ACES SUBCOMMITTEE MEETING

presented to

ACES Subcommittee

presented by

Jim Halley
Office of Policy Planning

June 25, 2019

FTP Florida Transportation Plan

SIS Strategic Intermodal System

FDOT

WELCOME AND INTRODUCTIONS

- Name
- Agency/Organization
- Brief background in ACES

AGENDA

- Partner Updates
- Workshop: Preparing the SIS for ACES
- Lunch
- Workshop: Preparing the SIS for ACES - Continued
- Discussion: ACES Issues, Opportunities, and Values
- Next Steps

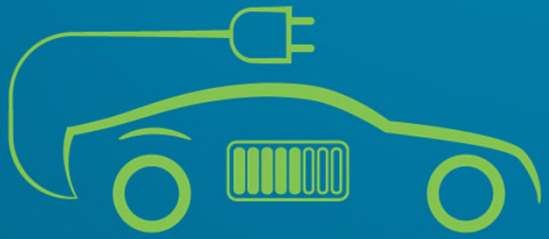
Partner Updates

FDOT Update

Jim Halley, FDOT Office of Policy Planning

Automated Vehicles

Connected Vehicles



Electric Vehicles

Shared Vehicles

FDOT

FTP GOALS & CROSS-CUTTING TOPICS

Technology	Resilience	Statewide and Interregional	Regional and Local

- ***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***
- ***Florida's environment and energy conservation***

FDOT

FTP GOALS & CROSS-CUTTING TOPICS

Technology

- ACES
- TSM&O
- Data
- New materials & processes

Resilience

- Major weather events
- Evacuation and emergency response
- Sea level rise, flooding
- Economic or societal changes

Statewide and Interregional

- SIS, including modal facilities
- Trade & Logistics
- Interregional/multi-use/multi-modal
- Connectivity

Regional and Local

- Urbanized, non-urbanized and rural
- Congestion relief
- Land use/community planning
- Regional visions

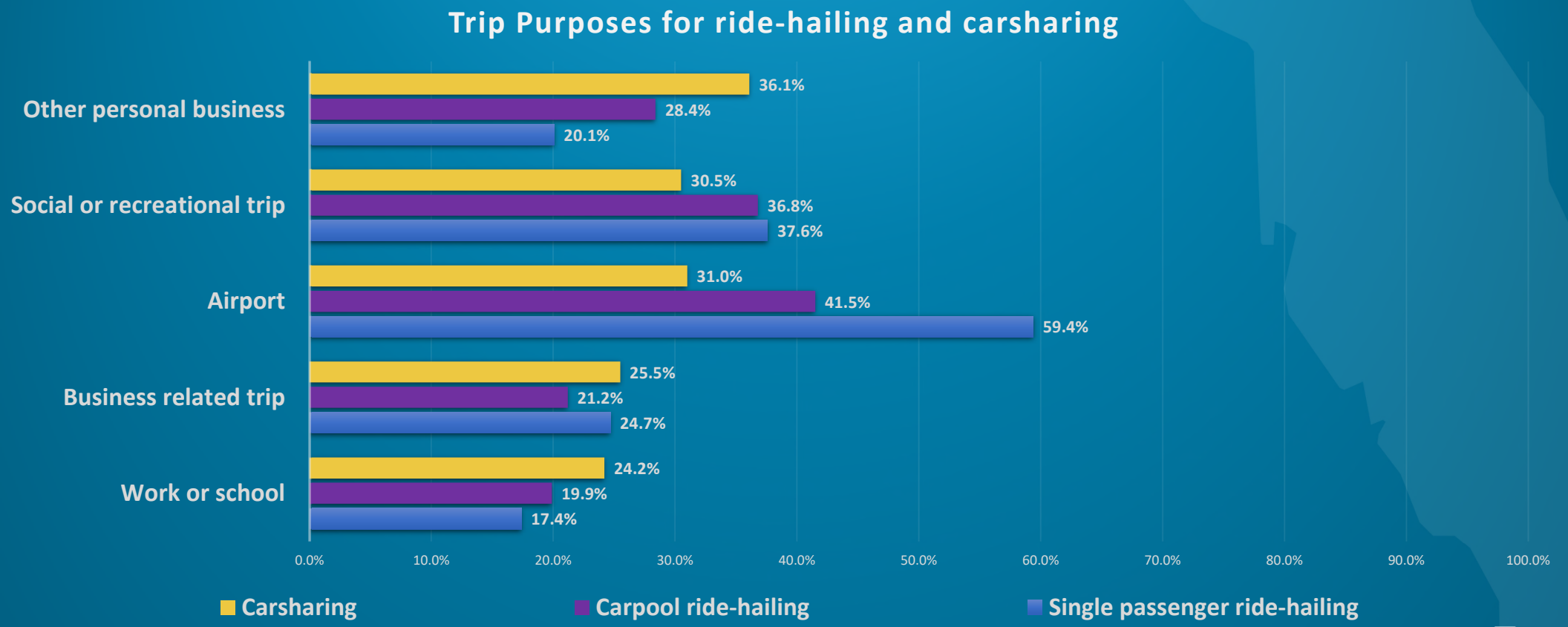
ACES SUBCOMMITTEE STRUCTURE

- **Subcommittee of the FTP-SIS Steering Committee**
- **Includes “full” members as well as additional “friends” of the subcommittee who are interested stakeholders/subject matter experts.**

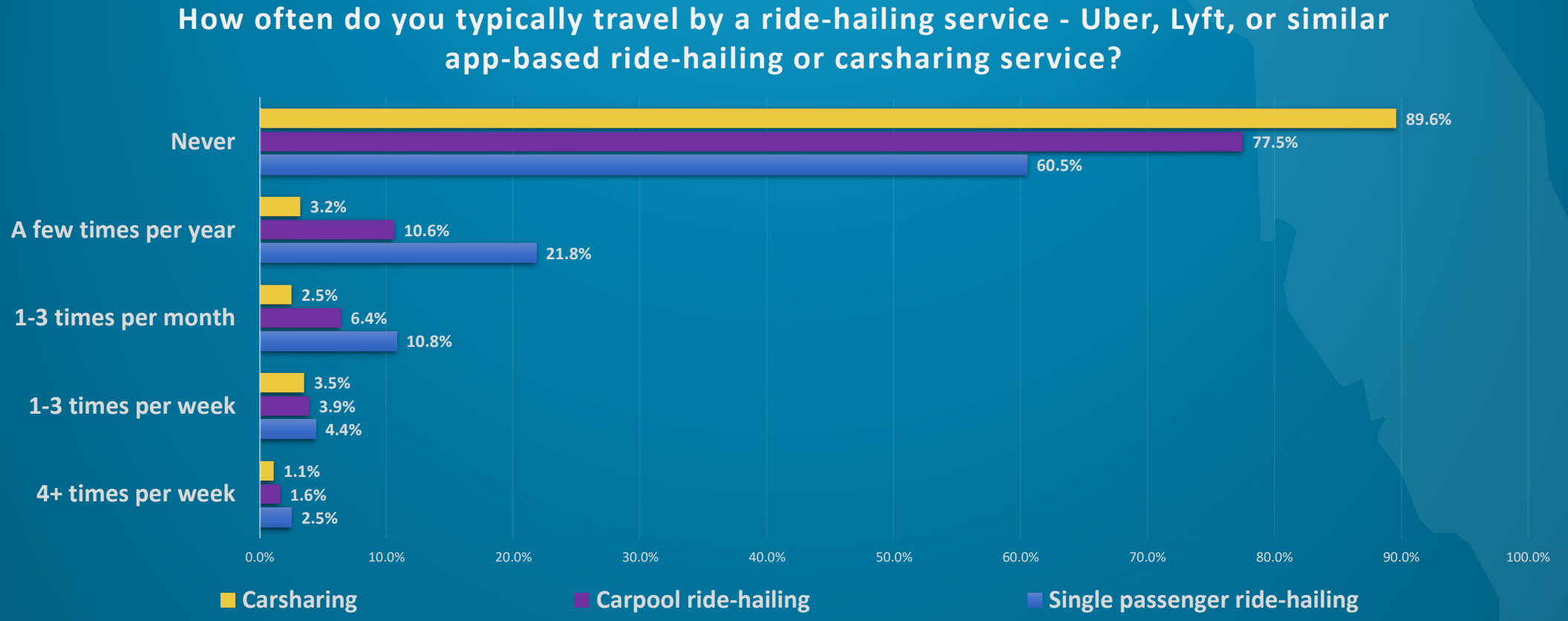
ACES SUBCOMMITTEE CHARGE

- 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

2018 SATISFACTION SURVEY FOR FLORIDA RESIDENTS – ACES RESULTS

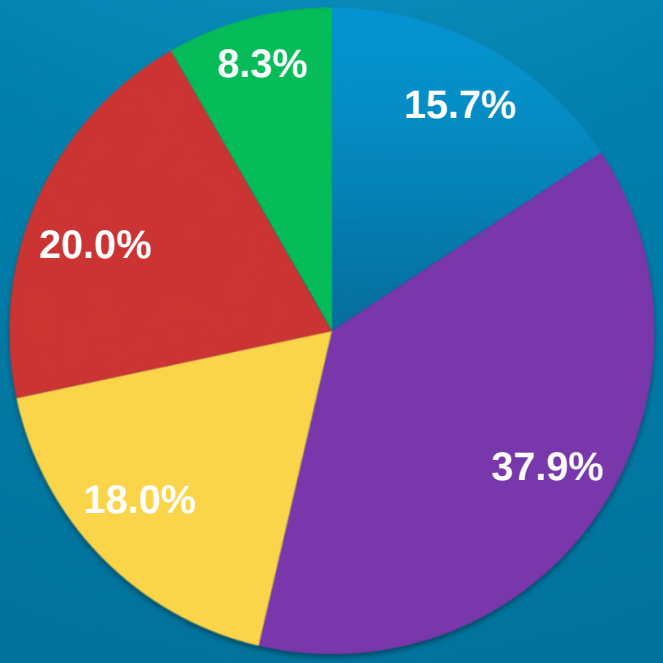


2018 SATISFACTION SURVEY FOR FLORIDA RESIDENTS – ACES RESULTS



2018 SATISFACTION SURVEY FOR FLORIDA RESIDENTS – ACES RESULTS

I would ride in a self-driving car once they have been proven to be reliable.

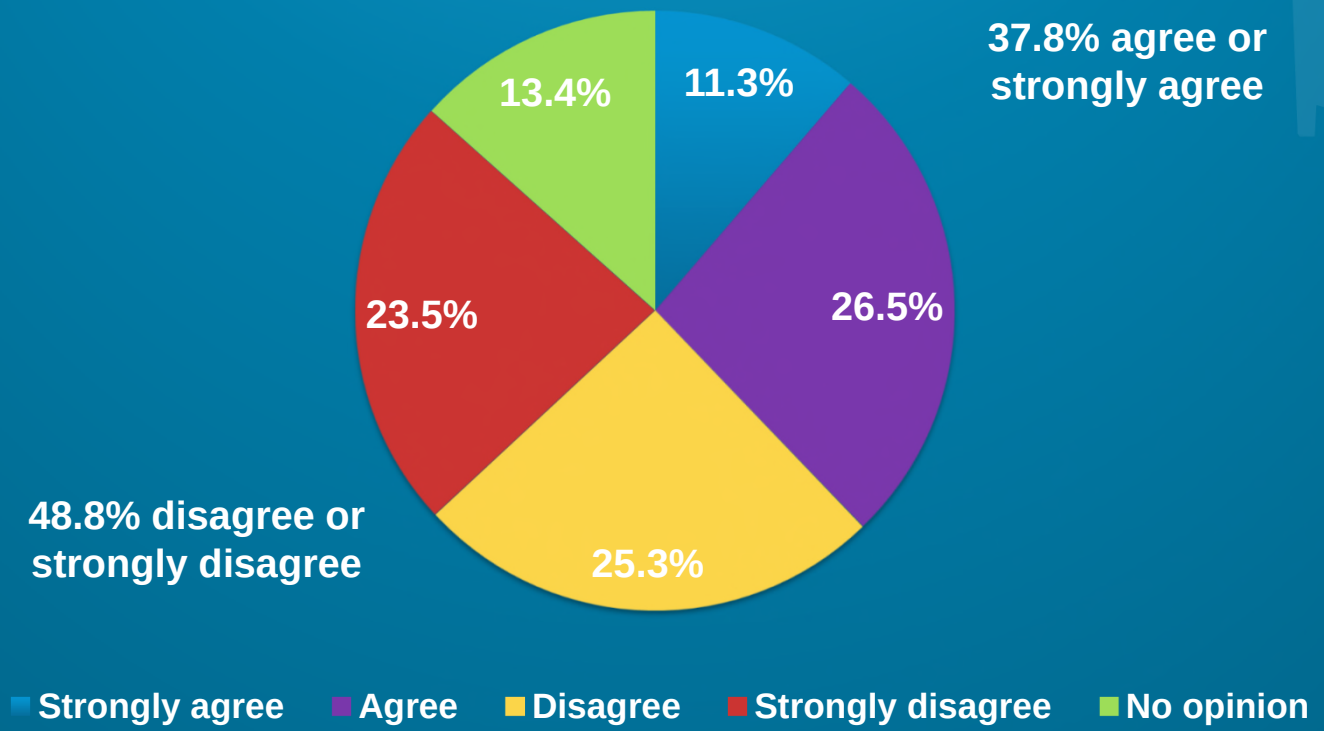


53.6% agree or strongly agree

38.0% disagree or strongly disagree

2018 SATISFACTION SURVEY FOR FLORIDA RESIDENTS – ACES RESULTS

I would feel comfortable knowing that a family member or someone close to me (e.g., an elderly parent) regularly travels in a self-driving vehicle.



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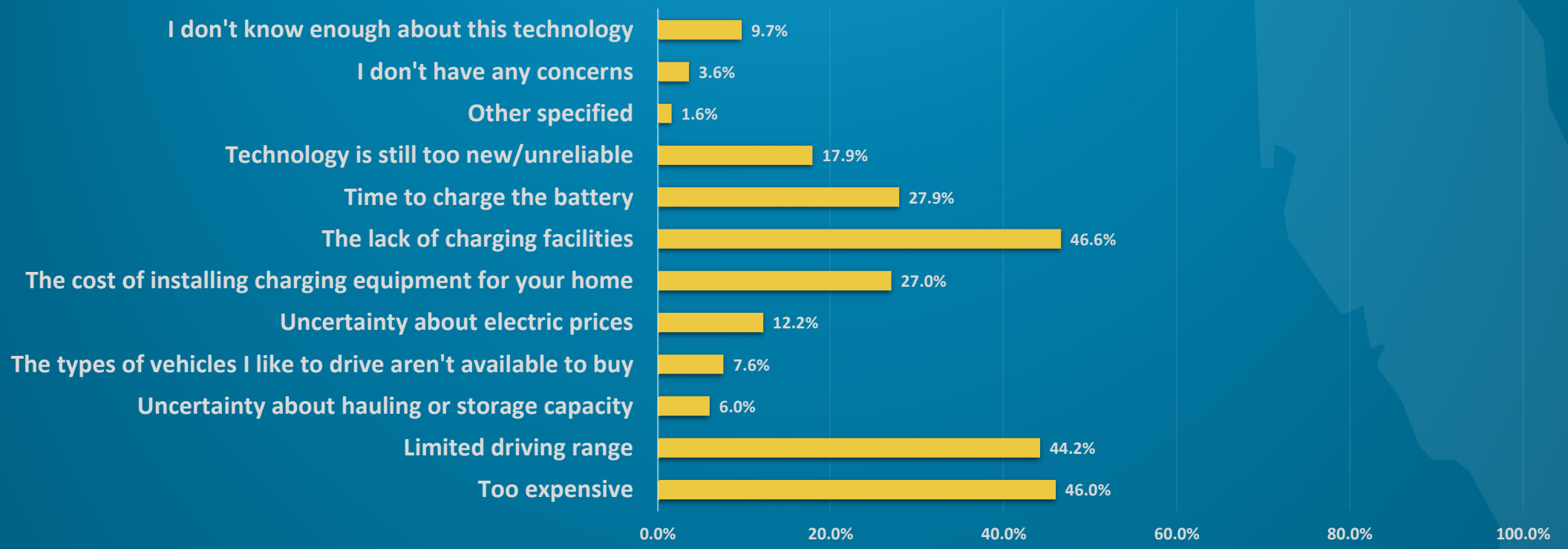


AUTONOMOUS FLORIDA

A Program of the Florida Chamber of Commerce

FDOT Presentation

AUTONOMOUS FLORIDA

Three Things to Consider

1 **Deployments**

2 **Policy Assumptions**

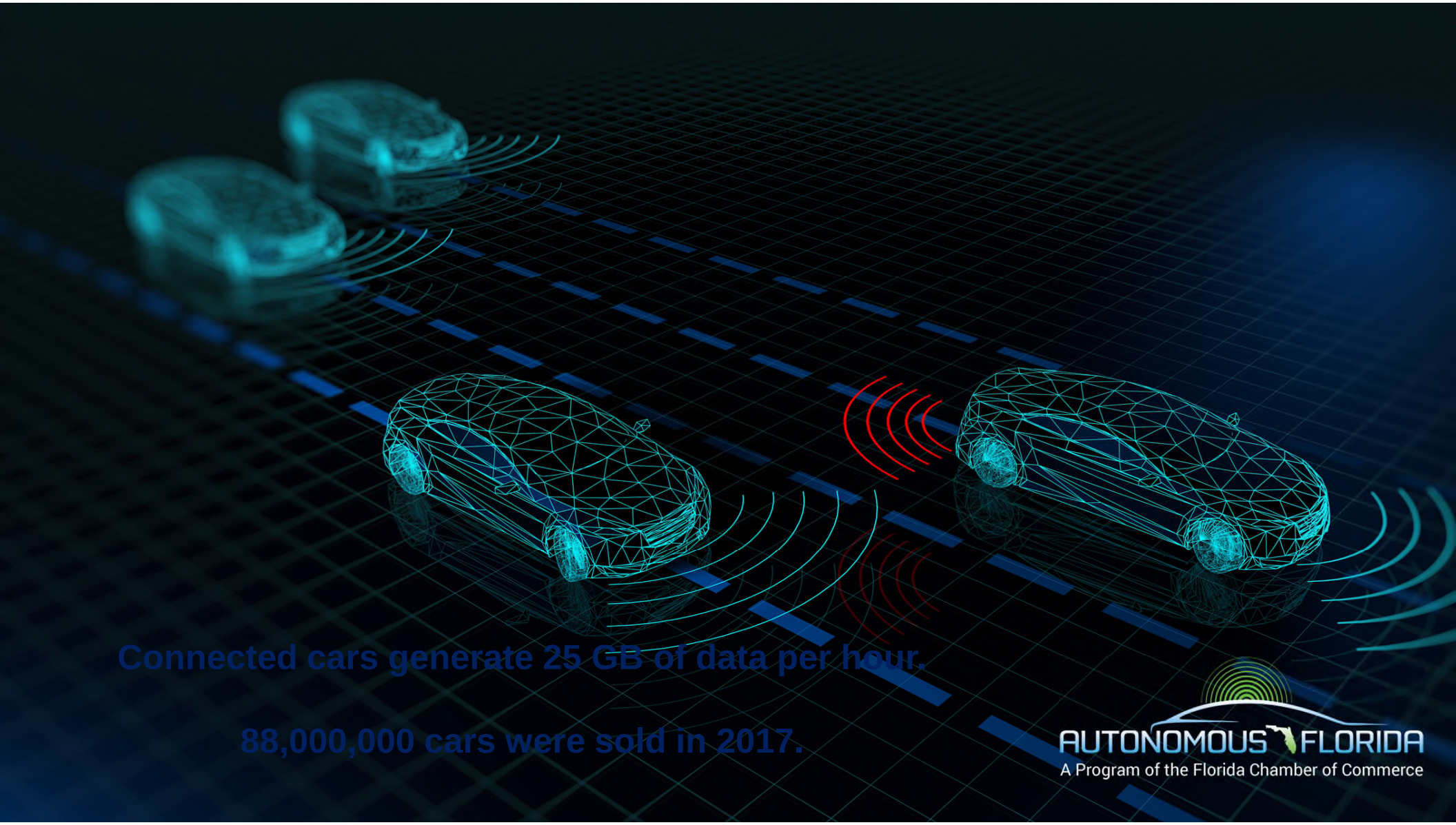
3 **Basic Needs**

Miami

Babcock Ranch

The Villages

Tampa


Connected cars generate 25 GB of data per hour.
88,000,000 cars were sold in 2017.
AUTONOMOUS FLORIDA
A Program of the Florida Chamber of Commerce

The Villages, as seen by Voyage and Velodyn

“Insurance premiums could be adjusted dynamically—automatically lowering when driving in an empty parking lot, and readjusting on a busy street with pedestrians.”

