64</b>	<b>27.5</b>	<b>29.02</b>	<b>7.47</b>
% of total of centerline miles of highway	91.8%	3.5%	3.7%	1.0%

Horizon Year (2026) Conditions - Miles				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
NHS Interstate (I-75)	2.69	0.00	17.06	15.54
NHS Non-Interstate	132.46	11.09	7.36	0.74
Non-NHS CMP Roadways	553.69	6.34	5.42	6.01
<b>Countywide</b>	<b>688.84</b>	<b>17.43</b>	<b>29.84</b>	<b>22.29</b>
% of total of centerline miles of highway	88.6%	2.2%	3.8%	2.9%



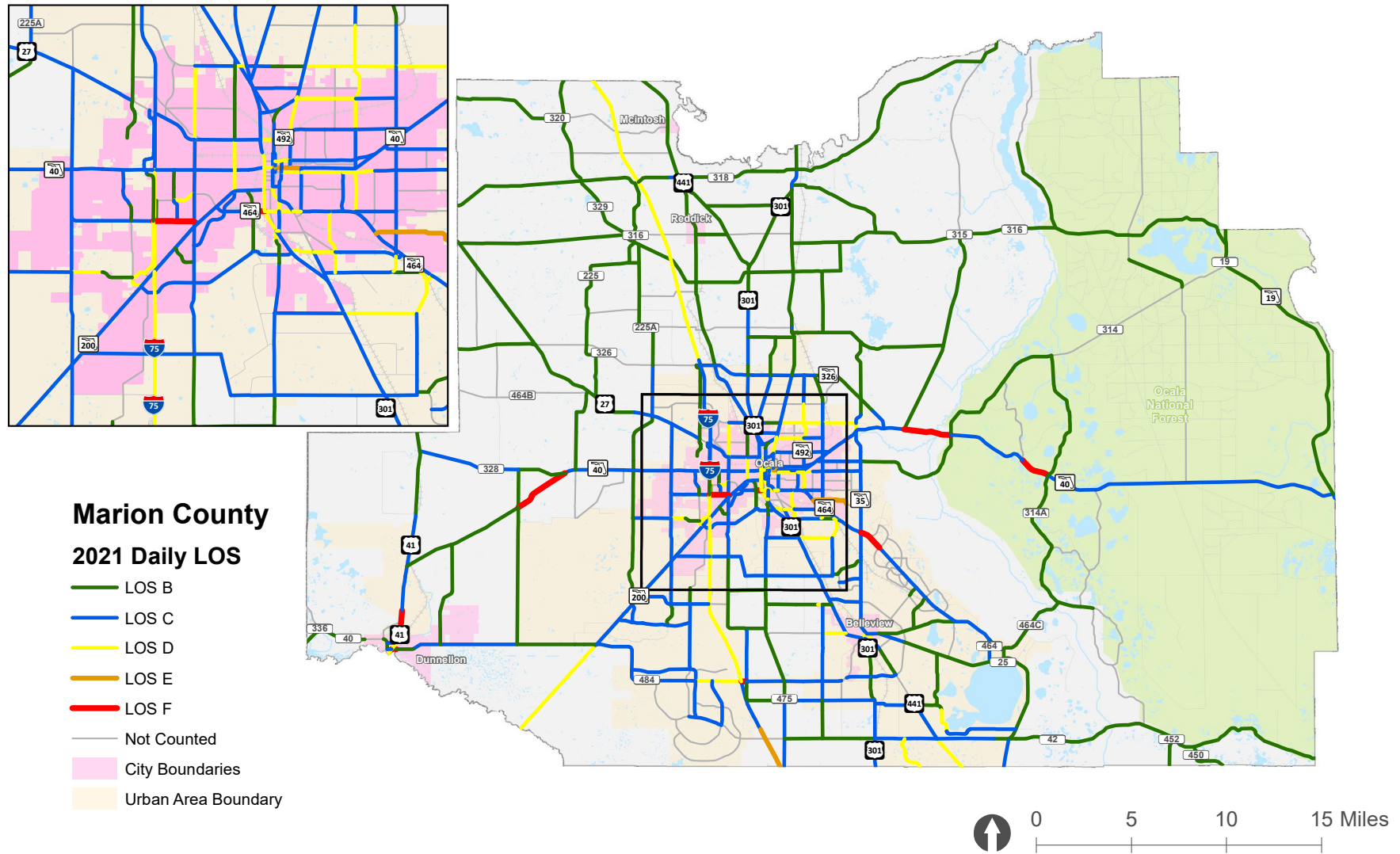
**Table 4: Congested Vehicle Miles of Travel- Ocala Marion TPO CMP Network**

Existing (2021) Conditions - Million Vehicle-Miles Traveled (MVMT)				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
NHS Interstate (I-75)	243	399	442	0
NHS Non-Interstate	905	60	53	38
Non-NHS CMP Roadways	1,191	88	15	8
<b>Countywide</b>	<b>2,339</b>	<b>547</b>	<b>510</b>	<b>46</b>
% of total congested miles of travel	68.0%	15.9%	14.8%	1.3%

Horizon Year (2026) Conditions - Million Vehicle- Miles Traveled (MVMT)				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
NHS Interstate (I-75)	90	0	743	647
NHS Non-Interstate	883	136	88	11
Non-NHS CMP Roadways	1,356	46	66	66
<b>Countywide</b>	<b>2,329</b>	<b>182</b>	<b>897</b>	<b>725</b>
% of total congested miles of travel	53.8%	4.2%	20.7%	16.7%

Additional details are provided in the following pages that include maps showing specific congested areas under existing (2021) conditions as compared to the existing plus committed network in horizon year (2026). The existing plus committed includes funded roadway construction projects. The maps display Level of Service, Volume to Maximum Service Volumes Ratios (V/MSV at LOS Standard) as well as Volume to Physical Capacities (V/C). The V/MSV ratios indicate the amount of capacity using the adopted LOS standard whereas the V/C ratios indicate conditions where a greater level of congestion is tolerated, in many cases a LOS E condition. The LOS standard for each roadway is based on the Transportation Element of the Comprehensive Plan for Marion County and the incorporated cities. The LOS standard for State maintained roadways is D for urban areas and C for rural areas. The LOS standard for non-State maintained roadways is E for urban areas and D for rural areas. Roadways within the Farmland Preservation Area have a LOS B standard and scenic roadways have a LOS C standard, unless otherwise specifically designated in the Comprehensive Plan.

