# ACES SUBCOMMITTEE MEETING

*presented to*

**FTP-SIS ACES Subcommittee**

*presented by*

**Jim Halley**
**Office of Policy Planning**

*August 21, 2019*

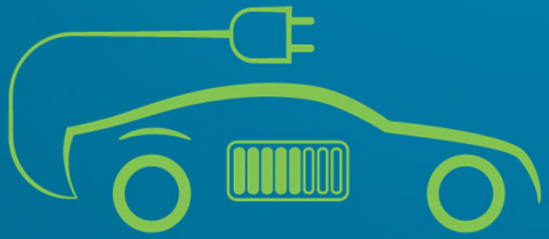
# AGENDA

- Welcome and Introductions
- Subcommittee Update
- FDOT ACES Activities
- Steering Committee/Partner Input
- Discussion: How Can ACES/Technology Help Us Achieve FTP Goals & Objectives?
- Potential Framework for Subcommittee Recommendations
- Next Steps

# INTRODUCTIONS

*Automated Vehicles*

*Connected Vehicles*



*Electric Vehicles*

*Shared Vehicles*



FDOT

# ACES SUBCOMMITTEE CHARGE

- Discuss themes, trends, and planning implications of ACES for transportation in Florida
- Identify policy-level objectives or strategies to address and/or maximize emerging technologies to support the FTP goals and the SIS objectives
- Review and provide input, as requested, on related plans and processes, including those from FDOT and other partners
- Serve as ACES subject matter experts for the FTP-SIS Steering Committee and provide updates to the committee as needed

# SUBCOMMITTEE UPDATE: WHERE WE'VE BEEN

- Formed Subcommittee (January)
- Reviewed trends and brainstormed issues/opportunities (January)
- Received updates from partner groups (June)
- Participated in workshop on ACES impacts on Strategic Intermodal System (June)
- Discussed potential revisions to FTP goals and objectives (June)

# SUBCOMMITTEE UPDATES: WHERE WE'RE GOING

- Receive update on FDOT initiatives (today)
- Review current FTP strategies (today)
- Receive additional updates as needed
- Start developing potential strategies for FTP update (fall)
- Prepare recommendations to full FTP Steering Committee (by February)

# FDOT Updates

# Freight and Multimodal Operations

# FTP ACES Updates

## August 21, 2019

FDOT

FMO
FREIGHT & MULTIMODAL OPERATIONS

# ACES - Trucking

- Autonomous Vehicles will drive the future
  - 90% of all traffic accidents are human error (NHTSA)
  - Up to 7% cost reduction

Peloton-tech.com

- Automated Trucks currently being tested in Florida
  - Starsky Robotics to have driverless deployments by 2020
- Truck Platooning was successfully tested with over 1,000 miles logged via partnership between Peloton and FDOT

FDOT FMO FREIGHT & MULTIMODAL OPERATIONS

# ACES - Data

- Truck Parking Availability System (TPAS) deployment in progress across I-4, I-10, I-75, and I-95
- RFID of containerized cargo reduces hours of services (HOS) issues by quick identification through checkpoints, and FDOT pursuing weigh station bypass pilot options

Beth Oliver/Flickr

# ACES – Consumer Delivery

- Personal Delivery Drones now legal in Florida
  - F.S. 316.2071 passed in 2018 paving way for last mile automation
  - UPS estimates this can generate over $50 mil. in savings
    - Can assist in providing at risk or aging communities with access to previously difficult to access commodities, increasing Quality of Life

QIHAN Technology

FDOT FM FREIGHT & MULTIMODAL OPERATIONS

# Seaport and Waterways Office

# Transit Office

# Aviation and Spaceports Office

# FTP-SIS ACES Aviation Update

Nixon *"Nick"* Harwell – ICMA, FCCM

# Choices??

**Traditional or Non-Traditional Travel**

**POV travel to airport :**

**Autonomous travel to airport:**

# Transportational Changes

**80** The PERCENTAGE of young adults ages 18-24 that would be comfortable as a passenger on a self-flying aircraft at some point in their lifetime.

**22** THOUSAND….online consumers across China, Europe, India & the U.S. participated.

**25**

**34**

Airbus concluded this age bracket (25-34) had the highest positive reaction to the concept of urban air mobility and perceived convenience of the concept was higher in more densely populated areas such as Mexico City and Los Angeles.

**1/2** More than ½ of the respondents would be willing to take a flight in an air taxi

FDOT

# Skip the Flight or Take the Drive

Some people **prefer driving over taking a plane, no matter the distance**.

The option to **take a self-driving car** makes people less interested in flying

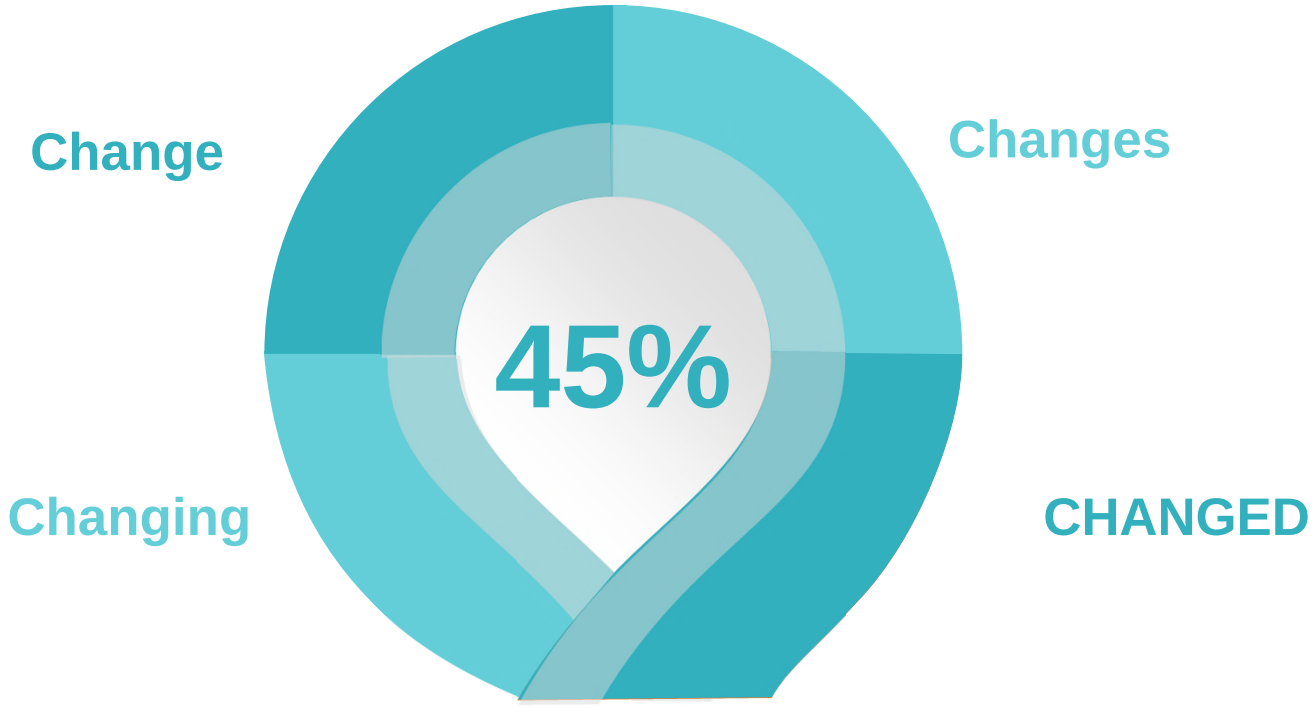
ESPECIALLY if it means **avoiding renting a car at the destination**. Which means everyone else would head to the airport.

## Here are the results

# The Airline Effect

- Losing even 1 in 10 customers would substantially reduce airline revenues
- Revenue loss will likely force airlines to reduce services
- Rippling the effect of passengers splitting trips between autonomous vehicles and aircraft

***The PERCENTAGE of respondents OVER the age of 65 that stated they were willing to fly on an autonomous aircraft in their lifetime!***