-July 2018


NO PARKING
AUTONOMOUS VEHICLES ONLY
PICK-UP AND DROP-OFF ZONE
AV


Drive the future
forward.
JULY 15 – 18, 2019
Orlando World Center Marriott
AUTOMATED VEHICLES
SYMPOSIUM
DRIVEN BY AUVSI & TRB
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AutomatedVehiclesSymposium.org
For more information contact John Lambert
johnlambert@Nexutech.com

AUVSI: AV Symposium
July 15 – 18, Orlando

Future of Florida Forum
Oct 28 – 30, Orlando

FAV Summit
Nov. 20 – 22, Miami

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AUTONOMOUS FLORIDA

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cemmanuel@flchamber.com

@ChrisEmmanuelFL

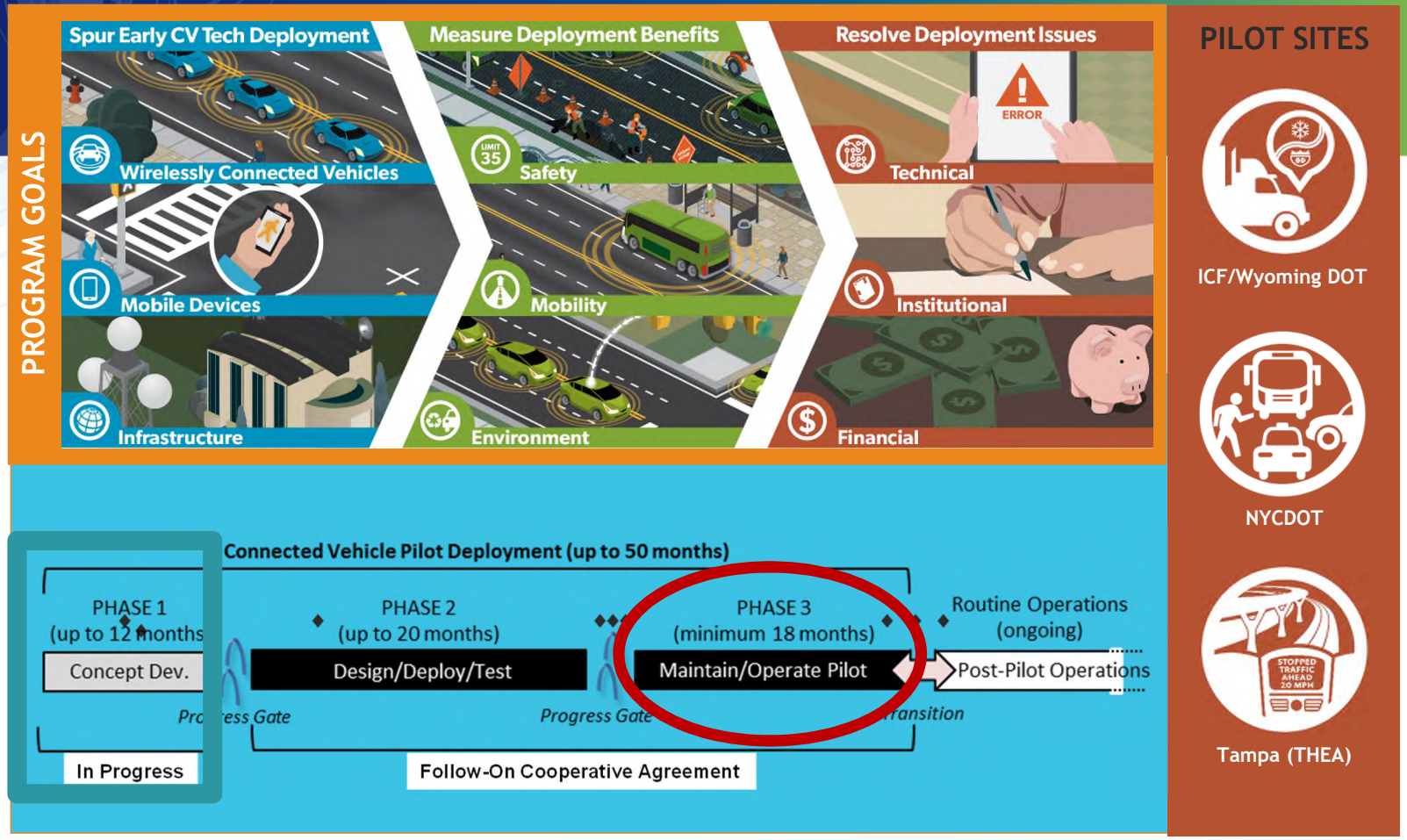
THEA CV PILOT

Overview, Status, Challenges, and Lessons Learned

Walk. Ride. Drive. ***Smarter.***

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

CONNECTED VEHICLE PILOT DEPLOYMENT PROGRAM



FOCUSED DEPLOYMENT AREA

PARTICIPANTS AND INFRASTRUCTURE

CONNECTED VEHICLE PILOT TAMPA

PHOTO: THEA

1,200

Privately Owned Vehicles

PHOTO: THEA

9

TECO Line Streetcar Trolleys

PHOTO: THEA

10

Hillsborough Area Regional Transit (HART) buses

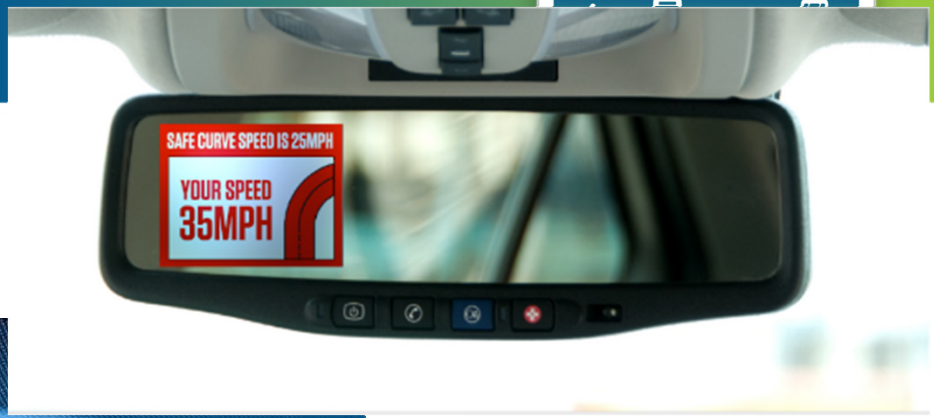
PHOTO: SIEMENS

44

Roadside Units

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

DRIVER EXPERIENCE

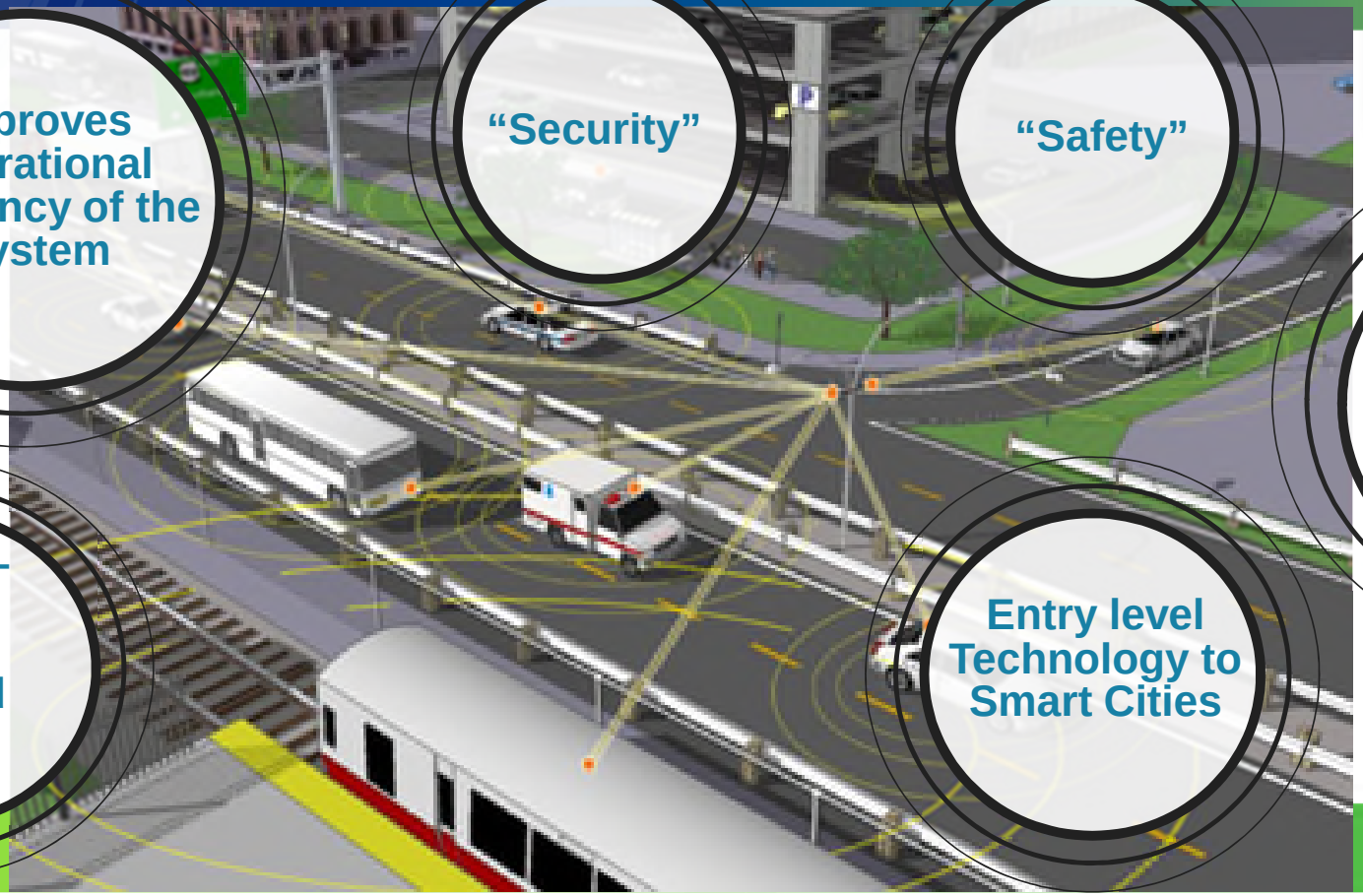


Mirror display uses sticker to depict location and concept of warning.
Actual image is still in development

Source: Brand Motion and Global 5

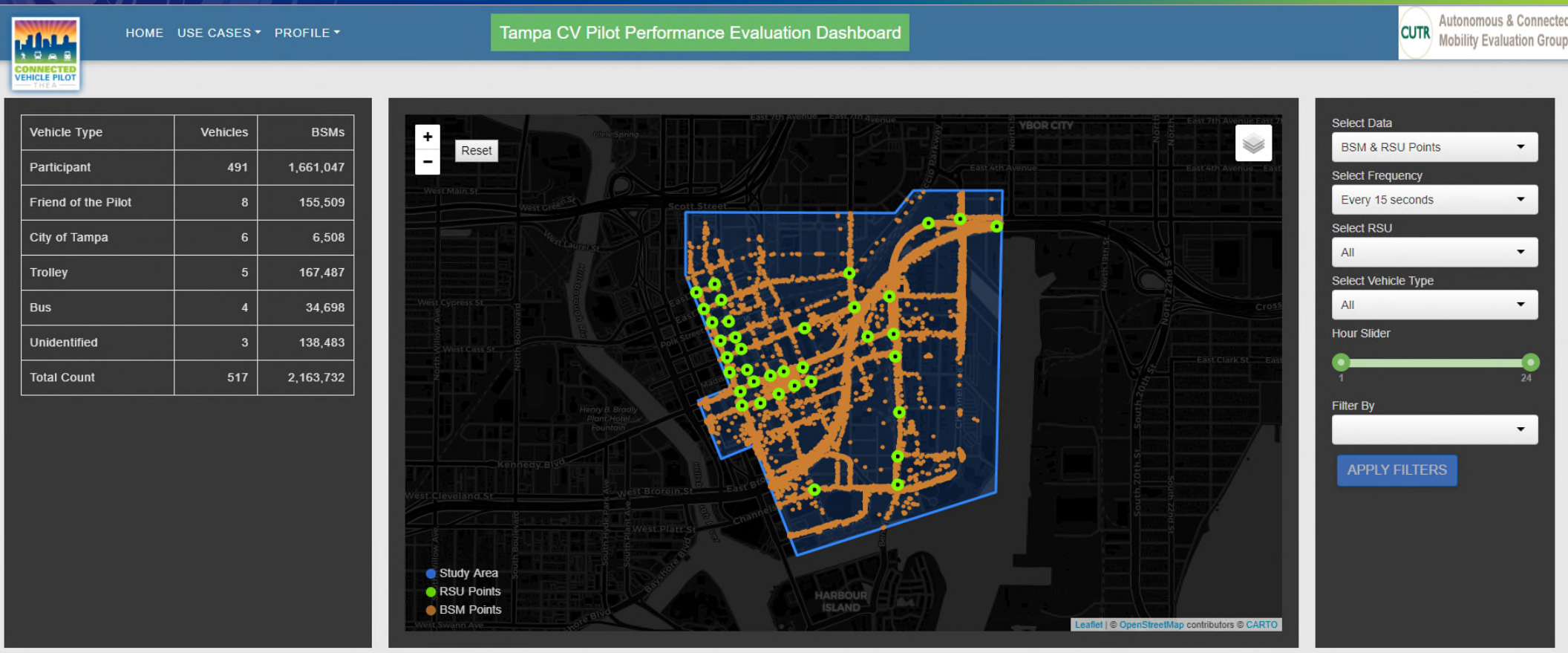
BENEFITS OF CONNECTED VEHICLE COMMUNICATION FOR LOCAL GOVERNMENTS

CONNECTED VEHICLE PILOT
TAMPA



- Improves operational efficiency of the system
- "Security"
- "Safety"
- Ability for all residents to experience benefits of technology…
- DSRC – Strong Track Record in Tolling
- Entry level Technology to Smart Cities

PERFORMANCE EVALUATION DASHBOARD

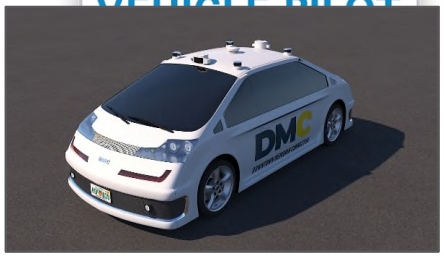


Vehicle Type	Vehicles	BSMs
Participant	491	1,661,047
Friend of the Pilot	8	155,509
City of Tampa	6	6,508
Trolley	5	167,487
Bus	4	34,698
Unidentified	3	138,483
Total Count	517	2,163,732

NEXT STEPS TO BUILD UPON THEA CV PILOT

Mobility hub to house a C-AV rideshare shuttle fleet providing service in downtown connecting to parking

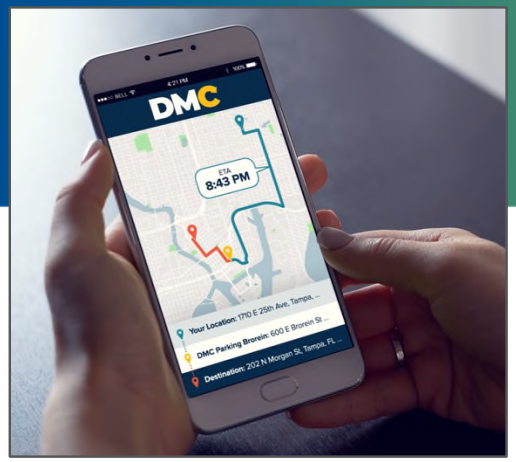
- Connected mobility/C-AV hubs and stations
- Elevated smart guideway for C-AV shuttles connecting major destinations
  - Bypasses congested and worsening LOS intersections
  - Follows along Meridian Avenue
  - Connects Water Street development from USF Medical facility and Port Tampa Bay parking to potential Ybor developments
- Integrated Mobility App for users
  - Smart parking technology
  - C-AV rideshare scheduling/payment



Mobility Hub and Infrastructure for C-AV Future

Transportation Oriented Development

SUPPORTING A CONNECTED FUTURE



Michael Baker
INTERNATIONAL
We Make a Difference

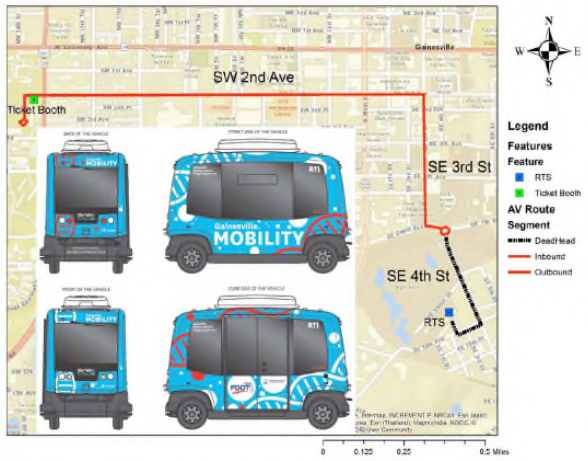
FDOT FTP-SIS ACES Subcommittee
Florida Transit

June 25, 2019

Examples

- Gainesville RTS
- Hillsborough Area Regional Transit (HART)
- Jacksonville Transportation Authority
- Lynx (Central Florida RTA)
- Pinellas Suncoast Transit Authority (PSTA)

Autobus Route



Considerations

- Defining Use Case
- Workforce Impacts
- Risk Management
  - Regulatory Uncertainty
  - Technology “Clockspeed”
  - Procuring Innovation
- Vehicles/Fleet Management

Electric

FTA Low and No Emission Vehicle Deployment Program				
	FY2018	FY2017	FY2016	FY15
Gainesville	$1m	$1m		
Pinellas	$1m	$1m		
Jacksonville		$1m		
Broward	$2.25m	$1m		
Miami			$2.36m	
Tallahassee		$1m		
Low No Program	**$85.5m**	**$55m**	**$55m**	**$22.5m**

Considerations:

- Range
- Charging Infrastructure
- Cost
- Fleet Conversion/Mix
- Transition: Diesel - CNG - Electric

Shared

- Ride Sharing
- Car Sharing
- MicroMobility – Bikes/Scooters
- Microtransit
- Subscription Services

Considerations

- Transit Friend or Foe?
- First Mile, Last Mile Applications
- Supporting Infrastructure (Complete Streets 2.0)
- Integrated Mobility and Payment App Integration

ACES Transit Considerations

- Public Agencies Managing Rapid Change
- Institutional Roles and Responsibilities
- Infrastructure Needs
- Managing the Curb Space
- Long Range Planning
- Data Management
- Disabled and Transportation Disadvantaged Impacts

Michael Baker
INTERNATIONAL
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Questions?

