Task Force Member Instructions

- The webinar will begin at 9:30 a.m.
- Please insert your PIN to join with audio
- If you are a substitute, please email Marlon Bizerra with your information
- If you experience technical difficulties, please:
  1. Try logging in again, or
  2. Contact for technical support
     - Marlon Bizerra – Marlon.Bizerra@dot.state.fl.us
     - Tommy Bull – Tommy.Bull@dot.state.fl.us.
Welcome

L. K. Nandam, Chair
Introduction and Agenda Review

Karen Kiselewski, Facilitator
The Public Comment Period begins at 10:45 a.m., or as soon as the agenda items are completed.

Requests to comment that were received by 5 p.m. yesterday will be addressed during the Public Comment Period.

When your name is called, we will unmute your line in order for you to provide comment within your allotted time of 3 minutes.

Only one person at a time will be unmuted; if you have self-muted please be sure to unmute before speaking.

If you did not submit your request in time to be able to speak today, please email your comments to FDOT.Listens@dot.state.fl.us.
The webinar is being recorded and will be available with other materials on the M-CORES website.

You will remain muted for the entirety of the presentations. We will unmute Task Force members one at a time during the discussion period.

Only one person at a time will be unmuted; if you have self-muted please be sure to unmute before speaking.

We will go through all Task Force members one at a time for a single round; then you may use the “hand raise” function for any additional questions you may have.

Do not put the webinar on hold or take another call, as we will hear your hold music.
Today’s Objectives

- Receive briefing on emerging technology trends and opportunities
- Discuss implications of emerging technologies for corridor development
- Receive public comments
Today’s Agenda

9:45 AM  Presentation

9:55 AM  Panel Discussion

10:40 AM  Next Steps

10:45 AM  Public Comments
Task Force is subject to Government in the Sunshine
(Sec. 286.011, F.S., and FL Constitution Art. I Sec. 24)

Task Force members may not:

- Discuss with any other member of the Task Force any item that is under consideration for action by the Task Force, except at a duly noticed public meeting
- Send emails that solicit comments from members or circulate responses from members on Task Force business

Task Force members may:

- Discuss other matters unrelated to the work of the Task Force with the other members at any time
- Discuss Task Force business with any person who is NOT a member of the Task Force, except that person cannot act as a liaison between or among the members
John Fricke
Office of the Attorney General
PL-01 The Capitol
Tallahassee, FL 32399-1050
850-414-3300
John.Fricke@myfloridalegal.com
Task Force Member Roll Call

Karen Kiselewski, Facilitator
Connected and Automated Vehicle (CAV) Program

Raj Ponnaluri, PE., PTOE, PhD, PMP
Connected Vehicle and Arterial Management Engineer, FDOT
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
SPaT and FRAME Projects Overview

<table>
<thead>
<tr>
<th></th>
<th>Projects</th>
<th>No. of RSUs</th>
<th>No. of OBUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 90 SPaT</td>
<td>31</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Gainesville SPaT</td>
<td>27</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Pinellas County SPaT</td>
<td>40</td>
<td>4</td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>98</strong></td>
<td><strong>78</strong></td>
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**Projects**

- Improve Safety
- Improve Mobility
- Increase Throughput
- Increase Multimodal Transportation Systems

SPaT - Signal Phase and Timing
FRAME - Florida's Regional Advanced Mobility Elements
• Project goal is to improve pedestrian and bicyclist safety using CV technologies.

Alerts to pedestrians and bicyclists using CAV applications

Alerts to vehicles using CAV applications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>No. of RSUs</td>
<td>20</td>
</tr>
<tr>
<td>No. of OBUs</td>
<td>20</td>
</tr>
<tr>
<td>No. of PIDs</td>
<td>2</td>
</tr>
<tr>
<td>No. of Passive Ped Detectors</td>
<td>64</td>
</tr>
</tbody>
</table>
- FDOT has an Automated, Connected, Electric, and Shared Program.
- The department supports exploring ways to build partnerships with **shared mobility** technology providers.
- FDOT supports **infrastructure readiness for promoting shared mobility and electric vehicles deployment**.

Gainesville Autonomous Shuttle supports shared use
TAPs-LA and I-STREET

$10M TAPs-LA @ Districts

$10M I-STREET @ UF

Vital Few: ART
Safety Mobility
Innovation

Performance – centric
CAV Program

Technology Application Partnerships for Local Agencies

TAPs-LA

ART – Attract, Retain, Train

Transportation Institute
University of Florida
Connected Freight Priority System

- Support economic development
- Reduce travel time
- Investigate safety and mobility issues
- Identify top 10 truck-related crash locations
- Upgrade Infrastructure

Connected trucks
Autonomous Truck Mounted Attenuator

Increases work-zone safety by removing the driver from a work-zone truck.