# *The study conclusively reported the following*

**Timeline for Adoption:**

**70 PERCENT**

are ready to fly in an autonomous plane in their lifetime

**58 PERCENT**

are ready to fly in an autonomous plane in the next decade

**12 PERCENT**

insist on waiting longer than ten years

# Traffic Engineering and Operations

# *Planning and Designing Connected Vehicle Projects for Safety and Mobility in a Multimodal Transportation Network*

FTP SIS ACES

August 21, 2019

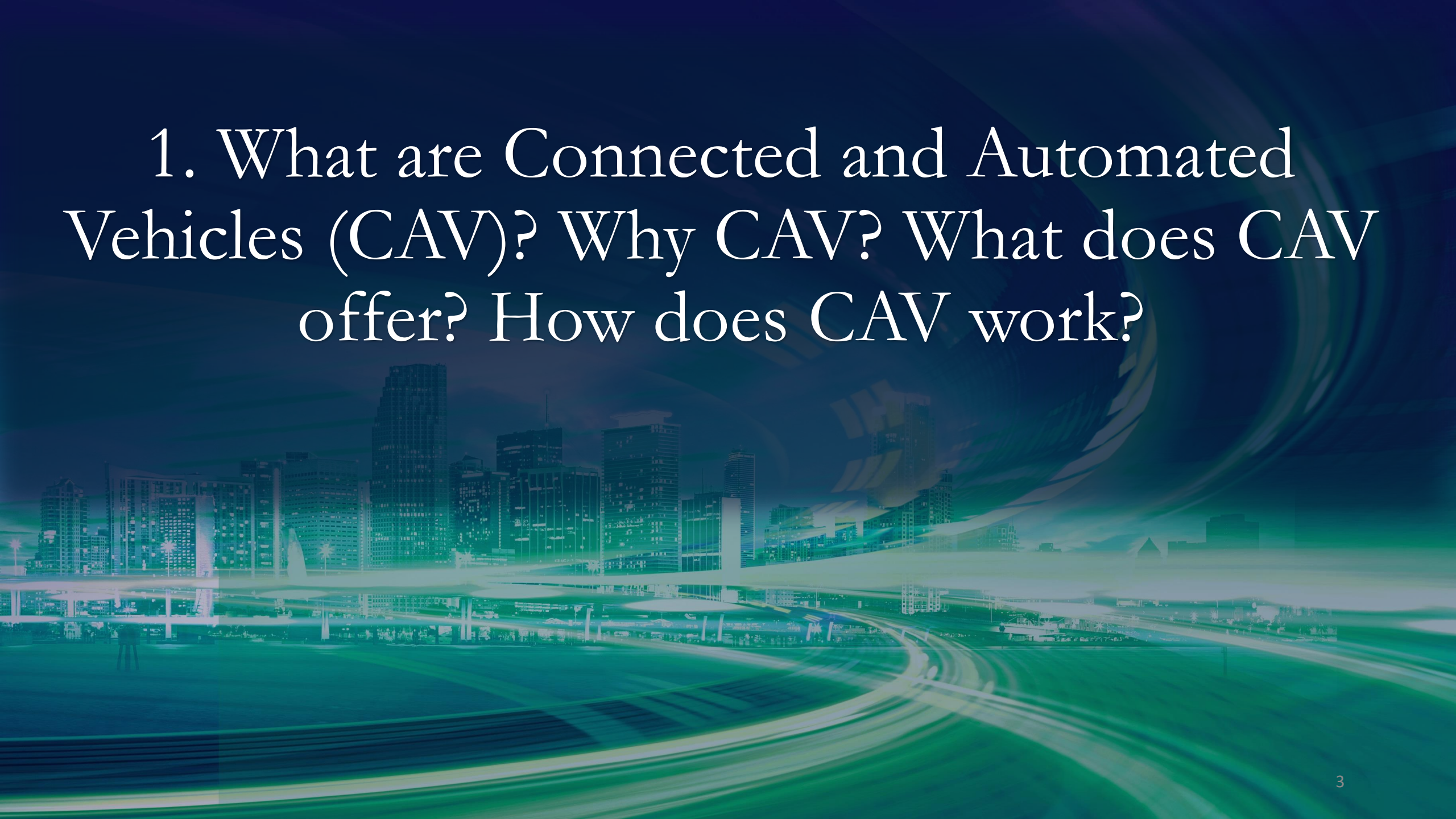
Raj Ponnaluri, PhD, PE, PTOE, PMP

Connected Vehicles and Arterial Management Engineer, FDOT

# Agenda

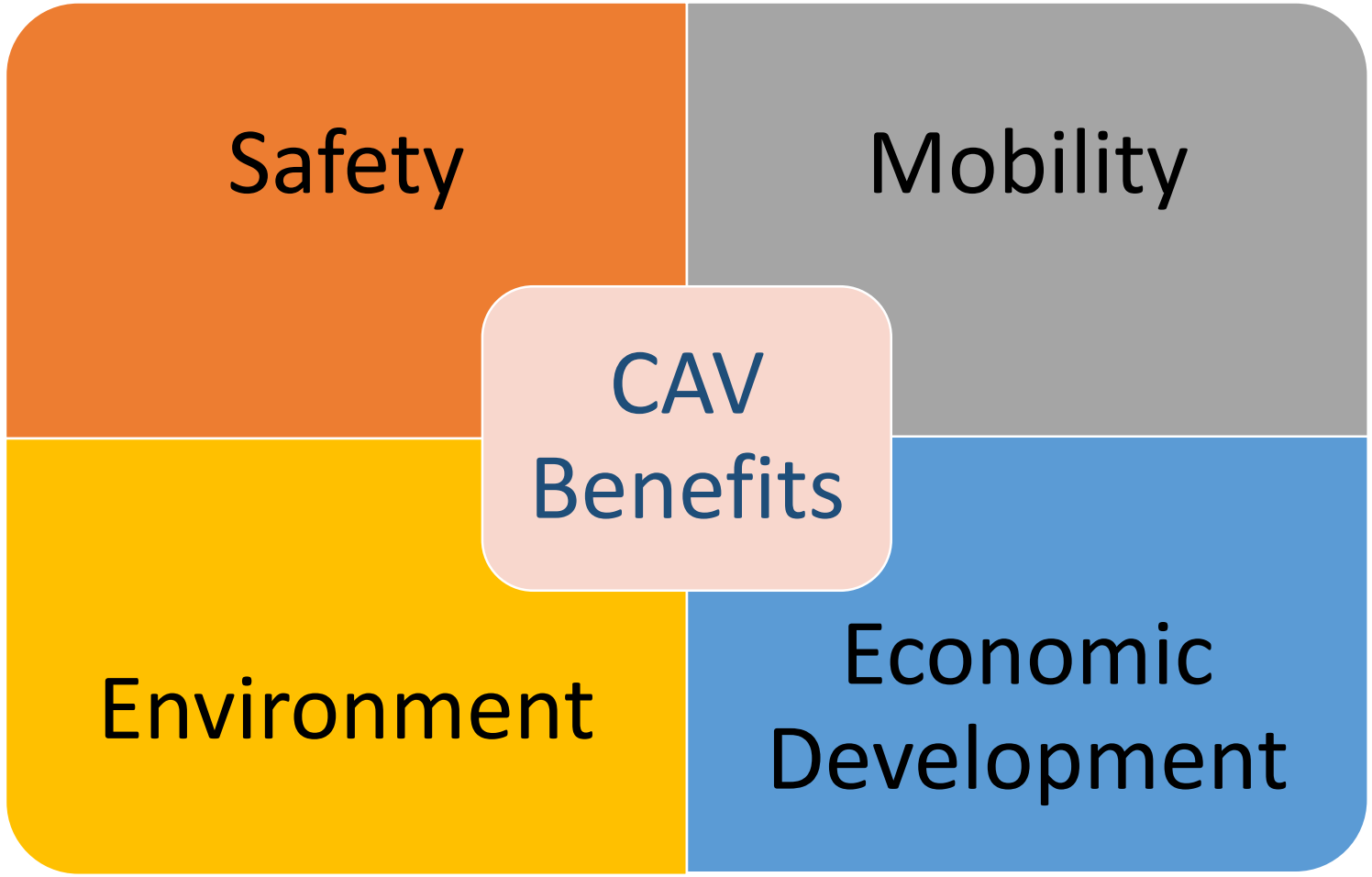
1. What are Connected and Automated Vehicles (CAV)? Why CAV? What does CAV offer? How does CAV work?
2. CAV Data and Data Sources
3. FDOT CAV Program Development
4. FDOT's Automated, Connected, Electric and Shared (ACES) Program
5. Mainstreaming CAV
6. CAV Research and Development
7. CAV Projects and Roadmap

# 1. What are Connected and Automated Vehicles (CAV)? Why CAV? What does CAV offer? How does CAV work?



# Why CAV?

1. **Safety:** CAV can mitigate and eliminate traffic crashes by compensating for human error and responding in real time.
2. **Mobility**: CAV technology can directly communicate with the drivers about recurring and non-recurring traffic, incidents upstream, etc.
3. **Environment:** CAV deployments will improve air quality and increase energy savings.
4. **Economic Development:** CAV can improve speed, efficiency, reliability, dependability, and productivity.



# Example: Connected Vehicle Applications

## Intersection Movement Assist

Warns the driver when it is not safe to enter an intersection—for example, when something is blocking the driver's view of opposing or crossing traffic.

*Source: FHWA*

# 2. CAV Data and Data Sources

# CAV Data

**SAE J2735 and J2945** – Defines the format and structure of message, data frames, and data elements for exchanging data between vehicles (V2V) and between vehicles and infrastructure (V2I); **Data Dictionary**.