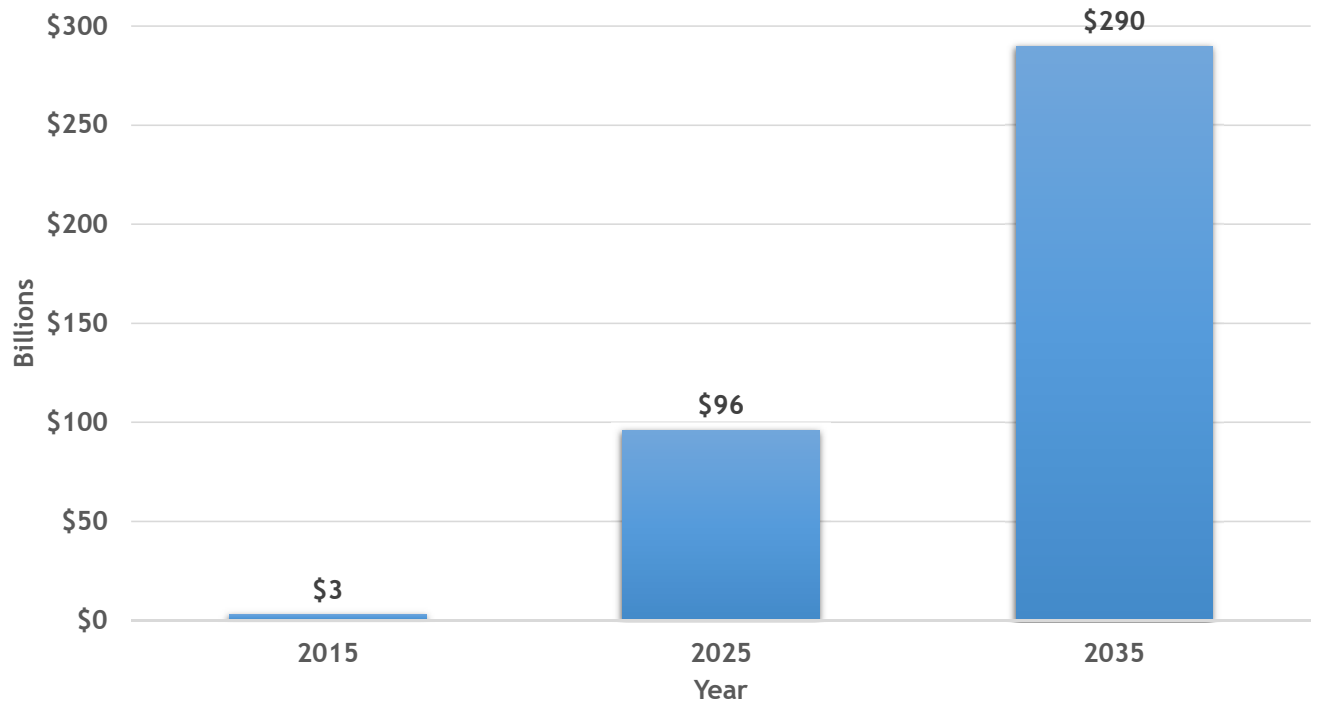
Thank You!

Preparing for Connected and Automated Vehicles

MetroPlan Orlando

TECHNOLOGY THAT MOVES PEOPLE

Goldman Sachs Market Projection



Source: Cities vie to become hubs of self-driving technology, USA Today, June 25, 2017

Benefits CAV

Improve Safety

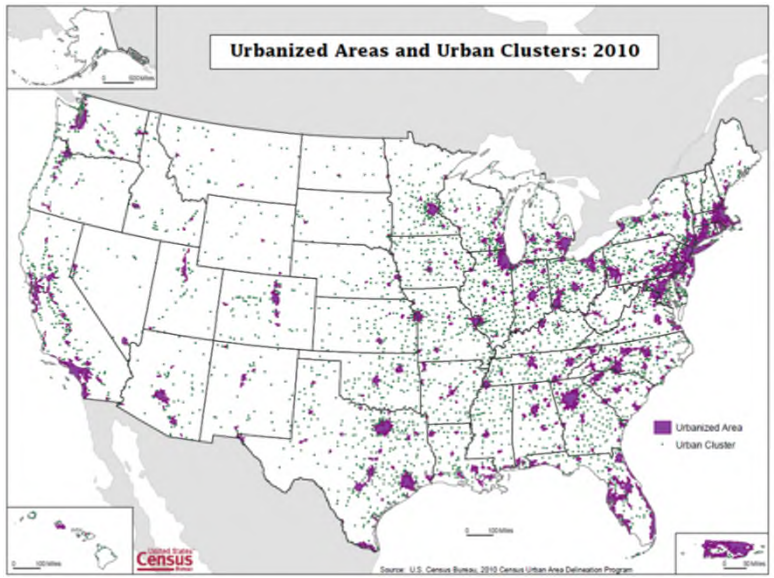
Reduce Congestion

Enhance Mobility

Minimize Environmental Impacts

Association of Metropolitan Planning Organization (AMPO)

- 80.7% of the U.S. population is urban
- ~90% of the U.S. GDP
- “Keepers of the Vision”
- Build relationships
- Guide implementation of emerging technology



Connected and Automated Vehicle (CAV) Working Group

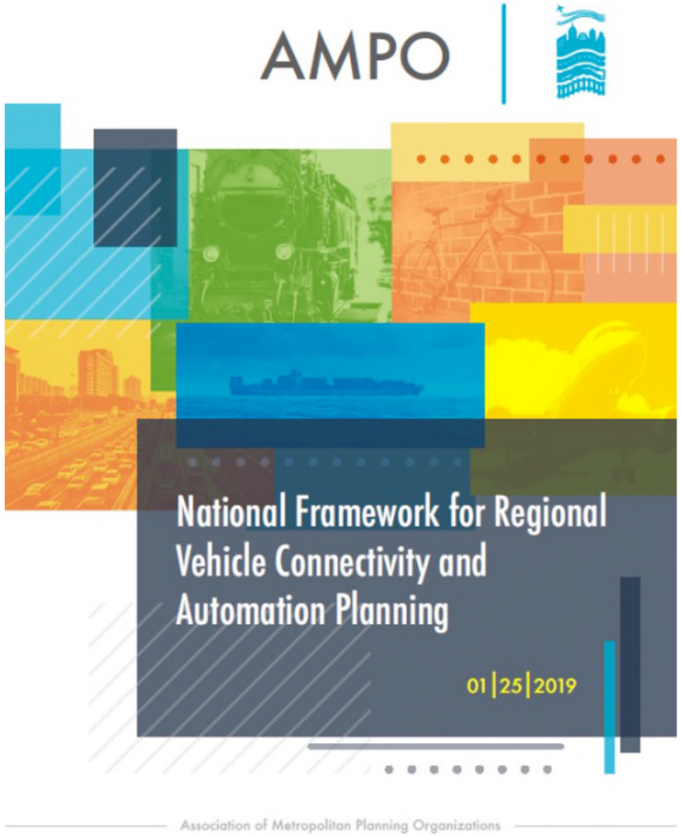
- Build technical, institutional, and policy capacity
- Leverage the benefits of deployment
- Address knowledge gaps
- Support the U.S. DOT's efforts

CAV Impact Areas

- Safety and security
- Operations
- Mobility and mode choice
- Freight
- Transportation demand
- Infrastructure design and capacity
- Funding and financing
- New transportation service markets
- Equity
- Data collection and analysis
- Housing affordability
- Public acceptance
- Land use
- Air quality conformity
- Policy Engagement and Coordination
- Employment
- Performance

National Framework for Regional CAV Planning

- Engagement, Coordination, and Collaboration
- Policies and Investment Decisions
- Other Planning Products and Processes
- Institutional Readiness



MetroPlan Orlando CAV Readiness Study

1. CAV Industry Review
2. Evaluation of Local Existing Capabilities
3. Public Involvement
4. Recommendations for CAV Preparedness

Themes:

Jurisdictional

Agency

User

Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)

- $11.9 Million Award
- Central Florida's Connecting the East Orlando Communities (CEOC)

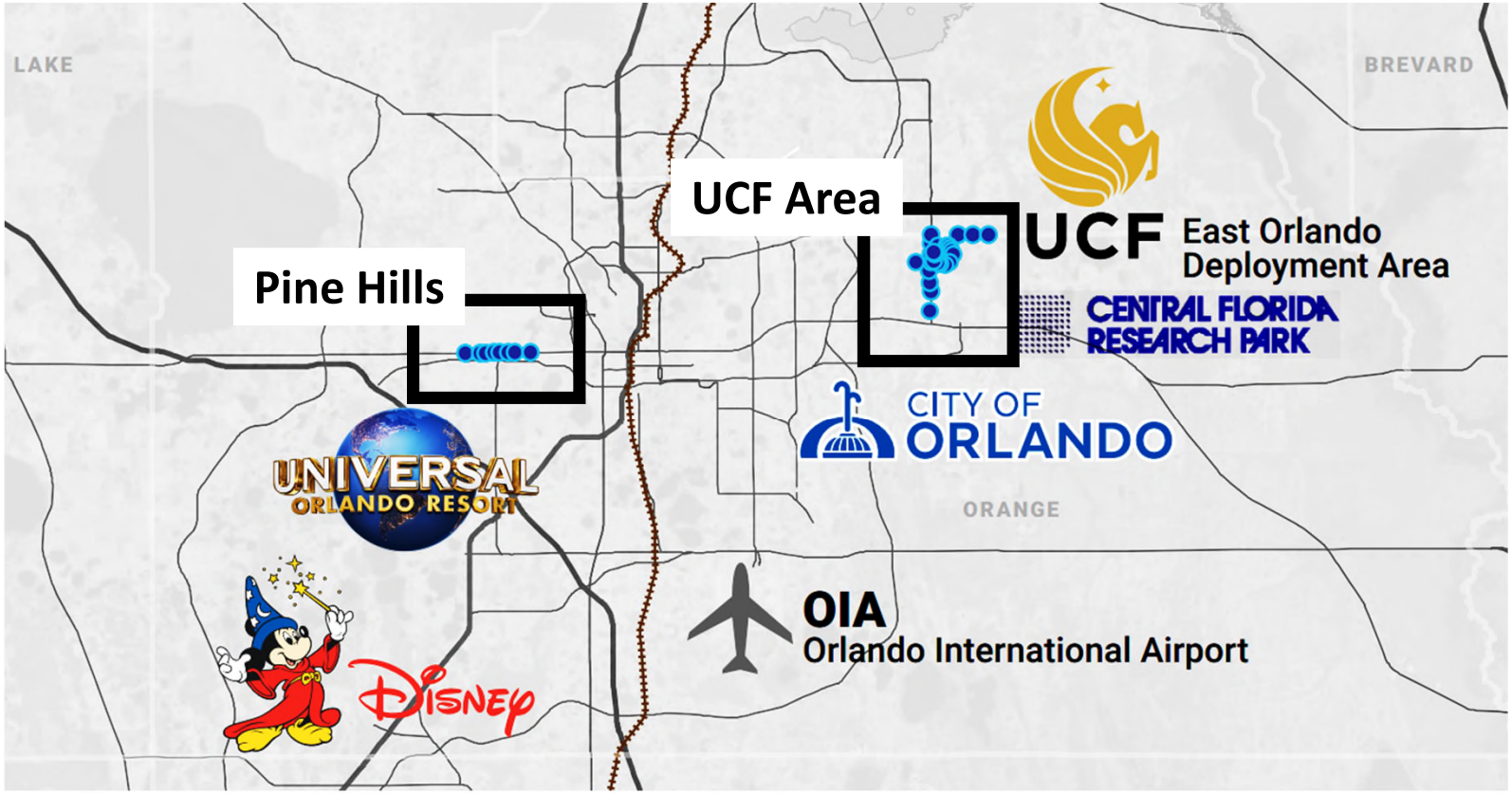
FDOT

metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

UCF

CEOC Programs

CEOC Area


LAKE
BREVARD
UCF Area
Pine Hills
UCF
East Orlando
Deployment Area
CENTRAL FLORIDA
RESEARCH PARK
CITY OF
ORLANDO
UNIVERSAL
ORLANDO RESORT
ORANGE
OIA
Orlando International Airport
Disney
FDOT

Others Considerations

- Rural areas and tribal reservations
- Pew Research Center's 2017 data, 23% of U.S. adults in urban areas lack smart phones; 28% do not have smartphone ownership or can't afford service plans in rural areas.
- Lack of smartphone ownership is concentrated in minority, seniors, low income and disabled groups
- According to the Federal Deposit Insurance Corporation (FDIC), 7% of U.S. households are unbanked; 20% are underbanked as of 2015.
- Underserved populations; not counted in planning data; and perpetuates historical and institutional disenfranchisement

Thank You

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250 South Orange Ave., Suite 200, Orlando, FL 32801

FTA – SIS ACES Meeting

June 25, 2019

FDOT

FLORIDA'S TURNPIKE

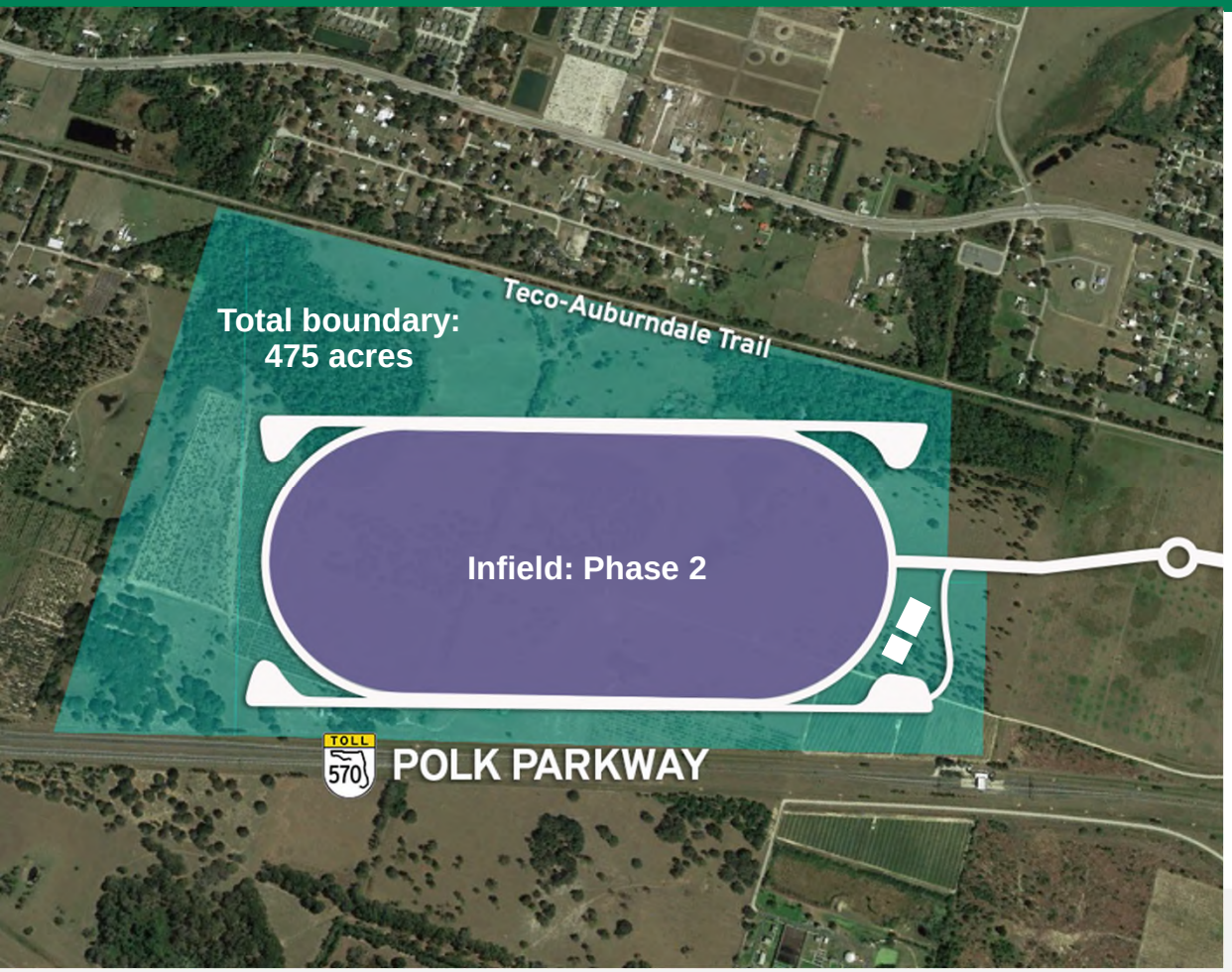
Our Mission

To accelerate the future of transportation

Our Vision

A continuously-evolving center for the development of innovative technologies that improve transportation safety, efficiency, and accessibility