Figure 11: Existing (2021) Daily Level of Service



**Figure 12: Existing + Committed (2026) Daily Level Of Service**

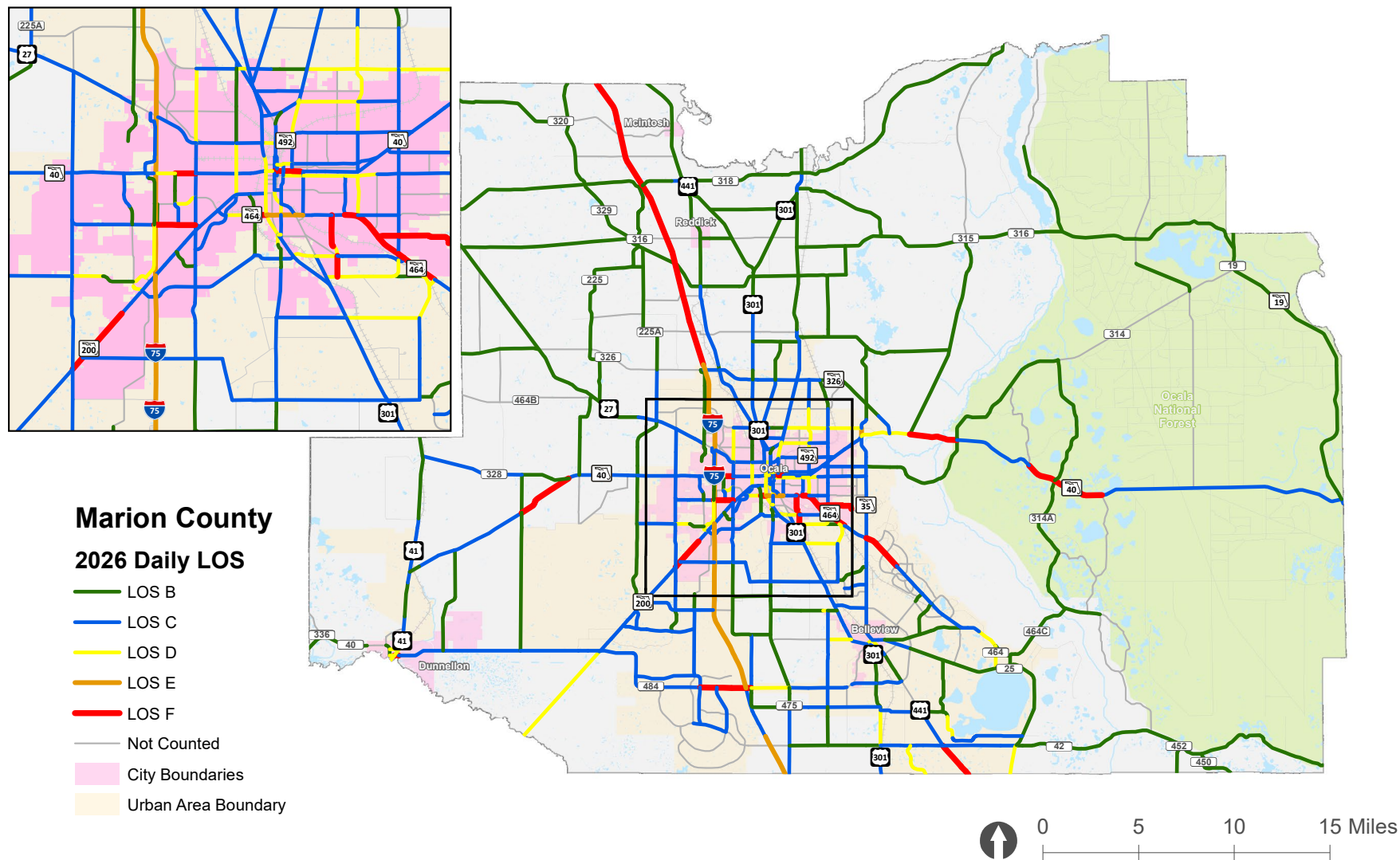


Figure 13: Existing (2021) Volume Maximum Service Volume (V/MSV)

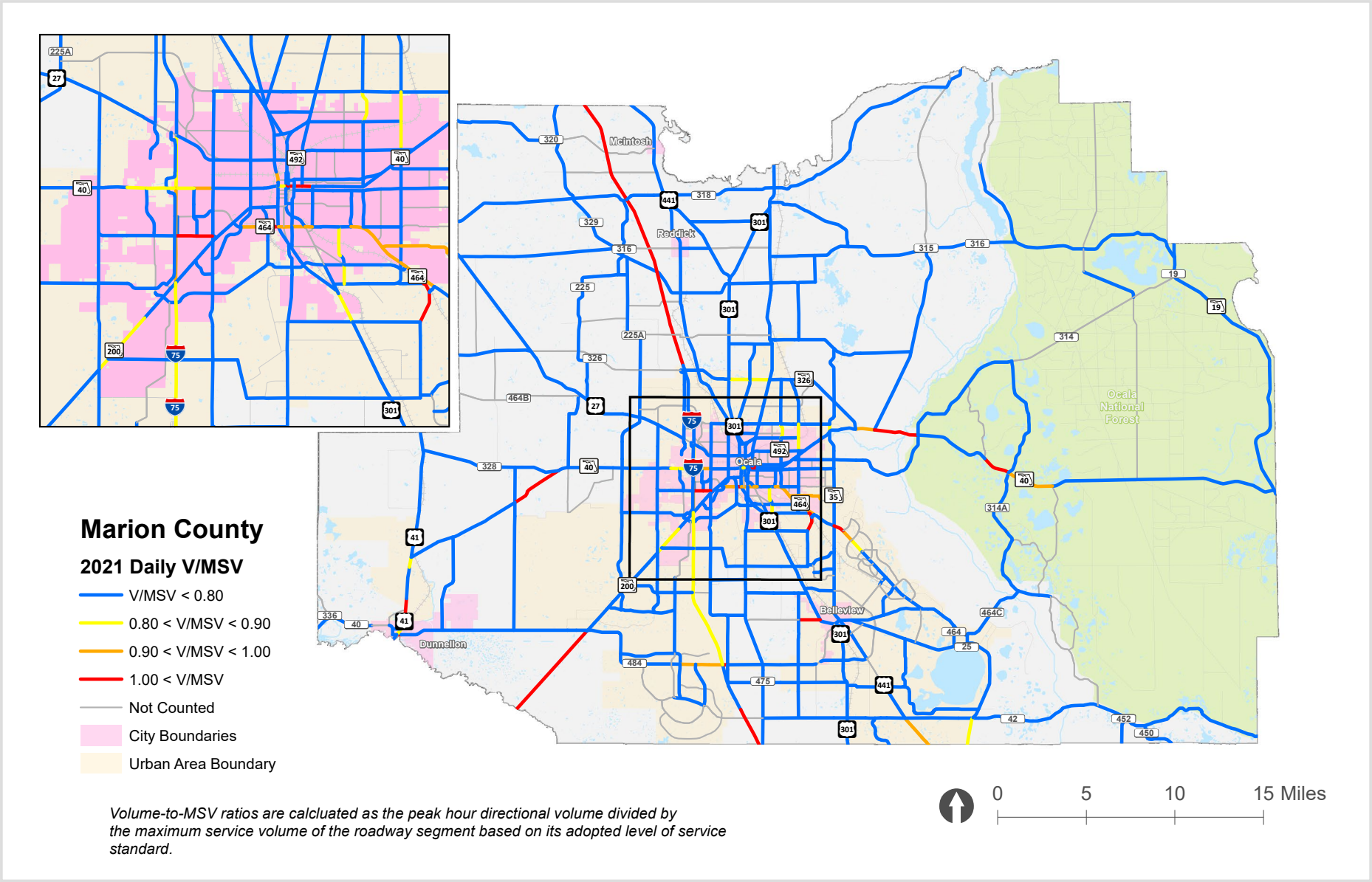
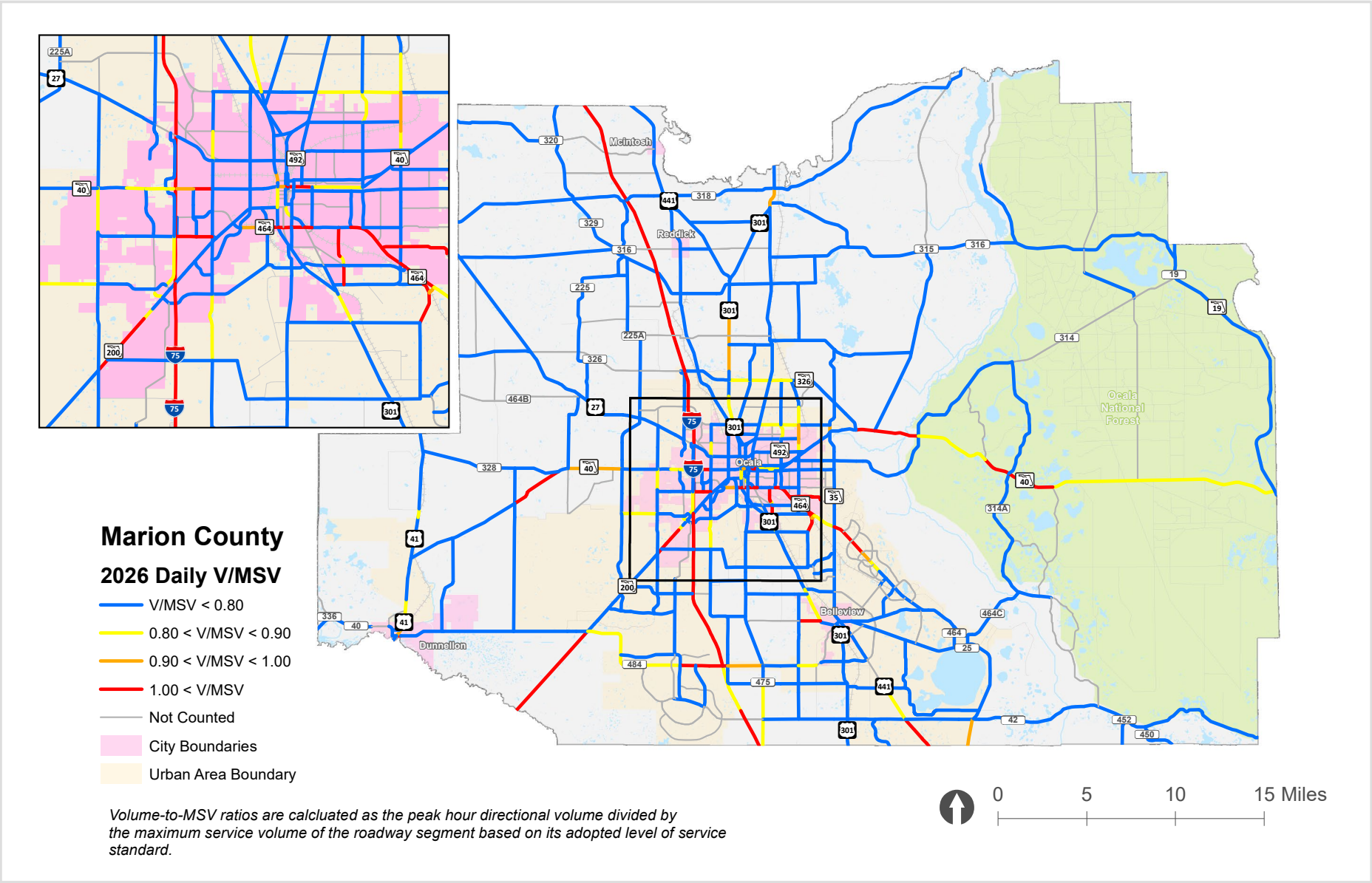




