

FTP-SIS ACES Subcommittee Meeting

August 21, 2019

2:00 p.m. to 4:00 p.m. EST

FDOT Central Office

605 Suwannee St., Tallahassee, FL 32399

Meeting Objectives

The objectives of this meeting include:

- Receive status reports from various FDOT offices on ACES planning, research, testing, and deployment activities within FDOT and within each mode
- Summarize ACES-related discussions from the FTP Steering Committee and partner outreach events
- Discuss the ACES opportunities for achieving the goals and objectives of the FTP
- Review potential framework for Subcommittee recommendations on FTP strategies
- Discuss the ACES Subcommittee's future workplan and schedule

For meeting information, please contact Jim Halley at (850) 414-4817, Jim.Halley@dot.state.fl.us.

Meeting Attendees

Members

Janet Bowman, *The Nature Conservancy*
Denise Bunnewith, *North Florida Transportation Planning Organization – Metropolitan Planning Organization Advisory Council (MPOAC)*
Chris Emmanuel, *Florida Chamber of Commerce*
Eric Frey, *Florida Council of 100*
Eric Hill, *MetroPlan Orlando - Metropolitan Planning Organization Advisory Council (MPOAC)*
Cathy Kendall, *Federal Highway Administration*
Alix Miller, *Florida Trucking Association*
Ananth Prasad, *Florida Transportation Builders Association*
John Rene, *Urban Land Institute*
James Stansbury, *Florida Department of Economic Opportunity*
Pat Steed, *Central Florida Regional Planning Council*
Brad Thoburn, *Michael Baker International (representing Florida Public Transit Association)*

Lt. Col. Troy Thompson, *Florida Highway Patrol*
Doug Wheeler, *Florida Ports Council*
Ralph Yoder, *Florida Transportation Commission*

Friends

Nithin Agarwal, *University of Florida*
Marco Barbarossa, *JACOBS*
Dan Beaty, *HNTB*
Daren Cheatham, *Broward County*
Kyle Cheerangie, *HNTB*
April Groover Combs, *Florida Department of Agriculture and Consumer Services*
John Dohm, *Florida Transatlantic*
Candice Ericks, *TSE Consulting*
Steven Gayle, *RSG*
Mohammed Hadi, *Florida International University*
Dennis Hinebaugh, *Center for Urban Transportation Research (CUTR)*
Robert Holroyd, *Tripp Scott Eriks Consulting*
Kok Wee Hwang, *ST Engineering Aerospace*
Beth Kigel, *HNTB*

Gloria Li, *Advanced Energy Economy*
 Rob Schiffer, *Metro Analytics*
 Sean White, *Florida Department of Agriculture
 and Consumer Services*

FDOT Staff and Consultant Support

Jennifer Carver, *FDOT Office of Policy Planning*
 Holly Cohen, *FDOT Freight and Multimodal
 Operations Office*
 Frank Collins, *FDOT Forecasting and Trends
 Office*
 Chris Edmonston, *FDOT Systems
 Implementation Office*
 Dan Fitz-Patrick, *FDOT Seaport and Waterways
 Office*
 Macy Fricke, *Kimley-Horn & Associates*
 Ming Gao, *FDOT District 7*
 Jim Halley, *FDOT Office of Policy Planning*
 Nick Harwell, *FDOT Aviation and Spaceports
 Office*
 Daniel Hubbard, *FDOT Seaport and Waterways
 Office*

John Kaliski, *Cambridge Systematics*
 Jennifer King, *FDOT Systems Implementation
 Office*
 Ashley Mahon, *Cambridge Systematics*
 Tanner Martin, *HDR*
 John Podczerwinsky, *FDOT District 4*
 Raj Ponnaluri, *FDOT Traffic Engineering and
 Operations Office*
 Dana Reiding, *FDOT Office of Policy Planning*
 Mark Reichert, *FDOT Office of Policy Planning*
 Dean Rogers, *FDOT Systems Implementation
 Office*
 Gregor Senger, *FDOT District 4*
 Huiwei Shen, *FDOT Chief Planner*
 Danny Shopf, *Cambridge Systematics*
 Karen Somerset, *FDOT Program Management
 Office*
 Jennifer Stults, *Florida Turnpike Enterprise*
 Brian Watts, *FDOT Forecasting and Trends
 Office*
 Chris Wiglesworth, *FDOT Transit Office*

