



# Carbon Reduction Strategy and Resilience Action Plan

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**Florida Department of Transportation**

*December 12, 2022*

# Attendee Participation Panel



Attendees are automatically muted throughout the webinar



Click the  to open the panel box and submit a question to the panelists



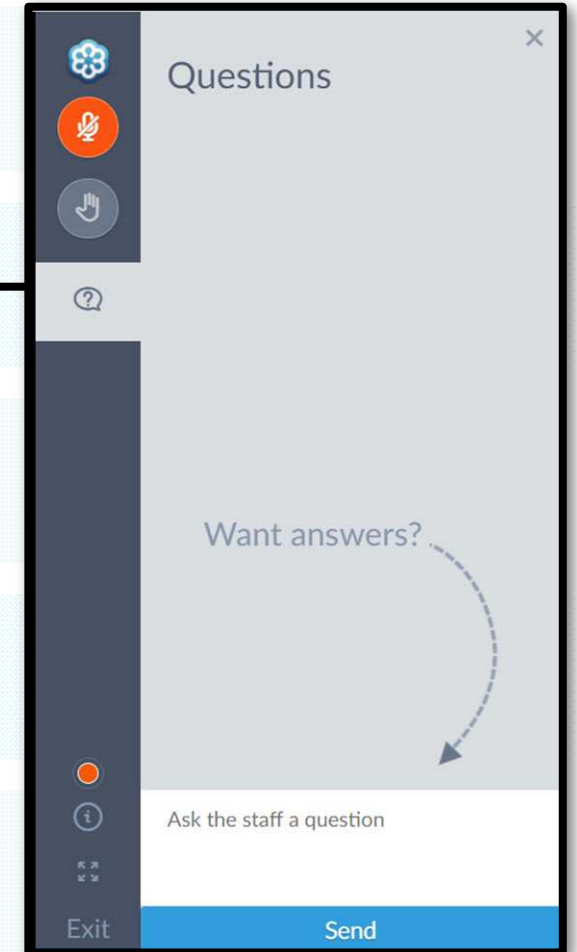
Questions will be answered by panelists either verbally or in the question box



Webinars are being recorded and will be available with other materials on the FDOT website



Please complete the evaluation survey that will be sent via email at the conclusion of this webinar





# AICP Certification Maintenance (CM) Credits

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Certification  
Maintenance

- AICP members can earn CM credits for this activity
  - **Course number:** 9261567
  - **Course name:** FDOT's Carbon Reduction Strategy and Resilience Action Plan (MPO Webinar)
- More information can be found at [www.planning.org/cm](http://www.planning.org/cm)



# CARBON REDUCTION STRATEGY

December 12, 2022

MPO Meeting on CRS



# Carbon Reduction Strategy Discussion

Go to: [www.menti.com](https://www.menti.com)  
Enter the code: 4245 4939





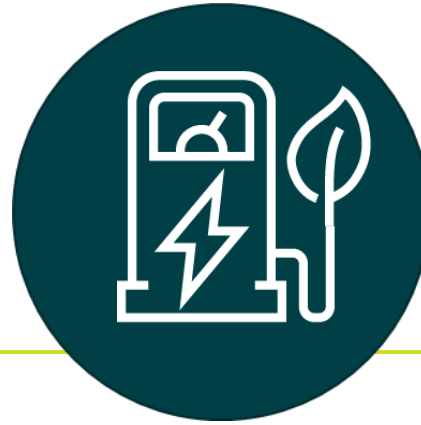
# Federal Goals

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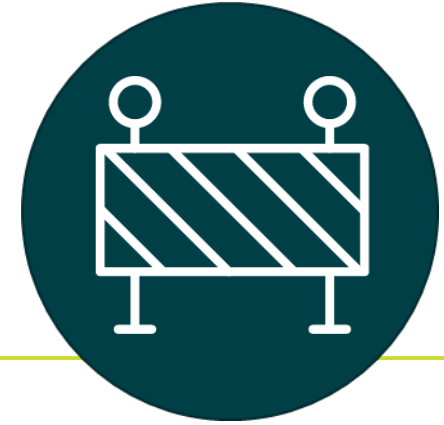
## Reduce transportation emissions by:



Reducing  
single-occupant  
vehicle trips

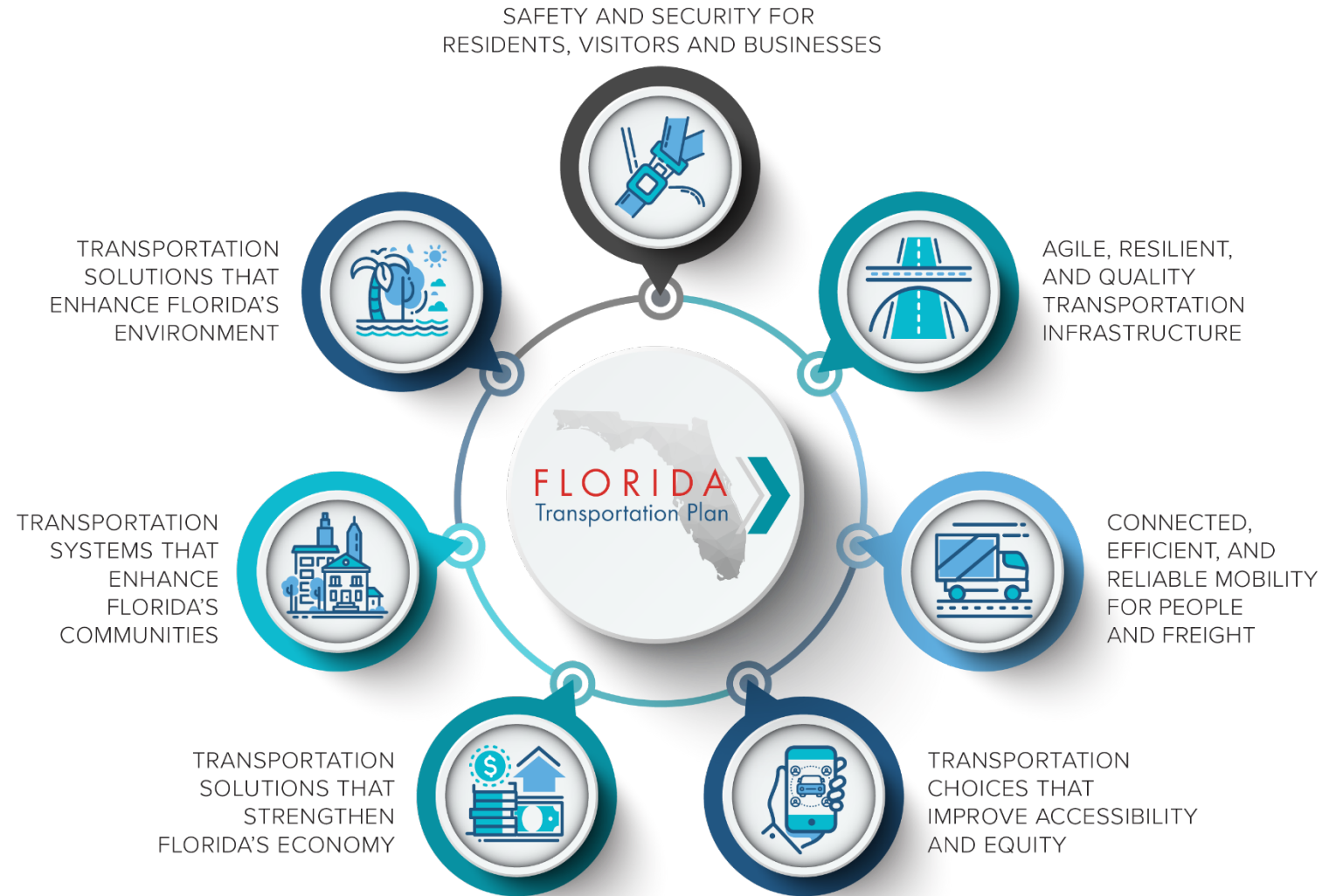


Facilitating the use of  
vehicles or modes of  
travel that result in  
lower emissions










Facilitating approaches  
to construction that  
result in lower  
emissions

# Florida Transportation Plan Alignment



# Co-Benefits of Carbon Reduction

	<b>ECONOMIC</b> Financial savings for Floridians by managing congestion on the transportation network		<b>SAFETY</b> Safer roadways and improved emergency response and recovery times
	<b>SOCIAL</b> More active and healthier communities throughout Florida		<b>IMPROVED MOBILITY</b> More efficient and agile transportation network for people and freight
	<b>ENVIRONMENTAL</b> Reduction in transportation's impact on natural resources that will manage effects of climate change		<b>RESILIENCY</b> Faster recovery from disruptions to the transportation network by diversifying energy sources
	<b>ACCESSIBILITY TO TRANSPORTATION</b> Increase access for all Floridians		



# Carbon Reduction Strategy Approach

Data and Research

Internal and  
External Outreach

Tools and Guidance

Objectives and  
Strategies

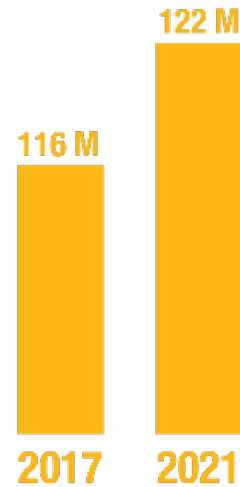
# Carbon Reduction Strategy Approach

## Data and Research


# Florida Trends and Conditions: Population

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Florida's population is projected to grow from **21.5 Million** in **2020** to **27.8 Million** in **2050**.



In **2019**, there were **122 Million** visitors to Florida, with **64%** arriving by automobile.