Figure 14: Existing + Committed (2026) Volume Maximum Service Volume (V/MSV)





**Figure 15: Existing (2021) Volume to Physical Capacity (V/C)**

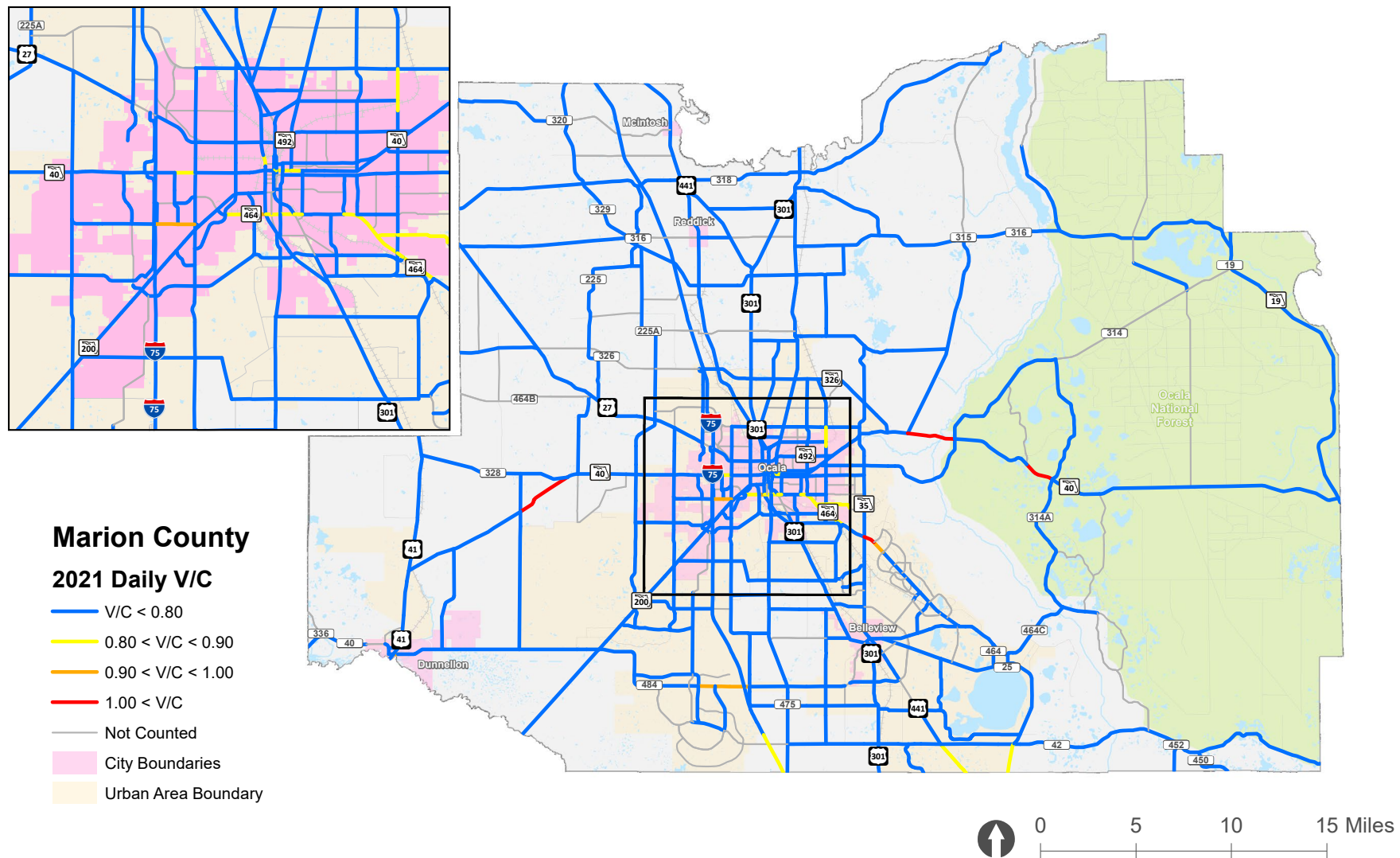
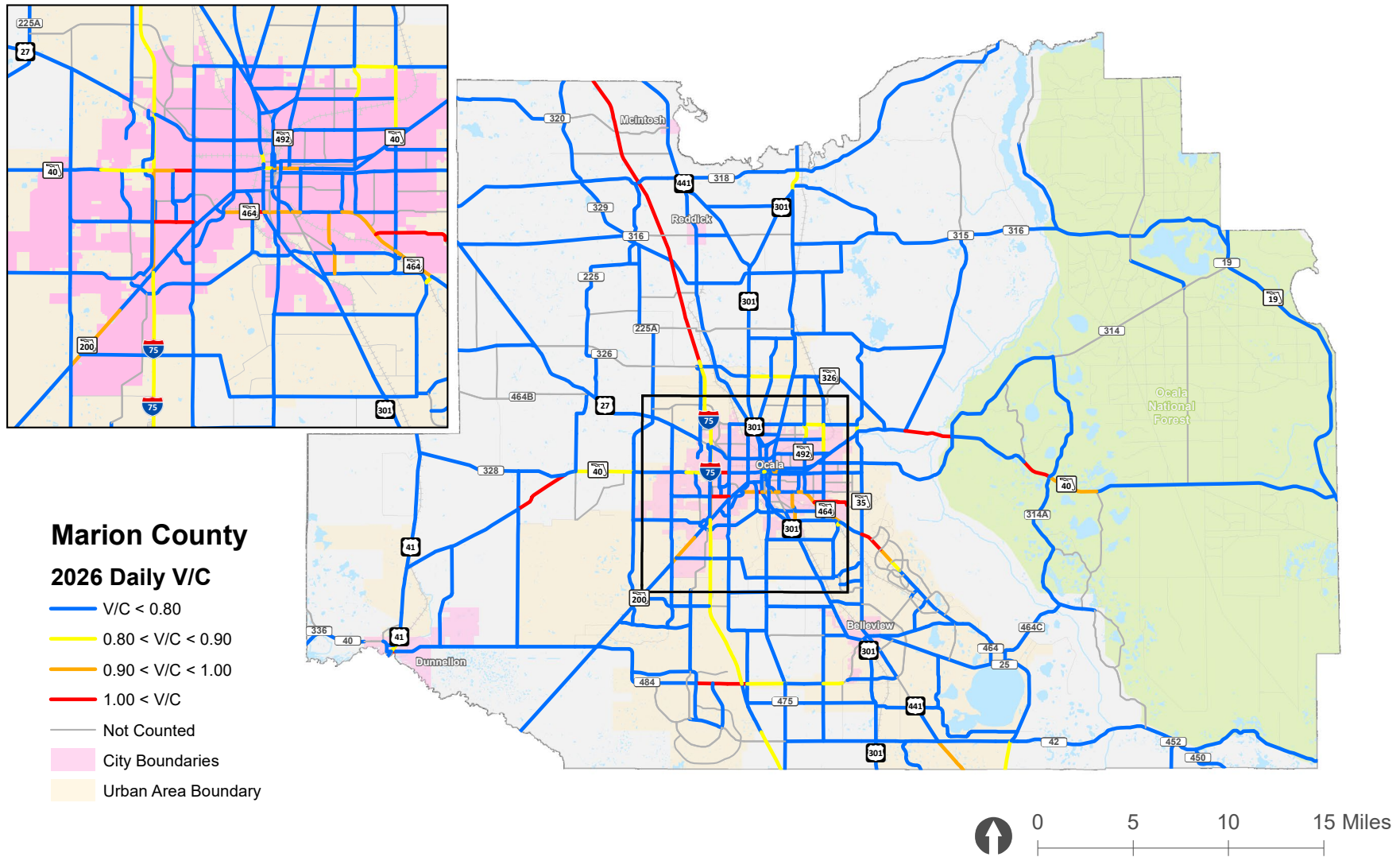


