

ACES Subcommittee Meeting

November 20, 2019 1:30 p.m. to 4:30 p.m. EST Hilton Miami Downtown, Tenor Room 1601 Biscayne Blvd, Miami, FL 33132

MEETING OBJECTIVES

The objectives of this meeting include:

- Identify challenges and opportunities and then focus on development of strategies
- Purpose of Subcommittee
- Identify approaches and strategies for ACES to support FTP goals
- Want to identify strategies that cut across all seven goals
- Partnerships are critical to implement plans
- Need effectively use partnerships

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

MEETING ATTENDEES

Subcommittee Members	
Alix Miller, Florida Trucking Association	Michael Stewart, Florida Airports Council
Brady Nepple, TEAM Florida	Troy Thompson, Florida Highway Patrol
Ananth Prasad, Florida Transportation	Brad Thoburn, Florida Public Transportation
Builders Association	Association
Pat Steed, Florida Regional Councils	Ralph Yoder, Florida Transportation
Association	Commission
Friends	
Silvia Beltre, Stantec Consulting Services	Bill Hafner, ST Engineering
David Binder, Intelligent Imaging Systems	David Hutchinson, Sarasota/Manatee TPO
Aileen Boucle, Miami Dade TPO	Evangelos Kaisar, Florida Atlantic University
Ryan Brown, Sarasota/Manatee TPO	Beth Kigel, HNTB
Denise Bunnewith, North Florida TPO	Carmen Monroy, Stantec Consulting Services
Paul Chance, Miami-Dade TPO	Michael O'Rourke, Town of Lake Park
Lisa Colmenares, Miami Dade TPO	Tom Ross, Jacobs
Jay Correojo, Uber Technologies	Richard Scherle, Town of Lake Park



John Dohm, Florida Transatlantic	Yu Zhang, University of South Florida
Consulting	
Tewari Edmonson, Miami Dade TPO	Steven Gayle, RSG
FDOT Staff	
Theodore Burdusi, FDOT	Carol Scott, Florida's Turnpike Enterprise
Frank Collins, FDOT Forecasting and	David Sherman, FDOT/HDR
Trends Office	
Nicole Forest, FDOT	Daniel Smith, FDOT
Tanner Martin, FDOT/HDR	
FTP Staff and Consultant Support	
Jim Halley, FDOT Office of Policy Planning	Jim Wood, Kimley-Horn Associates
John Kaliski, Cambridge Systematics	
Michael Williamson, Cambridge Systematics	

MEETING SUMMARY

Welcome and Introductions and Agenda Review

Jim Halley, FDOT Office of Policy Planning, welcomed the participants and asked the participants to introduce themselves. He started the meeting with an overview of the agenda.

Partner Updates

Miami-Dade TPO

Aileen Boucle, Executive Director of the Miami-Dade TPO, provided an overview of the TPO's Strategic Miami Area Rapid Transit (SMART) Plan (click <u>here</u> for a link to the presentation). Key points:

- The TPO has a SMART Plan to help the county address existing and future mobility needs.
- The region has critical needs, increasing congestion, and decreasing system reliability.
- There is a transformation in technology and travel underway impacting our transportation options.
- Traditional planning has new challenges with the emergence of connected and automated vehicles (CAV), social network transportation providers, e-commerce trends, and new mobility services.
- The county's SMART Demonstration Program encourages innovation at the local level, emphasizing flexibility, adaptability, and integration in an urban mobility test ground.
- The Program has many demonstration projects countywide looking at first/last mile solutions, express routes, feeder routes, door-to-door on-demand routes, and more.
- Evaluation criteria and a monitoring methodology will help define the Program's success. Key criteria will include travel time, level of service for system users, return on investment reduction in vehicle miles traveled, access to major activity centers, and multimodal connectivity.
- The 2045 long-range transportation plan has a chapter dedicated to emerging technologies.
- Land development guidelines are also provided to help support ACES such as re-charging stations for electric vehicles.



• The program provides: vision, policy, testing, and implementation.

Autonomous Florida

Chris Emmanuel of the Florida Chamber provided an update on Autonomous Florida. The Chamber is watching several key trends that impact the automated vehicle (AV) market:

- Driver assist technology continues to improve safety. The incremental benefit of further investment is lower because of the total benefits associated with AVs that have already been realized. Algorithms are being developed based on matching driver behavior.
- Interstate Highway/rural roadways are the AV's friend. Highway corridors with no stoplights, crosswalks, or pedestrians are much easier than an urban setting when rolling out AVs.
- Deployment of AVs will improve productivity and saving time by providing the driver with the ability to be able to do other things during the trip (meetings, phone calls, etc.).
- Battery technology is advancing and will be critical to full scale deployment.
- Specialized/niche technologies, such as e-scooters, have the ability to make use of existing capacity/infrastructure.
- Not many states are investing in AV as significantly as Florida. Legislative changes are still happening in Florida while other states are backing off or pausing and the federal government is still working on its policy framework. Florida is still leaning in and focusing on collaboration.