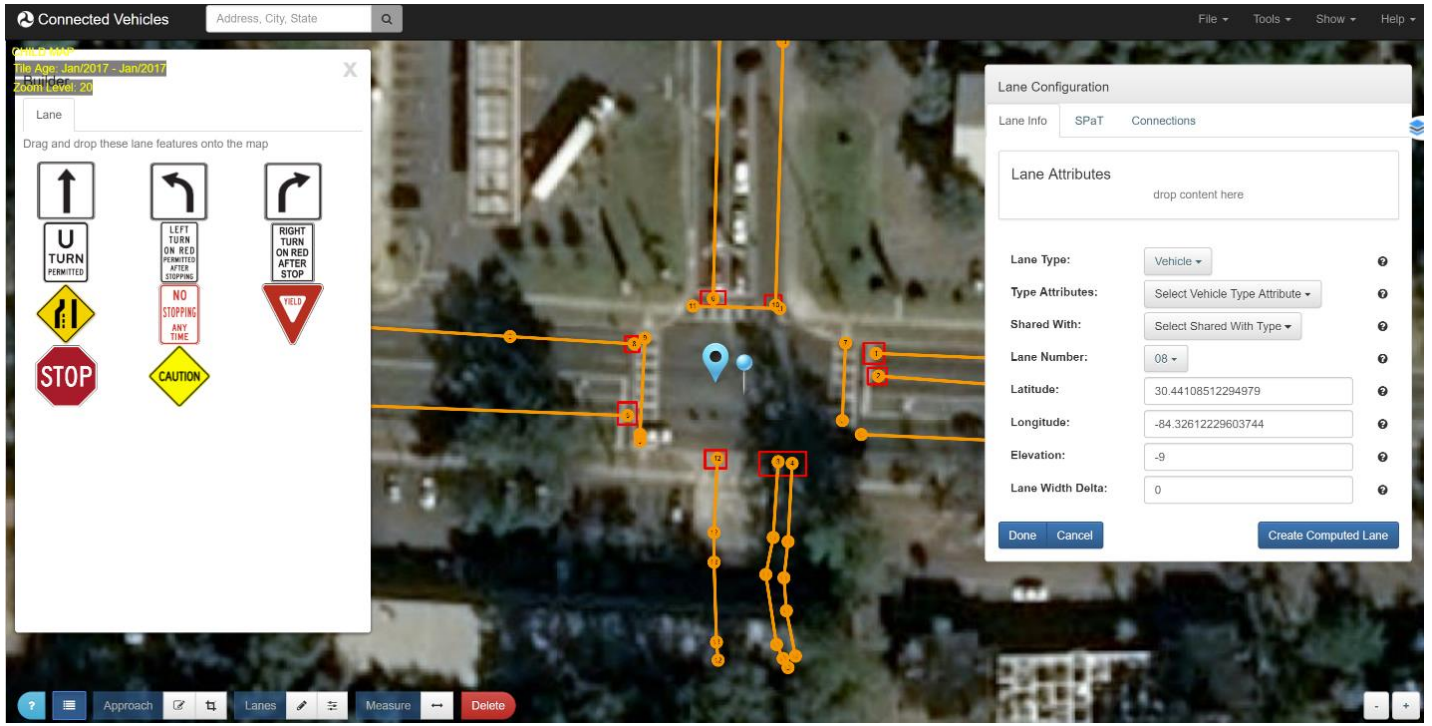
**SAE J2735 DSRC Messages (Revised 2016-03-30)**

- MAP
- SPaT (Signal Phase and Timing)
- BSM (Basic Safety Message)
- CSR (Common Safety Request) *[Not in any known use]*
- EVA (Emergency Vehicle Alert) *[Not in any known use]*
- ICA (Intersection Collision Alert) *[Not in any known use]*
- PDM (Probe Data Management)
- PVD (Probe Vehicle Data)
- RSA (Roadside Alert)
- SRM (Signal Request Message)
- SSM (Signal Status Message)
- TIM (Traveler Information Message)
- PSM (Personal Safety Message)
- NMEAcorrections
- RTCMcorrections

*(Highlighted messages are widely used in various CAV projects)*

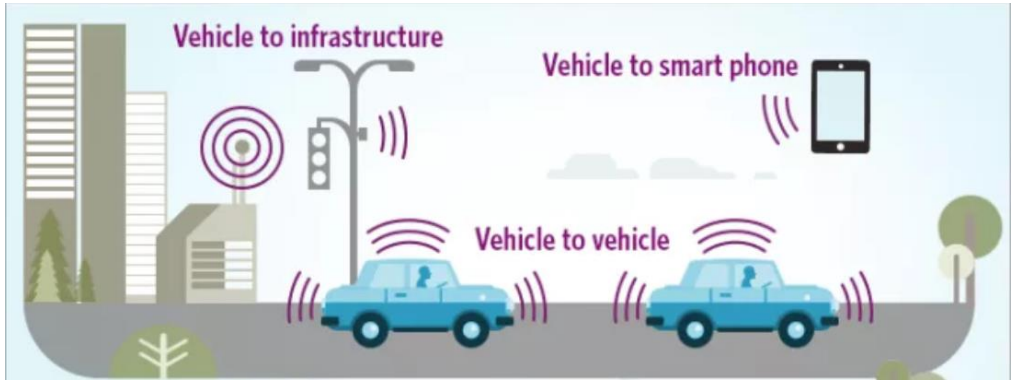
# CAV Data- MAP Data

- MAP data is created using the MAP Creator Tool by USDOT.
- MAP data includes lanes, stop bars, signal group assignments, etc.
- There are challenges to make them work in the field.
- Need to be properly coded.



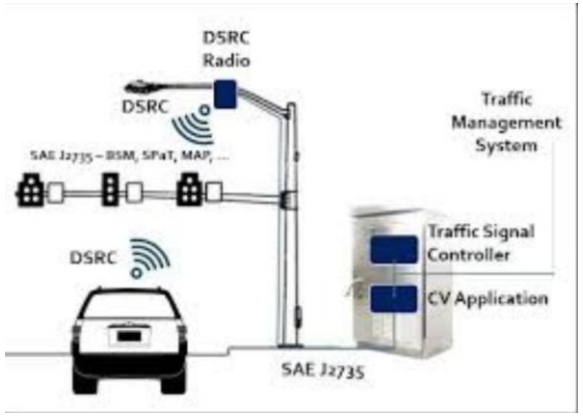
# Data Sources

Video data:
~100 MB per camera per hour

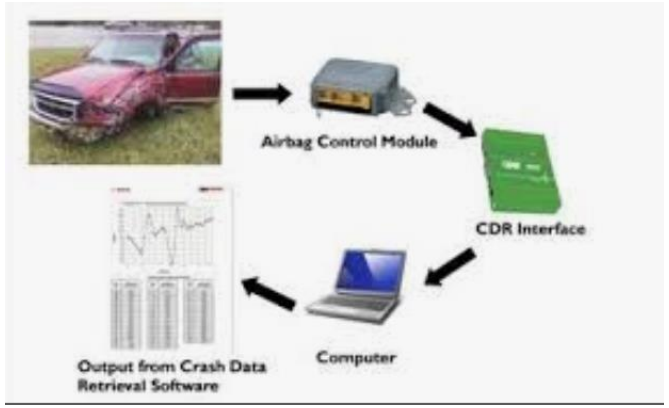



Here.com, Probe data: 1GB per month
Alachua County


Bluetooth data:
When reported every 5 minutes:
~500kB per day for all routes(Gainesville)




Controller logs:
~5MB per intersection per day (Gainesville)




Crash Data: 500MB per month
for Gainesville.