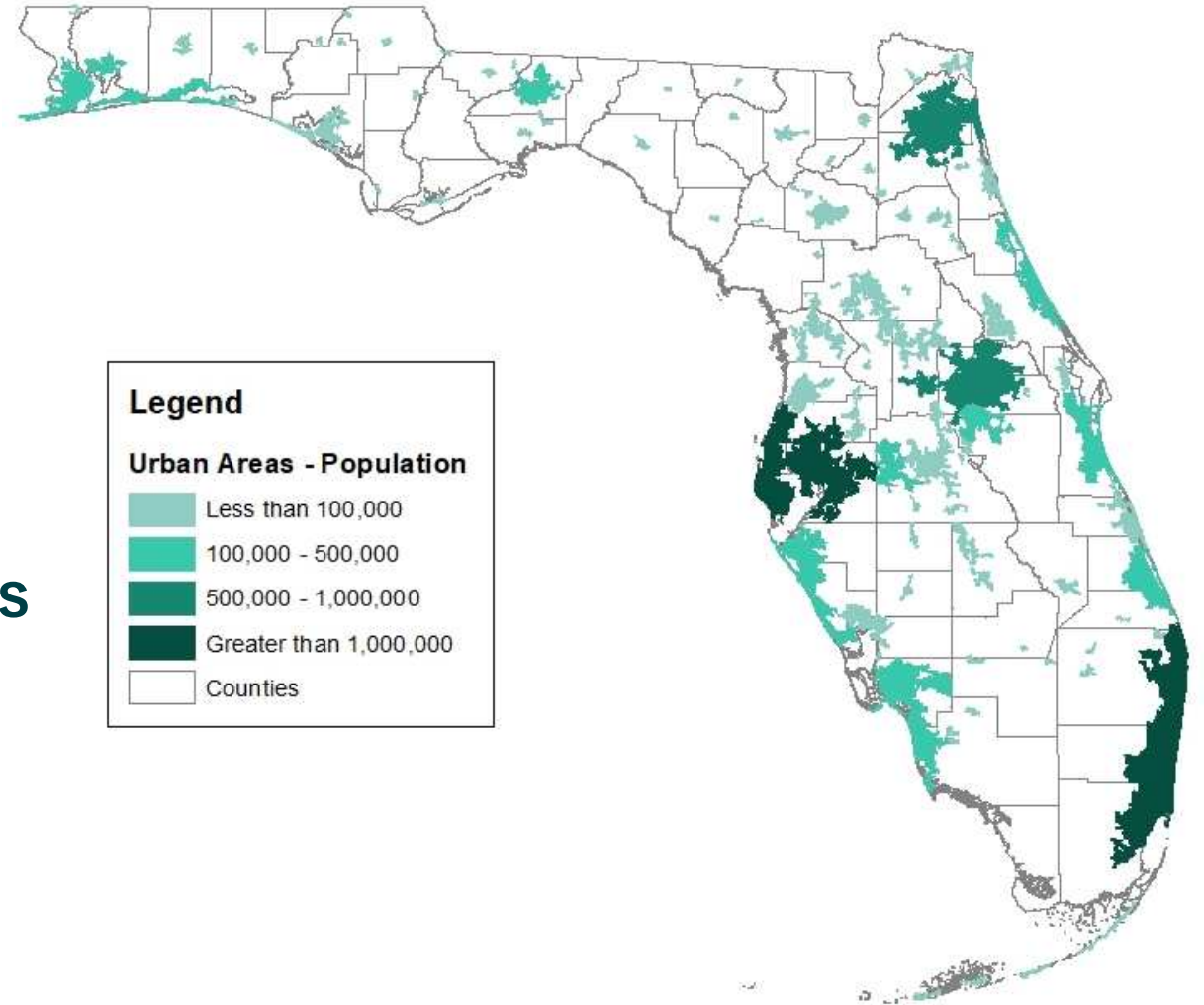
# Florida Trends and Conditions: Urban Areas

**9** out of **10**  
Floridians live  
in urban areas.



**60%** of growth projected to be in **10 counties**

- Orange
- Hillsborough
- Miami-Dade
- Lee
- Palm Beach
- Broward
- Polk
- Osceola
- Duval
- Pasco



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In **2019**, **682 Million** annual truck tons were transported in Florida.



On average, **7,712,758,078** Gasoline Gallon Equivalents (GGEs) of gasoline fuel are **consumed each year** in Florida, and **2,180,465,519** GGEs of diesel are consumed.

The number of electric transit buses in the United States grew **112%** from **2018** to **2021**.



**112%**



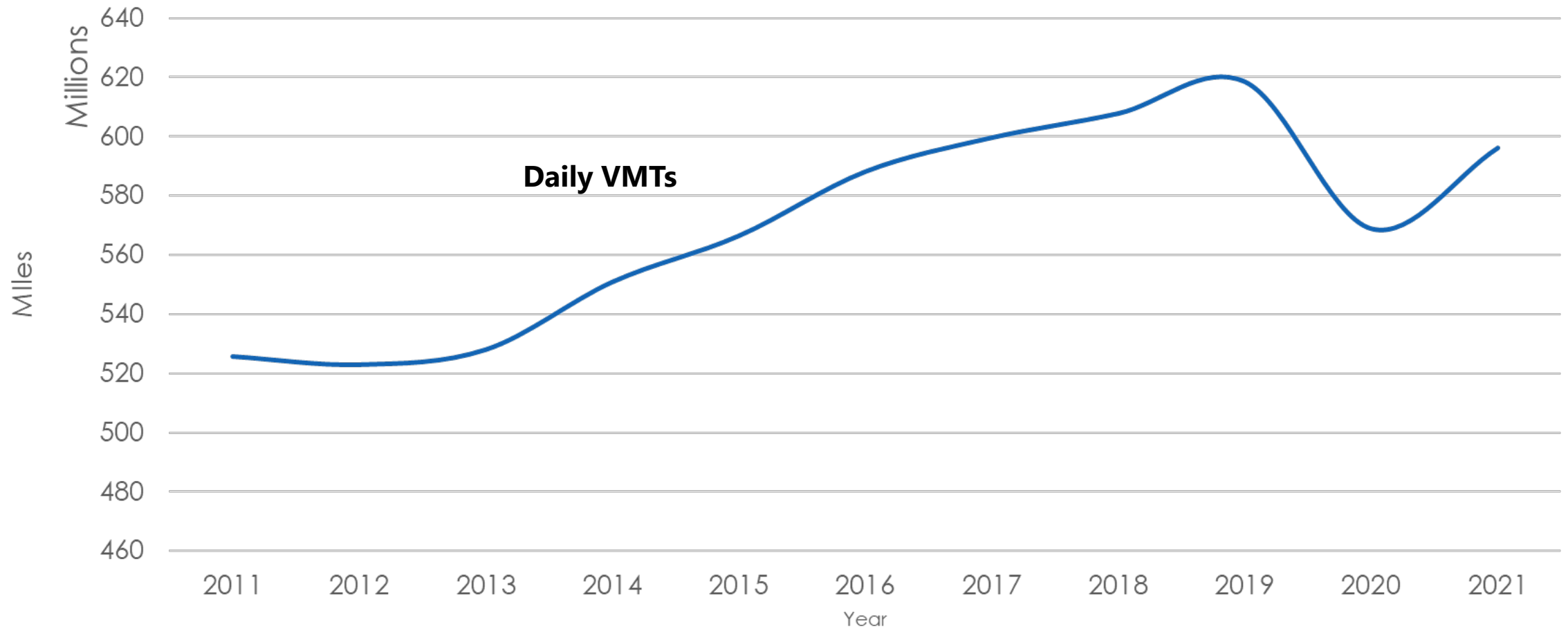
**95,600** Electric Vehicle registrations in Florida in **2021**



**98%** of truck drivers report **problems finding safe parking, causing drivers more than 56 minutes of additional drive time** to find parking.