Strategic Intermodal System

Tanner Martin, of HDR, provided an overview of how FDOT is preparing the SIS for ACES including the results of a legislatively mandated study. The following summarizes the talking points and resulting discussion:

- FDOT has developed three technical memoranda about ACES and the SIS; the third document, "Technical Memorandum 3: SWOT Analysis: Preparing SIS for AV/CV and Other Emerging Technologies" (hard copies distributed at meeting) provides material partners are encouraged to use to inform their programs as appropriate. Appendix in this document includes potential needs and priorities including changes to SIS policies identified at the summer meeting of this group and through additional stakeholder input.
- We need to better understand the ability of CAVs to improve safety; this will help determine how to set expectations.
- A recent study of SR 70 was conducted to develop a methodology to look at safety impacts of ACES. The study looked at crash data to identify causes, match those causes to technology, and estimated a reduction in crashes resulting from technology; crashes were estimated to decrease by 5% along the corridor. These results were lower than anticipated but reflected a relatively modest assumption about market penetration of ACES.
- Aggressive adoption of technology is about 60%; participants asked if low adoption rates are an issue.
- Rural areas bring challenges like lack of cell service and broadband.
- Technologies will need to support shifts in supply chains; for example, new/evolving warehouse needs/strategies tied to e-commerce and other trends will impact technology deployments.
- Participants suggested AV technologies can be used to address capacity without putting more vehicles on the road. For example, the FAA's Integrated Pilot Program (IPP) could help advance the use of drones.



- Drones could be used to move agriculture products. We need to think outside the box; asphalt costs a lot; are other technologies like drones more feasible?
- Drones may help with deliveries to homes particularly located on dirt roads, which have degraded more and more based on the growing volume of e-commerce related traffic.
- What about subsidizing drones at the level FDOT would have paid on new roadway capacity?
- The long-term impacts on demand for capacity under various levels of penetration were looked at in technical memorandum #2.
- Participants questioned the appropriate role of government in funding the electric charge station infrastructure.
 - o Government does not build gas stations. Some of this should be market driven.
 - We do need to consider emergency evacuation and response. Legislature asked state to investigate queuing at charging stations, which exceeded gas stations during recent weather events. Need to consider impact of the grid being out for an extended period following a hurricane.
 - Keep in mind that we could be out of gas following a hurricane as well.
 - Also, there is an issue of everyone trying to charge at once leading up to an event- is there a strategy for rationing access?
 - The time to charge also need to be considered; what are the alternatives to charging? What about swapping batteries? How can time to "refuel" be reduced?
 - Battery technology is not there yet.
 - After Irma, it was difficult to get fuel inland due to demand in urban areas. Governor had to intervene, then we had the issue of not enough power at some pumps. So we do need a public sector intervention in some cases.
 - Any gas station along an evacuation route need a backup generator.
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 - Changes to solar laws could help support re-charging and overall recovery, especially at times when there is no electric service from grid.
- May need a general approach that there are fewer "single use" items in the future- whether a vehicle or charging on road. Ability to repurpose is important.

Panel Discussion: A View into the Future

Grayson Brulte, Brulte & Company, and Frank Collins, FDOT Forecasting and Trends Office led a discussion on "A View into the Future" to cover future trends beyond the next several years.

There is a relationship between a driver and vehicle and the available technologies. The government asks the private sector what they need and both sides are still figuring that out. What is the best way to have this conversation?

• This is a two-sided conversation. The Florida Legislature and the Governor have made it clear that Florida is open for business. We should continue to invite the private sector to Florida to show them what Florida is all about.

What strategies are being used effectively?

• Silicon Valley is driving for levels 4 & 5 automation but not interested in levels 1-3. Detroit is being more incremental. Voyage is being more community specific. Believe we need to get to levels 4 & 5 as soon as possible; level 1 and 2 are not enough, and level 3 could be dangerous because of



the mix of driver functions. removal of the steering wheel and pedals allows for additional opportunities, such as in-vehicle tourism for our 100 million visitors.

- AVs help the elderly travel; they reduce fear of riding as a passenger with a stranger, provide added mobility, and improve the quality of life by reducing isolation. Also, could create opportunities for children and disabled.
- Our future has increased mobility and accessibility. There are two views about the possible impact of AVs utopia (safe and increased mobility for all) and dystopia (huge increase in travel demand due to benefits of AVs, like increased mobility).
- One key question is the future balance between private and shared vehicles.
- Subscription services are likely to be popular; for example, a parent with three kids all headed to different locations could subscribe to a service that provides all transportation needs.
- Services in general are moving towards subscriptions.
- Vehicles and VMT will increase so DOTs need to keep paving.

What will commerce look like?

• More mobile commerce, less bricks and mortar; in-car shopping. Truck to trucks to depot outside of the city to shift to smaller trucks for delivery.

When do we need to broaden the discussion on CAV to a larger audience?