*Source: Professor Sanjay Ranka, Ph.D. (UFTI)*

# 3. FDOT CAV Program Development

# Creation Of CAV Business Plan

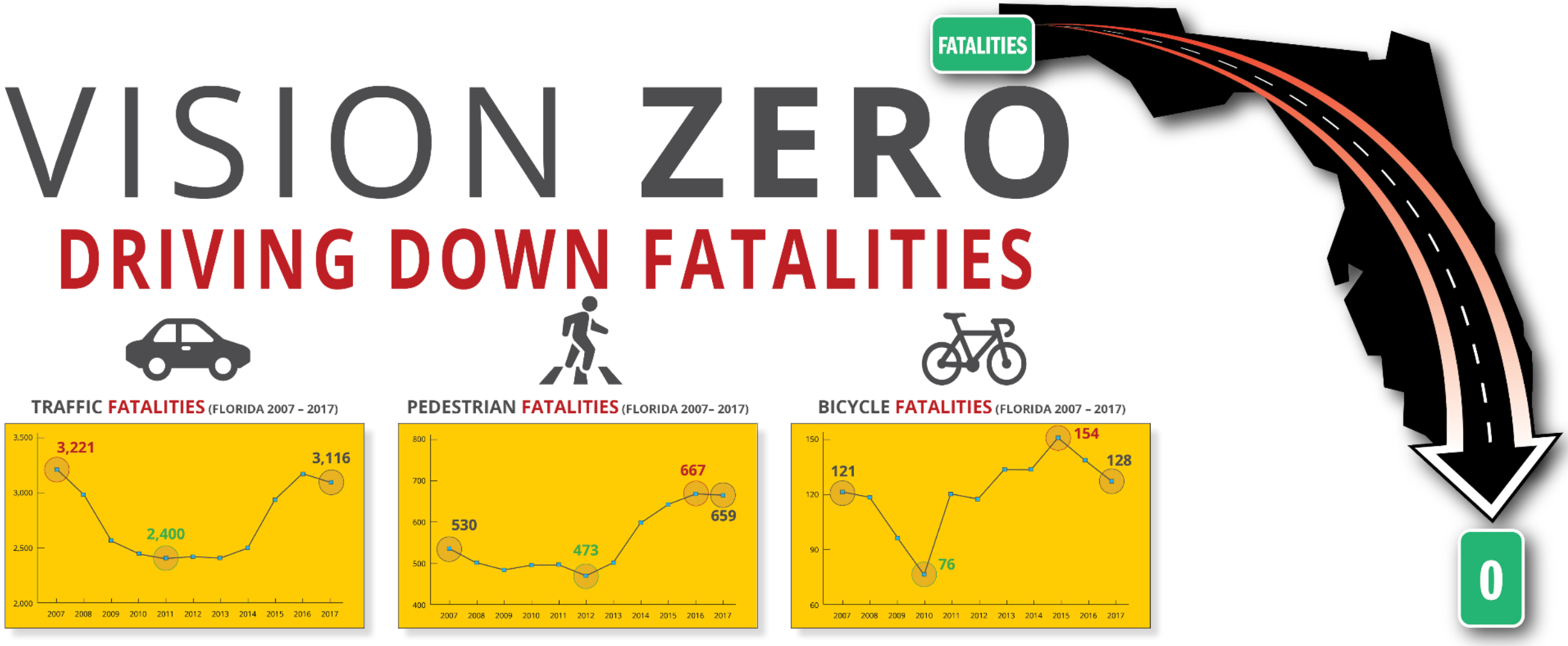




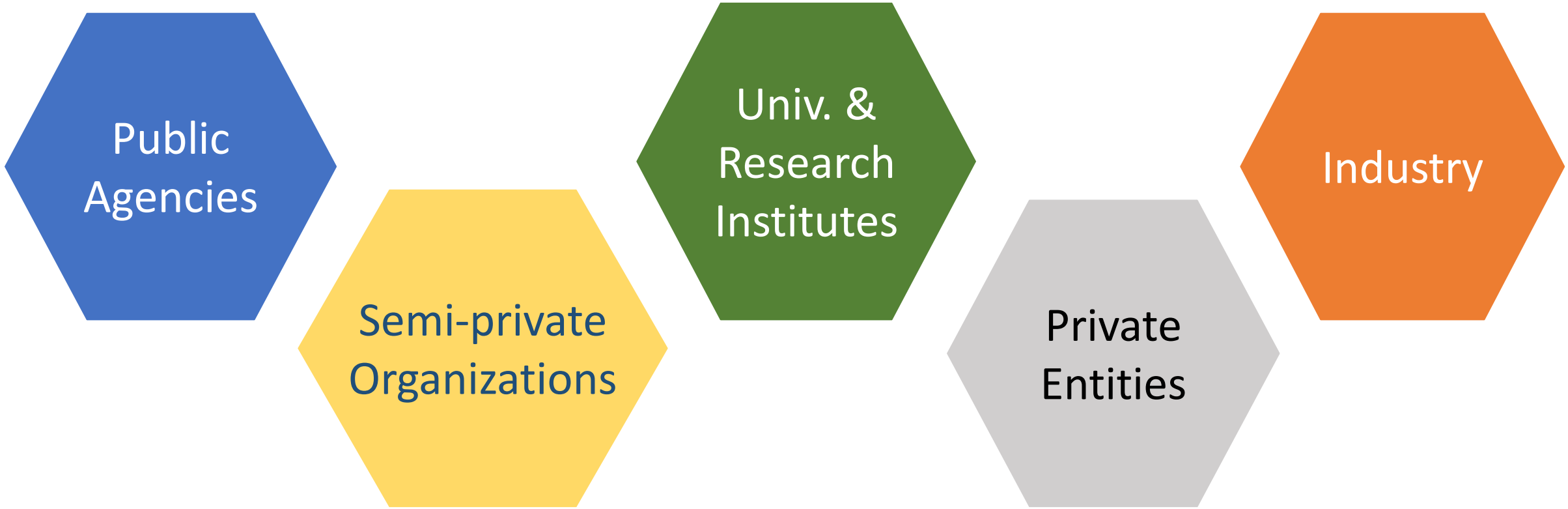
# CAV Business Plan Focus Areas

1. Policies and Governance
2. Program Funding
3. Education and Outreach
4. Industry Outreach and Partnerships
5. Technical Standards and Specifications Development
6. Implementation Readiness
7. Deployment and Implementation

# FDOT's Focus on Safety and Mobility



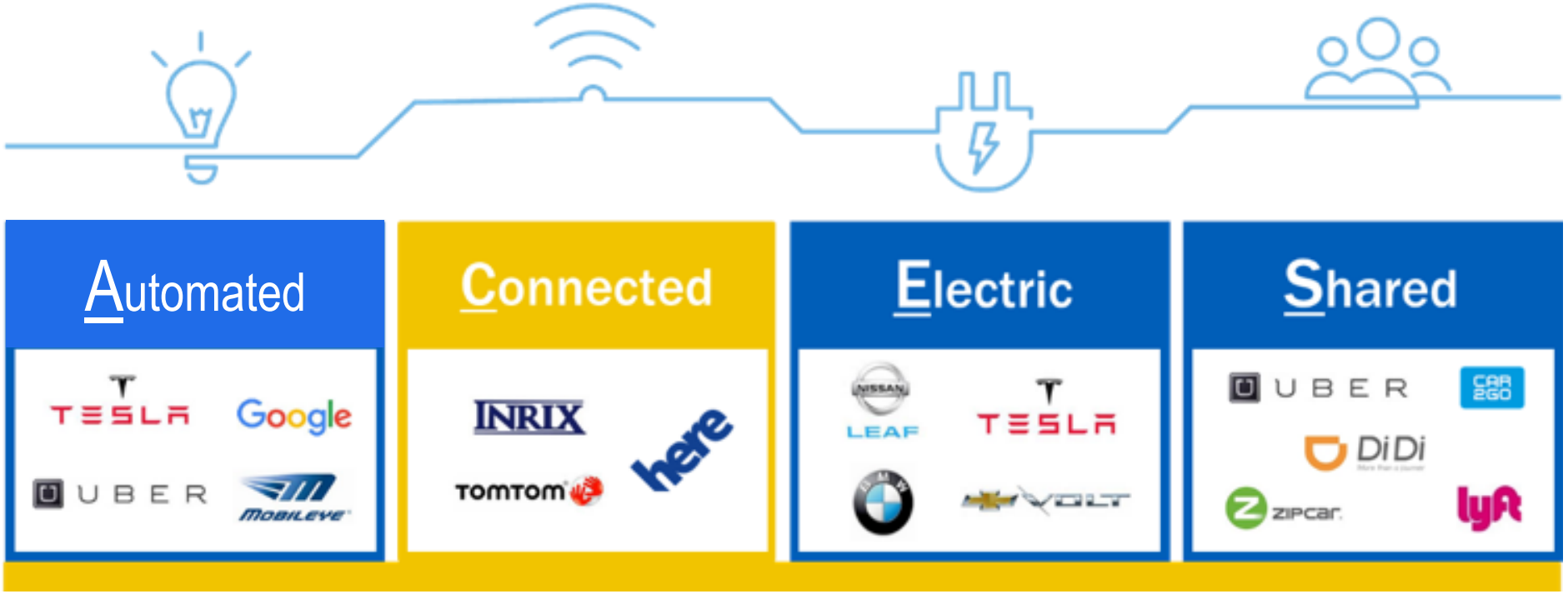
# Major Stakeholders



# 4. FDOT's Automated, Connected, Electric and Shared (ACES) Program

# FDOT's ACES Program

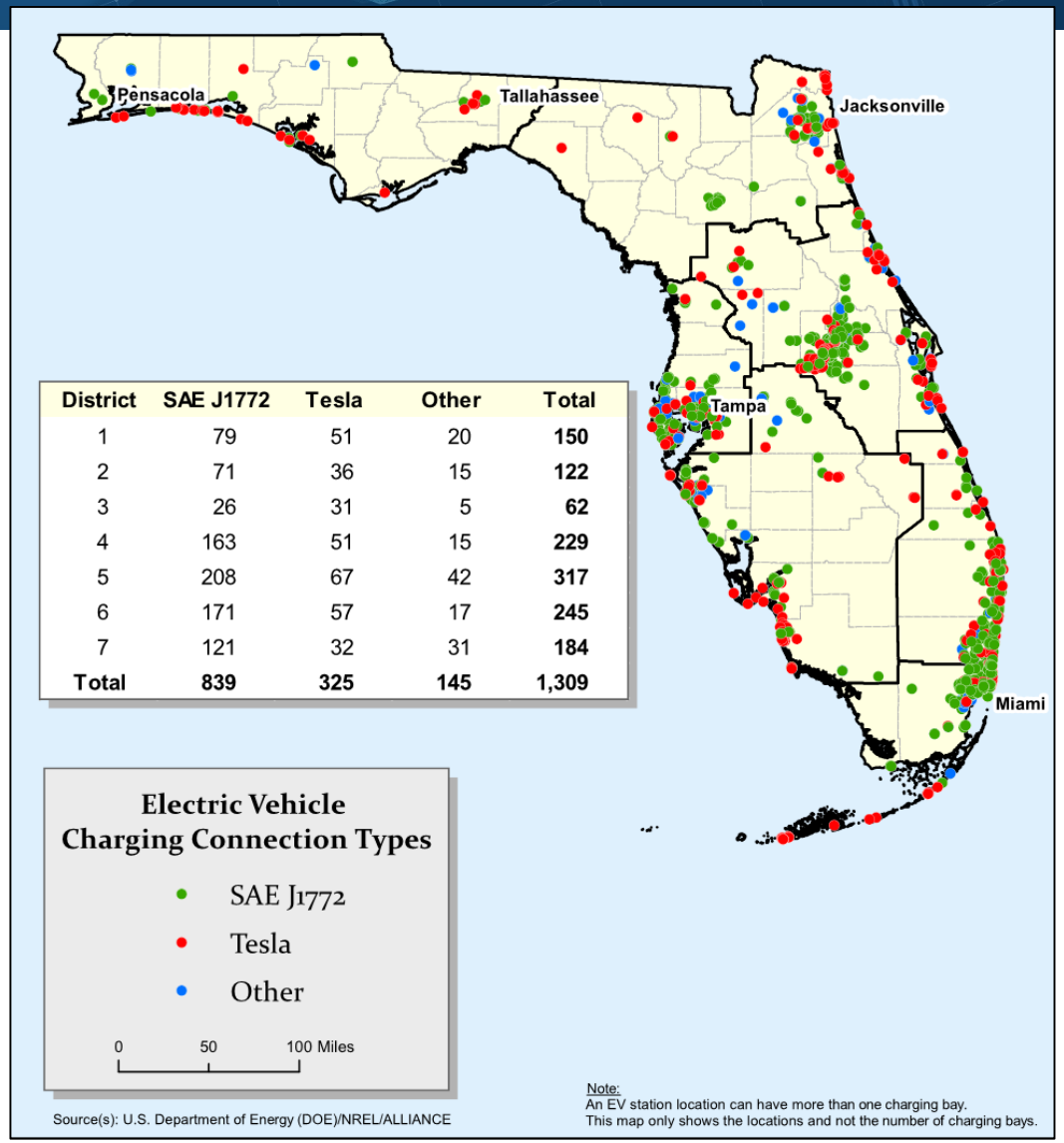
- **Automated** vehicles are gaining traction and they are an increasing priority for automakers.
- **Connected** vehicle technologies are already being deployed by state and local agencies.
- **Electric** vehicles gained popularity for saving in gas prices and environmental concerns.
- **Shared** vehicles gained popularity for the convenience and significant reduction in the cost of mobility.