Increases safety by reducing fatalities by having a cushion impact in the event of a vehicle crash.
Technology Implications for Transportation Corridors

Panel Discussion
Connected and Automated Vehicle (CAV) Projects

Trey Tillander, PE
Director of Traffic Engineering and Operations
Agenda

- CAV Objectives
- 2018 Crashes and Fatalities
- CAV Applications and Benefits
- Current CAV Projects
- Florida’s Regional Advanced Mobility Elements (FRAME) and Truck Parking Availability System (TPAS)
- Southwest-Central Florida Connector and CAV Projects
CAV Objectives

SAFETY

MOBILITY

ECONOMIC DEVELOPMENT
## 2018 Crashes and Fatalities

<table>
<thead>
<tr>
<th></th>
<th>Crashes</th>
<th>Fatalities</th>
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<tr>
<td>Statewide</td>
<td>403,626</td>
<td>3,135</td>
</tr>
<tr>
<td>Charlotte</td>
<td>2,734</td>
<td>27</td>
</tr>
<tr>
<td>Collier</td>
<td>5,471</td>
<td>44</td>
</tr>
<tr>
<td>DeSoto</td>
<td>413</td>
<td>15</td>
</tr>
<tr>
<td>Glades</td>
<td>184</td>
<td>12</td>
</tr>
<tr>
<td>Hardee</td>
<td>505</td>
<td>9</td>
</tr>
<tr>
<td>Hendry</td>
<td>417</td>
<td>14</td>
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<tr>
<td>Highlands</td>
<td>1,186</td>
<td>20</td>
</tr>
<tr>
<td>Lee</td>
<td>12,626</td>
<td>94</td>
</tr>
<tr>
<td>Polk</td>
<td>11,635</td>
<td>123</td>
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</table>

Source: FLHSMV Crash Dashboard 2018 Finalized
CAV Applications and Benefits

Improving Safety
- Freight Signal Priority improves freight travel time by reducing delay at traffic signals

Reducing Congestion
- Emergency Vehicle Preemption reduces delay for emergency vehicles

Using Technology
- Autonomous shuttles provide transportation opportunities for all, including the elderly, low income, and disabled
Current CAV Projects

PROJECTS/INITIATIVES

PLANNING
Vehicle-to-Everything (V2X) Data Platform 1
US 1 Keys COAST 2
Connected Freight Priority System Deployment 3
US 98 Smart Bay 4
Central Florida Autonomous Vehicle (AV) Proving Ground 5

DESIGN/IMPLEMENTATION
I-75 Florida’s Regional Advanced Mobility Elements (FRAME) Gainesville 1
I-75 Florida’s Regional Advanced Mobility Elements (FRAME) Ocala 2
I-4 Florida’s Regional Advanced Mobility Elements (FRAME) 3
Implementing Solutions from Transportation Research and Evaluation of Emerging Technologies (I-STREET) 4
Pinellas County Signal Phase and Timing (SPaT) 5
Florida’s Tumpik Enterprise (FTE) SunTrax 6
Orlando Smart Community (2017 ATCMTD) 7
SR 434 Connected Vehicle Deployment 8
US 41 Florida’s Regional Advanced Mobility Elements (FRAME) 9
Gainesville Bike and Pedestrian Safety 10
Lake Mary Boulevard CV Project 11
Downtown Tampa Autonomous Transit 12

OPERATIONAL
Security Credential Management System (SCMS) 1
US 90 Signal Phase and Timing (SPaT) Tallahassee 2
Gainesville Signal Phase and Timing (SPaT) Tranpezium 3
Gainesville AV Shuttle 4
AV Shuttles at Lake Nona 5
Tampa Hillsborough Expressway Authority (THEA) Connected Vehicle Pilot 6
Voyage at The Villages 7
Osceola County Connected Vehicle Signals 8
### FRAME Projects Overview

#### FRAME – Florida’s Regional Advanced Mobility Elements

- Integrated Corridor Management (ICM)
- Automated Traffic Signal Performance Measures (ATSPM)
- Signal Phase and Timing (SPaT)
- Emergency Vehicle Preemption (EVP)
- Freight Signal Priority (FSP)
- Real-time Information Dissemination
- Traveler Information Message/Roadside Alert
- Road Weather Information Systems and Dissemination
- Basic Safety Message Receipt/Forwarding

#### Projects

<table>
<thead>
<tr>
<th>Projects</th>
<th>No. of Roadside Units</th>
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<tbody>
<tr>
<td>I-75 FRAME</td>
<td>232</td>
</tr>
<tr>
<td>I-4 FRAME</td>
<td>239</td>
</tr>
<tr>
<td>US 41 FRAME</td>
<td>100+</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>571+</strong></td>
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</table>

**Improving safety:**
- Improve safety
- Improve Mobility

**Increasing mobility:**
- Increase Throughput
- Increase Multimodal Transportation Systems

**Improving systems:**
- Integrated Corridor Management (ICM)
- Automated Traffic Signal Performance Measures (ATSPM)
- Signal Phase and Timing (SPaT)
- Emergency Vehicle Preemption (EVP)
- Freight Signal Priority (FSP)
- Real-time Information Dissemination
- Traveler Information Message/Roadside Alert
- Road Weather Information Systems and Dissemination
- Basic Safety Message Receipt/Forwarding
Deployment Locations
• Rest Areas - 45
• Weigh Stations -20
• Welcome Centers -3