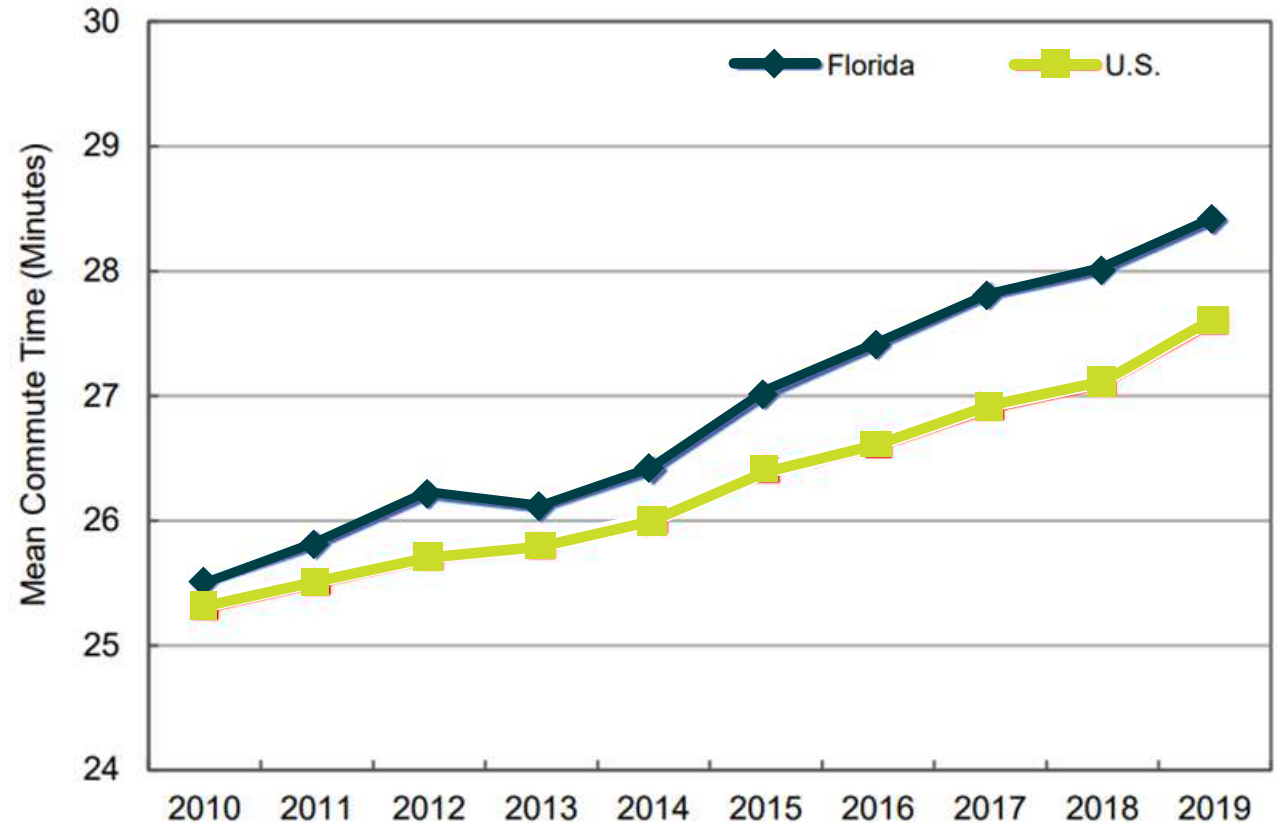


# Florida Trends and Conditions: Vehicle Miles Traveled



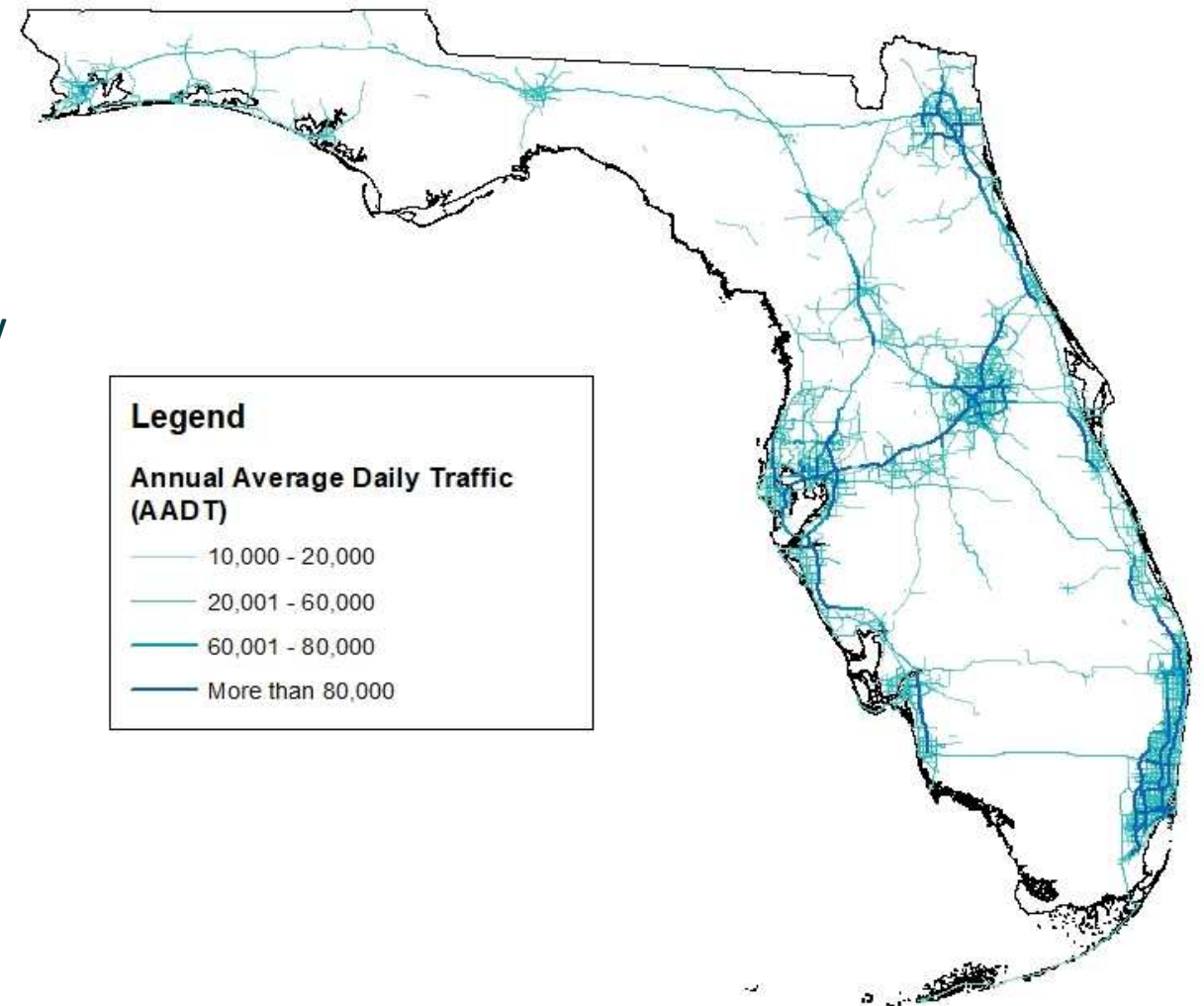
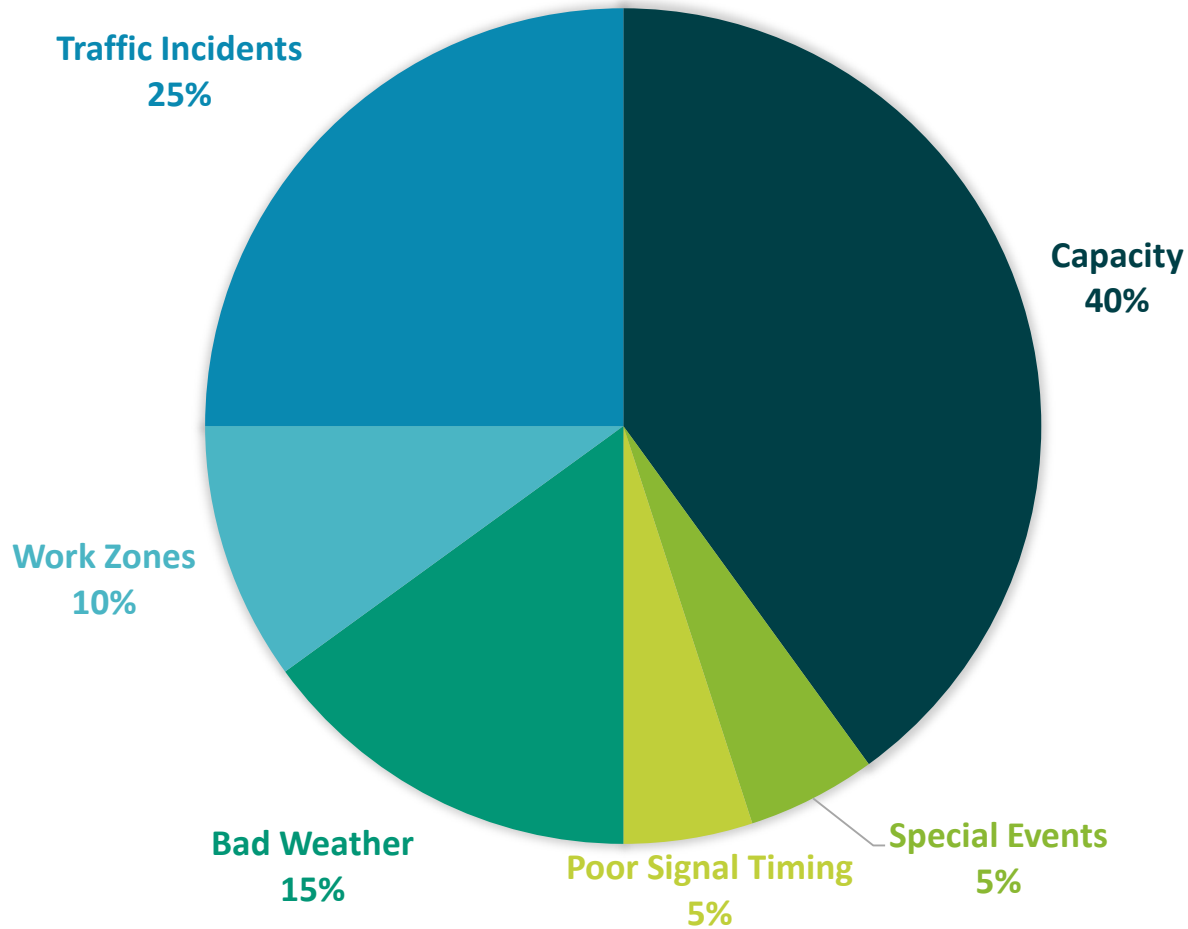
# Florida Trends and Conditions: Commute Times

- In 2019, Florida's average commute time was 28.4 minutes
- Average commute times have grown by 11.4% over the last decade
- 18.7% of Floridians have commutes of 45 minutes or longer

