ACES Subcommittee

February 3, 2020 Web Conference

presented to

ACES Subcommittee

presented by

Jim Halley, FDOT Office of Policy Planning

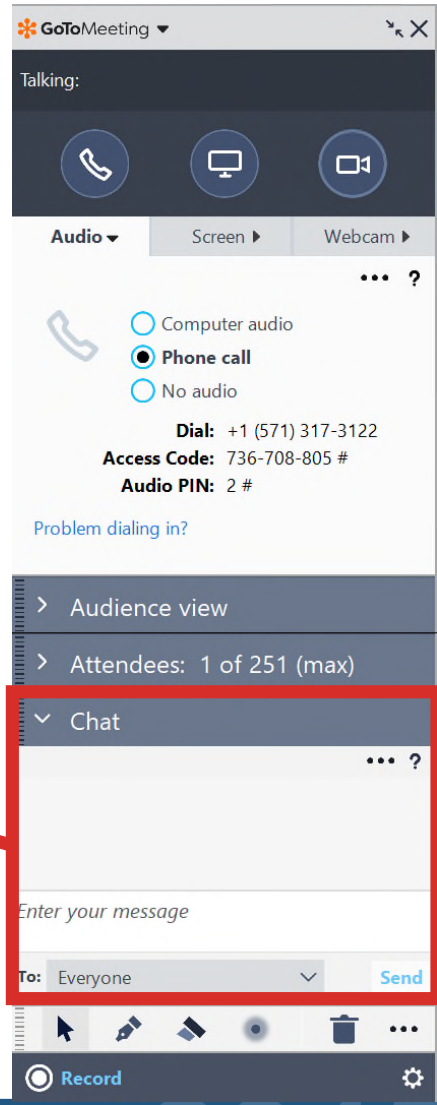
February 3, 2020

FLORIDA Transportation Plan

Your Florida. Your vision. Your plan.

GoTo Meeting Instructions

- Please mute your phone when you are not talking.
  - Don’t put us on hold or take another call or we will hear your hold music.
- If you have questions during the presentation, please type them into the chat box



Meeting Agenda

Time	Topic	Presenter/Facilitator
1:30 pm	Welcome and Introductions	Jim Halley, FDOT
1:35 pm	Preparing the SIS for AV/CV - Update	Jennifer King, FDOT
2:00 pm	Electric Vehicle Impact on Revenue	Sisinnio Concas, CUTR
2:30 pm	Smart North Florida	Jeff Sheffield, North Florida TPO
3:00 pm	Identify and Prioritize Additional Strategies • Partnerships • Planning and Project Development • Funding	Group Discussion
3:45 pm	Review of ACES Strategies • Customers • Economic and Workforce Development • Infrastructure and Design • Technology and Data	Group Discussion
4:25 pm	Wrap up and Next Steps	Jim Halley, FDOT
4:30 pm	Adjourn	

Roll Call

Recap of Subcommittee Activities

- Four meetings to date
  - January 2019 kickoff
  - June 2020 in person
  - October 2020
  - November 2020 in person
- Reviewed trends and potential disruptions related to technology
- Heard from subject matter experts
- Identified opportunities and challenges related to FTP goals
- Began developing potential strategies in 7 areas