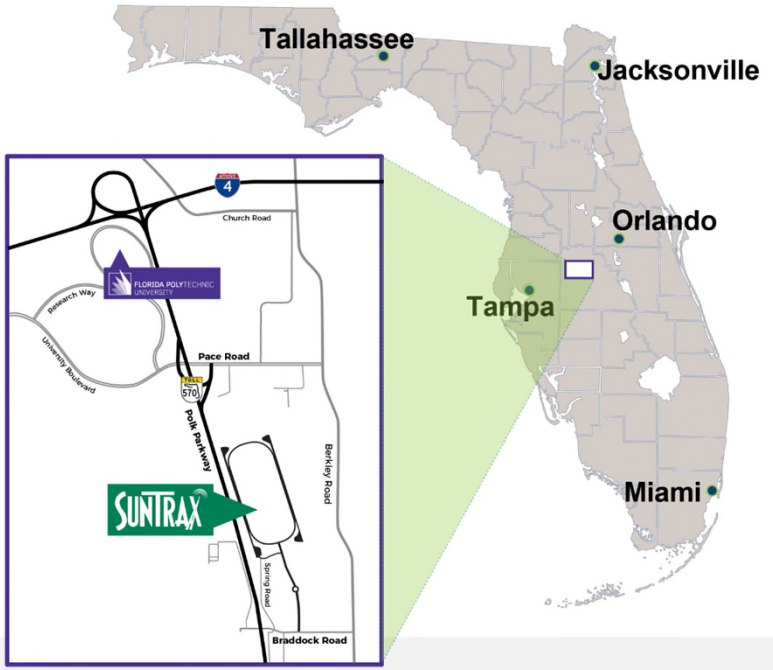
Tolls Testing Facilities



Project Location

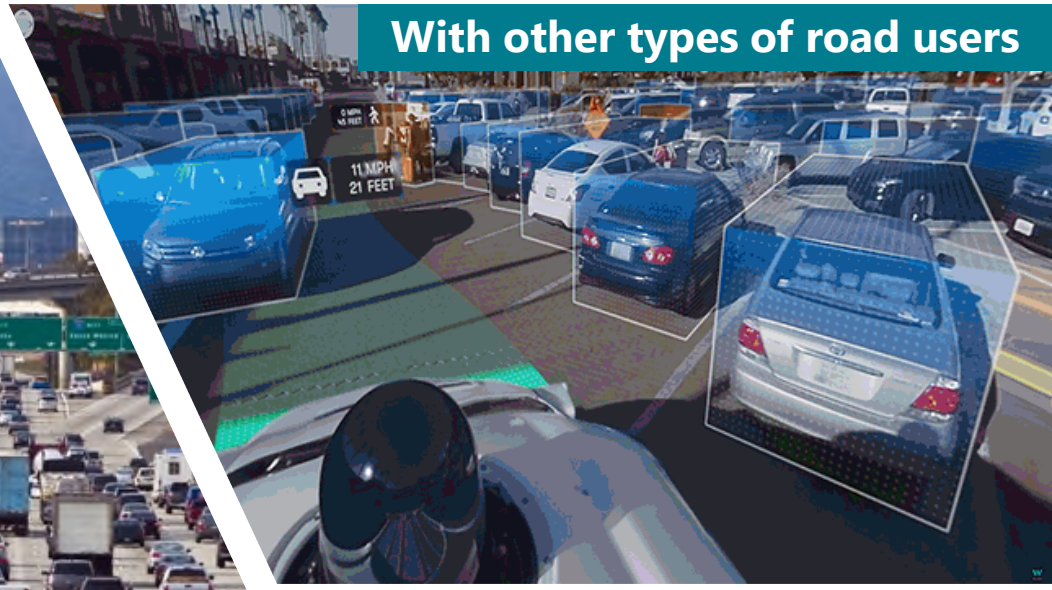
45 miles to Tampa

46 miles to Orlando

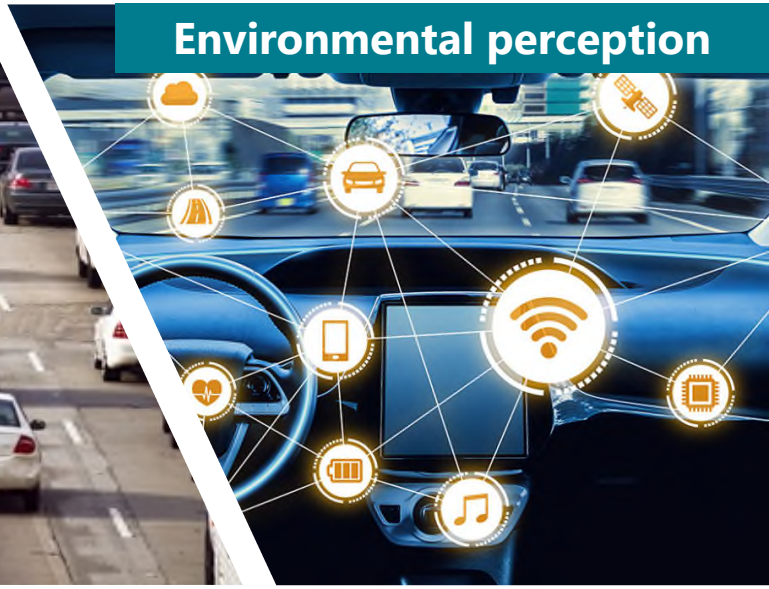


Next Generation Testing

With multiple vehicles

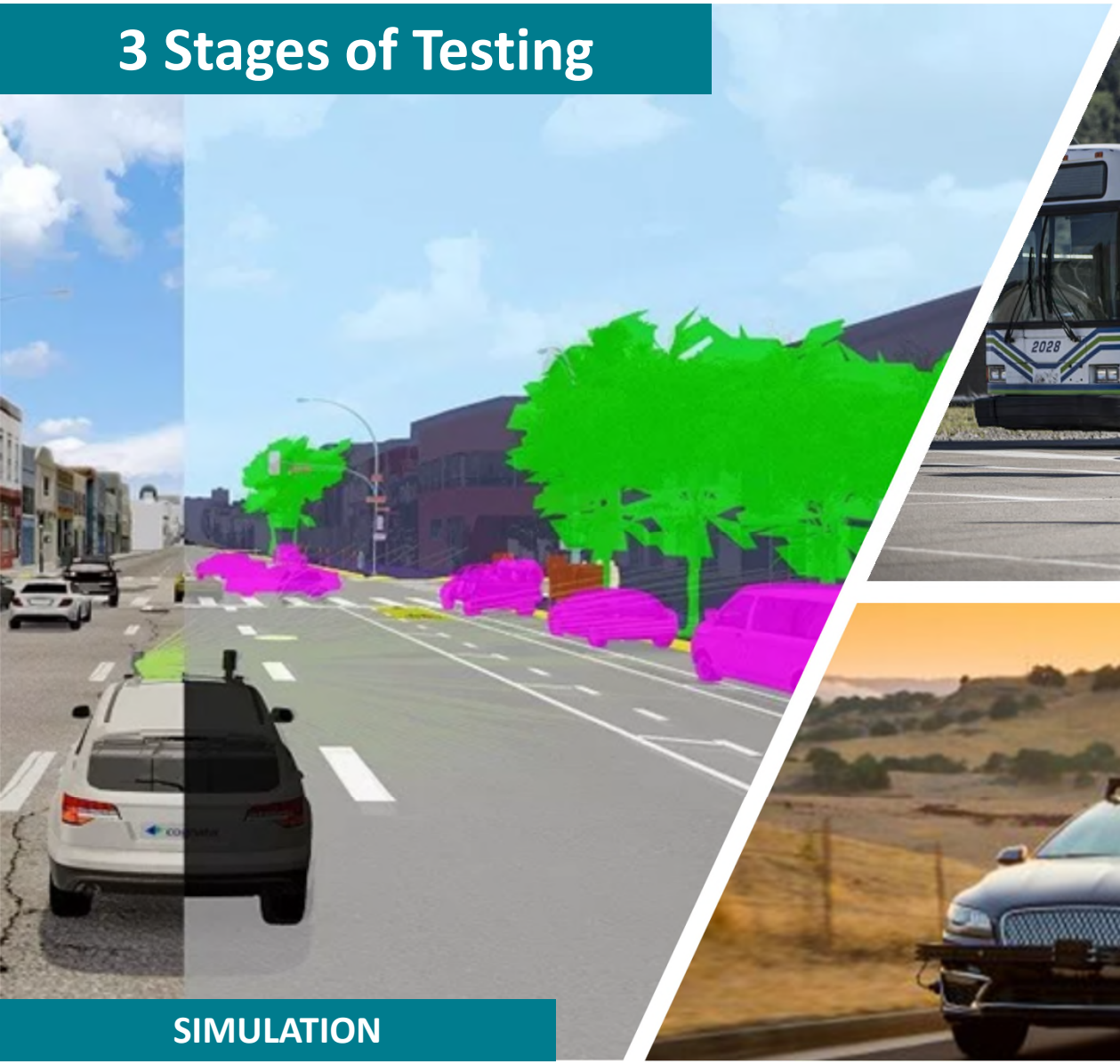


With other types of road users



Environmental perception

3 Stages of Testing



SIMULATION

CONTROLLED TRACK TESTING

ON-ROAD TESTING


SUNTRAX
Phase 1

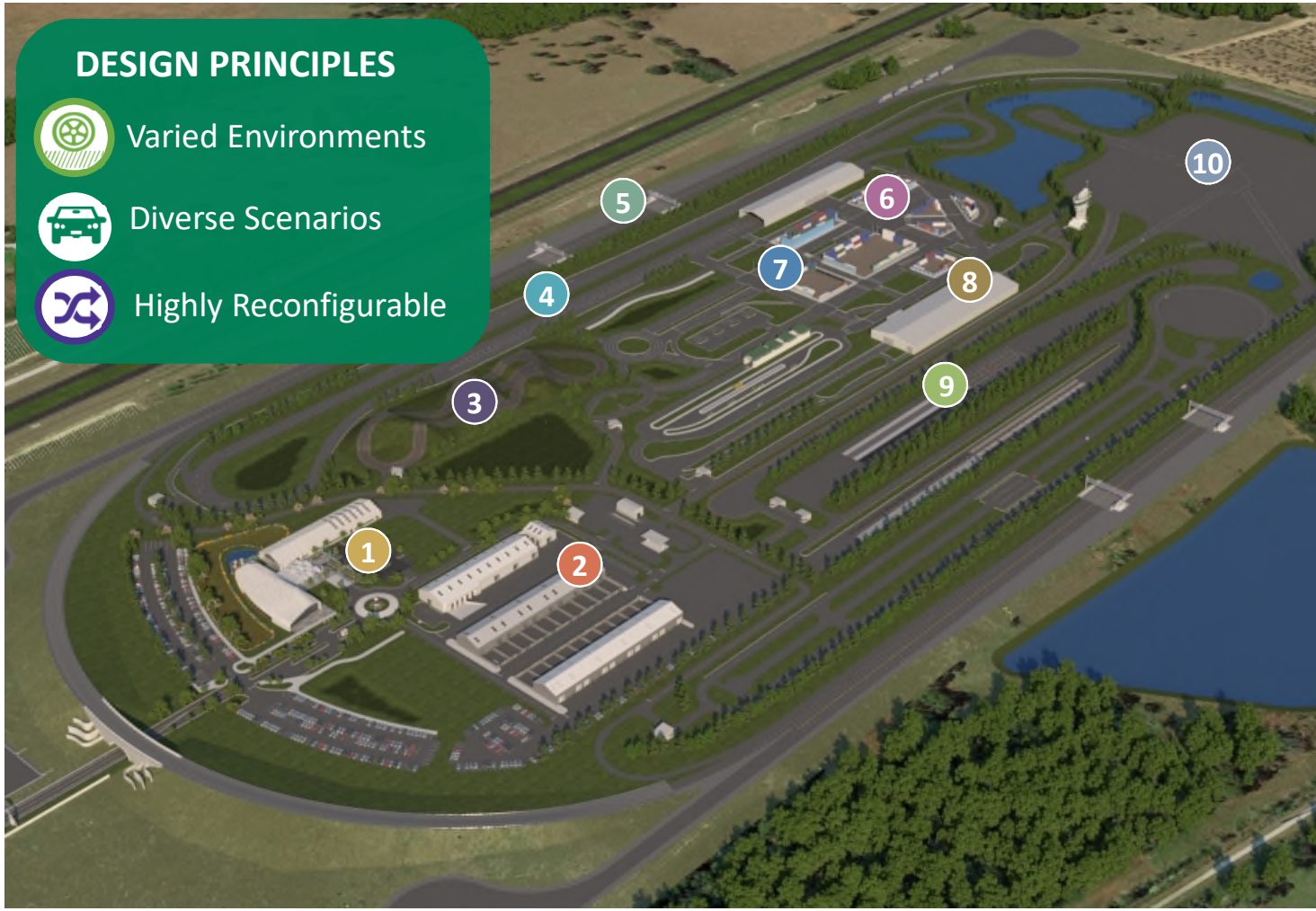
Construction Progress


Phase 2

Infield

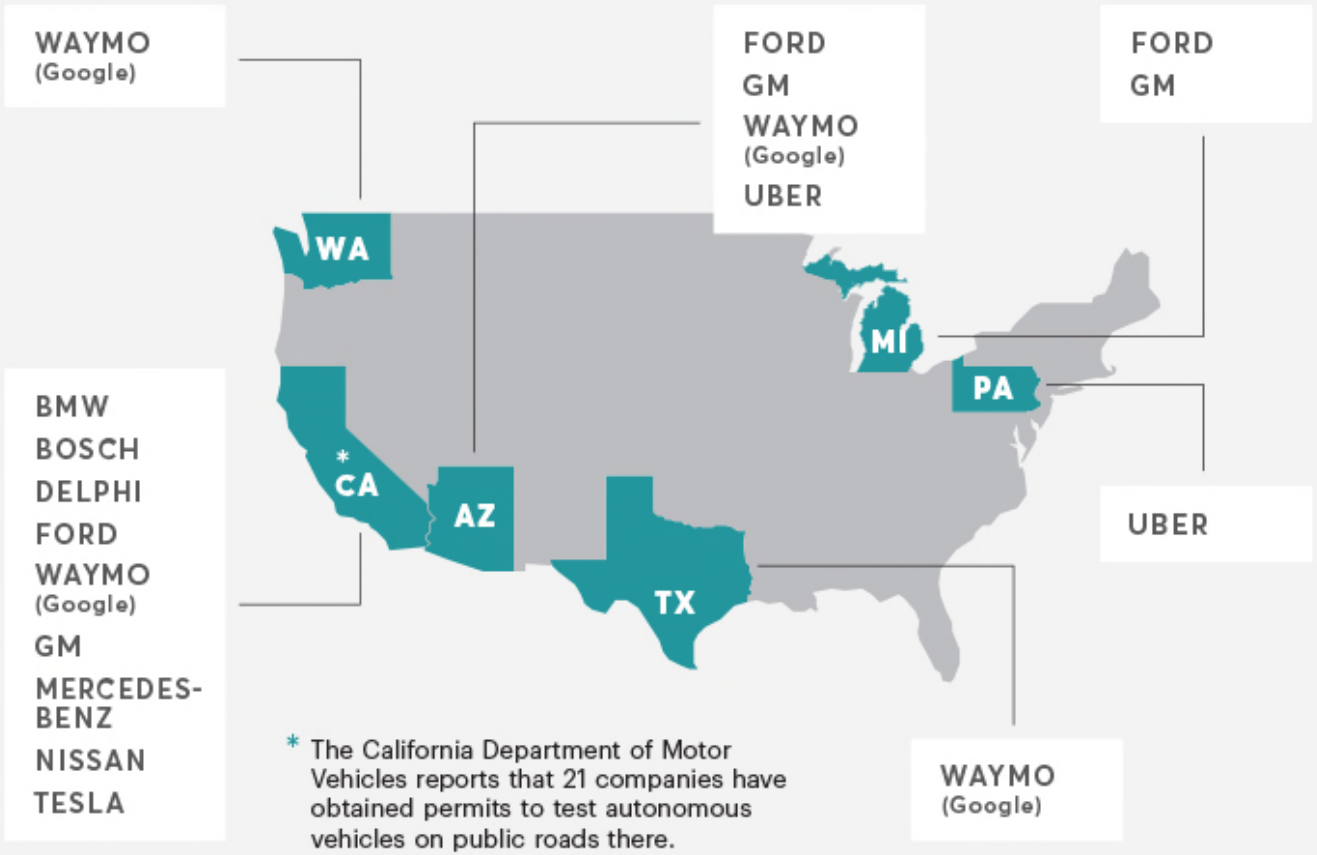
TEST FEATURES

1. Main Entry Campus
2. Workshops & Warehouses
3. Roadway Geometry Track
4. Loop Tracks
5. High-Speed Oval
6. Urban / Suburban
7. Pick-Up/Drop-Off
8. Sensor Test Chamber
9. Braking & Handling
10. Technology Pad



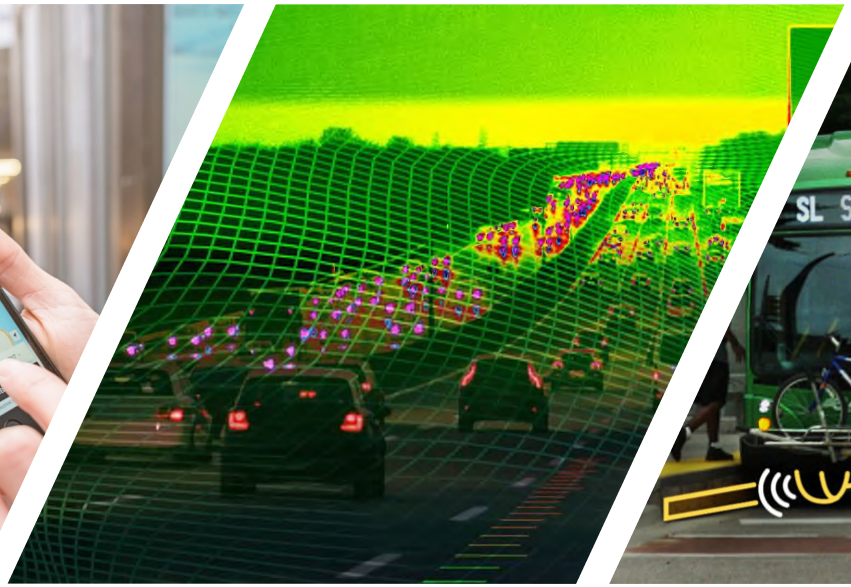
Organizational Structure

- Third Party Operator to Perform:
  - Operation
  - Maintenance
  - Marketing
- Suite of Services Available to Users:
  - Lease Individual or Combined Test Sectors
  - Development of Test Scenarios
  - Full Service Testing Performance



* The California Department of Motor Vehicles reports that 21 companies have obtained permits to test autonomous vehicles on public roads there.