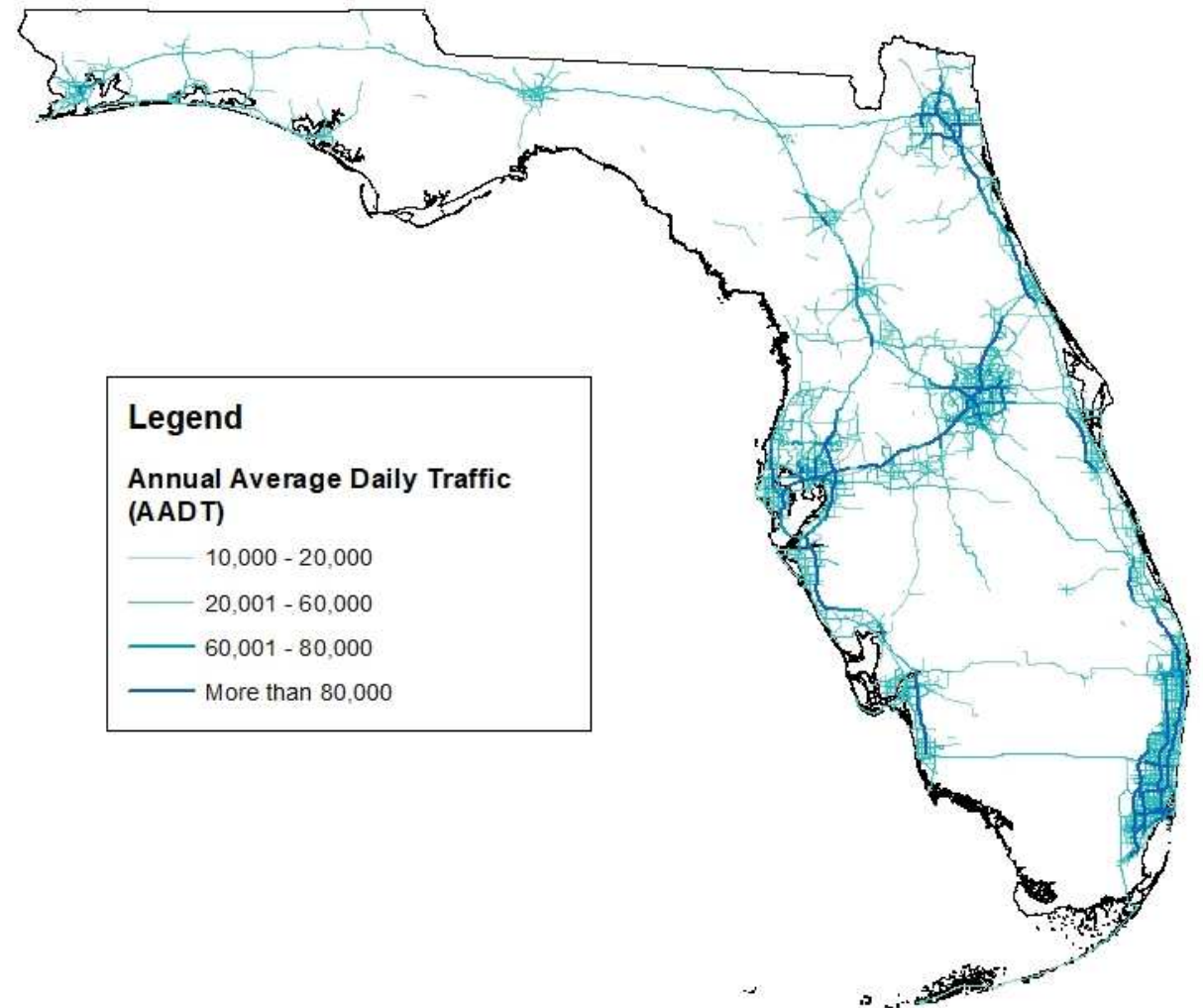
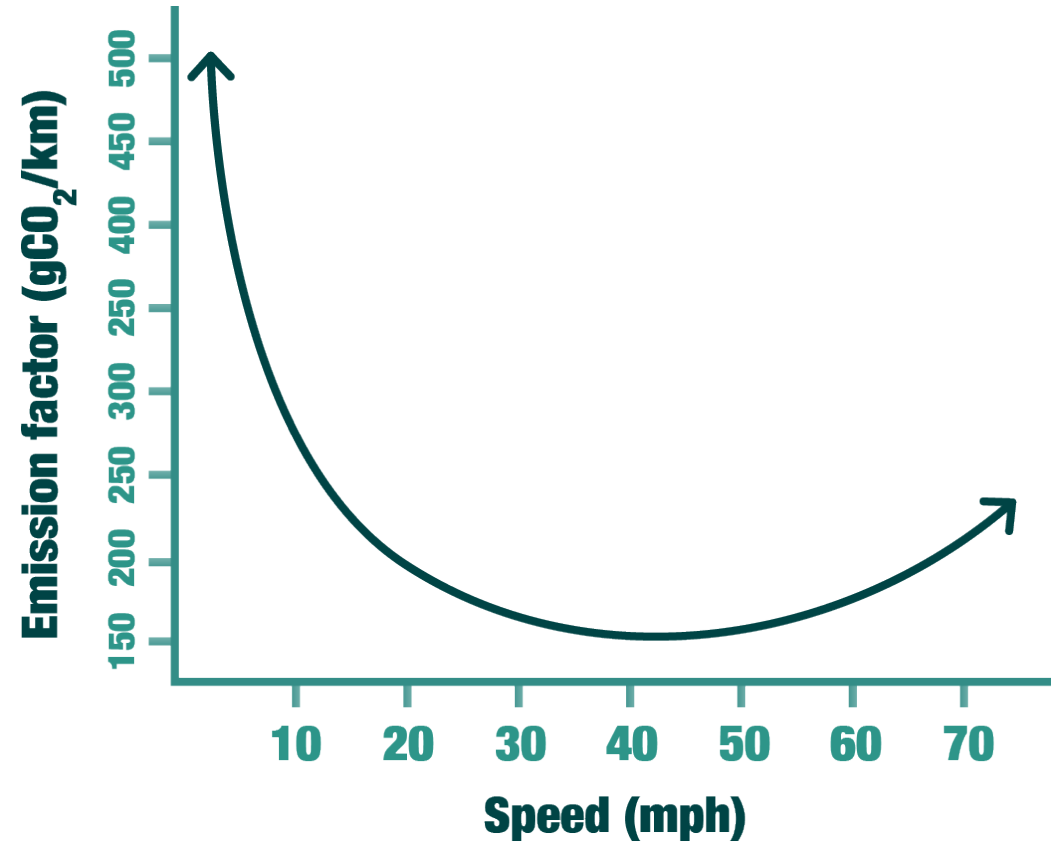


Source: FDOT 2019 Commuting Trends in Florida

# Florida Trends and Conditions: Congestion and Traffic Volumes



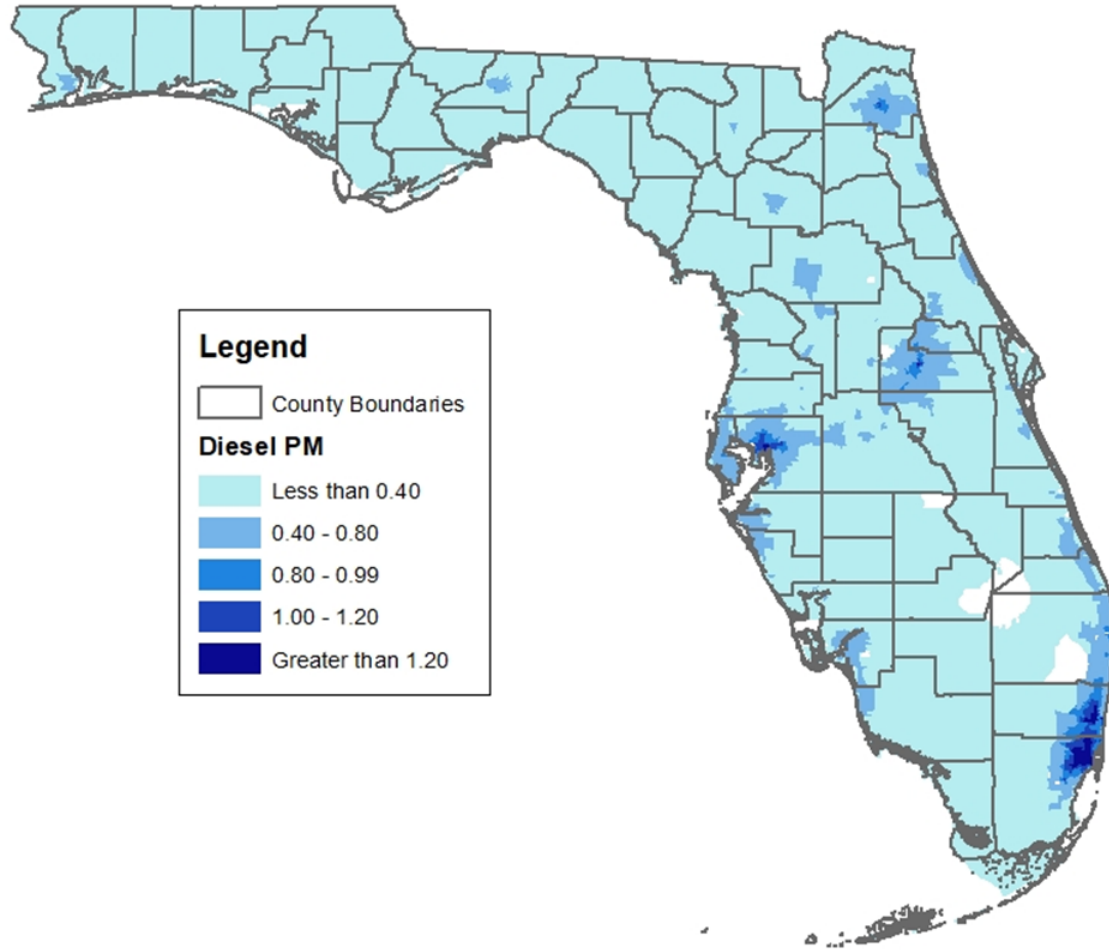
# Florida Trends and Conditions: Speed and Emissions