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

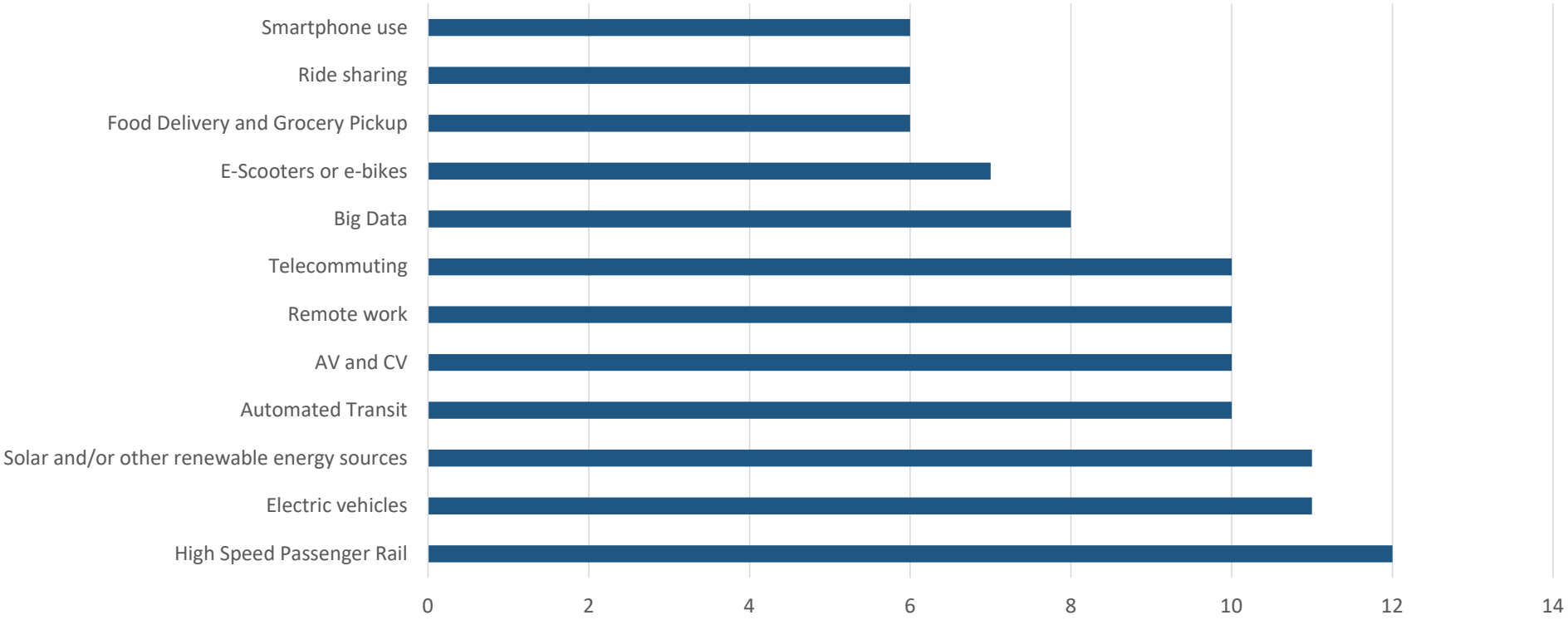
Subcommittee Assumptions

- Start with ACES technologies but look at innovation broadly for all modes
- Focus on how emerging technologies can enhance FTP safety, mobility, and accessibility goals; recognize that these technologies also will help accomplish remaining FTP goals
- Recognize unique opportunities and issues in both urban and rural areas; and for residents, visitors, and freight
- Prepare for an extended period of transition to comprehensive adoption of specific technologies such as automated or connected vehicles

Draft Framework for Strategies

- Economic and Workforce Development (October)
- Customers (October)
- Infrastructure and Design (November)
- Technology and Data (November)
- Partnerships (today)
- Planning and Project Development (today)
- Funding (today)

Survey Results: Key Technology Trend for FTP



Survey Results: How Will Technology Impact Transportation?