FDOT
DISTRICT 5
CITRUS
LAKE
SEMINOLE
VOLUSIA
HERNANDO
SUMTER
ORANGE
PASCO
OSCEOLA
POLK
BREVARD
INDIAN RIVER
Tampa
UCF
LYNX
FLORIDA A&M UNIVERSITY - FLORIDA STATE UNIVERSITY
COLLEGE OF ENGINEERING
CITY OF ORLANDO
FLORIDA'S TURNPIKE
GREATER ORLANDO AVIATION AUTHORITY
NASA/ KENNEDY SPACE CENTER
PORT CANAVERAL
FLORIDA POLYTECHNIC UNIVERSITY
SUNTRAX
FDOT
DISTRICT 1
TOLL 528
TOLL 91
N
W
E
S




SL SILVER LINE


DriveNow


RIDE SHARING 37
RIDE SHARING 37
FAB LAB
Pizza Delivery

Project Timeline

2016

December Sign MOU with Florida Polytechnic University

December CFAVP designated as USDOT AV proving ground

2017

June Begin high-speed oval construction

November Begin final infield design

2019

April High-speed oval open for testing

May Complete final infield design

July Begin infield construction

Summer Publish ITN for a facility operator

Fall Facility operator acquired

2021

Spring Infield open for testing

Thank You

SHARING OUR IDEAS – POLL EVERYWHERE

- **Works best from website – no registration required**
- **Use www.pollev.com/FTP2045 to access the polling questions**
- **Respond to each question using your mobile device or laptop**

- **CONNECT TO THE WI-FI**
  - » Network name: DOTGUEST
  - » Password:

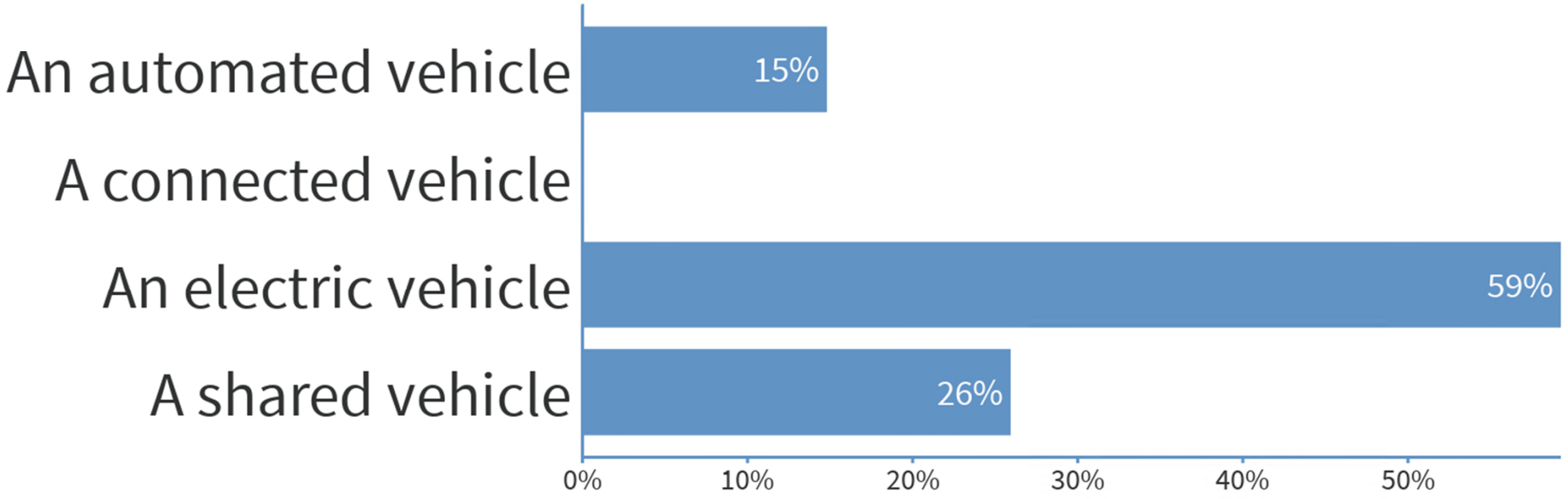
uHmkK9EX7sb<58R

(case sensitive)

When poll is active, respond at **PollEv.com/ftp2045**

Text **FTP2045** to **22333** once to join

The first automobile-related fatality in the United States involved an ACES vehicle. Which was it?



When poll is active, respond at **PollEv.com/ftp2045**

Text **FTP2045** to **22333** once to join

ACES is _____

"the future."
"Connectivity"
"Proactive"
"Tacos"
"An opportunity to integrate travel options and modes"
"Tacos"
"Think tank"
"Expensive"
"Developing"
"The future of transportation"
"Technology squared"
"Crazy"
"Tacos"
"Economic opportunities"
"An opportunity to improve the future!"
"our future"
"The future"
"The future"
"Tacos"
"Innovative"
"The long term future"
"Automated connected electric shared"
"Emerging"
"Fun"
"Cash flow"
"NOW"
"Coming"
"Tacos"
"Cool!"
"Future of mobility"
"Something for everyone."
"Innovation"
"Tacos"
"Automated connected electric and shared"
"Tacos"
"The future"
"Tacos"
"THE FUTURE"
"Not a panacea"
"Tacos"
"The Future"
"Tacos"
"Tacos"
"AV, CV,EV, and shareed"
"The future is now"
"Tacos"
"Good PR"
"Tacos"
"Dynamic"
"Dynamic"
"Tacos"
"Automated connected electric sharing"

Break

Preparing SIS for AV/CV SWOT Workshop

FTP-SIS ACES Subcommittee

June 25, 2019

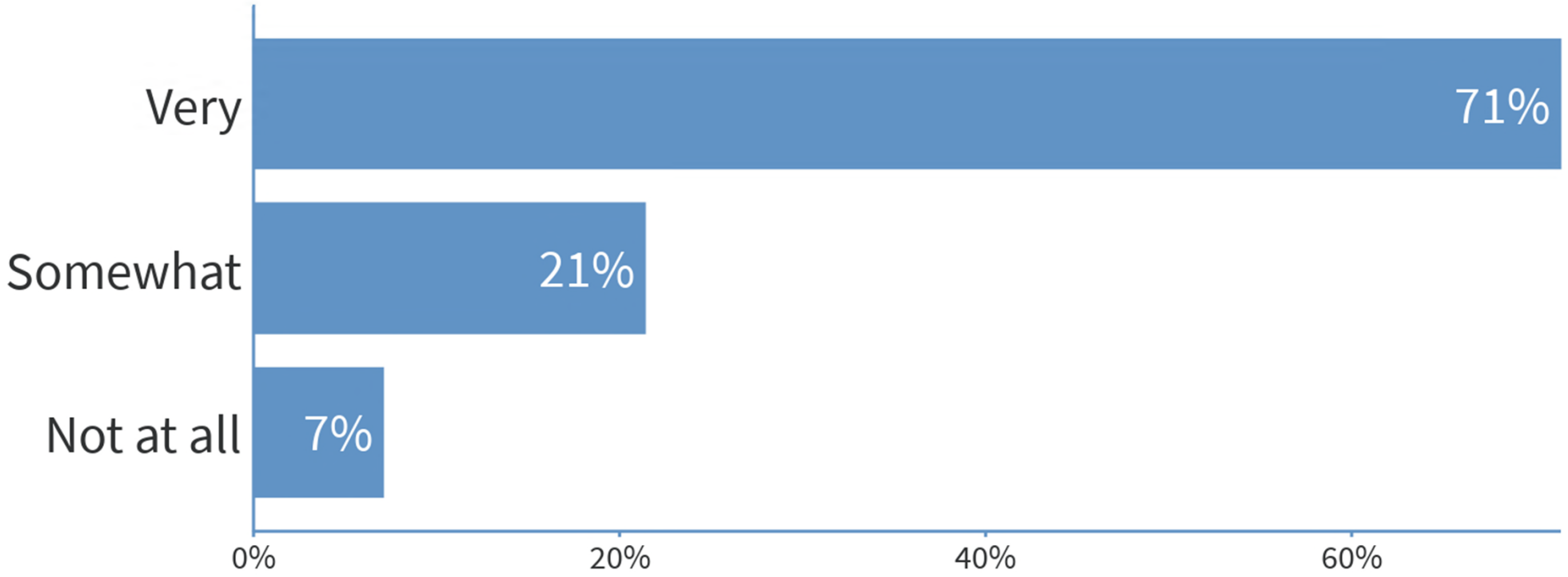
Agenda

- Introductions
- Project Information
- SIS Background
- Emerging and Significant Trends
- SWOT Analysis

Introductions

Poll locked. Responses not accepted.

Test Question: By 2030, how willing are you to ride in a fully autonomous vehicle?



Preparing SIS for AV/CV and Other Emerging Technologies

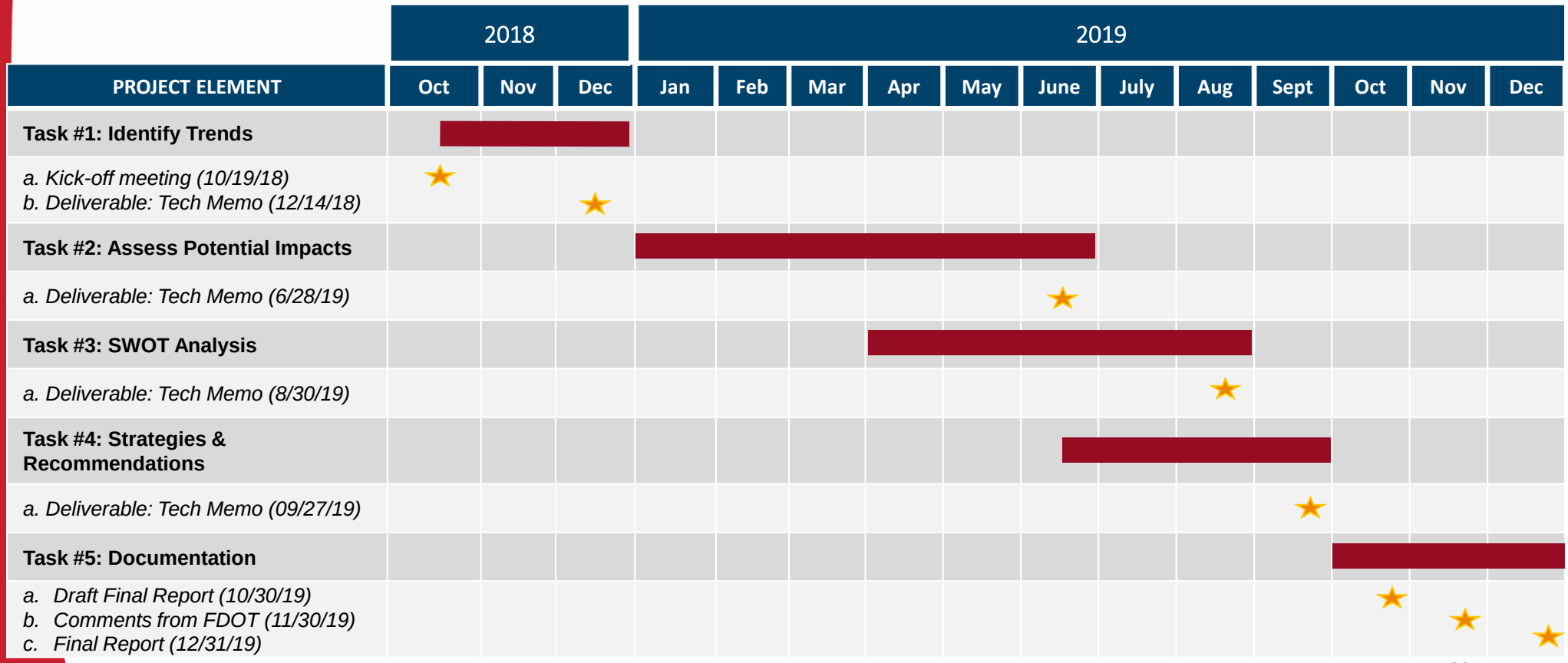
Statutory Mandate

Systems Implementation Office (2018)

- Preparing SIS for AV/CV and other Emerging Technologies
  - Mandated by Florida Statute (F.S. 339.64), passed during 2017 Legislative session.

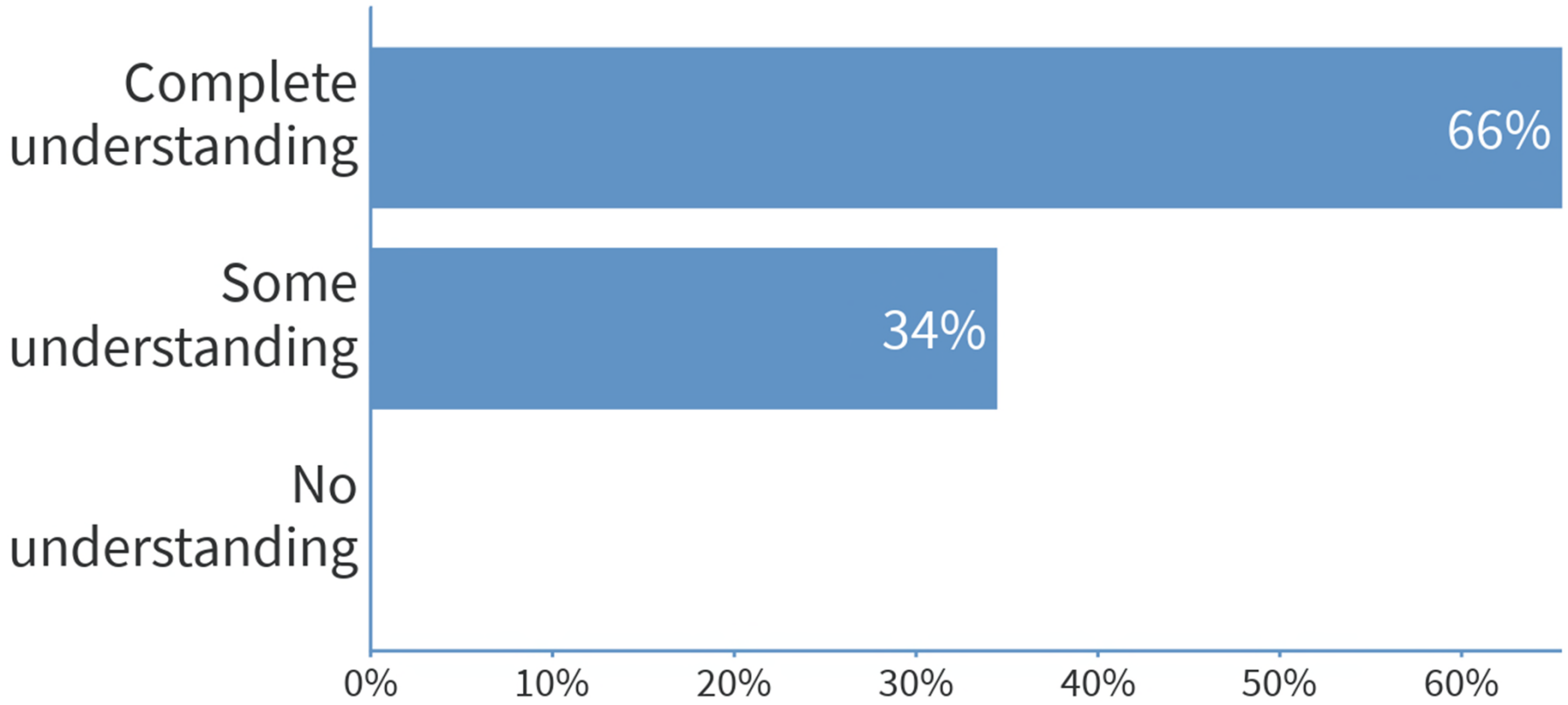
*"The [SIS] Plan shall include…consideration of infrastructure and technological improvements necessary to accommodate advances in vehicle technology, such as **autonomous technology** and other developments."*

Project Schedule



Poll locked. Responses not accepted.