Figure 16: Existing + Committed (2026) Volume to Physical Capacity (V/C)



# RELIABLE TRAVEL TIME PERFORMANCE MEASURES

Travel-time reliability is defined as the consistency and dependability in travel times that are measured from day-to-day and/or across different times of the day. Travel-time reliability is significant to the CMP because it incorporates a systematic method to address the issue of traffic congestion caused by non-recurring events. Examples of non-recurring events are depicted below:



Non-recurring congestion can account for more delay than recurring congestion. Non-recurring congestion caused by incidents is especially problematic for the traveling public. It is possible for a commuter to factor in additional travel time to address routine congestion and they may be willing to accept that additional travel time as part of their normal commute. However, it is difficult to plan ahead for significant incidents, such as vehicle crashes to ensure on-time arrival.

Only recently were cost-effective data collection opportunities identified. In addition to more inexpensive travel-time monitoring technologies, there are three factors that have contributed to a greater focus on travel-time reliability. These factors include:

- **Constraints on Expansion of the Transportation System** – New roadway construction and roadway expansion has largely ended in the United States due to high costs, the built-out nature of urbanized areas, and the community desire for multimodal streets.
- **Expectations of the Traveling Public** – Surveys have shown that the traveling public often values travel-time reliability more than speed.
- **Federal Surface transportation Reauthorization Law** – When MAP-21 was signed into law, a process that involved performance measurement, target setting, and transportation investment reporting was established and seven national goals were set. Three years later, the FAST Act was signed into law and included the same national goals. One of the seven goals is System reliability – to improve the efficiency of the surface transportation system



The Federal Highway Administration (FHWA) finalized the identification of the required performance measures in January 2017 with the requirement to include the following measures:

- Percent of Person-Miles Traveled on the Interstate That Are Reliable
- Percent of Person-Miles Traveled on the Non-Interstate NHS That Are Reliable
- Truck Travel Time Reliability (TTTR) Index (Goods Movement Performance Measure)

FDOT reports travel time reliability for Interstate, Non-Interstate NHS, and Goods movement. The latest information reported by FDOT is provided in Table 5.

**Table 5: Travel Time Reliability**

Performance of NHS			
Performance Measure	FDOT 2-Year Target	FDOT 4-Year Target	2019 Existing Conditions Ocala/ Marion County TPO
Interstate Reliability	75%	70%	100%
Non-Interstate Reliability	Not Required	50%	96%

Freight Movement			
Performance Measure	FDOT 2-Year Target	FDOT 4-Year Target	2018 Existing Conditions Ocala/ Marion County TPO
Truck Travel Time Reliability Index	1.75	2.00	1.42





## Goods Movement Performance Measures

Performance measures that have been identified to monitor Goods Movement are listed below. Existing performance information is also provided below.

- Amount of centerline miles for truck routes that are considered congested (the truck routes are comprised of the NHS roadways within the CMP network).
- Amount of vehicle miles of travel that are considered congested.

**Table 6: Goods Movement Performance Measures**

Freight Movement			
Performance Measure	FDOT 2-Year Target	FDOT 4-Year Target	2018 Existing Conditions Ocala/Marion County TPO
Truck Travel Time Reliability Index	1.75	2.00	1.42

**Table 7: Goods Movement - Congested Centerline Miles (2015 to 2021 Performance)**

NHS Network				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
Ocala Marion Region	152.92	18.22	25.38	6.94
% of total goods movement on congested centerline miles of highway	75.2%	9.0%	12.5%	3.4%

**Table 8: Goods Movement - Congested Vehicle Miles of Travel (2021 Performance)**

NHS Network				
	Not Congested	Approaching/ Minimally Congested	Congested Today	Extremely Congested
Ocala Marion Region	1,147.79	458.68	495.14	37.91
% of total goods movement on congested centerline miles of highway	53.6%	21.4%	23.1%	1.8%

# PUBLIC TRANSIT PERFORMANCE MEASURES

Ocala and Marion County's transit system, SunTran, regularly collects and maintains information related to various transit service and operational data, including route networks. The following represents the latest available public transit performance measure data as provided by SunTran.

*Table 9: Public Transit Performance Measures*

Transit Performance Measure	FY 2020 Data
Average Peak Service Frequency	70 minutes / 0.86 buses per hour
On-Time Performance	76%
Annual Ridership	256,510
Passenger Trips Per Revenue Hour	8.84

# BICYCLE/PEDESTRIAN/TRAIL FACILITY PERFORMANCE MEASURES

There are several performance measures that have been identified to monitor the bicycle and pedestrian mode of travel which are listed below. Existing performance information is also provided below.

- Percentage of congested roadways within urban or transitioning areas that have a bicycle facility on at least one side of the roadway.
- Percentage of congested roadways within urban or transitioning areas that have a sidewalk on at least one side of the roadway

Within Marion County miles of multi-use trails are also reviewed. Currently, there are at least 15 miles of multi-use trails with plans to expand and provide further connections. The expansion of the vast trail system within Marion County will continue to be reviewed as part of the State of the System Report.

*Table 10: Congested Roadway Centerline Miles with Bicycle Facilities*

Percent of Congested Roadway Centerline Miles (within Urban Areas) with Bicycle Facilities	Existing (2021) Conditions	Horizon (2026) Conditions
Congested Urban Area Roadways	6.1 miles	15.9 miles
Congested Roadways with a Bicycle Facility	0.4 miles	0.4 miles
Congested Roadways without a Bicycle Facility	5.7 miles	15.5 miles
% of Congested Roadways with a Bicycle Facility	6.8%	2.6%

**Table 11: Congested Roadway Centerline Miles with Sidewalks**

Percent of Congested Roadway Centerline Miles (within Urban Areas) with Sidewalks	Existing (2021) Conditions	Horizon (2026) Conditions
Congested Urban Area Roadways	6.1 miles	15.9 miles
Congested Roadways with a Sidewalk	3.9 miles	9.4 miles
Congested Roadways without a Sidewalk	2.2 miles	6.5 miles
% of Congested Roadways with a Sidewalk	64.7%	58.7%

*Note: Includes where there is a sidewalk on at least one side of the roadway*

## TDM PERFORMANCE MEASURES

Strategies that reduce travel demand can be a cost-effective solution to reduce congestion and provide expanded mobility options. Since 2010, the FDOT, District Five has provided commuter assistance programs through the reThink Your Commute. The program promotes transportation solutions such as carpools, vanpools, public transit, walking, and telecommuting to limit the number of single-occupant commuter trips that contribute to peak hour congestion on highways throughout District Five, which includes Marion County.