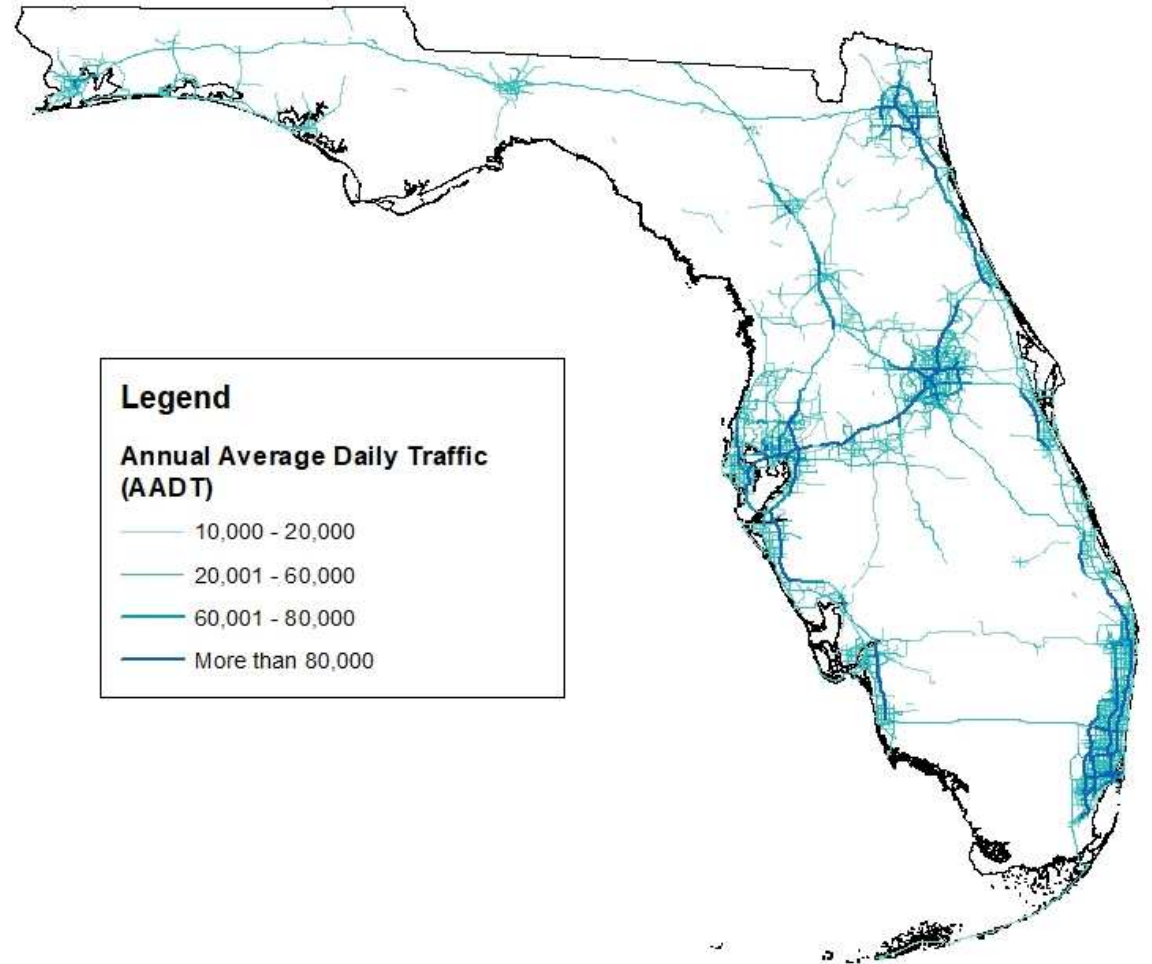


# Florida Trends and Conditions: Traffic Volumes and Emissions

## Transportation Emissions

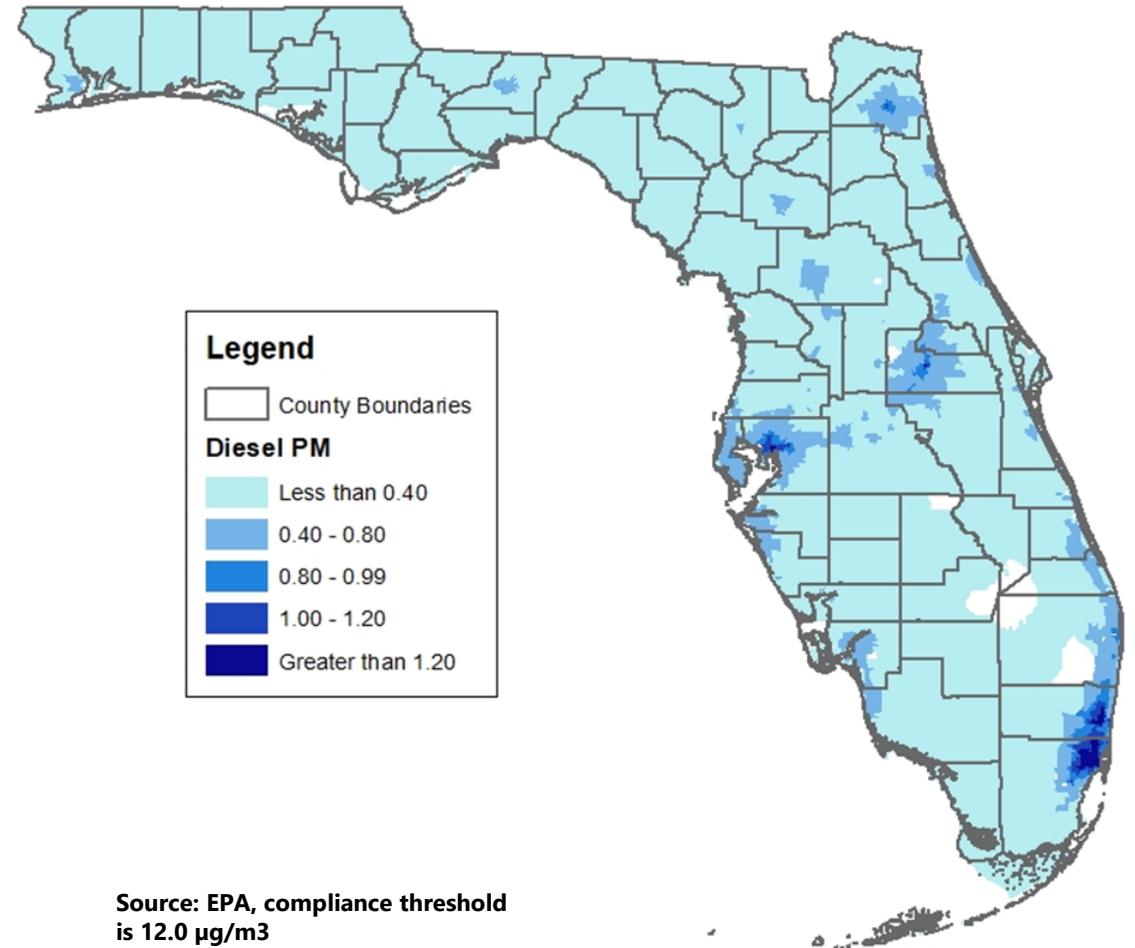


## Traffic Volumes



# Florida Trends and Conditions: Emissions

- Florida ranks among the top 15 states for diesel emissions
- Diesel emissions are most concentrated in urbanized areas



Source: EPA, compliance threshold is 12.0  $\mu\text{g}/\text{m}^3$

# Carbon Reduction Strategy Discussion

Go to: [www.menti.com](https://www.menti.com)  
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# Carbon Reduction Strategy Approach

## Internal and External Outreach



# Carbon Reduction Strategy Consultative Process

Date	Event
July 11-12, 2022	Federal Findings Meeting
August 18-19, 2022	FMPP Workshop
October 27, 2022	MPOAC Staff Directors' Advisory Committee
November 1-15, 2022	MPO Online Survey
December 12, 2022	MPO Virtual Meeting
February 1, 2023	FMPP Workshop
March 2023	MPO Virtual Meeting
April 2023	MPOAC
July 2023	FMPP Workshop
July 2023	Federal Planning Findings
August 2023	MPO Virtual Meeting
August 2023	Document Review/Comment Period



# Carbon Reduction Strategy Discussion

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# Carbon Reduction Strategy Approach

## Tools and Guidance



# Carbon Reduction LRTP Quick Guide



## **CARBON REDUCTION QUICK GUIDE:** Incorporating Carbon Reduction in the MPO Long Range Transportation Plan



### **CARBON REDUCTION IN THE LRTP**

MPOs are responsible for identifying investment strategies that focus on developing projects and programs to best meet the transportation needs of the communities they serve. The long-range transportation plan, or LRTP, is a key tool used to set policy and guide planning processes for project identification and prioritization.

*In this Quick Guide you will find:*

**Section 1:** Understanding the importance of carbon reduction

**Section 2:** Reviewing trends and conditions related to transportation emissions

**Section 3:** Including goals and objectives specific to the MPO

**Section 4:** Measuring progress for carbon reduction goals and objectives

**Section 5:** Considering eligible projects

**Section 6:** Additional resources





# Carbon Reduction Strategy Approach

## Objectives and Strategies

# Carbon Reduction Strategy Themes and Objectives

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## Transportation Choices



Provide safe and convenient transportation options that appeal to consumers.

## Congestion Management



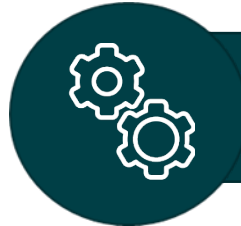
Improve traffic flow and reduce congestion and idling.

## Energy



Safely improve energy efficiency and diversify energy sources.