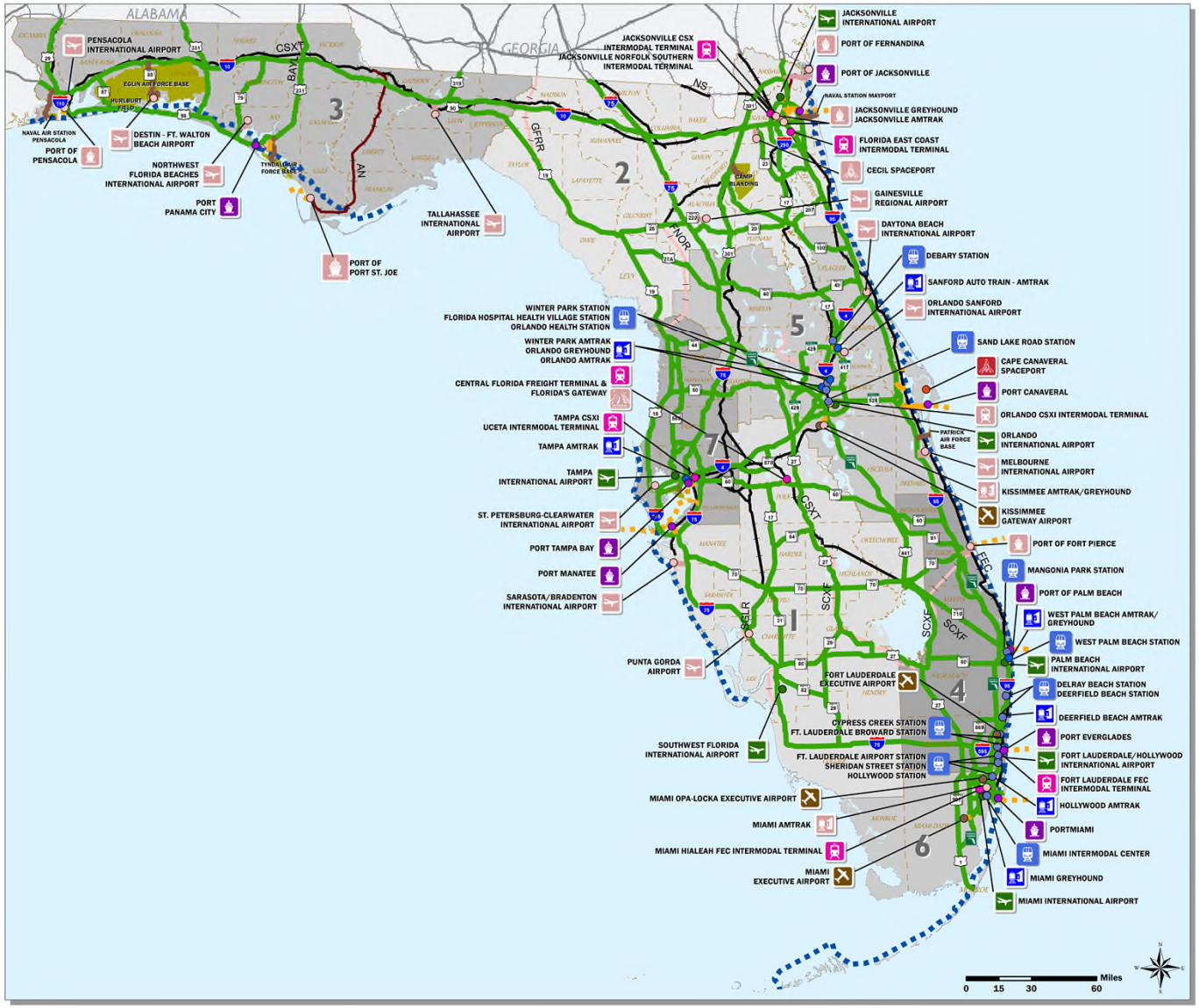
How familiar are you with the Strategic Intermodal System (SIS)?



SIS Background

SIS Background

- Legislatively established in 2003
- Intermodal transportation network
- Facilities of statewide importance
- Mobility needs of people and freight



SIS atlas

Airports
- SIS Airport
- Strategic Growth Airport
- SIS General Aviation Reliever Airport

Spaceports
- SIS Spaceport
- Strategic Growth Spaceport

Intermodal Logistic Center
- Strategic Growth Intermodal Logistic Center

Seaports
- SIS Seaport
- Strategic Growth Seaport

Freight Rail Terminals
- SIS Freight Rail Terminal
- Strategic Growth Freight Rail Terminal

Passenger Terminals
- SIS Passenger Terminal
- Strategic Growth Passenger Terminal

Urban Fixed Guideway Hubs
- SIS Urban Fixed Guideway Hubs

Highway
- SIS Highway Corridor
- SIS Highway Connector
- Strategic Growth Highway Connector
- Military Access Facility

Rail
- SIS Railway Corridor
- Strategic Growth Railway Corridor
- SIS Railway Connector
- Strategic Growth Railway Connector

Waterways
- SIS Waterway
- SIS Waterway Connector

Florida Department of Transportation
Strategic Intermodal System
May 2018
http://www.dot.state.fl.us 850-414-4900

SIS Funding Eligibility

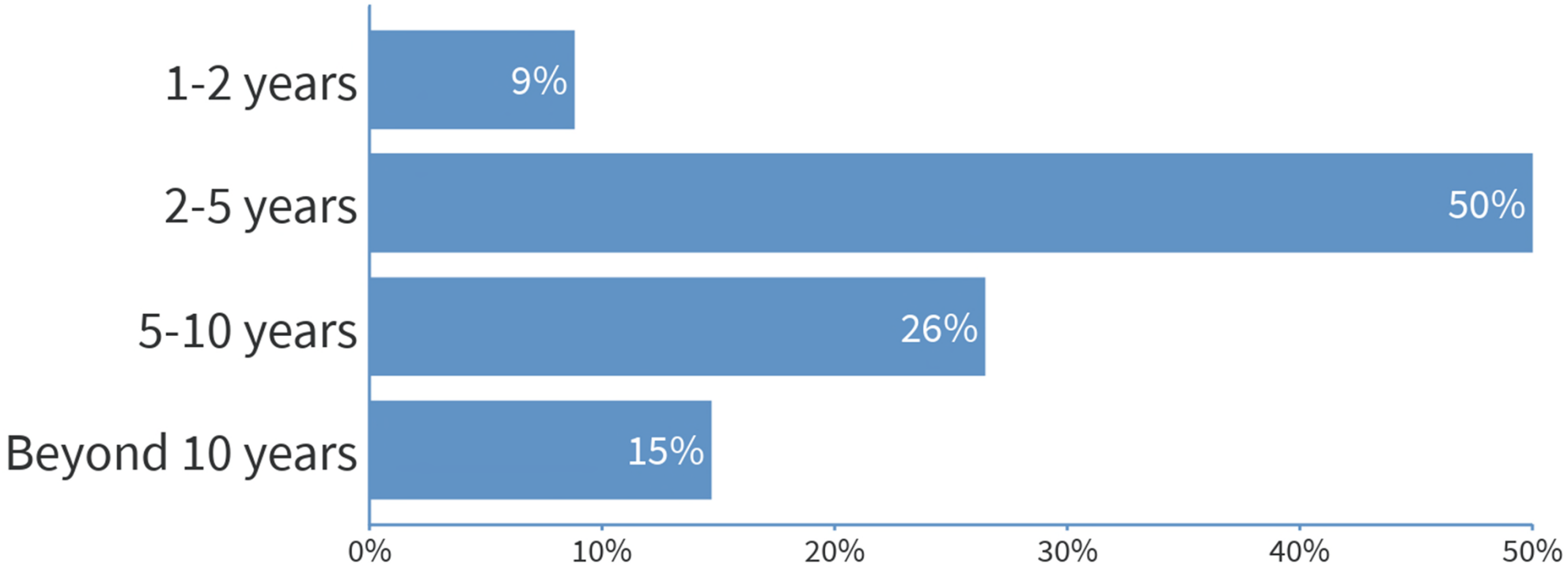
- Long-Range Cost Feasible Plan
- Approved 2nd Five Year Plan
- Adopted SIS Work Program (1st Five)

Statewide Project Prioritization

- MPO/District Priorities
- Systems Implementation Office
  - Qualitative Analysis
  - Quantitative Analysis
- Work Program
- Senior Management and Executive Guidance

Poll locked. Responses not accepted.

How soon do you think ACES technologies will start to impact SIS facilities significantly?



Emerging & Significant Trends

Literature Review

Federal & State Governments

- Florida Department of Transportation (FDOT)
- U.S. Department of Transportation (USDOT)
- Federal Communications Commission (FCC)
- Governors Highway Safety Association (GHSA)
- Intelligent Transportation Systems Joint Program Office
- DOT NHTSA
- California DMV
- Iowa DOT
- Caltrans

Private Industry

- AutonomouStuff
- Delphi
- Strategy Analytics
- Toyota
- Insurance Institute for Highway Safety (IIHS)
- Society of Automotive Engineers (SAE)
- Victoria Transport Policy Institute (VTPI)
- KEA Technologies, Inc.

Academia & Organizations

- National League of Cities (NLC)
- National Cooperative Highway Research Program (NHCRP)
- Transportation Research Board (TRB)
- American Center for Mobility
- Airport Cooperative Research Program (ACRP)
- Deloitte Insights
- Virginia Tech Transportation Institute
- University of Central Florida Computer Vision Lap
- Texas A&M Transportation Institute

Emerging Trends

Changing Demographics	Improved Technology	Shifting User Preferences	Improved Travel Options
• Millennial travel behavior • Aging population • Generation Z	• Automated vehicles • Connected vehicles • Electric vehicles • Rise of robots • Improved user information & navigation • Smart City	• Urbanization • Shift from individual ownership to fleet ownership • Telecommuting • E-commerce & delivery options	• Better walking and biking options • Improved public transit • Shared mobility

Significant Trends

Autonomous Vehicles

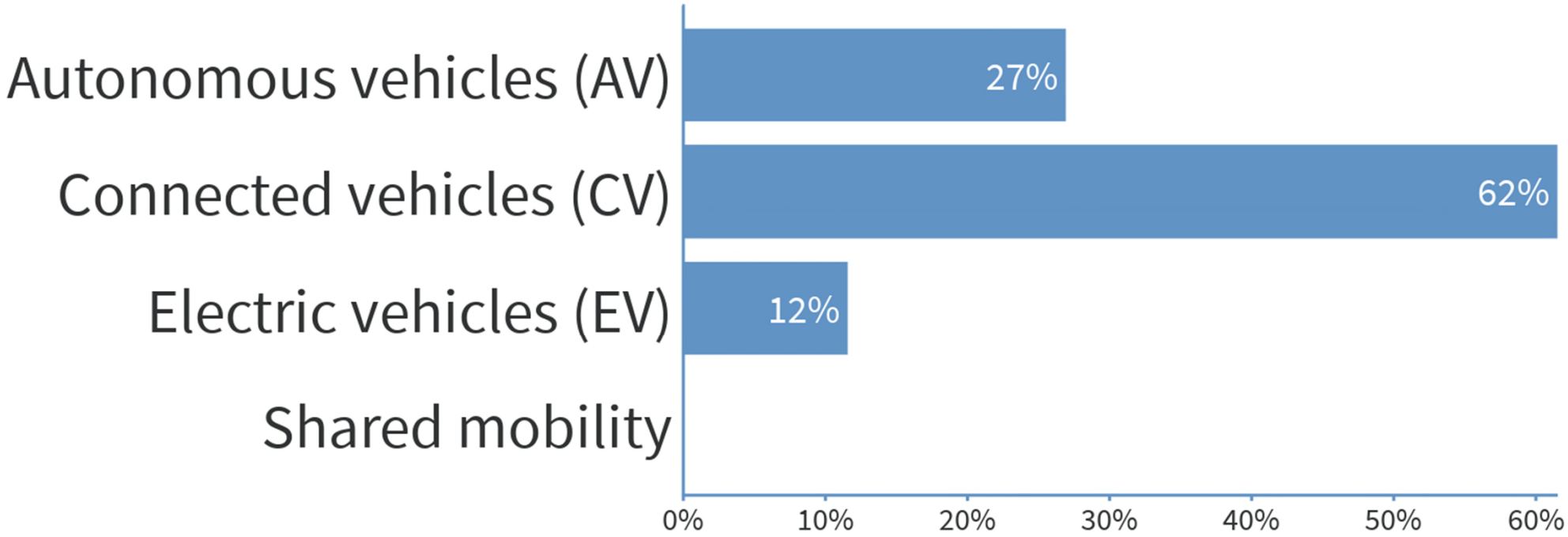
Connected Vehicles

Electric Vehicles

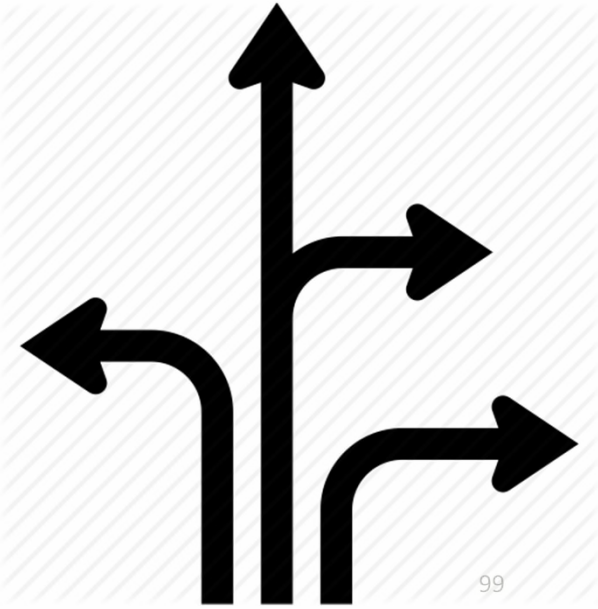
Shared Mobility

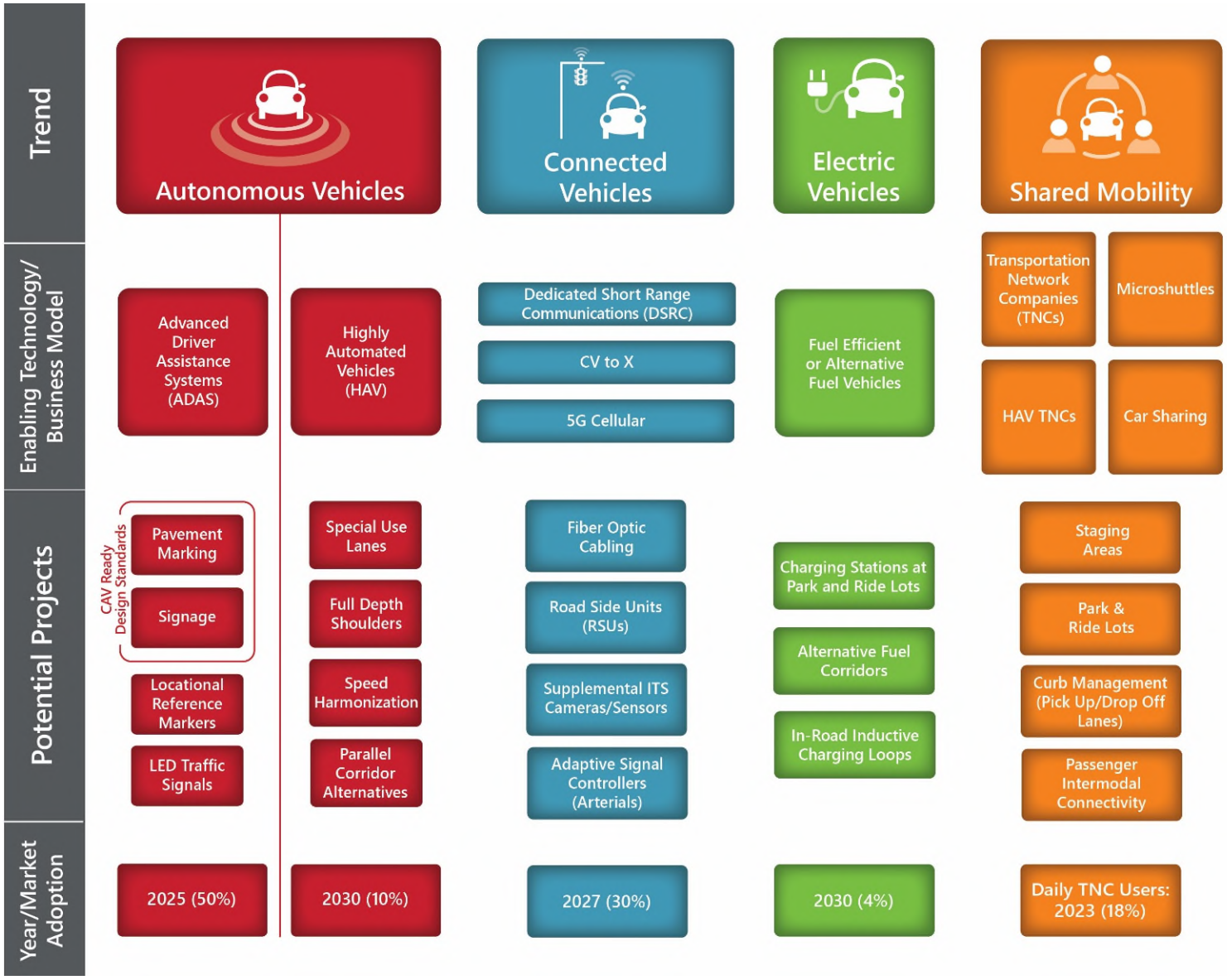
Poll locked. Responses not accepted.

Which ACES trend do you think will have the greatest impact on the SIS network?