Meeting Summary

Welcome and Introductions and Update on Subcommittee Work Plan

Jim Halley, FDOT Office of Policy Planning, welcomed the attendees to the meeting and prompted introductions. Jim opened the meeting with an overview of ACES, its role in the FTP update, and the structure of the ACES Subcommittee. Information on the ACES Subcommittee and the full ACES Subcommittee presentation can be found [HERE](#).

FDOT ACES Initiatives

Jim asked members of FDOT's modal offices, FDOT's Traffic Operations office, and FDOT's Systems Implementation office to provide a brief update on innovations in technology and ACES specific to their mode.

Freight

Holly Cohen, FDOT Freight and Multimodal Operations Office, gave a presentation on autonomous trucking innovations in Florida. She noted that autonomous trucks are currently being tested on Florida's roadways. She introduced the Trucking Parking Availability System (TPAS), which is being deployed on I-

4, I-75, I-10, and I-95 to help drivers identify parking opportunities for better route planning. She noted that personal delivery drones are now legal in Florida and are allowing for automation of the last mile delivery process. UPS estimates they can generate more than \$50 million in savings due to drone delivery support.

Seaports and Waterways

Dan Fitz-Patrick, FDOT Seaport and Waterways Office, said FDOT is looking at the top 50 seaports nationwide to identify how they are incorporating ACES technologies and identifying where Florida's seaports can implement those strategies. He said staff are reviewing the plans and press releases associated with these top 50 seaports and using a bank of key search terms related to ACES to identify potential innovations in ACES implementation. Participants had the following questions and comments:

- What was included in the bank of terms for this research?
 - The bank of terms was very inclusive with terms such as autonomous, automated, etc. The team reviewed the master plan and associated press releases of a port that was working with ACES technology and used key terms from those documents as a starting point for developing the bank of terms.

Transit

Chris Wiglesworth, FDOT Transit Office, said that several autonomous shuttles are available in Florida, especially in communities with a major university nearby. The City of Gainesville is preparing to start operating its first driverless shuttle. The shuttle has been in service with an operator for the past several months and waiver for the shuttle to operate autonomously in traffic was granted in July 2019. The vehicle will operate at 12.5 miles per hour with six designated stops along a 1.4-mile route. An operator will be available on the vehicle and in the event of an emergency they can take control of the shuttle.

Aviation

Nick Harwell, FDOT Aviation and Spaceports Office, said the current focus is on how ACES impacts ground connections to Florida's airports. Staff performed a review of online survey results that indicated that 80% of young adults (18-24) would be comfortable as a passenger in a self-flying aircraft at some point in their lifetime and more than half of survey respondents would be willing to ride in a self-flying aircraft. Nick noted if people are more comfortable taking longer trips in autonomous vehicles it could reduce the number of aviation customers by as much as 10%, substantially reducing airline revenues and likely causing the airlines to reduce service to some markets. The research indicated that only 12% of respondents said they wanted to wait longer than 10 years before flying in an autonomous plane. Participants had the following questions and comments:

- Did the surveys that were reviewed include an estimate of the time and cost of flying vs driving?
 - No, they did not.
- Was this a survey that was conducted by FDOT?