## Construction Practices



Reduce climate impacts from construction of transportation facilities

# Carbon Reduction Strategy Transportation Choices



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# Upcoming Activities

- LRTP Quick Guide, Anticipated Release Late Dec.
- Florida Regional Councils Association Meeting, Jan. 23
- Regional Information Sessions
- FMPP Workshop, Feb. 1



# CARBON REDUCTION STRATEGY

*Stay Aware. Stay Alert.*



**April Combs**

Statewide Planning Coordinator

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Email: [April.Combs@dot.state.fl.us](mailto:April.Combs@dot.state.fl.us)



# RESILIENCE ACTION PLAN

presented to  
*MPO Webinar*

presented by  
*Jennifer Z. Carver, AICP  
Statewide Resilience  
Planning Coordinator  
Office of Policy Planning*

*December 12, 2022*

# Florida Transportation Plan

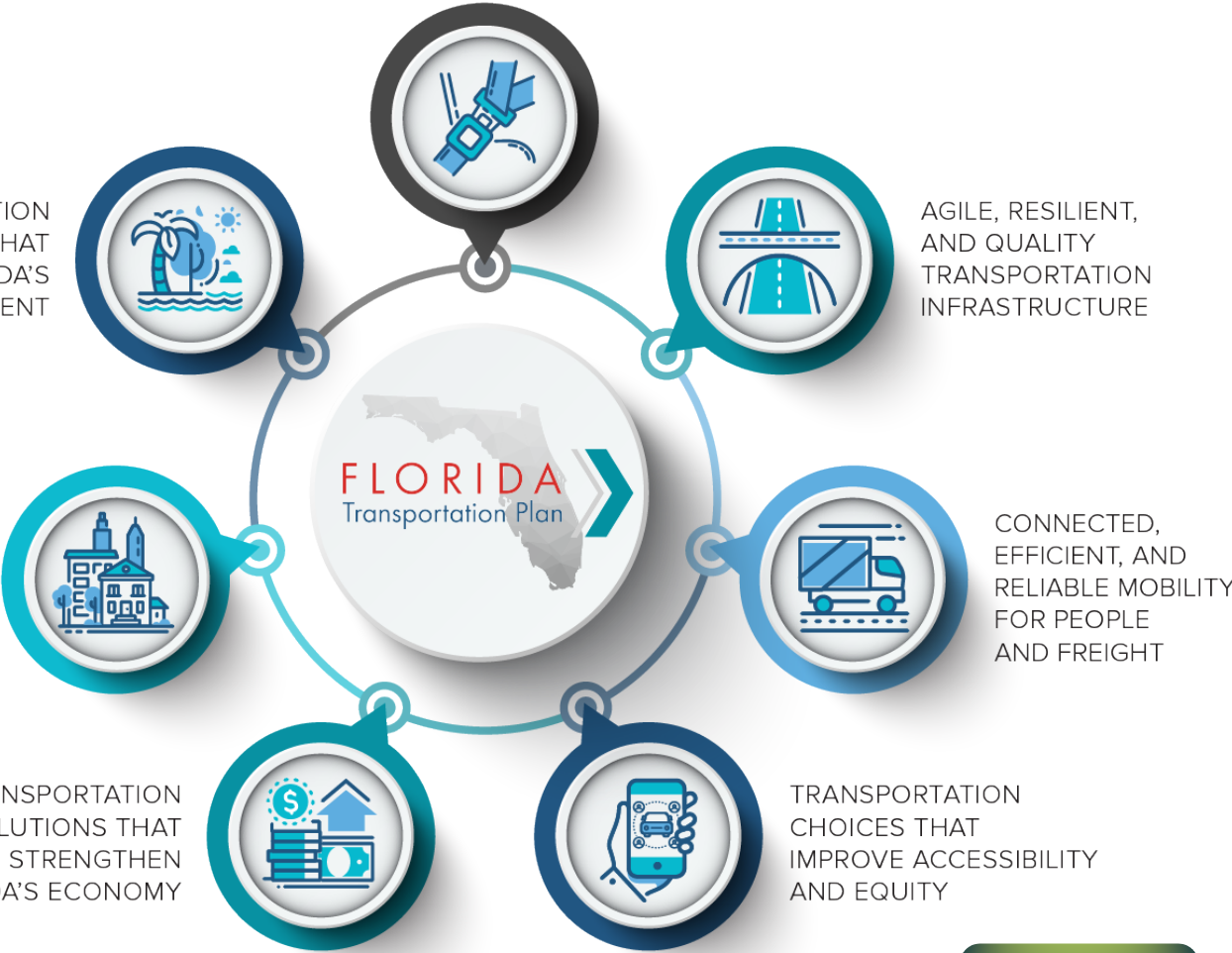


SAFETY AND SECURITY FOR  
RESIDENTS, VISITORS, AND BUSINESSES

TRANSPORTATION  
SOLUTIONS THAT  
ENHANCE FLORIDA'S  
ENVIRONMENT

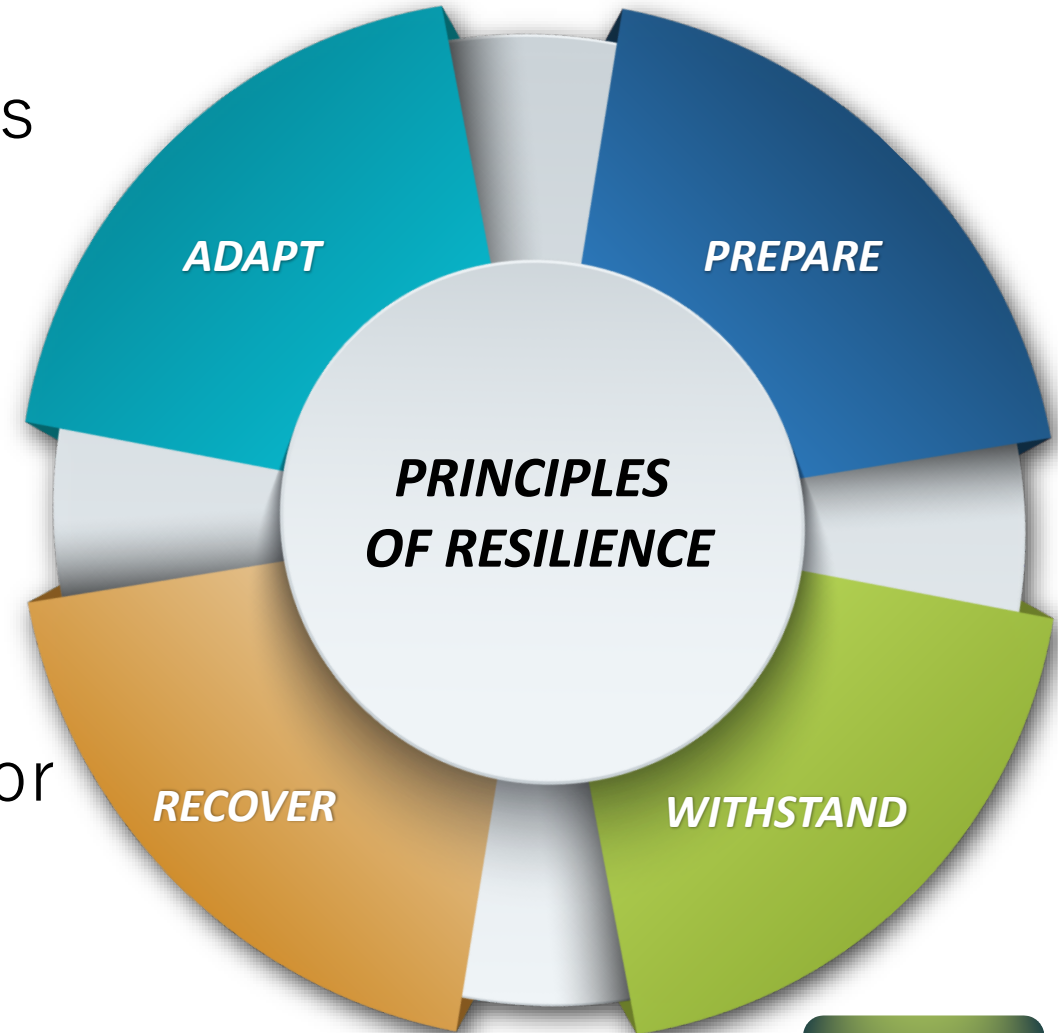
TRANSPORTATION  
SYSTEMS THAT  
ENHANCE  
FLORIDA'S  
COMMUNITIES

TRANSPORTATION  
SOLUTIONS THAT  
STRENGTHEN  
FLORIDA'S ECONOMY



# Resilience Policy

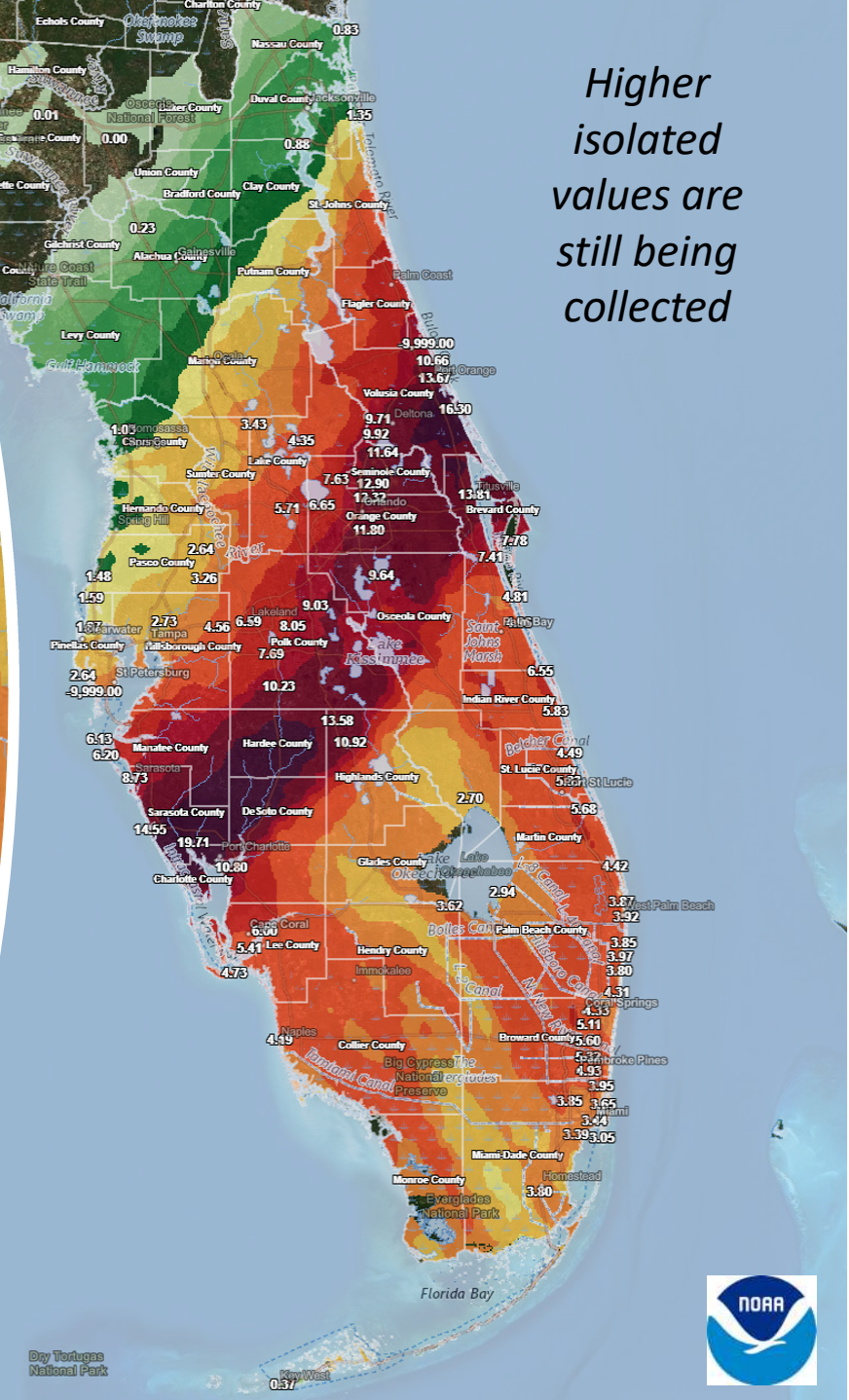
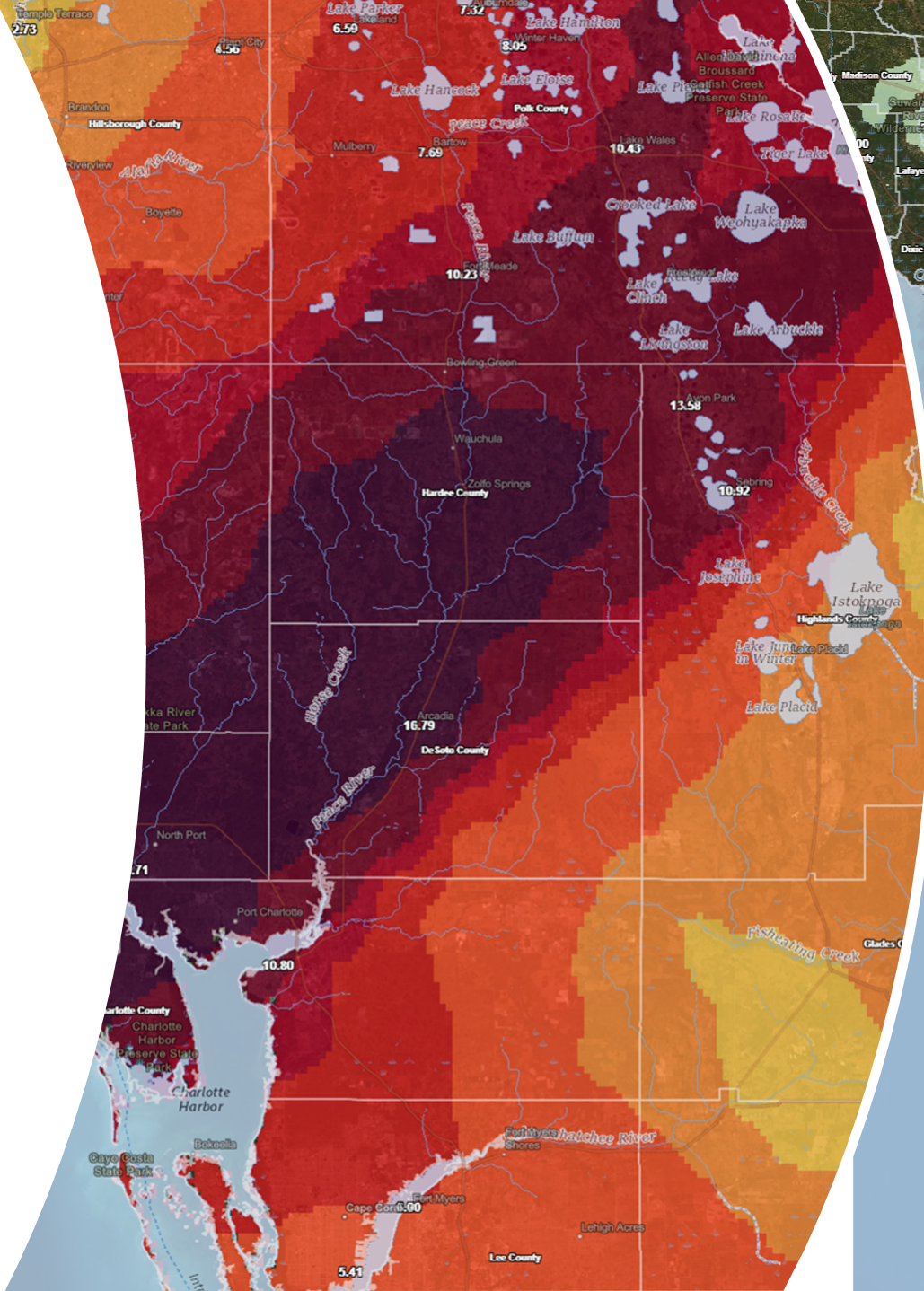
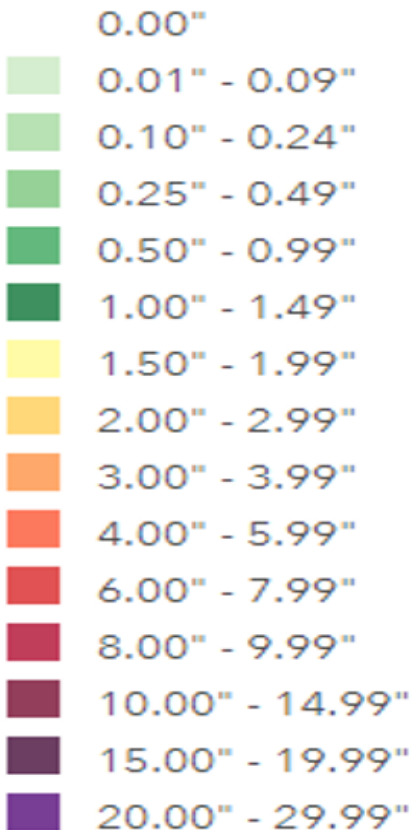
- Ability to adapt to changing conditions and prepare for, withstand, and recover from disruption
- Identify risks, particularly related to:
  - Storms
  - Flooding
  - Sea level rise
- Assess potential impacts
- Employ strategies to avoid, mitigate, or eliminate impacts