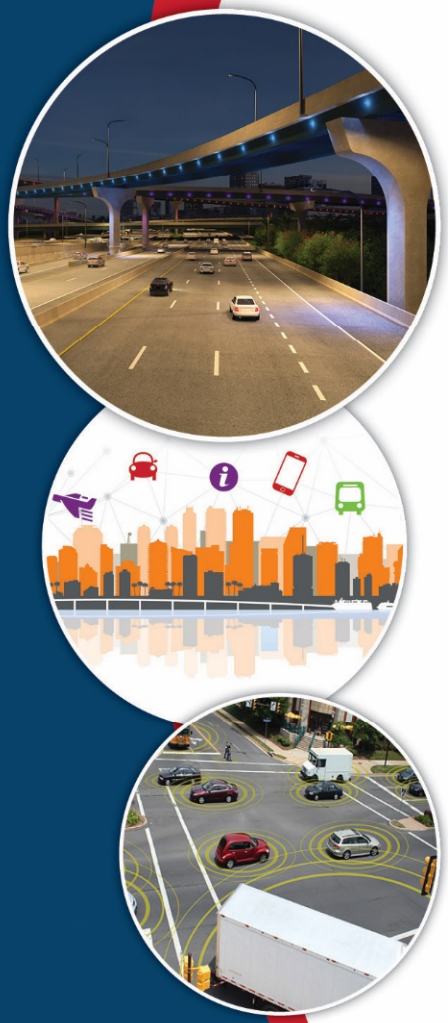
- Change it
  - Reduce traffic/need for new lanes
  - Make system more useful/improve service
  - Change how, when, why we travel
  - Reduce cost
  - Reduce dependency on oil, increase dependency on technology
- Improve it
  - Reduce traffic
  - Improve transit service/provide more choices
  - Improve economy
  - Reduce parking demand
  - Defer maintenance needs

Survey Results: How Will Technology Impact Transportation?

- Challenge it
  - Risk of infrastructure not keeping up with technology; time to implement
  - Need for confidence that new vehicles/technologies are safe
  - Eliminate need for driver
  - Encourage more vehicles on the road
  - Change way visitors travel (e.g., high speed rail)
  - Could have unintended consequences: droid crashes, noise, privacy

Survey Results: Potential Strategies to Address, Adopt, Integrate, or Prevent Technology Impacts

- Encourage alternatives to highways
- Shift to different energy sources
- Speed up production process
- Prioritize security of transportation system
- Adapt to rapid changes; challenge status quo



Preparing SIS for AV/CV Project Summary & Recommendations

February 3, 2020

Agenda

- Project Purpose
- Trends Analysis
- Assessing Potential Impacts
- SWOT Analysis
- Recommendations

Project Purpose

Statutory Mandate

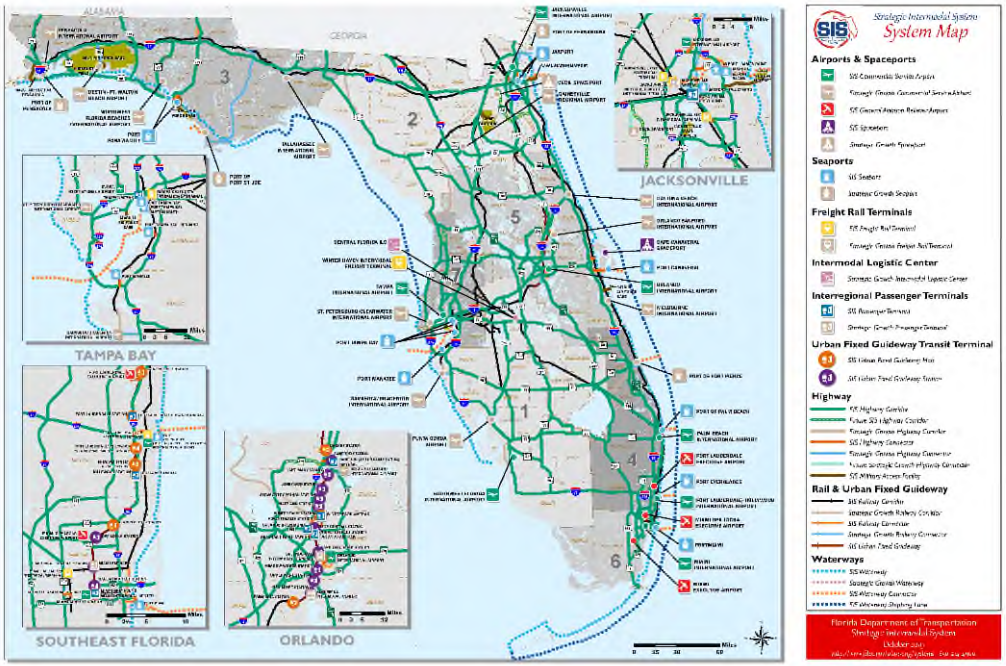
Systems Implementation Office (2018)