Both carpooling and vanpooling can be effective congestion mitigation strategies when they target consolidating trips to downtown areas, activity centers, and other major employers. The number of registered carpools and vanpools in the County is one of the CMP Performance measures. Attention is directed to the fact that these are "registered" carpools and vanpools that are reported by reThink Your Commute. Users are not required to register, and the number of persons participating in carpools and vanpools is likely to be much higher.

**Table 12: 2021 Registered Carpools and Vanpools**

	Carpool	Vanpool
Ocala Marion Region	2	12

*Source: FDOT*

# BRIDGE AND PAVEMENT PERFORMANCE MEASURES

FHWA has established six performance measures to assess pavement conditions and bridge conditions for the National Highway System (NHS). The pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in good or poor condition. The bridge condition measures represent the percentage of bridges, by deck area, on the NHS that are in good condition or poor condition. The 2019 pavement and bridge conditions within the TPO planning area based on data provided by FDOT and their relation to established FDOT targets are found in Table 13 and Table 14.

**Table 13: Pavement Condition (2019)**

Pavement Condition			
Performance Measure	FDOT 2-Year Target	FDOT 4-Year Target	2019 Existing Conditions Ocala/ Marion County TPO
% of Interstate pavements in GOOD condition	Not Required	≥60%	66.4%
% of Interstate pavements in POOR condition	Not Required	≤5%	0.0%
% of non-Interstate NHS pavements in GOOD condition	≥40%	≥40%	37.8%
% of non-Interstate NHS pavements in POOR condition	≤5%	≤5%	0.0%

**Table 14: Bridge Condition (2019)**

Bridge Condition			
Performance Measure	FDOT 2-Year Target	FDOT 4-Year Target	2019 Existing Conditions Ocala/ Marion County TPO
% of NHS bridges classified as in GOOD condition	≥50%	≥50%	59.1%
% of NHS bridges classified as in POOR condition	≤10%	≤10%	0%



# PUBLIC INVOLVEMENT PERFORMANCE MEASURES

Public involvement is a critical element to the success of the CMP development and implementation and the involvement of local technical experts (engineering, planning, public works, etc.) is especially important. Stakeholders were involved throughout the development of the CMP including the Ocala Marion TPO Citizen’s Advisory Committee (CAC) and Technical Advisory Committee (TAC). The public was also involved in the development of the CMP through the Ocala Marion TPO Board Meetings. Collectively, both Committees and TPO Board were involved in key elements of the decision making process, including the selection of CMP Goals, Performance Measures, and the CMP Network.

Table 15: CMP-Related Meetings with Outreach Groups

Outreach Group	2021 CMP-Related Meetings
Technical Advisory Committee (TAC)	5
Citizens Advisory Committee (CAC)	5
Ocala Marion TPO Board	4

The TPO's committees were actively involved in the developing the process for the CMP. As elements of the CMP are implemented, it is anticipated that an increasing number of groups such as Freight/Goods Movement Stakeholders and Community Traffic Safety Teams will become actively involved to support the identification of congestion related issues and how to mitigate them.

## CMP Public Survey

The TPO conducted an online public survey from March 1 to March 31, 2021 to gather input from the public in support of the update to the Congestion Management Plan. The survey results are used to supplement and inform the technical analysis and improvement strategies. A total of 255 responses were submitted via the survey instrument on the TPO website. Additionally, three (3) responses were sent to the TPO by email for a total of 258 survey participants.

The survey responses indicated primary congestion concerns from poorly timed traffic signals, capacity constrained roadways, short turn lanes, and lack of alternative travel routes. The respondents’ top ranked congestion mitigation measures were improving traffic signals, adding or lengthening turn lanes, and having an alternative travel route. The most mentioned congested corridors were SR 200, US 301/441, SR 40, SR 464/Maricamp Road, CR 484, U.S. 27, CR 475 and I-75. **Appendix F** contains a complete summary of the survey results.

## Summary of Public Comments

In addition to the public comment opportunities described above, the Draft Congestion Management Plan (CMP) was made available on the TPO’s website and provided to the CAC, TAC, and TPO Board for review. Comments from the public included various congestion concerns and indicated support for traffic signal improvements, specifically at the intersections of SW 27th Avenue and SW 66th Street, as well as US 41 at SR 40 and SW 99th Place. Other comments noted daily congestion at SE 25th Avenue and SE Ft. King Street.

Concerns about congestion and crashes in the vicinity of Liberty Middle School and Hammett Bowen Elementary school, particularly on SW 95th Street and SW 49th Avenue were also provided. Another comment expressed support for a new roadway for local traffic on the west side of I-75 to alleviate congestion on CR 475.

In addition to the comments provided by the public on the Draft CMP, the TPO Board provided comments related to stacking and turning issues on SR 464/SE 17th Street at SE 25th Avenue, and on CR 475A from the intersection at CR 484 to SW 66th Street.

Consistent with the technical analysis performed for this report, the locations where the public noted they have experienced congestion may be evaluated further. It should be noted that some locations noted during the public comment period, such as US 41, have already been identified within this report as congested corridors requiring additional analysis.

## CONGESTED CORRIDOR NETWORK SELECTION

Using the elements of the CMP evaluation process discussed on the previous page, congested corridors were identified. These corridors have a Volume to Maximum Service Volume (V/MSV) greater than 1.0 either today or projected within the next five years.

Using the Corridor Selection process described previously, the following corridors were selected as appropriate for a more detailed analysis. The specific corridors are:

- CR 464 (SR 35 to Emerald Rd)
- SE 24th Street (SR 464 to SE 28th St)
- SW 20th St (SW 38th Ave to SW 27th Ave)
- CR 484 (US 41 to Lakeshore Dr)
- CR 484 (CR 475A to CR 475)
- SR 464 (SW 19th Ave Rd to SE 44th Ave)
- SE 19th Avenue (SE 38th St to SE 31st St)
- CR 35 (SR 40 to NE 35th St)
- SE 44th Avenue Road (SE 52nd Street to SR 464)
- CR 25 (Sumter C/L to CR 42)
- US 441 (NW 2nd St to NW 6th St)
- US 441 (NW 77th St to NW 117th St)
- SR 40 (SW 110th Ave to SW 80th Ave)
- US 41 (CR 484 to SW Robinson Rd)
- US 301 (NE Jacksonville Rd to CR 318)

More information on these corridors is provided in Chapter 4 - Congested Corridor Evaluation.

## Chapter 4

# Congested Corridor Evaluation





# Congested Corridor Evaluation

## CORRIDOR SELECTION PROCESS

This chapter provides more information on corridors identified as part of the congested corridor network identification process (Phase 1) discussed earlier in Chapter 3. Roadways that are congested today or forecasted to be congested in five years are considered.

Corridors are identified as being “not congested,” “approaching congestion or minimally congested,” or “extremely congested,” as summarized below:

**Not Congested (currently or in five years with improvements):** Corridors that are not anticipated to operate below their adopted level of service standards in either the existing conditions or after committed improvements in the five-year program are implemented.

**Approaching Congestion:** Corridors that are not congested but have segments that have traffic volumes that consume more than 90% of the roadway’s capacity at the adopted level of service standard, but less than 100%, with either the existing conditions or forecasted five-year condition without improvement.

**Congested:** Existing corridors or corridor forecasted in five years to have traffic volumes that exceed the adopted level of service standard (over 100% of the roadway’s capacity at the adopted level of service standard) that do not exceed the physical capacity of the roadway.