Higher isolated values are still being collected

Ian Rainfall Total Grid  
Rainfall Analysis 0" - 50"





# Coastal and Inland



**Pine Island**



**Peace River**



**SR 72 at SR 70**  
**Photo Credit: Steve Rogers**

# FDOT Actions

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**PRACTICES**



**TOOLS**



**RESEARCH**



**COLLABORATION**



**INTEGRATION OF  
TOOLS WITH  
PROCESSES**



# Inherent Resilience

- Traffic signals
- Pavement markings
- Roundabouts
- High mast lighting
- Materials



# Inherent Resilience

- Stormwater/drainage design procedure
- Nature-based solutions
- Context sensitive, complete streets
- Local partner coordination





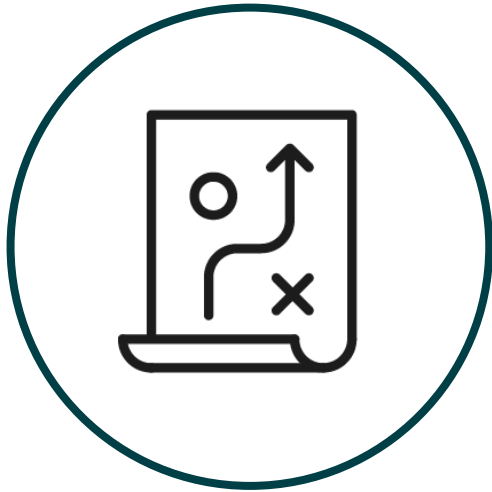
# Background - State

- Sea Level Impact Projection (SLIP) Studies
- Resilient Florida
- Establishment of Florida's Chief Resilience Officer
- Resilience Action Plan (RAP)



# Resilience Action Plan Goals

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Recommend **strategies** to enhance infrastructure and operational resilience



Recommend design changes for existing and new facilities



Enhance partnerships to address multijurisdictional resilience needs

# Resilience Action Plan Elements



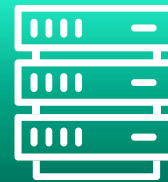
Historic/  
current issues



Alternatives to retrofit existing  
infrastructures and systems



FDOT policies  
& procedures



Database of vulnerable assets



Vulnerability assessment  
of State Highway System

# Resilience Action Plan Strategy Areas

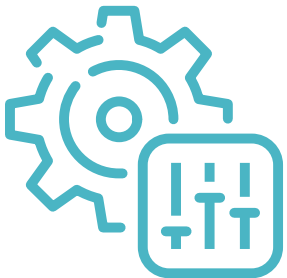
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Planning/PD&E