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

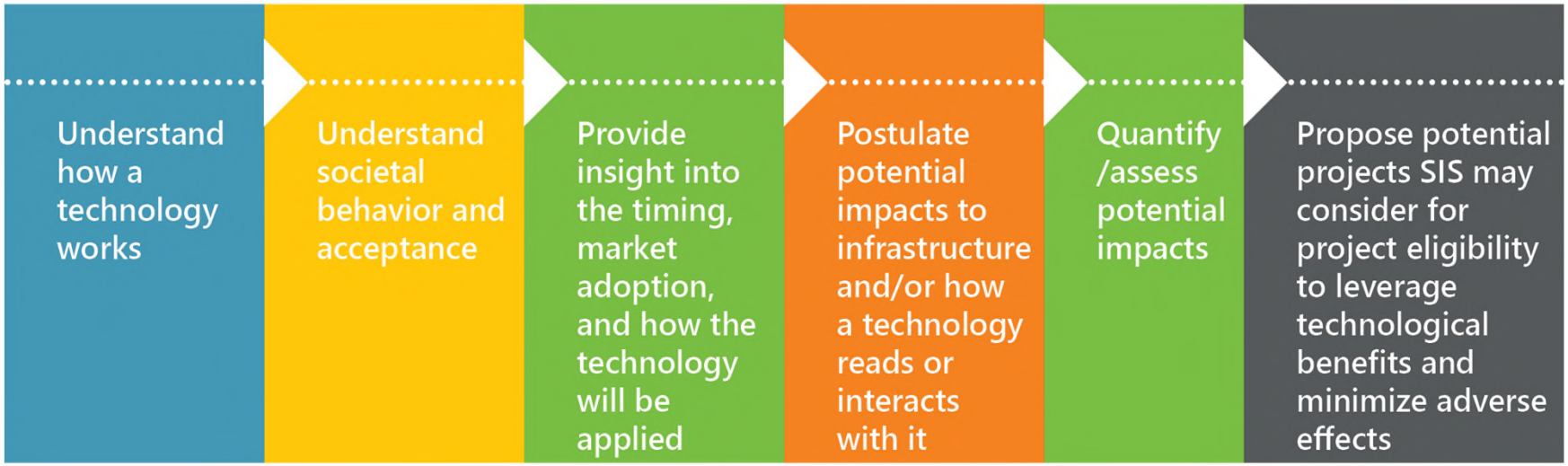
*"The [SIS] Plan shall include…consideration of infrastructure and technological improvements necessary to accommodate advances in vehicle technology, such as **automated driving systems and other developments**."*

Project Purpose

- Assessed technology trends and impact on SIS Facilities
- Completed **Safety and Mobility** analyses
- Identified opportunities and challenges (i.e. SWOT analysis)
- Developed strategies to leverage and address emerging technologies and business models
- Developed recommendations for how these considerations may be incorporated into SIS planning processes