**Extremely Congested:** Roadways in the Existing + Committed (E+C) five-year network that have forecast volumes that are greater than the physical capacity (typically occurs when using detailed analysis and the volume-to-capacity ratio is 1.08 or greater) of the roadway and are considered severely congested.





The map in Figure 17 depicts the overall congestion on the CMP network during the 2021 to 2026 timeframe based on the earliest year in which the highest level of congestion occurs. Figure 17 is based on the information included in Table 16, which identifies the locations on the network that are Approaching Congestion, Congested, or Extremely Congested in Existing Year 2021 or Horizon Year 2026. Table 16 also includes volume-to-maximum service volume (V/MSV) ratios and volume-to-capacity (V/C) ratios for these corridors. Additionally, those corridors for which a funded or unfunded project has been identified to study or construct improvements by either FDOT, Marion County, the City of Ocala, or the TPO and additional study is recommended for short-term congestion mitigation are noted in Table 16.

The following segments represent those for which no such project has been identified to date:

- CR 464 (SR 35 to Emerald Rd)
- SE 24th Street (SR 464 to SE 28th St)
- SW 20th St (SW 38th Ave to SW 27th Ave)
- CR 484 (US 41 to Lakeshore Dr)
- CR 484 (CR 475A to CR 475)
- SR 464 (SW 19th Ave Rd to SE 44th Ave)
- SE 19th Avenue (SE 38th St to SE 31st St)
- CR 35 (SR 40 to NE 35th St)
- SE 44th Avenue Road (SE 52nd Street to SR 464)
- CR 25 (Sumter C/L to CR 42)
- US 441 (NW 2nd St to NW 6th St)
- US 441 (NW 77th St to NW 117th St)
- SR 40 (SW 110th Ave to SW 80th Ave)
- US 41 (CR 484 to SW Robinson Rd)
- US 301 (NE Jacksonville Rd to CR 318)

Figure 18 illustrates roadway segments that have been identified to be approaching congestion, congested, or extremely congested. The roadways are delineated in orange if one of the following is true:

- The roadway segment has a capacity project identified in the five-year work program or TIP but the construction phase is not yet funded within the current five year plan
- The roadway segment has been identified within the LOPP for a capacity improvement
- The roadway segment has been identified within the LRTP for a capacity improvement

The roadways delineated in blue are those for which no such project has been identified to date, and are listed above. Preliminary recommendations and areas for additional study are provided for the roadways shown in blue in Figure 18, as described in the next paragraph and outlined in Table 16.

Next steps include screening to identify mitigation strategies as part of Phase 2 of the Congested Corridor Selection and Project Selection Process discussed in Chapter 3. These strategies are also documented as part of the CMP Policy and Procedures in Chapter 1 and include strategies in five tiers that range from strategies to reduce person trips, strategies to shift trips to other modes, as well as operations and capacity strategies. From there strategies that have the greatest benefit and potential are selected and specific projects are identified and implemented as part of Phase 3. During this phase, additional analysis of potential projects is undertaken to identify the specific improvement, implementation issues, and costs that feed into the TIP and/or LRTP. Preliminary recommendations and areas for additional study are provided in Table 16.

Figure 17: Overall Congestion (2021 to 2026 Performance)