Number of Truck Parking Spaces Monitored - 2,352

<table>
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<tr>
<th>System</th>
<th>Spaces</th>
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<tr>
<td>Wireless Detection System</td>
<td>1,875</td>
</tr>
<tr>
<td>Microwave Vehicle Detection System</td>
<td>477</td>
</tr>
</tbody>
</table>

A. I-4 Florida’s Regional Advanced Mobility Elements (FRAME)

B. Florida’s Turnpike Enterprise SunTrax

C. US 41 FRAME
I-STREET: An Overview

Dr. Lily Elefteriadou
Director, University of Florida Transportation Institute
I-STREET: An Overview

Dr. Lily Elefteriadou
Director, University of Florida Transportation Institute
Professor of Civil Engineering, University of Florida
The I-STREET Testbed

- UF, FDOT, CoG partnership
- Strong relevant research groups at UF
- Aligns well with UF strategic plan for campus

FDOT-Funded Project (completed Sept. 2017):
Develop a plan for an advanced transportation technologies testbed at UF/CoG
Why Gainesville, FL?
Autonomous Shuttle
I-STREET Infrastructure Projects
Detecting near-misses
FDACS Office of Energy & Central Florida Clean Cities Coalition: Florida EV Roadmap, 2020

Doug Kettles
Director, Central Florida Clean Cities Coalition
FDACS Office of Energy
&
Central Florida Clean Cities Coalition

Florida EV Roadmap, 2020
Roadmap Background

1. FDACS Office of Energy
2. Clean Cities
3. Alt Fuel Corridor Nomination
Roadmap Objectives

1. Gather Information & Catalogue
2. Develop EV Infrastructure Models
3. Focus on Evacuation Routes
4. Infrastructure Growth Recommendations
5. Infrastructure Deployment 2020-2023
6. Infrastructure Forecast 2024-2026
7. Final Report due 12/31/2020
Roadmap - Collaborate & Contribute

1. Diverse Set of Collaborators
2. Clean Cities, State Agencies, Infrastructure Developers, Power Providers, Universities, Stakeholders, Others
3. Data to be organized by FDOT District
4. Collaboration Webinars, May and June
5. Ongoing Individual Collaboration, April-September
Considerations

1. Increase in battery efficiency, resulting in 400+ mile range
2. Increase in EVSE output of 600kW+
3. Requirements for thermal management of higher EVESE outputs
4. Increased grid demands at EVSE locations
5. Broad introduction of EV passenger shuttles, taxis, and Transportation Network Companies (TNCs)
6. Initial deployment of autonomous vehicles
7. Inductive charging
8. Networking and internetworking of EVSE
9. Siting and upgrade capabilities
10. Uptime, Resiliency, Backup Power
11. Obsolescence and upgrade of EVSE
12. Social equity and underserved communities
13. Outreach, education, and training
14. Energy consumption
15. Environmental
16. Site Safety
17. Zoning, building codes, and permitting
18. Signage
Stakeholder Interest Group Webinar Schedule*

- 5/12 Power Interests – IOU, Coop, Muni, Supporting Associations
- 5/19 Infrastructure Providers – Manufacturers, Installation, Network, Software
- 5/21 Advocacy – Alternative Fuels, Environmental, Advocacy Organizations
- 6/16 Planning – MPO, TPO, Cities, Counties, State, Regional, National
Project Management

Kaitlin Reed
Project Manager
Central Florida Clean Cities
321-350-7564
kaitlin@cflccc.org

Doug Kettles
Director
Central Florida Clean Cities
321-300-4555
doug@cflccc.org
Ford Smart Mobility

Jovan Zagajac
Technology Manager, Ford Smart Mobility Division
100% OF NEW VEHICLES IN US CONNECTED BY 2019

NEW VEHICLES WILL BE CAPABLE OF OTA UPDATES BEGINNING 2020

100% OF NEW MODELS IN US EQUIPPED WITH C-V2X STARTING IN 2022†

† PROVIDED PERMISSIBLE REGULATORY ENVIRONMENT
Technology Implications for Transportation Corridors

Panel Discussion
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raj Ponnaluri</td>
<td>Director, Office of Traffic Engineering &amp; Operations, FDOT</td>
<td>(Connected &amp; Autonomous Vehicles (CAV))</td>
</tr>
<tr>
<td>Dr. Lily Elefteriadou</td>
<td>Director, University of Florida Transportation Institute (Autonomous Vehicle Shuttle/ Transit)</td>
<td></td>
</tr>
<tr>
<td>Doug Kettles</td>
<td>Director, Central Florida Clean Cities Coalition (Electric Vehicles/ Alternative Fuels)</td>
<td></td>
</tr>
<tr>
<td>Jovan Zagajac</td>
<td>General Manager for Connected Vehicle Technologies, Ford Smart Mobility (CAV)</td>
<td></td>
</tr>
<tr>
<td>Trey Tillander</td>
<td>Director, Office of Traffic Engineering &amp; Operations, FDOT</td>
<td>(CAV)</td>
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