- The survey wasn't conducted by FDOT, it was a general survey available online.
- <https://www.aviationtoday.com/2019/06/20/millennials-ready-embrace-autonomous-airplanes-new-global-study-finds/>
- <https://theconversation.com/driverless-cars-are-going-to-disrupt-the-airline-industry-118380>

Traffic Operations

Raj Ponnaluri, FDOT Traffic Engineering and Operations, gave a presentation on FDOT's Connected and Automated Vehicles (CAV) effort. He said NHTSA suggests that 94 percent of traffic crashes are due to some form of human error and many of those crashes could be avoided with CAV technology implementation. He noted that data are becoming very important elements of CAV applications and these data are important to understanding how an intersection operates and how vehicles and people can more safely navigate intersections, for example.

He reviewed the seven focus areas of the CAV business plan, highlighted Vision Zero, and reminded participants that FDOT is committed to a target of zero fatalities and serious injuries on Florida's transportation system. He noted that FDOT is supporting several research projects related to ACES and highlighted many of the ACES projects that are in the planning phases and under development in Florida.

Systems Implementation Office

Jennifer King, Systems Implementation Office, provided an update on the "Preparing SIS for AV/CV Implementation" project. Staff are analyzing the information gathered at the SWOT Analysis conducted during the last ACES Subcommittee meeting to help inform the Preparing the SIS for AV/CV Implementation project.

ACES/Technology Discussion from the FTP-SIS Steering Committee and Other Partner Outreach Events

Jim and John Kaliski, Cambridge Systematics, provided updates on the FTP-SIS Steering Committee meeting held on July 9-10, 2019 in Bonita Springs and recent partner outreach events.

FTP-SIS Steering Committee Meeting

John highlighted the seven FTP goals and told subcommittee members that there was a discussion about potential revisions to the FTP goals. He emphasized the Steering Committee wants to convey a bold vision in the FTP and put a greater emphasis on technology as a cross-cutting theme supporting multiple FTP Goals. The Steering Committee suggested technology fits best into the goals related to safety, infrastructure, and economic competitiveness.

John said that during the meeting, the Steering Committee provided suggestions related to technology that align well with the suggestions and discussions of the ACES subcommittee meeting including broadening the definition of infrastructure and better defining the public sector role in technology implementation.

Other Partner Outreach Events

Jim provided an overview of other partner input related to technology. He identified three major themes common across recent partner outreach events including:

- Funding for technology improvements;
- Autonomous vehicles changing demand and infrastructure needs; and
- Opportunities for more education about ACES.

He noted that consistently, integrating old and new technologies is the challenge most often cited related to ACES by meeting participants. Participants had the following questions and comments:

- How is the information discussed during ACES Subcommittee meetings being incorporated into the M-CORES process?
 - The statute related to M-CORES references the incorporation of emerging technologies into these corridors. We anticipate the work of this subcommittee and the FTP-SIS update process as a whole will be resources that could inform the M-CORES process, though the FTP-SIS update and M-CORES processes are separate efforts.

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

John provided an overview of the major themes identified by the ACES subcommittee during prior meetings and Jim reviewed the technology-related strategies included in the current FTP. Jim noted this information would be used to help develop recommendations for updating the strategies of the FTP. Jim asked participants to identify additional opportunities to use technology to support the FTP goals and objectives. Participants had the following questions, comments, and suggestions:

- It is important that ACES is viewed in terms of the overall transportation and quality of life goals. We need to be using technology to help us meet our goals, rather than deploying just because we can.
- Electrification of the transportation system is an important step in the CAV transition and we need to be sure we have solved issues related to electric vehicles before we are ready to embrace the full range of CAV technology.
- Curb design and curb management is going to continue to become even more important.
- FDOT is looking at how ACES improvements are changing the way we define both infrastructure (including utilities, broadband, etc.) and capacity (greater emphasis on moving people rather than vehicles). FDOT is also looking at funding opportunities, such as user fees on alternative fuel corridors, to supplement declining fuel tax revenues.