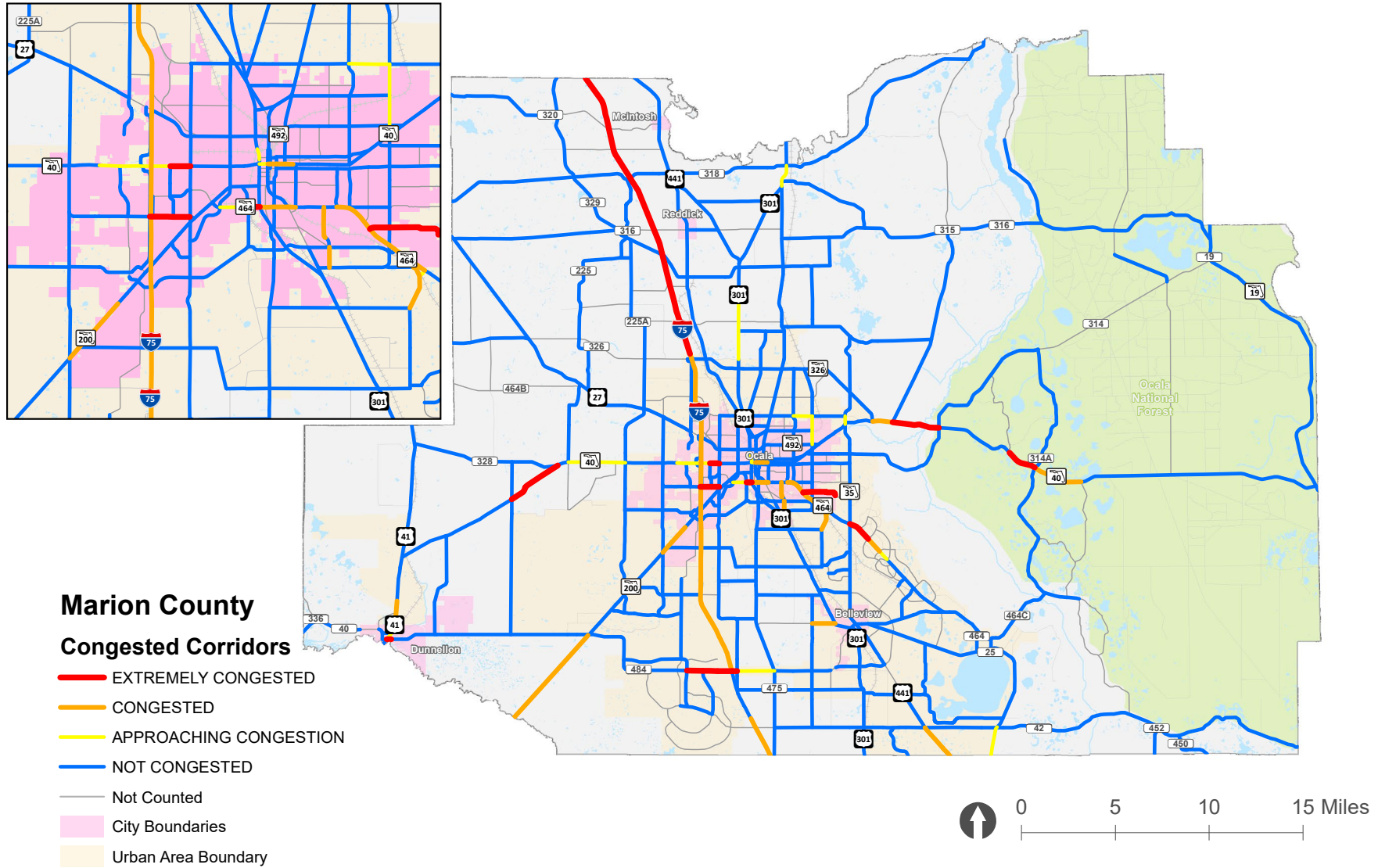


Table 16: Summary of Congested Corridors

Congestion Levels								
Name	From	To	LOS Std	2021 V/MSV	2021 LOS	2026 V/MSV	2026 LOS	2026 V/E+8%
CR 25	COUNTY LINE	CR 42	E	0.90	C	0.95	D	0.88
CR 35	SR 40	NE 35 ST	E	0.81	D	0.95	E	0.88
SR 464	SE 25 AV	SE 44 AV	D	0.95	C	1.06	F	0.98
CR 464	SR 35	EMERALD RD (N)	E	1.19	F	1.42	F	1.31
CR 484	SW 45 AV	I-75 RAMP (W)	E	0.98	D	1.19	F	1.10
CR 484	I-75 RAMP (E)	CR 475A	D	1.01	F	1.38	F	1.27
CR 484	CR 475A	CR 475	D	0.78	C	0.96	D	0.89
CR 484	US 41	LAKESHORE DR	E	1.08	F	1.18	F	1.09
I-75	COUNTY LINE (S)	URBAN AREA BOUNDARY	C	1.22	E	1.33	E	0.89
I-75	CR 484	SR 200	D	0.90	D	1.04	E	0.85
I-75	SR 200	SR 40	D	0.93	D	1.13	E	0.92
I-75	SR 40	US 27	D	0.81	C	1.03	E	0.84
I-75	US 27	SR 326	D	0.75	C	1.04	E	0.85
I-75	SR 326	URBAN AREA BOUNDARY	D	0.68	C	1.03	E	0.85
I-75	URBAN AREA BOUNDARY	CR 318	C	1.13	D	1.70	F	1.15
I-75	CR 318	COUNTY LINE (N)	C	1.12	D	1.57	F	1.06
NE 35 ST	NE 25 AV	NE 36 AV	E	0.77	D	0.90	D	0.83
NE 36 AV	NE 14 ST	NE 21 ST	E	0.86	C	0.90	C	0.84
NE 36 AV	NE 21 ST	NE 35 ST	E	0.89	C	0.93	C	0.86
SE 110 ST	CR 467	US 441	C	1.16	D	1.33	D	0.58
SR 464	SE 3 AV	SE 11 AV	D	0.98	D	1.02	E	0.91
SR 464	SE 22 AV	SE 25 AV	D	0.95	C	1.06	F	0.98
SE 19 AV	SE 38 ST	SE 31 ST	E	0.85	D	1.07	F	0.99
SE 24 ST	SR 464	SE 36 AV	E	0.96	E	1.31	F	1.21
SE 24 ST	SE 36 AV	SE 28 ST	E	0.96	E	1.31	F	1.21
SE 44 AV	SE 52 ST	SE 38 ST	C	1.50	D	1.69	D	0.73

Level of Congestion	Mitigation Strategy
Approaching	Add left-turn lanes at SE 175th Street, evaluate turn lane and signalization improvements at CR 42.
Approaching	Turn lanes at NE 35th Street, operational and safety improvements at SR 40, sidewalk extensions. Right-of-way would be needed for improvements along the corridor.
Congested (2026)	Bike lane improvements planned with resurfacing project (FDOT FM#4411411). Westbound right-turn lane at SE 25th Avenue. Signal timing/coordination between SE 36th Ave and SE 44th Ave Rd.
Extremely (2021)	Evaluate for intersection geometry / signal timing improvements. OPS37 in LRTP (ITS/Corridor Management).
Extremely (2026)	FDOT FM#433651-1 intersection improvements CST 2021. LRTP shows need to widen to 6L (unfunded need).
Extremely (2026)	FDOT FM#433651-1 intersection improvements CST 2021. LRTP shows need to widen to 6L (unfunded need).
Approaching	Monitor for growth patterns.
Extremely (2026)	Downtown Dunnellon - Capacity Constrained. Evaluate effect of railroad crossing in proximity to the traffic signal at US 41 for improvements and/or alternative roadway connections to US 41.
Congested (2021)	FDOT FM#443623-1 PD&E ongoing.
Congested (2026)	FDOT FM#443623-1 PD&E ongoing.
Congested (2026)	FDOT FM#443624-1 PD&E ongoing.
Congested (2026)	FDOT FM#443624-1 PD&E ongoing.
Congested (2026)	FDOT FM#443624-1 PD&E ongoing.
Congested (2026)	FDOT FM#443624-1 PD&E ongoing.
Extremely (2026)	FDOT FM#443624-1 PD&E ongoing.
Extremely (2026)	FDOT FM#443624-1 PD&E ongoing.
Approaching	Marion County Project #70, 100D planned for widening to 4 lanes.
Approaching	FDOT FM#431798-2 to widen to 4 lanes. LOPP Project 51.
Approaching	FDOT FM#431798-4 to widen to 4 lanes. LOPP Project 51.
Congested (2021)	Monitor development and growth trends.
Congested (2026)	Access management, ITS, signal corridor timing. LRTP Project OPS17.
Congested (2026)	Access management, ITS, signal corridor timing. LRTP Project OPS17.
Congested (2026)	Evaluate for intersection geometry / signal timing improvements at SR 464 and SE 31st Street. Evaluate sidewalk gaps.
Extremely (2026)	Evaluate for intersection geometry / signal timing improvements at the intersection with SR 464.
Extremely (2026)	ARTPLAN / Corridor analysis to evaluate actual operating conditions of the roadway.
Congested (2021)	Evaluate for intersection improvements / potential roundabout at SE 44th Ave Rd and SE 52nd St.

Identified to study or construct improvements by either FDOT, Marion County, the City of Ocala, or the TPO.

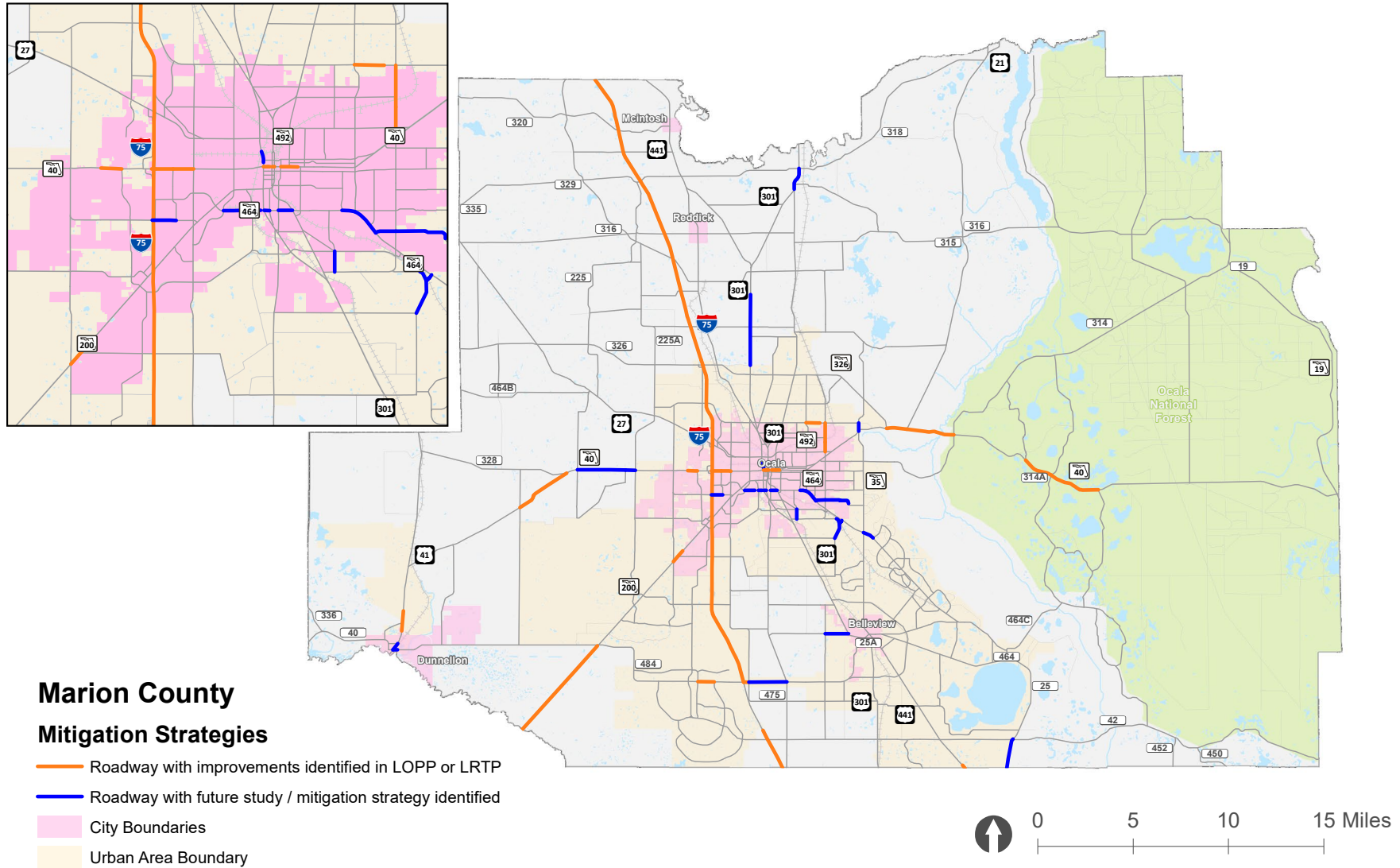
Congestion Levels (Continued)								
Name	From	To	LOS Std	2021 V/MSV	2021 LOS	2026 V/MSV	2026 LOS	2026 V/E+8%
SE 44 AV RD	SE 44 AV	SR 464	E	0.72	D	0.91	D	0.84
SR 200	COUNTY LINE	1/4 MI SW OF CR 484	C	1.12	D	1.34	D	0.69
SR 200	SW 60 AV	SW 48TH AVE	D	0.86	C	1.03	F	0.96
SR 40	SW 140 AV	CR 328	C	1.71	F	2.04	F	1.72
SR 40	SW 110 AV	SW 85 AV	C	0.76	C	0.92	C	0.82
SR 40	SW 85 AV	SW 80 AV	C	0.76	C	0.92	C	0.82
SR 40	SW 52 AV	I-75 RAMP (WEST)	D	0.81	C	0.90	C	0.84
SR 40	I-75 RAMP (WEST)	I-75 RAMP (EAST)	D	0.82	C	0.95	C	0.88
SR 40	I-75 RAMP (EAST)	SW 33 AV	D	0.86	C	1.00	D	0.92
SR 40	SW 33 AV	SW 27 AV	D	0.92	C	1.10	F	1.01
SR 40	US 441	NW 2 AV	D	0.89	D	0.94	D	0.83
SR 40	NW 2 AV	N MAGNOLIA AV	D	0.89	D	0.94	D	0.83
SR 40	N MAGNOLIA AV	NE WATULA AV	D	1.01	E	1.06	F	0.94
SR 40	NE WATULA AV	NE 8 AV	D	1.01	E	1.06	F	0.94
SR 40	NE 8 AV	NE 10TH ST	D	1.01	E	1.06	F	0.94
SR 40	SR 326	CR 315	C	0.97	C	1.11	D	0.57
SR 40	CR 315	CR 314	C	1.44	F	1.63	F	1.37
SR 40	NE 145 AV	CR 314A	C	1.42	F	1.80	F	1.52
SR 40	CR 314A	SE 183 AV	C	0.92	C	1.16	F	0.98
SR 464	SW 19 AV RD	SW 7 AV	D	0.92	C	0.99	D	0.91
SR 464	SW 7 AV	US 441	D	1.07	F	1.16	F	1.03
SR 464	US 441	SE 3 AV	D	0.98	D	1.02	E	0.91
SW 20 ST	SW 38 AV	SW 27 AV	E	1.03	F	1.26	F	1.17
US 301	NE JACKSONVILLE RD	CR 318	C	0.63	C	0.91	C	0.81
US 41	CR 484	SW ROBINSON RD	D	0.84	D	0.92	D	0.82
US 41	SW 110 ST	SW 99 PL	D	1.57	F	0.84	C	0.78
US 441	COUNTY LINE (S)	CR 42	D	0.96	D	1.01	F	0.94
US 441	NW 2 ST	NW 6TH ST	D	0.93	D	0.98	D	0.87
US 441	NW 77 ST	NW 117 ST	C	0.79	C	0.94	C	0.60