*Source: INRIX*

# Electric Vehicle (EV) Charging Station Locations in Florida

- 1,309 public and private EV charging station locations
- 3,314 charging bays or outlets
- As of March, 2019

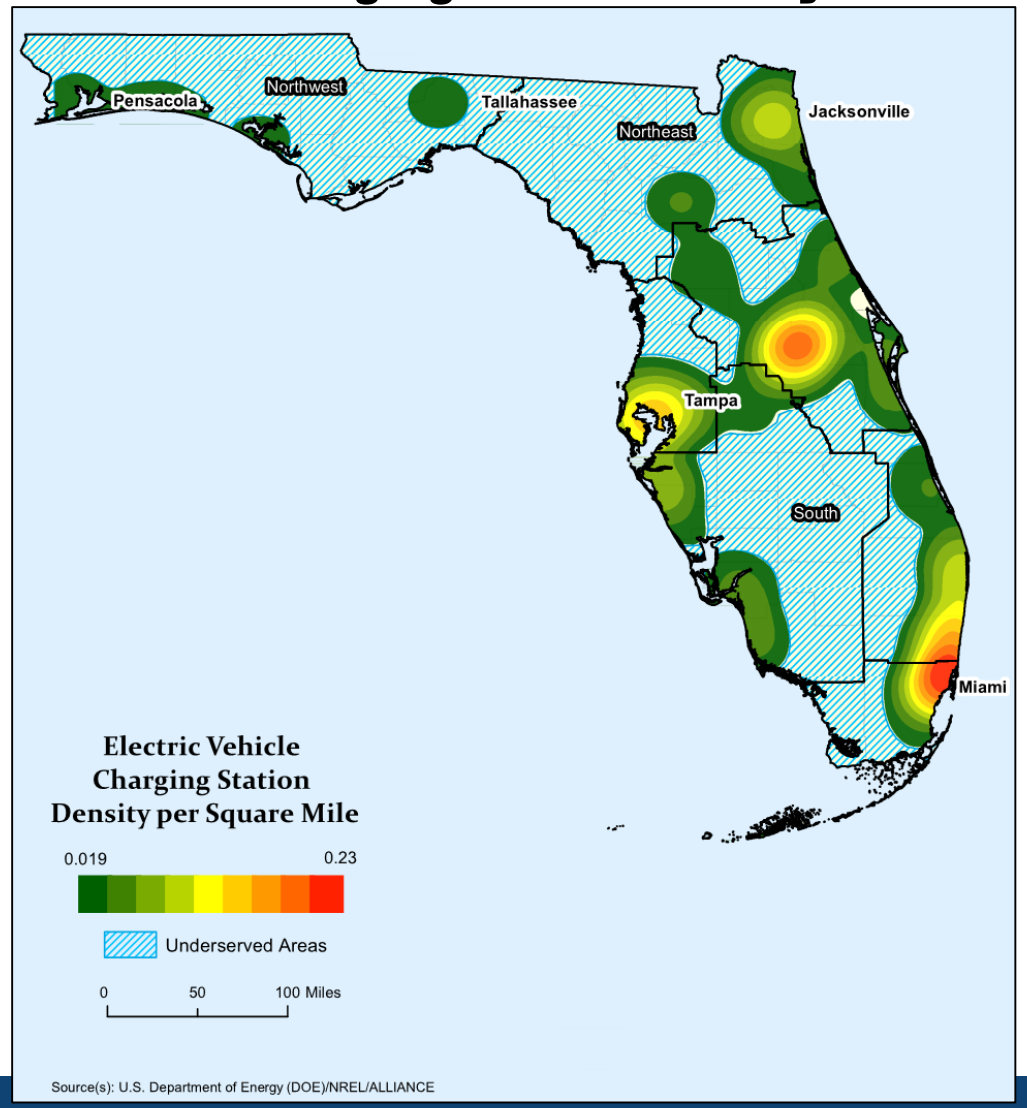



| District | SAE J1772 | Tesla | Other | Total |
|---|---|---|---|---|
| 1 | 79 | 51 | 20 | **150** |
| 2 | 71 | 36 | 15 | **122** |
| 3 | 26 | 31 | 5 | **62** |
| 4 | 163 | 51 | 15 | **229** |
| 5 | 208 | 67 | 42 | **317** |
| 6 | 171 | 57 | 17 | **245** |
| 7 | 121 | 32 | 31 | **184** |
| **Total** | **839** | **325** | **145** | **1,309** |