Design & Construction



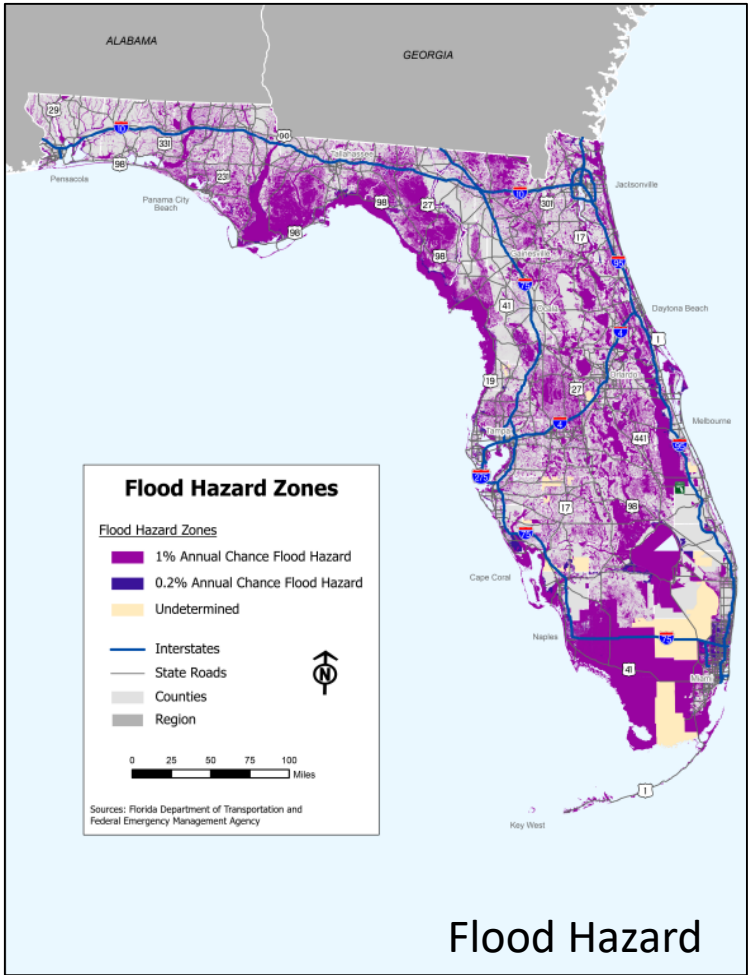
Operations



Asset Management



# Vulnerability Assessment

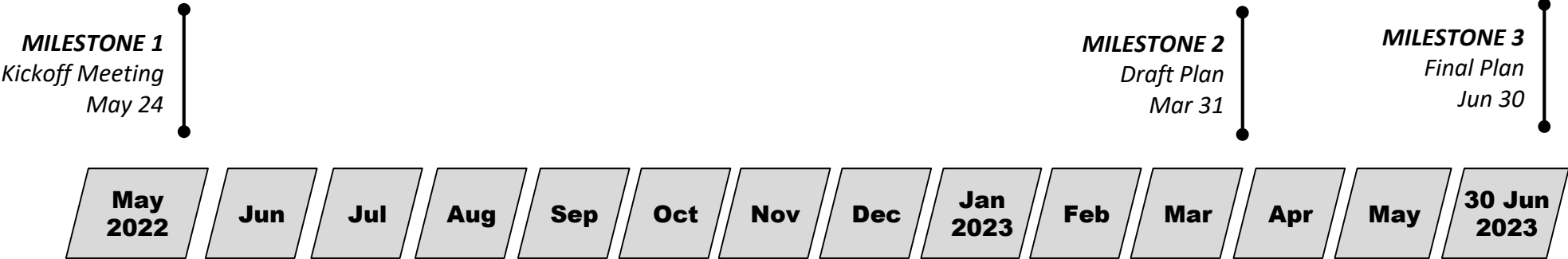


# Vulnerability Assessment

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- Identify extent of potential hazards and document vulnerable facilities
- Develop prioritization criteria
- Identify where the impacts of hazards should be addressed
- Identify systemwide resilience needs

# Resilience Action Plan Workplan



**ASSESS VULNERABILITY**



**DEVELOP STRATEGIES**



**PRIORITIZE FOR RISK**



**PREPARE NEEDS & PROJECTS DATABASE**



**COORDINATE WITH PARTNERS**



**COORDINATE INTERNALLY**



# Resilience Action Plan Next Steps

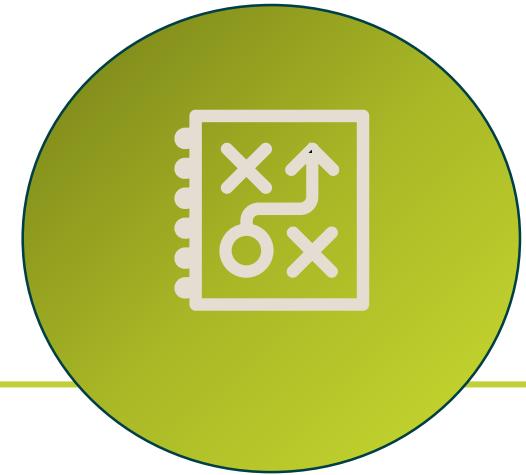
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Complete  
Vulnerability  
Assessment



Continue  
Outreach



Strategy Development

Plan due to Governor and Legislature by June 30, 2023



# Federal PROTECT Program

- Promoting Resilience Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)
- Formula and discretionary funding
- Formula funding allocated to FDOT districts
- Emphasis on incremental improvements and natural hazards



# Federal PROTECT Program

- Early identification will smooth programming
- Tracking method for resilience elements
- Optional Resilience Improvement Plan will increase federal share (80/20 to 90/10)



# Enhancements to RAP for RIP

- Surface transportation beyond state highway system (SHS)
- Add hazards/stressors
- Hazard mitigation plan consistency
- Risk-based – exposure, likelihood, and consequence
- Enhanced data or resources, e.g., Flood Hub
- Other improvements





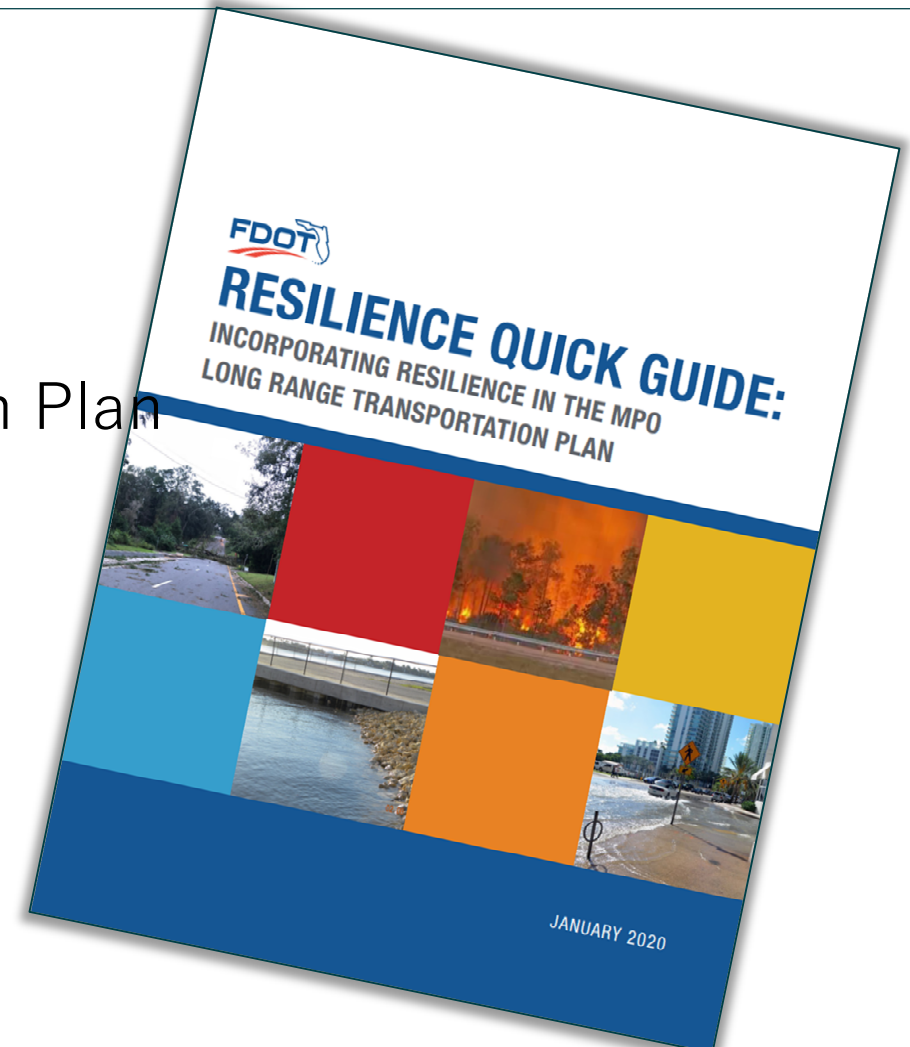
# L RTP Resilience Quick Guide Updates

## ➤ New

- Infrastructure Investment and Jobs Act (IIJA)
- PROTECT funding program
- Resilience Improvement Plan/Resilience Action Plan
- FDOT Resilience Policy

## ➤ Updated

- Florida Noteworthy Practices
- National examples





Go to [www.menti.com](https://www.menti.com) and use the code 2324 1096

# What is your organization doing to address resilience? (Select all that apply)

Mentimeter

0  
Education/training to staff/public

0  
Using sea level rise, rainfall, or other projections

0  
Update guidance to include resilience considerations

0  
Other (describe in chat)

0  
None



Slide type



Multiple Choice



Content

Customize

## Audience size limit for Dots

The Dots chart works best for small to medium-sized groups (up to 500 participants). You may experience slower animations after that.

[Add meta description](#)

Your question ?

What is your organization doing to address resilience?

[Add longer description](#)

Options ?

- ☐ Education/training to staff/public
- ☐ Using sea level rise, rainfall, or other projections
- ☐ Update guidance to include resilience consider
- ☐ Other (describe in chat)
- ☐ None

# Discussion (mentimeter)

- What is your organization doing to address resilience?
- What types of resilience-related technical assistance would be most valuable for FDOT to provide?
- What strategies should FDOT consider to support your resilience initiatives?
- What have we missed? What else should we consider?

***Don't Drive Into the Unknown.....***



***.....Stay Away from Flooded Streets!***

**For more information, please contact:**

**Jennifer Z. Carver, AICP**



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850-414-4820



# Thank you for attending!

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**Florida Department of Transportation**  
*December 12, 2022*