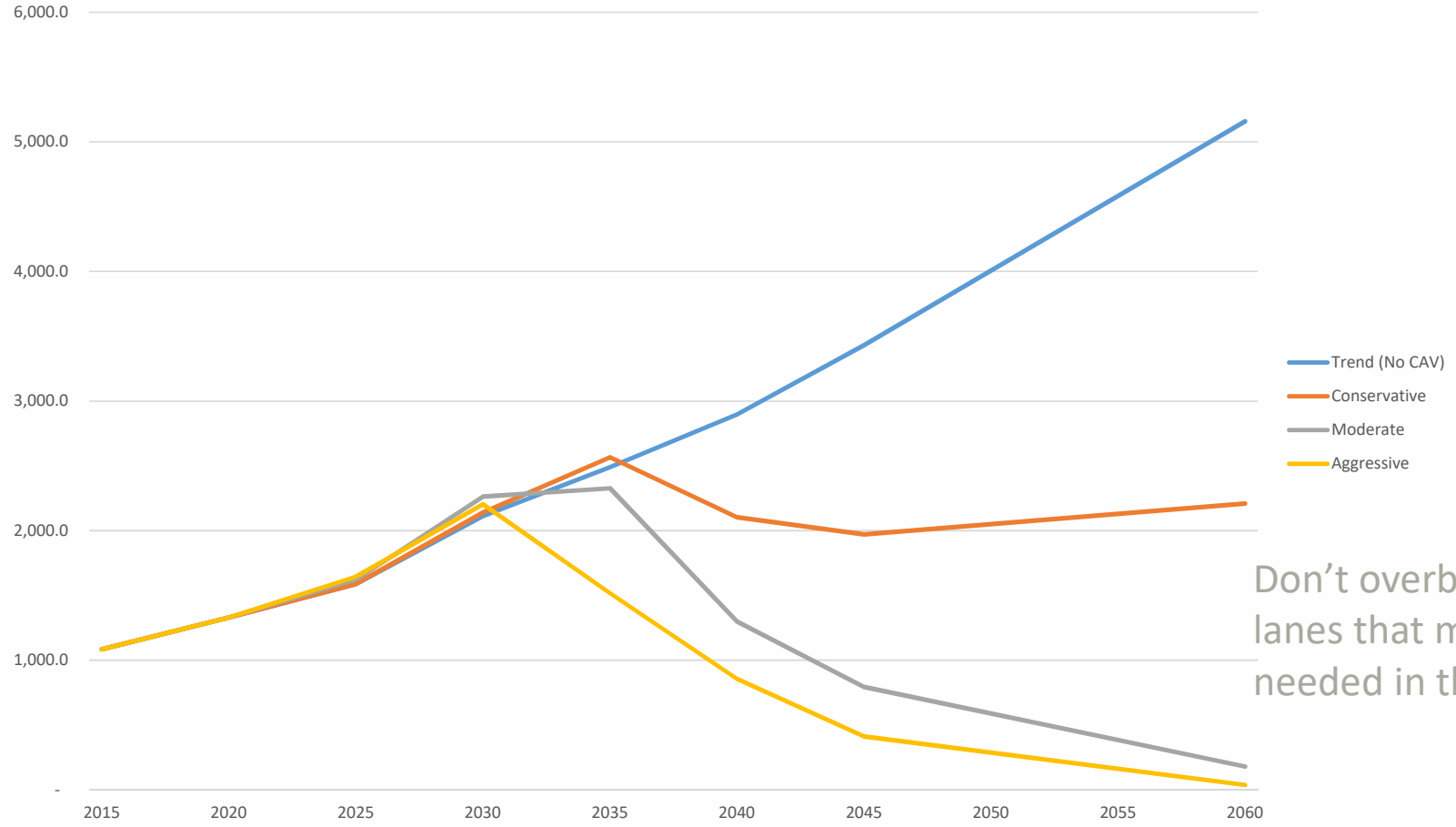
ACES Trends Impact on SIS




Trend
Enabling Technology/ Business Model
Potential Projects
Year/Market Adoption
Autonomous Vehicles
Connected Vehicles
Electric Vehicles
Shared Mobility
Advanced Driver Assistance Systems (ADAS)
Highly Automated Vehicles (HAV)
Dedicated Short Range Communications (DSRC)
CV to X
5G Cellular
Fuel Efficient or Alternative Fuel Vehicles
Transportation Network Companies (TNCs)
Microshuttles
HAV TNCs
Car Sharing
CAV Ready Design Standards
Pavement Marking
Signage
Locational Reference Markers
LED Traffic Signals
Special Use Lanes
Full Depth Shoulders
Speed Harmonization
Parallel Corridor Alternatives
Fiber Optic Cabling
Road Side Units (RSUs)
Supplemental ITS Cameras/Sensors
Adaptive Signal Controllers (Arterials)
Charging Stations at Park and Ride Lots
Alternative Fuel Corridors
In-Road Inductive Charging Loops
Staging Areas
Park & Ride Lots
Curb Management (Pick Up/Drop Off Lanes)
Passenger Intermodal Connectivity
2025 (50%)
2030 (10%)
2027 (30%)
2030 (4%)
Daily TNC Users: 2023 (18%)

Mobility Analysis – Lane Miles Needed

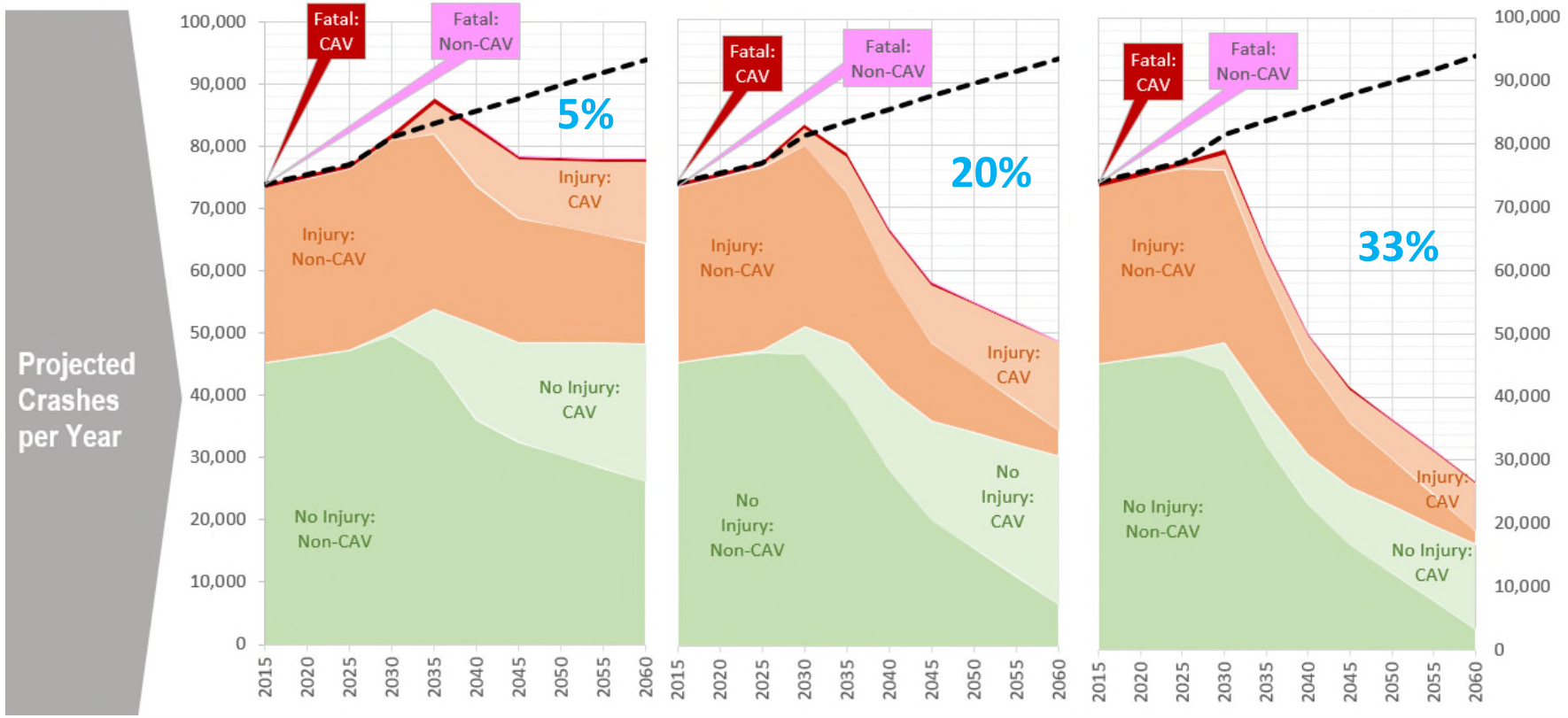
SIS Facilities Only



Don’t overbuild new lanes that may not be needed in the future

Safety Analysis – Crash Reductions

Scenario 1: Conservative **Scenario 2: Moderate** **Scenario 3: Aggressive** SIS Facilities Only

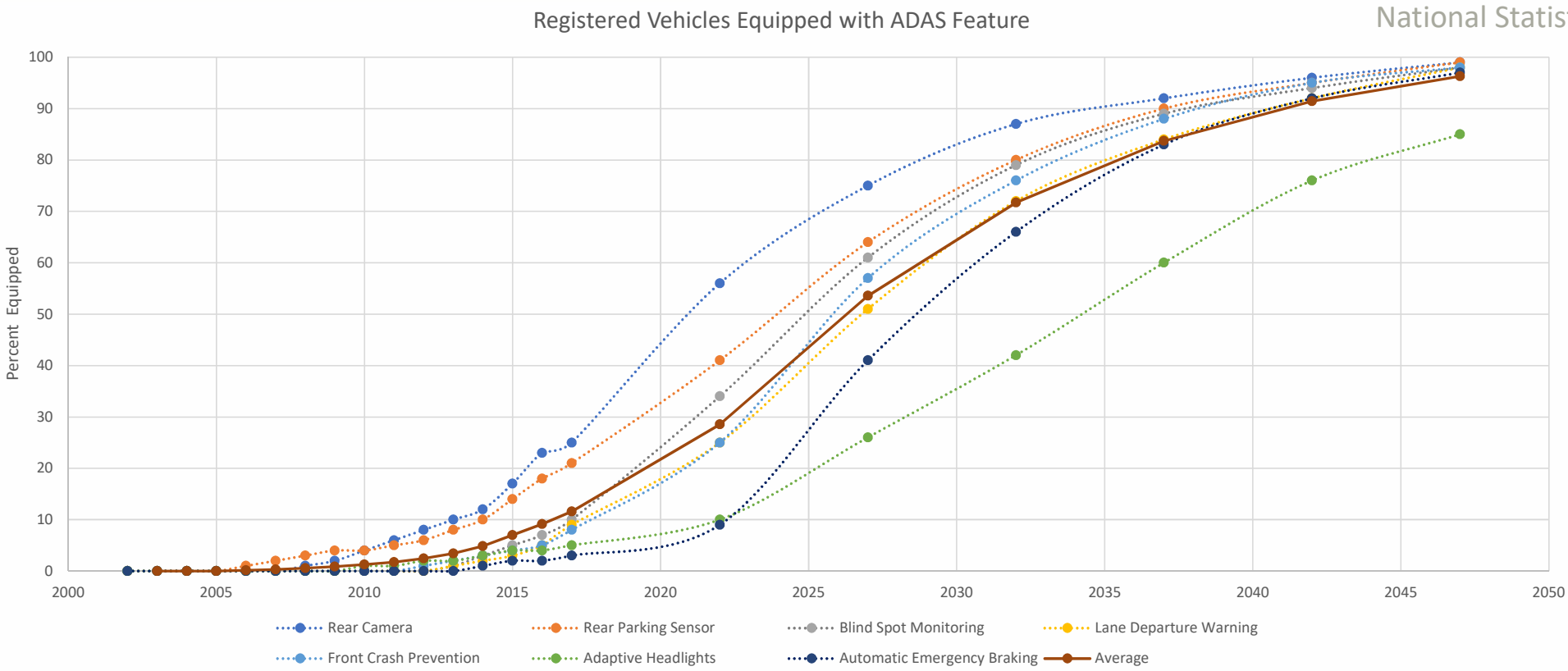


Autonomous Vehicle Technology

Trend A: Advanced Driver Assistance Systems (ADAS)

Trend	Enabling Technology/ Business Model	Potential Projects	Year/Market Adoption
Autonomous Vehicles	Advanced Driver Assistance Systems (ADAS)	CAV Ready Design Standards: Pavement Markings; Signage; Locational Reference Markers; LED Traffic Signals	2025 (50%)
Autonomous Vehicles	Highly Automated Vehicles (HAV)	Special Use Lanes; Speed Harmonization; Full Depth Shoulders; Parallel Corridor Alternatives	2030 (10%)

Market Adoption of ADAS – Observed & Projected



Data Source: HLDI Bulletin Vol. 34, No. 28: Sept. 2017

ADAS Implications

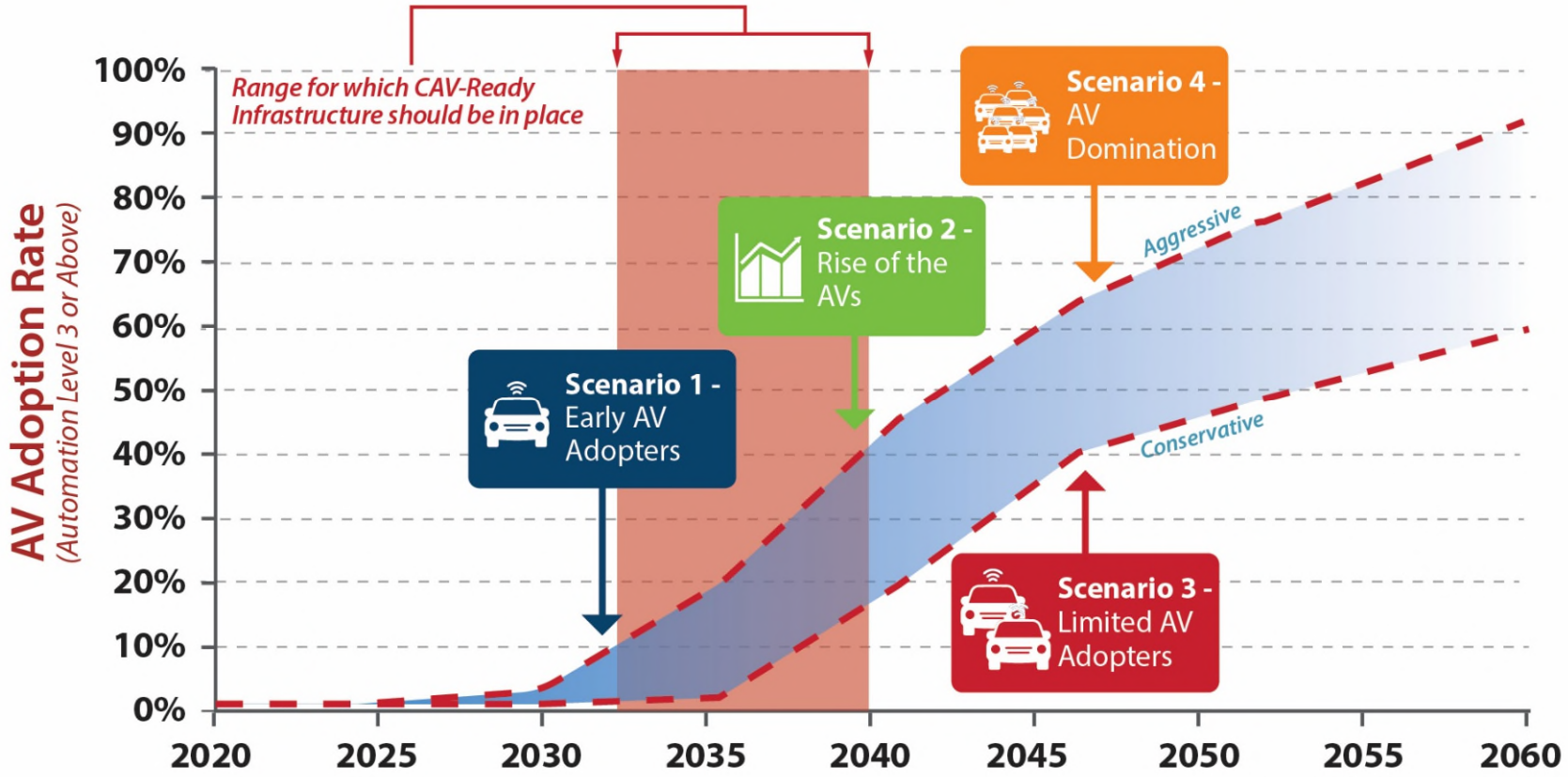
SIS Highway

- CAV-Ready design standards
  - Pavement markings
  - Signage
- Locational reference markers
- LED Traffic Signals

Trend A: Highly Automated Vehicles (HAVs)

Trend	Enabling Technology/ Business Model	Potential Projects	Year/Market Adoption
Autonomous Vehicles	Advanced Driver Assistance Systems (ADAS)	CAV Ready Design Standards: Pavement Markings; Signage; Locational Reference Markers; LED Traffic Signals	2025 (50%)
	Highly Automated Vehicles (HAV)	Special Use Lanes; Speed Harmonization; Full Depth Shoulders; Parallel Corridor Alternatives	2030 (10%)

Market Adoption of HAVs - Projected



HAV Implications

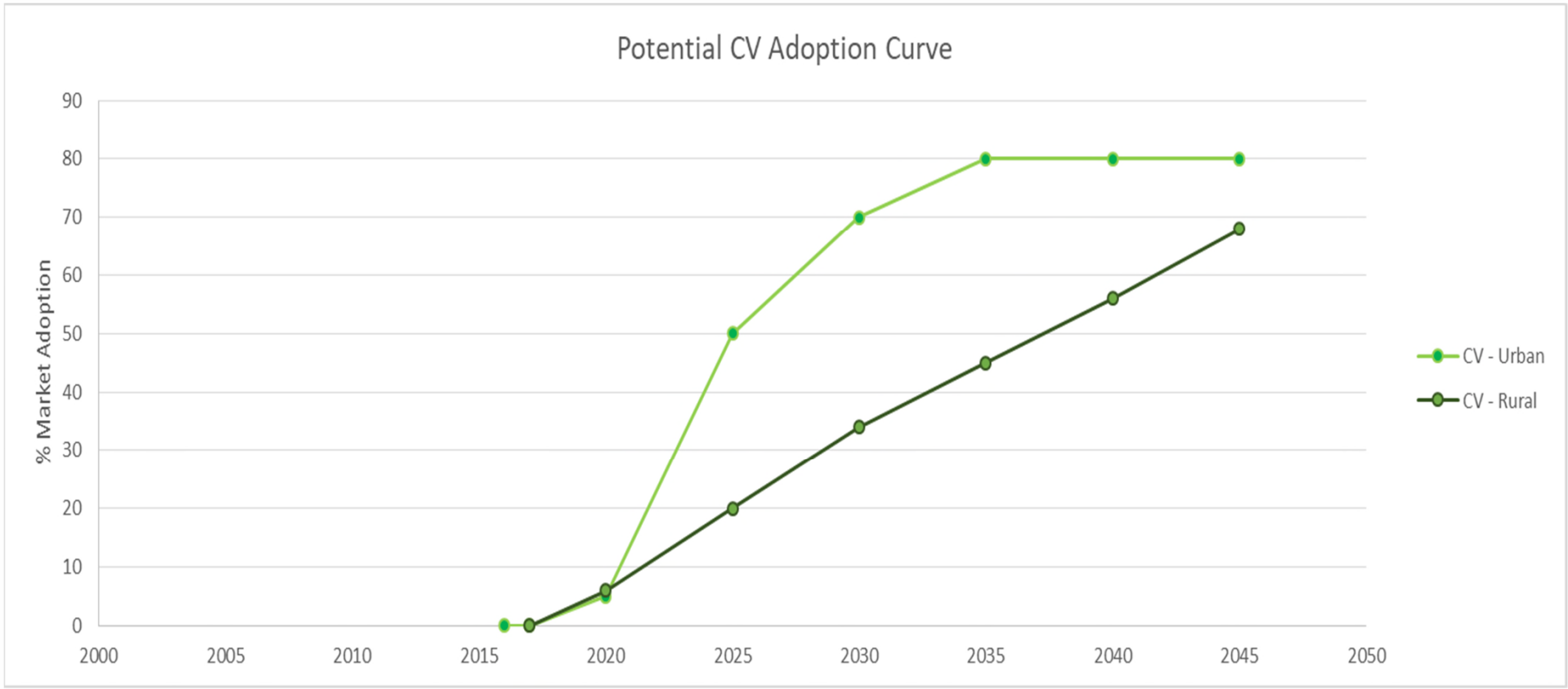
SIS Highway

- Special use lanes
- Full depth shoulders
- Variable speed limits
- Speed harmonization
- Parallel corridor alternatives (I-75 FRAME)