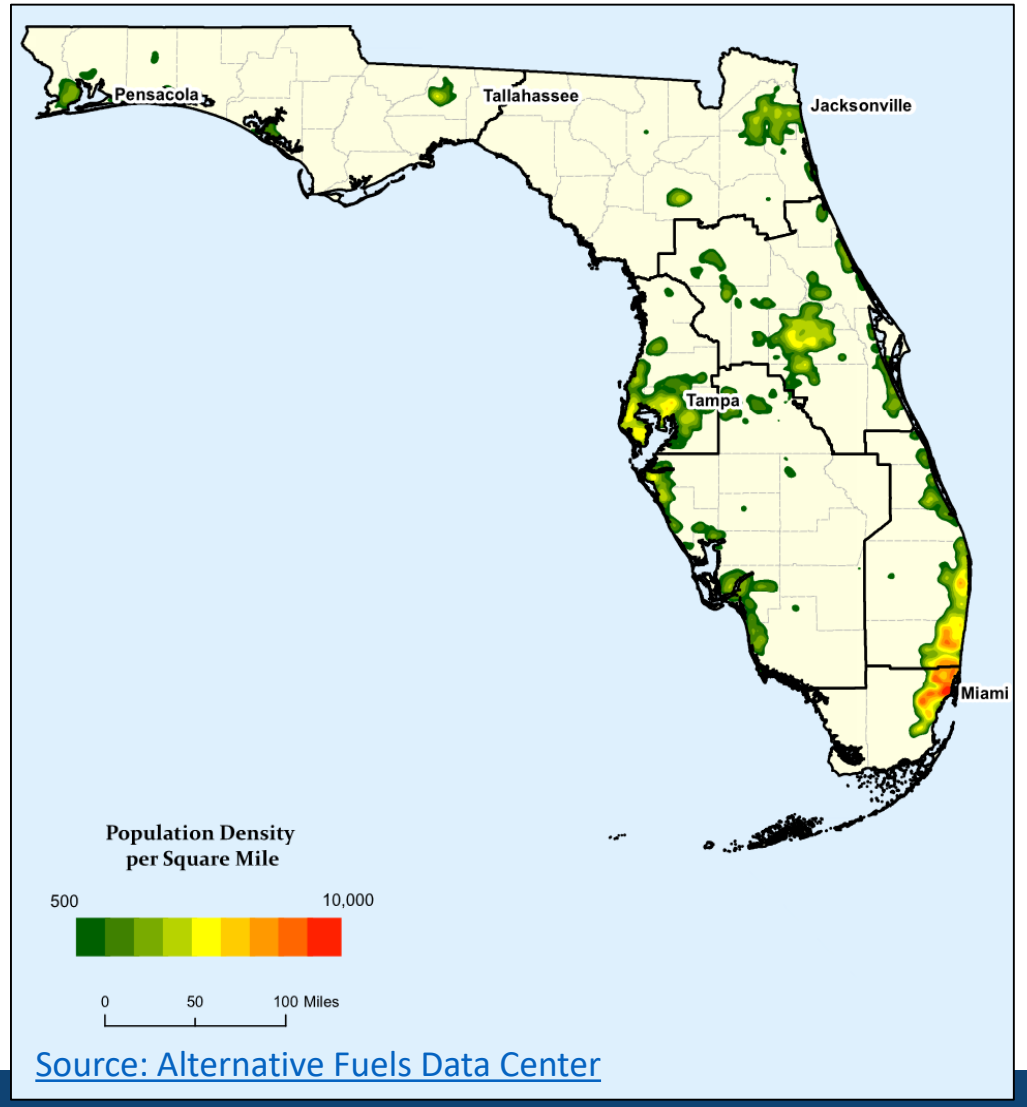
Source: Alternative Fuels Data Center

# Electric Vehicle (EV) Charging Station Locations in Florida

## EV Charging Station Density



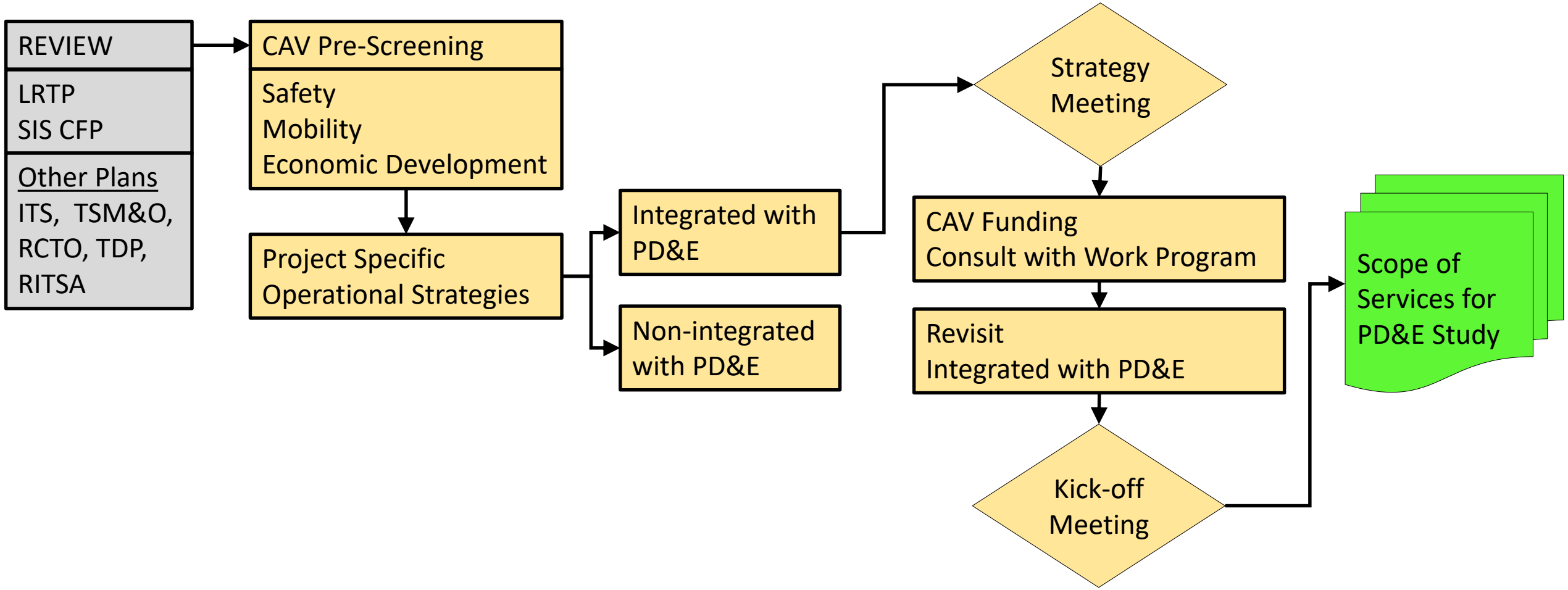

## Population Density




Source: Alternative Fuels Data Center

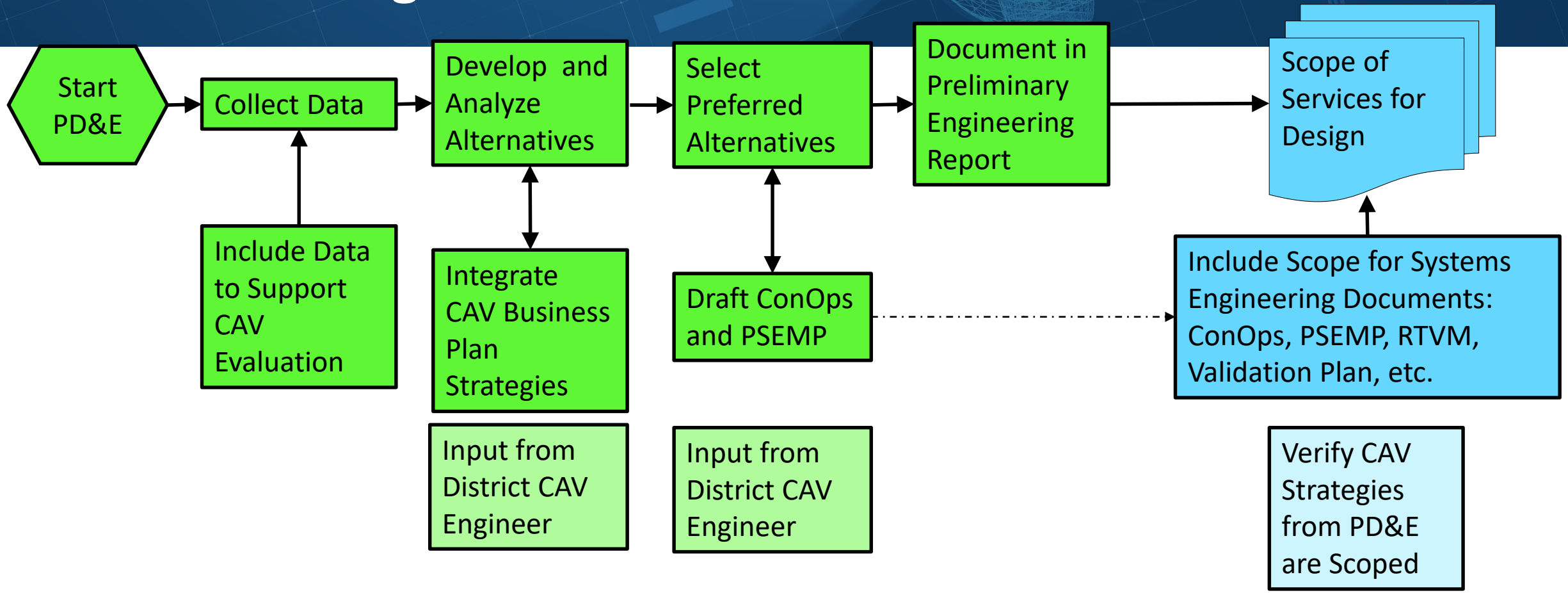
# 5. Mainstreaming CAV

# Mainstreaming CAV




**Planning Process** | **District Project Scoping Process**

# Mainstreaming CAV



# Mainstreaming CAV

Leverage the TSM&O Task Team and TSM&O Leadership Group

Created CAV Working Group

Created a Roadmap

# 6. CAV Research and Development

# CAV Research and Development

Completion Year: 2020

Univ: USF

**Toward a Florida Automated, Connected, Electric and Shared (ACES) Transportation System Roadmap: Phase I**

- ***Objectives***: *Develop an initial inventory of past, current and planned Automated, Connected, Electric and Shared (ACES) initiatives within Florida. Facilitate the rapid development, implementation, and evaluation of appropriate and optimized ACES technologies.*

Univ: UCF

**Using Smartphone as On-Board Unit (OBU) Emulator Implementation Study**

- ***Objectives***: *Use smartphones as on-board unit (OBU) emulators for in-vehicle communication.*

# CAV Research and Development

Completion Year: 2020

Univ: UF

**I-STREET Initiative - Evaluation of Intelligent School Zone Beacon and Vehicle-Cyclist Detection and Warning System**

- ***Objectives***: *Evaluate safety performance of cell phone technology that can send an alert if the driver does not reduce the speed in a school zone and in the vicinity of a cyclist*

Univ: UF

**Extended Development and Testing of Optimized Signal Control with Autonomous and Connected Vehicles**

- ***Objectives***: *Investigate how safety and efficiency of the CAV can be enhanced in the vicinity of the intersection. Optimization algorithm to use real-time tracking information of vehicles and consider the presence of pedestrians and other modes when optimizing signal control.*

# CAV Research and Development

2020 | FSU

**Evaluation of Connected Vehicle Applications on Mahan Corridor, Phase II**

- ***Objectives:*** Evaluate the efficacy of SPaT and ATSPM in improving efficiency and safety of road users along US 90 corridor.

2019 | UNF & FIU

**Exploring the Modified Procurement Framework for Expediting Florida Connected Vehicle (CV) Deployments**

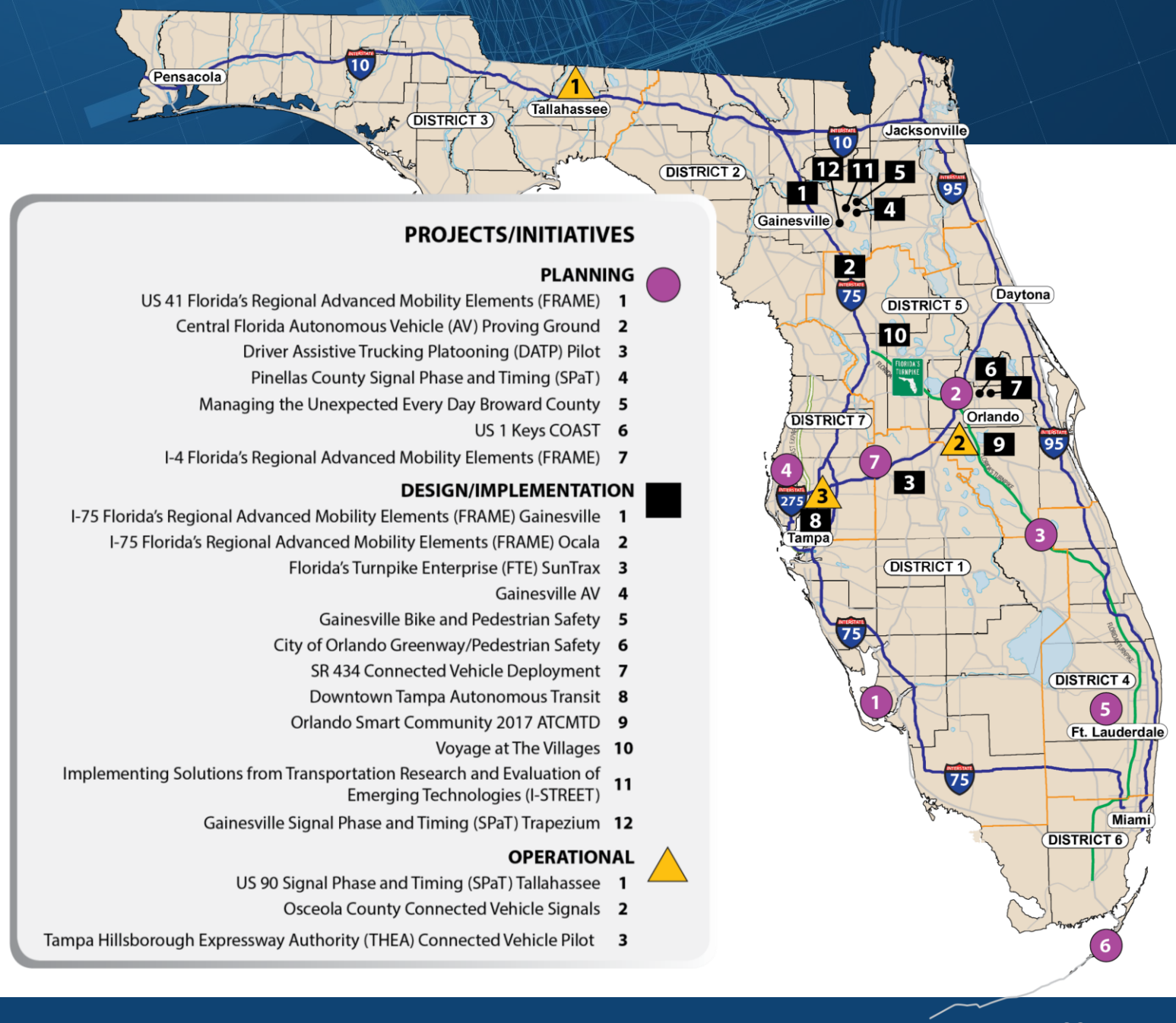
- ***Objectives****: Document lessons learned and best practices in adopting alternative project development, procurement and budgeting options. Provide specific recommendations to expedite CV project delivery.*