- MetroPlan Orlando is conducting a CAV Readiness Assessment and should be able to provide local government input from workshops associated with the project at future ACES Subcommittee meetings.
- Florida needs to consider the needs of different demographics. Different age groups and different socio-economic groups interact with technology differently and we need to ensure technology is accessible to users of all demographic backgrounds.
 - TRB currently has a research study looking at the impacts of transportation technology on underserved communities. Sometimes ACES technologies actually have negative impacts on these communities because they create a digital divide that serve as a barrier to opportunity.
 - When we discuss equity, we need to make sure we are highlighting the opportunities they will create for the underserved communities including better access to data. Florida needs to be aware of the positive impacts and make sure we are emphasizing those.
- Cybersecurity is a major factor in ACES. Has there been any consideration of physical “hacking” of the system? Changing an aspect of the infrastructure, for example, could send inaccurate messages to the vehicles connected to the infrastructure, potentially causing problems.
 - FDOT is incorporating this issue into the CAV implementation process including development of a security credential management system.
- Florida needs to ensure pedestrians and bicyclists are also being considered including sidewalk management.
- Has anyone done a study to determine the impact of e-commerce on traffic, especially local traffic?
 - Keep in mind that many delivery drivers are not professional drivers but hired contractors with less professional driving experience and less familiarity with truck routes, locations of loading zones and parking, etc.
 - The American Transportation Research Institute has a report on e-commerce and the impacts on the transportation industry. It includes references to relocating distribution centers and the change in the variety of products in demand.
 - FDOT is also starting a research project related to e-commerce and how employment is impacted by e-commerce. The Florida Ports Council and the Florida Chamber are both involved in research on e-commerce.

Jim introduced a polling software and instructed participants to respond to the following question using the poll. Responses to the question “What other ACES and technology issues and opportunities should be considered in drafting strategies to achieve the goals and objectives of the FTP?” are included below:

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

- Where govt has a responsibility vs. Private sector
- Workforce management

Potential Framework for ACES Subcommittee Recommendations on FTP Strategies

Jim suggested using the following framework (listed below) and the input provided at the ACES Subcommittee meetings, FTP-SIS Steering Committee meeting, and other partner outreach to develop potential technology-related strategies to consider in the FTP update.

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

Jim agreed to share potential technology-related strategies with ACES Subcommittee members for their review prior to the next ACES Subcommittee meeting. Participants had the following questions and comments:

- We have to identify the structure of governance related to ACES implementation and make sure that it is conducive for implementing ACES effectively in the future. ACES could create some challenges for existing transit operators as we move to mobility as a service- how they rethink both internal and external partnerships?
- Because this is a long-range vision and technology is uncertain, we need to ensure we are allowing enough flexibility in the strategies and in the plan to accommodate potential changes.
 - Staff can identify shorter term strategies that are fairly concrete and other longer-term objectives that are more flexible.
- Can you elaborate on the “Customers” portion of the framework?
 - That is something that the subcommittee will need to help us figure out. Initially, “Customers” was related to the users of the system but based on recent discussions, it could be expanded to include the users of the data generated by these technologies.

Wrap Up and Next Steps

Before concluding the meeting, Jim facilitated a roundtable with members of the ACES Subcommittee. He asked each member to provide additional updates relevant to the subcommittee:

- Chris Emmanuel, Florida Chamber of Commerce, said a successful driverless truck test has been completed on Florida's turnpike and there have been two new driverless deployments since the last ACES Subcommittee meeting took place in July.
- John Rene, Urban Land Institute, said he reviewed a study suggesting there is a higher adoption for ride sourcing apps (such as Uber and Lyft) in urban areas - approximately 40-50 percent more than people in suburban and rural areas. People in urban areas are more likely to give up their vehicles and use autonomous vehicles and we need to consider how the curb, pedestrian safety, and land use influence the decision to use autonomous vehicles, especially in Florida's urban areas.

Jim concluded the meeting with a discussion on next steps. He said staff will send out a poll to schedule the next ACES Subcommittee teleconference in September or October. The next in-person ACES Subcommittee meeting will be in coordination with the FAV Summit on November 20, 2019 in Miami.