Level of Congestion	Mitigation Strategy
Approaching	Evaluate for intersection improvements / potential roundabout at SE 44th Ave Rd and SE 52nd St.
Congested (2021)	FDOT FM# 238651-1 to widen to 4 lanes, not funded for CST in TIP. LOPP Project 19.
Congested (2026)	SW 49th Avenue and SW 44th Avenue projects will alleviate traffic on this section of roadway. Monitor.
Extremely (2021)	FDOT FM# 238720-1. Project in design. ROW and CST not funded.
Approaching	Monitor for growth patterns.
Approaching	Monitor for growth patterns.
Approaching	LRTP Project R13 Widening to 6 lanes in Cost Feasible Plan (2026-2030).
Approaching	FDOT FM# 433652-1-32-01, not funded for CST in TIP (add turn lanes at I-75 and SW 27th Ave). LOPP Project 7. LRTP Project R13 Widening to 6 lanes in Cost Feasible Plan (2026-2030).
Approaching	FDOT FM# 433652-1-32-01, not funded for CST in TIP (add turn lanes at I-75 and SW 27th Ave). LOPP Project 7. LRTP Project R14 Widening to 6 lanes in Cost Feasible Plan (2026-2030).
Extremely (2026)	FDOT FM# 433652-1-32-01, not funded for CST in TIP (add turn lanes at I-75 and SW 27th Ave). LOPP Project 7. LRTP Project R14 Widening to 6 lanes in Cost Feasible Plan (2026-2030).
Approaching	FDOT FM#431935-1, not funded for CST in TIP. LOPP Project 4.
Approaching	FDOT FM#431935-1, not funded for CST in TIP. LOPP Project 4.
Congested (2021)	FDOT FM#431935-1, not funded for CST in TIP. LOPP Project 4.
Congested (2021)	FDOT FM#431935-1, not funded for CST in TIP. LOPP Project 4.
Congested (2021)	FDOT FM#431935-1, not funded for CST in TIP. LOPP Project 4.
Congested (2026)	FM# 410674-2 to widen to 4 lanes, not funded for CST in TIP. LOPP Project 15.
Extremely (2021)	FM# 410674-2 to widen to 4 lanes, not funded for CST in TIP. LOPP Project 15.
Extremely (2021)	FM# 410674-3 to widen to 4 lanes, not funded for CST in TIP. LOPP Project 38.
Congested (2026)	FM# 410674-4 to widen to 4 lanes, not funded for CST in TIP. LOPP Project 39.
Approaching	Access management, ITS, signal corridor timing. LRTP Project OPS17.
Extremely (2026)	Access management, ITS, signal corridor timing. LRTP Project OPS17. Evaluate intersection improvements at SR 464/US 441. Evaluate alternate north-south corridors (SE 3rd, Magnolia Extension).
Congested (2026)	Access management, ITS, signal corridor timing. LRTP Project OPS17. Evaluate intersection improvements at SR 464/US 441.
Extremely (2026)	Evaluate for improvements at the intersections of SW 20th Street with SW 38th Avenue, SW 31st Avenue and SW 27th Avenue. Listed as an unfunded need in the LRTP to widen to 4 lanes.
Approaching	Monitor for growth patterns. High 5-year growth rate that may be stabilizing.
Approaching	Traffic signal timing / coordination. Four traffic signals within 1 mile. Listed as an OPS18 in the LRTP.
Congested (2021)	FDOT FM# 238648-1 construction funding in 2024 to widen to 4 lanes. Not congested in 2026 with the widening.
Congested (2026)	LRTP Project R5 Widening to 6 lanes in Cost Feasible Plan (2031-2035).
Approaching	Monitor for growth patterns. Stabilized traffic volume over past 5 years.
Approaching	Monitor for growth patterns. Potential signal improvements at NW 77th Street.

Identified to study or construct improvements by either FDOT, Marion County, the City of Ocala, or the TPO.



Figure 18: Mitigation Strategy Segments



# SUMMARY

The Ocala Marion TPO State of the System Report was created to identify potentially congested corridors and to provide information on methods that could be applied to reduce congestion in the region as part of the Congestion Management Process (CMP). Future Action items for the Congestion Management Process may include, but are not limited to:

1. Integrate the recommendations of the Ocala Marion TPO Congestion Management Process for the ongoing monitoring of the transportation system by key stakeholders including the Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC)
2. Monitor the availability of data from the Florida Department of Transportation, especially as it relates to travel time reliability measures
3. Monitoring Federal and state requirements pertaining to performance evaluation and Congestion Management Process requirements including the setting of performance targets
4. Program two to three corridor / intersection studies per year based on the mitigation strategies identified in Table 16
5. Perform a State of the System update in two to three years to monitor system performance and effectiveness of congestion management strategy implementation
6. Publish an online interactive map and CMP resource page on the TPO's website with updates to coincide with the State of the System report

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