# 7. CAV Roadmap and Projects

# CAV Projects

Projects/Initiatives

- Planning (7)
- Design Implementation (12)
- Operational (3)




## PROJECTS/INITIATIVES

### PLANNING

| | |
|---|---|
| US 41 Florida's Regional Advanced Mobility Elements (FRAME) | 1 |
| Central Florida Autonomous Vehicle (AV) Proving Ground | 2 |
| Driver Assistive Trucking Platooning (DATP) Pilot | 3 |
| Pinellas County Signal Phase and Timing (SPaT) | 4 |
| Managing the Unexpected Every Day Broward County | 5 |
| US 1 Keys COAST | 6 |
| I-4 Florida's Regional Advanced Mobility Elements (FRAME) | 7 |

### DESIGN/IMPLEMENTATION

| | |
|---|---|
| I-75 Florida's Regional Advanced Mobility Elements (FRAME) Gainesville | 1 |
| I-75 Florida's Regional Advanced Mobility Elements (FRAME) Ocala | 2 |
| Florida's Turnpike Enterprise (FTE) SunTrax | 3 |
| Gainesville AV | 4 |
| Gainesville Bike and Pedestrian Safety | 5 |
| City of Orlando Greenway/Pedestrian Safety | 6 |
| SR 434 Connected Vehicle Deployment | 7 |
| Downtown Tampa Autonomous Transit | 8 |
| Orlando Smart Community 2017 ATCMTD | 9 |
| Voyage at The Villages | 10 |
| Implementing Solutions from Transportation Research and Evaluation of Emerging Technologies (I-STREET) | 11 |
| Gainesville Signal Phase and Timing (SPaT) Trapezium | 12 |

### OPERATIONAL

| | |
|---|---|
| US 90 Signal Phase and Timing (SPaT) Tallahassee | 1 |
| Osceola County Connected Vehicle Signals | 2 |
| Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle Pilot | 3 |

# ROADMAP to FLORIDA CAV

**2017-2018**
**Initialization**

**2019-2020**
**Early Implementation**

**2020+**
**Full Scale Implementation and Operations**

FDOT TSM&O
Transportation Systems Management & Operations

# CAV Project Roadmap


- US 90 Signal Phase and Timing (SPaT) (Arterial)
- I-75 Florida's Regional Advanced Mobility Elements (FRAME) – Ocala/Marion (Multi-Modal Integrated Corridor Management (MMICM))
- I-75 FRAME – Gainesville (MMICM)
- Gainesville SPaT Trapezium (Arterial)
- SR 434 Connected Vehicle Deployment (Arterial)
- PedSafe Greenways Deployment (Arterial)
- I-4 FRAME (MMICM)
- Pinellas County SPaT (Arterial)
- Gainesville Bike/Ped Safety (Arterial)
- US 41 FRAME (MMICM)
- Broward County (MMICM)
- US 1 Monroe County (Arterial)

# Programmatic Lessons Learned

- Agency commitment at the executive level is essential
- Create a dedicated team and funding in your agency to advance CAV
- Develop statewide leadership team, task team, and working groups
- Integrate CAV into all elements of planning, development, project delivery, operations, and maintenance
- Partnerships with other agencies, universities, and industry are vital
- Have a strategic approach to pilot projects that expands CAV capabilities instead of duplicating CAV applications

# Thank you

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# Steering Committee Updates

# CURRENT FTP GOALS

***Safety and security***

***Agile, resilient, and quality transportation infrastructure***

***Efficient and reliable mobility***

***More transportation choices***

***Economic competitiveness***

***Quality places to live, learn, work, and play***

***Environment and energy conservation***

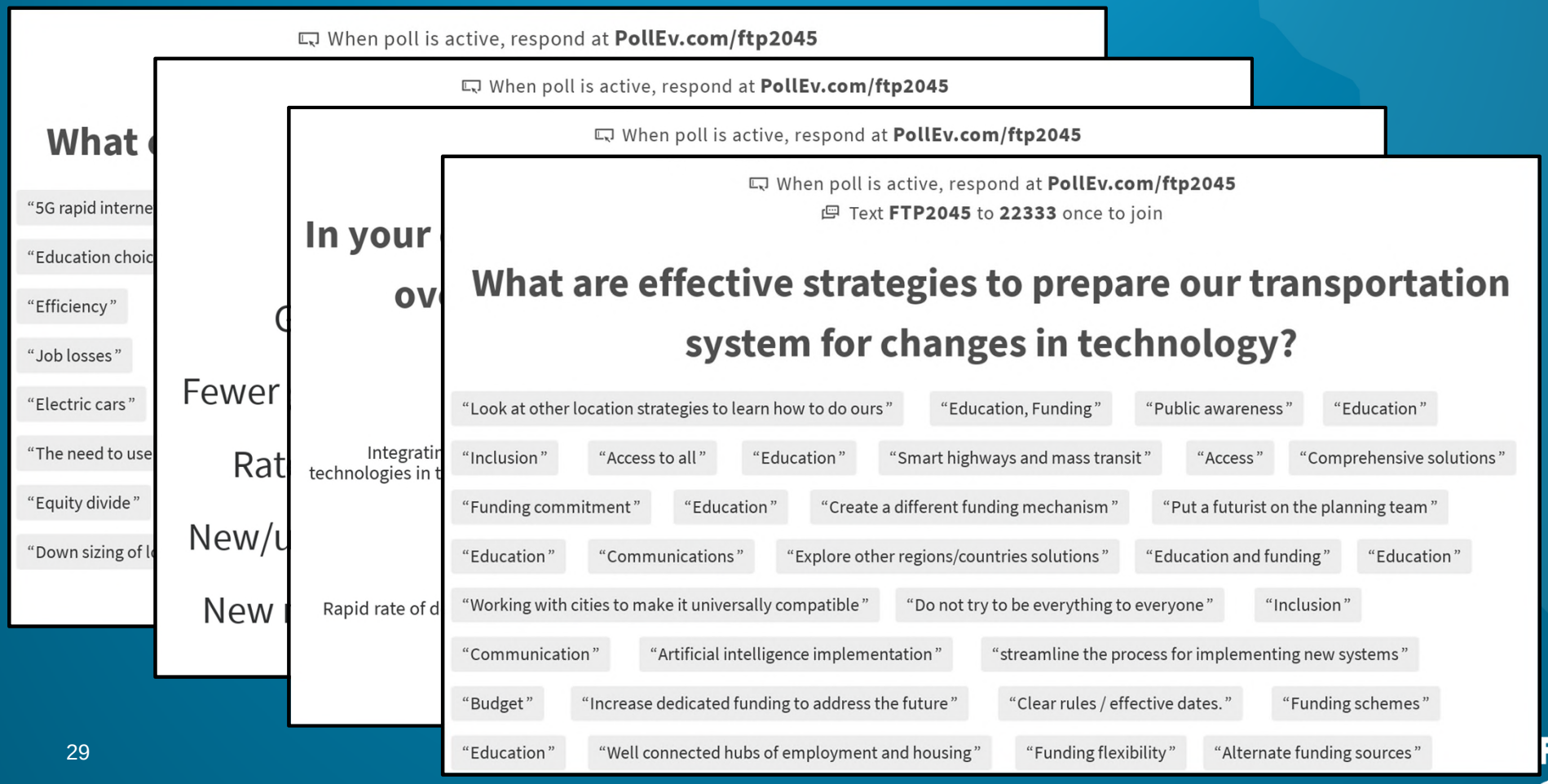
# FTP STEERING COMMITTEE GUIDANCE

- **Communicate bold vision and potential for change**
- **Provide more emphasis on technology as a cross-cutting issue**
- **Integrate technology/innovation into revised objectives/strategies; potential opportunities include**
  - » Safety
  - » Infrastructure
  - » Economic competitiveness