Trend B: Connected Vehicles (CV)

Trend	Enabling Technology/ Business Model	Potential Projects	Year/Market Adoption
 Connected Vehicles	Dedicated Short Range Communications (DSRC) CV to X 5G Cellular	Fiber Optic Cabling Road Side Units (RSUs) Supplemental ITS cameras/ sensors Adaptive Signal Controllers (Arterials)	2027 (30%)

CV Adoption Projections



Connected Vehicle Implications

SIS Highway

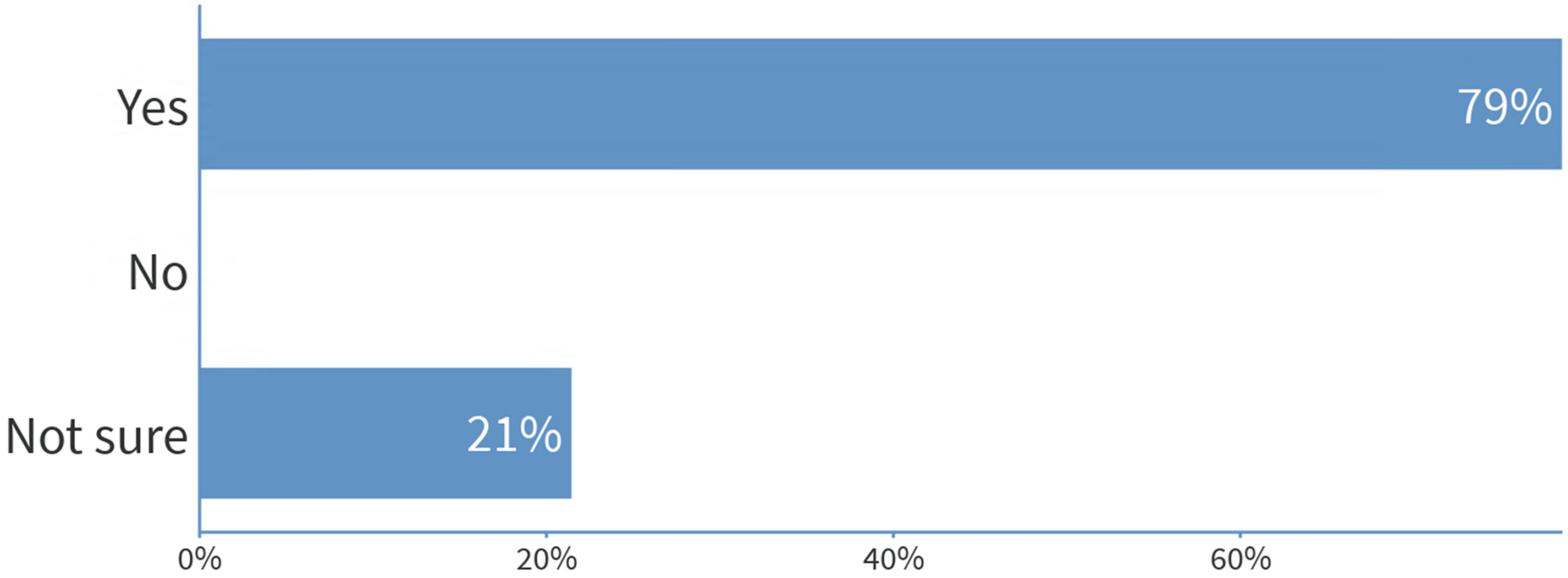
- Fiber Optics
- Road Side Units (RSUs) Deployment

SIS Highway Connector

- Advanced Traffic Signal Controllers (ATSC)

Poll locked. Responses not accepted.

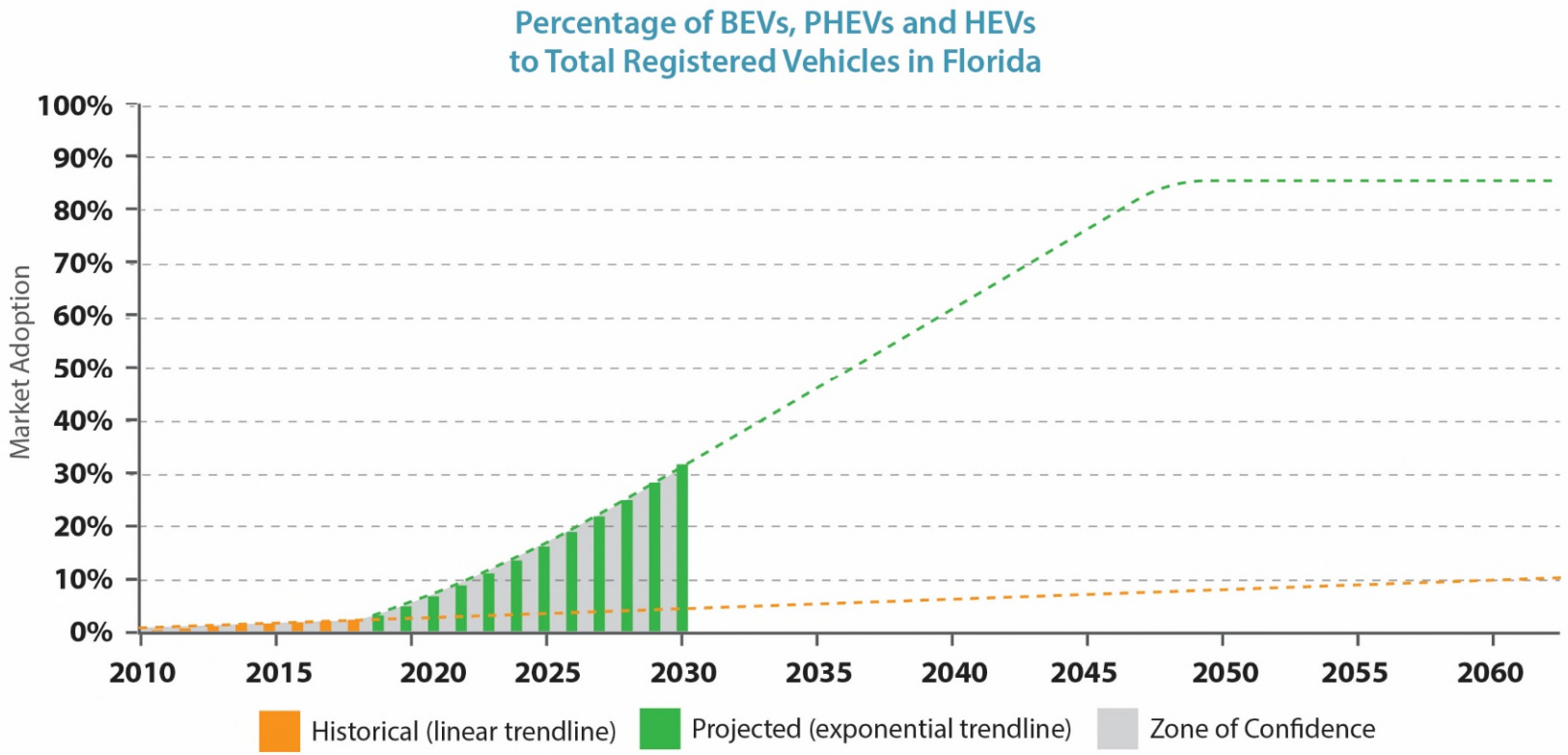
Are you starting to feel the need for incorporating ACES technologies into the SIS discussion?



Trend C: Electric Vehicles

Trend	Enabling Technology/ Business Model	Potential Projects	Year/Market Adoption
 Electric Vehicles	Fuel Efficient or Alternative Fuel Vehicles	Charging Stations at Park and Ride Lots Alternative Fuel Corridors In-Road Inductive Charging Loops	2030 (4%)

Electric Vehicle Market Adoption in Florida – Observed & Projected



Sources: https://www.flhsmv.gov/resources/driver-and-vehicle-reports/vehicle-and-vessel-reports-and-statistics/
https://autoalliance.org/energy-environment/advanced-technology-vehicle-sales-dashboard/

BEV – Battery Electric (full), PHEV – Plug-in Hybrid Electric, HEV – Hybrid Electric

Electric Vehicle Implications

SIS Highway

- Charging stations
- FHWA's Alternative Fuel Corridors program
- Fuel tax impact

Trend D: Shared Mobility

Trend	Enabling Technology/ Business Model	Potential Projects	Year/Market Adoption
Shared Mobility	Transportation Network Companies (TNCs) Microshuttles HAV TNCs Car Sharing	Staging Areas Curb Management (Pick Up/ Drop Off) Lanes) Park & Ride Lots Passenger Intermodal Connectivity	Daily TNC Users: 2023 (18%)

Shared Mobility Video

Shared Mobility Implications

SIS Highway

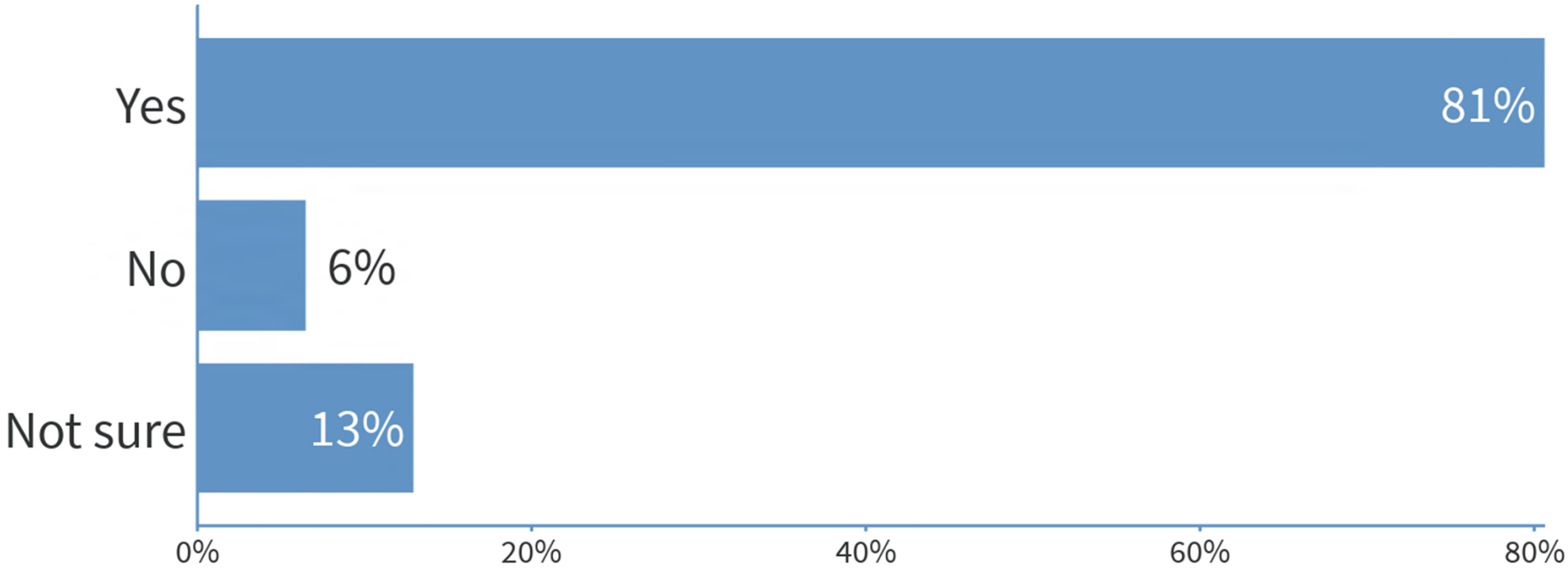
- Potential reduction in funding (toll revenue, gas tax)
- Passenger intermodal connectivity (BRT-to-Park & Ride)

SIS Hubs

- Curb management (pick-up/drop-off lanes)
- Fewer parking garages
- Staging areas

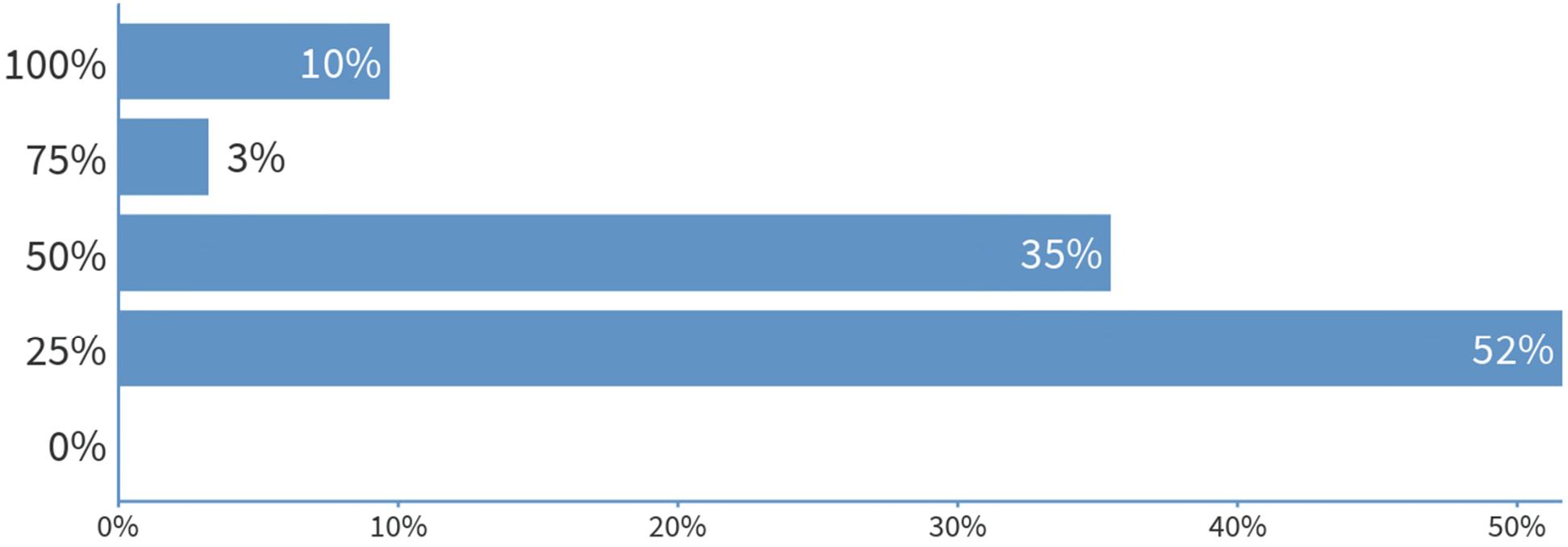
Poll locked. Responses not accepted.

If ACES technology projects increase traffic throughput significantly without adding lanes, would you consider those capacity projects?



Poll locked. Responses not accepted.

Given your knowledge of the SIS program and emerging technologies, how much would you allocate towards emerging technology projects if you were building a funding scenario for capacity projects?



LUNCH BREAK

SWOT Analysis

SWOT Analysis

What are the strengths and weaknesses, opportunities and threats of the ACES technologies to the SIS network?

Small Groups

Instructions

- Four groups based on color of star sticker on handout
- One trend has been pre-selected for each group to analyze
- Each group has a facilitator and a scribe
- Handout in folder with discussion questions & diagram
- Select one volunteer per group to report out afterwards
- Time for analysis: ~20 minutes

Large Group Discussion

Brief Summary

Contact:

Florida Department of Transportation
Systems Implementation Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399
850.414.4900
sisinfo@dot.state.fl.us
www.fdot.gov/planning/systems

Break

ACES Issues, Opportunities, & Values

MAJOR THEMES FROM JANUARY 2019 MEETING

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

GROUP DISCUSSIONS

- **Each breakout group will discuss THREE topics (~15 minutes each)**
  - » Each topic includes four prompt questions groups should focus on
    - Note: Infrastructure and Design was already discussed during the Preparing the SIS for ACES Workshop

- **Breakout groups will summarize their discussions in a facilitated report-out (~15 minutes)**

GROUP DISCUSSION QUESTIONS

- Which issues are most important for addressing the opportunities and impacts of ACES? Are there other issues we should add to this list?
- How should these issues impact the goals and objectives of the FTP? What recommendations do you have for the FTP Steering Committee?
- What additional information would you like to have at future meetings?

Table 1: Partnerships	Table 3: Customers
Table 2: Economic & Workforce Development	Table 4: Technology & Data

GROUP DISCUSSION QUESTIONS

- Which issues are most important for addressing the opportunities and impacts of ACES? Are there other issues we should add to this list?
- How should these issues impact the goals and objectives of the FTP? What recommendations do you have for the FTP Steering Committee?
- What additional information would you like to have at future meetings?

Table 1: Technology & Data	Table 3: Planning & Project Development
Table 2: Customers	Table 4: Funding

GROUP DISCUSSION QUESTIONS

- Which issues are most important for addressing the opportunities and impacts of ACES? Are there other issues we should add to this list?
- How should these issues impact the goals and objectives of the FTP? What recommendations do you have for the FTP Steering Committee?
- What additional information would you like to have at future meetings?

Table 1: Economic & Workforce Development	Table 3: Funding
Table 2: Planning & Project Development	Table 4: Partnerships

Next Steps

UPCOMING MEETINGS

- **July 9-10, 2019**
  - » FTP/SIS Steering Committee Meeting (Optional Attendance)
- **August 2019**
  - » ACES Subcommittee teleconference
- **November 20, 2019**
  - » ACES Subcommittee in-person meeting in conjunction with Florida AV Summit

QUESTIONS?

JIM HALLEY

Office of Policy Planning
Florida Department of Transportation
Jim.Halley@dot.state.fl.us
(850) 414-4817

www.fdot.gov/planning/policy