- The time is now.
- Walmart has a 10-person team working on CAV full time; Arkansas passed AV law to help them out.
- We need to start with kids; career opportunities in the ACES environment are exciting.
- Many folks see AV as "not in my lifetime," which leads to investments in infrastructure that will become obsolete.
- We need to understand mobility needs and focus services on these needs from an end to end perspective; changing demand for parking, transit, etc.
- There will be competition for public right of way Including sidewalks, the curb, etc. Where do we need regulations or model codes?
- What about private right of way for example, what happens if 600 delivery bots show up at an office tower at the same time.
- There needs to be a balance of investments (public and private) in AV infrastructure.
- We should focus on AV not CV, as manufacturers need to be able to operate anywhere.
- Infrastructure such as airports will need to be upgraded and redesigned to handle AVs.
- The ownership model will need to be worked out. AVs will become very personal, like driving a smart phone. What's the role of the car dealer in the future? Where is customer support needed?
- Consumers hold the key to the future.
- Innovation is the key to mitigating market competition.

What about equity implications?

- The private sector innovates; the government can partner to help expand access to services.
- Mobility options with ties to transit services can help expand access to service.

How do we better integrate services given how slow government agencies are to change?



- Lines will get blurred; government is like a 747 slow to turn.
- Government approaches problems holistically; private sector approaches from business proposition; they feed off each other.

How does infrastructure and technology change in the future?

- Cyber security, funding, and other key factors will evolve.
- We need to be bold.
- ACES should be discussed in the context of the state's complete streets policy; how does the impact of ACES on the arterial system impact decisions?
- Stricter licensing requirements, insurance requirements, etc. would help us get to zero fatalities; AVs also will help mitigate the impacts of impaired driving.
- AVs are not generational; they will benefit all existing generations.
- Should electric vehicles make a sound to help communicate/warn visually impaired pedestrians or other pedestrians not paying attention?
- Cyber security will be critical; folks will need to be careful what they click on; for example, an infected email could compromise an AV.
- Florida urban areas are way behind other large metro areas from a mobility perspective; we are growing fast and need to catch up.

Brainstorming of FTP Strategies

John Kaliski of Cambridge Systematics led a discussion on strategies to support the inclusion of ACES in the FTP. Input was provided by participates via post it notes; this input is listed below as provided.

Future Meetings

- Have someone knowledgeable about 5G.
- Invite "smart city" experts to join and speak; future land development truths, trends, etc.
- Have someone here who can speak to legislation; transportation, renewable energy (solar, wind, etc.).

Infrastructure and Design

- FDOT needs to create a smart SIS robust connected communications for personal and commercial vehicles.
- Focus on adapting infrastructure to compliment/supplement technology that is already commercially available to being adopted by the market ADAS "machine vision".
- ACES in context of complete streets for arterials.
- Investing in new mobility infrastructure in urban cores; bike lanes, bike racks, pedestrian friendly.
- Develop next generation of complete streets smart, connected, ped sensors, green solar roads, support micro mobility.
- How can curbside management be coordinated with urban planning and street design? More innovative channelization will be needed, as well as dynamic pricing.
- How will (should) AVs impact neighborhoods; should driveways and sidewalks be changed? Should we return to service alleys?



- Information for real estate developers and planners; where are we in the process related to designing buildings for AVs?
- How to prepare infrastructure so that we can utilize low altitude airspace? State-level effort on embracing/encouraging urban air mobility?
- Focus on technologies and applications that will reduce VMT per capita to support climate change policies.

Data and Technology

- Explicitly differentiate between connected car (i.e., cellular and convenience) vs. connected vehicle (i.e., DSRC and operational and safety critical applications)
- Protect user privacy (no real-time data access); allow private sector to work with government on sharing data but not receive it in real-time.
- Encouraging integration of public transit into transportation platforms.
- Cyber security and data sharing issues need resolution.

Customer Service

- Combining seamless ACES with seamless mobility.
- Better/more intrastate air service; air taxi/uber air.
- Equity; be honest about the fact AVs will not be operational in rural areas for a long time.

Workforce & Economic Development

• Working with seaports and unions; implications of automated trucks

Partnerships

- Ways to incorporate outside groups/entities that will be affected by new technology.
- Streamline governance; mobility authorities reduce fragmented approach to plan, fund, build, operation and maintain.
- Public private partnerships used to foster innovation and reduce risk to public agencies; not just finance mechanism.

Regulatory (new topic)

• Removal of siloed regulations and funding.

Planning/Project Development

• Replace the LRTP with a shorter ranger strategic ACES plan.

Funding

- Alternative infrastructure funding.
- Identify funding for local governments to improve infrastructure for AVs.
- Commit to engage with private sector for share of revenue from ACES activities. For example, need for charging infrastructure must be satisfied with standardization.



• What level of market adoption (X %) should public dollars be allocated toward, enhancing/addressing specific technologies?

Adjourn

Jim Halley thanked all participants in the meeting and indicated that the meeting summary will be circulated soon. The next meeting will be a teleconference in January.