# FTP STEERING COMMITTEE GUIDANCE

- Broaden definition of infrastructure (including technology/broadband, utilities, charging stations, sensors, etc.)
- Define public sector role, recognizing most technologies are market-driven
- Consider objective/strategies related to cybersecurity and data privacy
- Address implications of technology on equity
- Address implications of innovation on transportation funding sources and needs

# OTHER PARTNER INPUT



# Discussion

# DISCUSSION PURPOSE

- Briefly review discussion from previous meetings
- Review existing FTP strategies
- Identify opportunities to use technology to support FTP goal/objectives
- Share ideas for further discussion at future meetings

# MAJOR THEMES FROM JANUARY 2019 MEETING

- Infrastructure and Design
- Technology and Data
- Economic Development and Workforce
- Customers
- Partnerships
- Planning and Project Development
- Funding

# POTENTIAL FRAMEWORK FOR RECOMMENDATIONS

| Theme | Ideas |
|---|---|
| Infrastructure & design | • Broader definition of infrastructure (broadband, roadside technology)<br>• Priorities for roadside technology deployment<br>• Curb redesign and management, particularly at major hubs<br>• Redesign/repurposing of parking facilities<br>• Implications on ability to manage capacity of SIS for long distance trips<br>• First/last mile connections<br>• Impacts of extreme weather/other hazards on ACES vehicle/roadside equipment<br>• Coordination with local land use and urban design changes |
| Technology & data | • Data governance and management policies including data privacy and transparency<br>• Identifying and addressing cybersecurity risks<br>• Transition to ACES including need to support both legacy and emerging technologies in the interim<br>• Interoperability and standards |

# POTENTIAL FRAMEWORK FOR RECOMMENDATIONS

| Theme | Ideas |
|---|---|
| Economic development & workforce | • Development/retention of workforce with transportation technology skills<br>• Retraining and transitioning of existing staff in occupations anticipated to see declining demand or automation<br>• Development, attraction, and retention of transportation technology businesses<br>• Impacts of ACES on urban and rural economies |
| Customers | • Increasing public awareness and education about ACES<br>• Equity impacts of ACES<br>• Improving user experience and comfort with ACES<br>• Adapting approach to emergency evacuation and response |
| Partnerships | • Increasing support for/reducing barriers to public/private partnerships<br>• Working with newer or nontraditional partners<br>• Collaboration with MPOs and local governments<br>• Collaboration with federal government<br>• Need for “mobility manager” function |

# POTENTIAL FRAMEWORK FOR RECOMMENDATIONS

| Theme | Ideas |
|---|---|
| Planning & project development | • Providing more flexibility in plans/programs to address rapidly evolving technologies<br>• Linking long- and short-term plans<br>• Linking planning and operations<br>• Eligibility of ACES for SIS and other capacity-oriented funding categories<br>• Incorporating ACES into project prioritization processes<br>• Using ACES data to improve data for planning purposes |
| Funding | • Need for a strategic approach to funding technology – targeted sources or integration into existing sources?<br>• Need approach for funding operations and management of technology<br>• Implications of ACES on motor tax revenues, toll revenues, transit fares, etc. |

# How Can ACES/Technology Help Us to Achieve the FTP Goals and Objectives?

# SAFETY AND SECURITY

*Safety and security*

- Use technology, information, and operations strategies for all modes to improve transportation security and emergency preparedness and response
- Continue to support research, testing, policy, and deployment activities to realize the anticipated safety benefits of automated and connected vehicles
- Reduce the vulnerability of transportation technologies to hacking, cyberattacks, system failure, and other disruptions

# INFRASTRUCTURE

***Agile, resilient, and quality transportation infrastructure***

- **Lead the nation in the research, development, and deployment of state-of-the-art materials, technology, and methodologies for transportation infrastructure, design, construction, maintenance, and operations**
- **Develop enhanced transportation corridors that incorporate and support emerging technologies such as connected vehicles or alternative fuel sources and …support integration of compatible uses such as utility infrastructure**
- **Adapt planning, design, construction, maintenance, and operations practices to reflect changing customer expectations, new technologies**

# MOBILITY

***Efficient and reliable mobility***

- **Use emerging technologies to reduce delay and improve reliability and customer service, such as intelligent transportation systems; automated, connected, or shared vehicles;…**
- **Increase the efficiency of the supply chain and distribution network ….expanding use of new technologies such as automated and connected truck technologies and unmanned aerial vehicles**
- **Use technology to enhance customer service, such as providing schedule, incident, parking and rerouting information to partners**
- **Establish a framework for data sharing to address emerging technologies such as automated and shared vehicles**
- **Periodically reassess state and local transportation-related laws and regulations to reflect changing technologies and business practices**



FDOT

# CHOICES

*More transportation choices*

- Improve connectivity of data, technology, and business processes between transportation modes and systems
- Support research, development, and testing of automated and connected vehicles and other emerging technologies
- Accommodate telework, telepresence, distance learning, distance medicine, and similar approaches for using communications technologies to substitute for travel
- Provide publicly available transportation system, incident, construction schedule, and other data to support new private sector business models, such as bicycle and vehicle sharing, automated and connected vehicles, transportation apps, and ride services



FDOT

# ECONOMIC COMPETITIVENESS

*Economic competitiveness*

- **Encourage private sector companies involved in research, development, manufacturing, and service activities for transportation equipment and technology to locate and expand in Florida**

- **Build transportation workforce skills to encourage innovation and support or adoption of new technologies that improve safety and mobility or increase the efficiency and reduce the cost of project delivery**

# QUALITY PLACES

***Quality places to live, learn, work, and play***

- **Encourage community design and multimodal transportation investments, including technology applications and multipurpose solutions that promote quality of life**

# ENVIRONMENT AND ENERGY

*Environment and energy conservation*

- **Support more diversity in transportation energy sources, including greater use of renewable or low-emission sources, through research, collaboration, enhanced infrastructure, public-private partnerships, and incentives**

- **Collaborate between the public and private sectors to generate energy from transportation facilities, infrastructure, and right of way, such as pavement charging systems, solar highways, solar rooftops, and solar panels in medians or on noise abatement walls and paths**

# SHARING OUR IDEAS

- **Use www.pollev.com/FDOTplanning to access the polling questions**
  - » Respond to each question using your mobile device or laptop
- **Text "FDOTPlanning" to 22333 to join the poll and respond to the polls via text message**
- **Important note: A record of the poll responses will be kept for statutory records retention requirements**

Respond at **PollEv.com/fdotplanning**

Text **FDOTPLANNING** to **22333** once to join, then text your message

# What other ACES and technology issues and opportunities should be considered in drafting strategies to achieve the goals and objectives of the FTP?

"Fleet electrification"
"parking requirements"
"Public private partnerships for publicly accessible DC Fast chargers"
"realistic pace of implementation"
"Mobility"
"Ensure that mobility technology supports human mobility as the priority"
"Use of AC in ER situations"
"E commerce"
"Data sharing"
"Framework for coordinated pilots/ testing"
"Telecommuting"
"urban curb management"
"Grid efficient building design"
"Data"
"Policies"
"Data marketplaces; partnering with private sector"
"Workforce management"
"Emphasis on integrating EV/AV"
"Digital work zones"
"Night shipping incentives"
"EV charging infrastructure"
"Mobility management"
"Road design for ACES"
"cost of autonomous vehicle ownership"
"Land use impacts"
"Understand public and private sector changing roles"
"Where govt has a responsibility vs. private sector"
"3D printing"
"Monetization of data"
"Evaluate governing structures needed for successful implementation"
"Remote work location"
"Timely adaptation of highway design manual"
"Ev charging on sis"
"ecommerce"
"How to deal with the rapid pace of changing technology"
"Rural applications"
"Involving electric utilities in EV planning"
"Revenue opportunities"
"Induction wireless EV charging on interstate and toll roads"
"Funding strategies for the new ACES transportation system"
"Access to underserved"
"Transit agencies as mobility integrators"
"More fast chargers"
"Exception to demand pricing for EV charging companies"
"Encourage innovation"
"Consider how ACES initiatives can dovetail with environmental, equity, and resilience initiatives."
"EV charging infrastructure"
"connecting the transportation disadvantaged (disabled, elderly, younger and economically disadvantaged)"
"Land use"
"Designing for drop offs rather than designing for parking"
"Opportunities for enhanced supply chain management"
"Making sure technology acts equitably"
"EV charging needs analysis (Level 2 and DC Fast)"
"Address sustainability"
"Can't think of anything at the moment"
"e-commerce"
"Finite supply of precious metals for battery technology."
"Re-imagining of parkways as corridors for mixed use including electric truck and other vehicles with pedestrians and bicyclists"
"EV charger access for people in multi family and residential units"
"Transportation Improvement Financing Mechanisms and ACES"
"Complete streets = multimodal, Smart corridors, resilient and green. Not just road diets."
"Changes in land use requirements"

# Potential Framework for Recommendations

# POTENTIAL FRAMEWORK

- Infrastructure and Design
- Technology and Data
- Economic Development and Workforce
- Customers
- Partnerships
- Planning and Project Development
- Funding

# Roundtable

# Next Steps

# UPCOMING ACES SUBCOMMITTEE MEETINGS

- **September/October 2019**
  - » ACES Subcommittee teleconference
  - » **Start developing potential strategies for FTP update (fall)**

- **November 20, 2019**
  - » ACES Subcommittee in-person meeting in conjunction with Florida AV Summit
  - » **Start preparing recommendations to full FTP Steering Committee (by February)**

# QUESTIONS?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