Approach for Preparing SIS for Emerging Technology

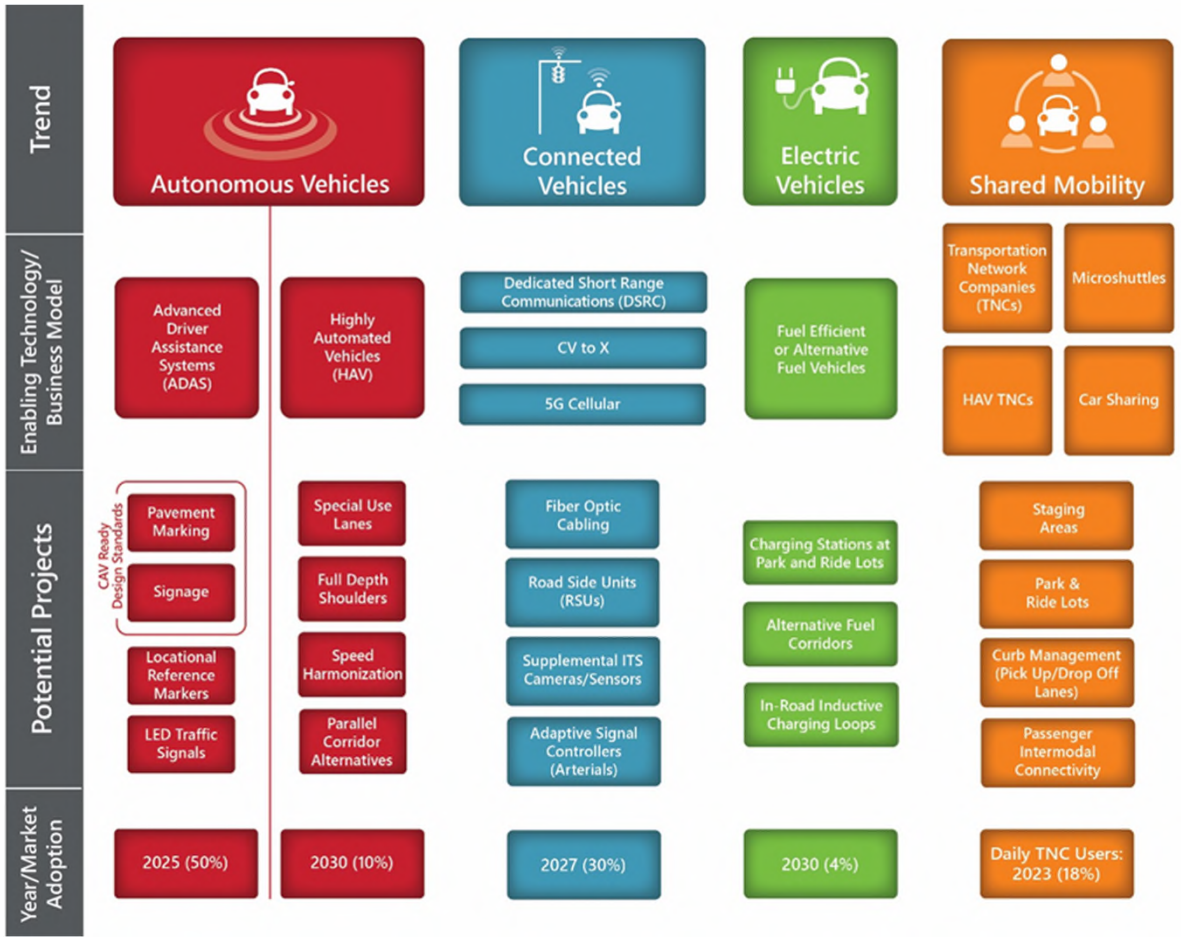


Trends Analysis

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 • Mobility as a Service

ACES Components and Timeline



ACES Trends Impact on SIS

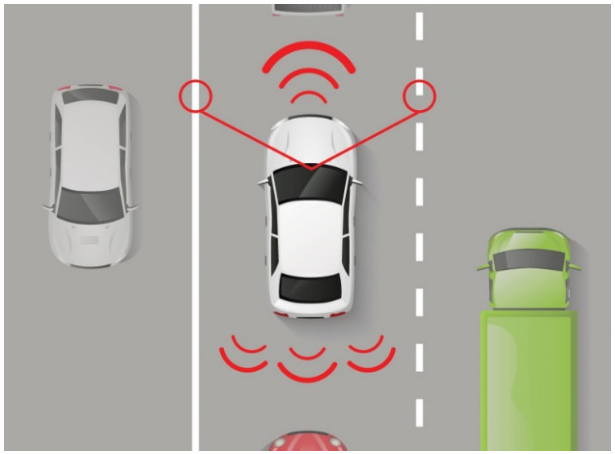
Trend A: Advanced Driver Assistance Systems (ADAS)

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%)
	Highly Automated Vehicles (HAV)	Special Use Lanes; Speed Harmonization; Full Depth Shoulders; Parallel Corridor Alternatives	2030 (10%)

ADAS Implications

SIS Highway

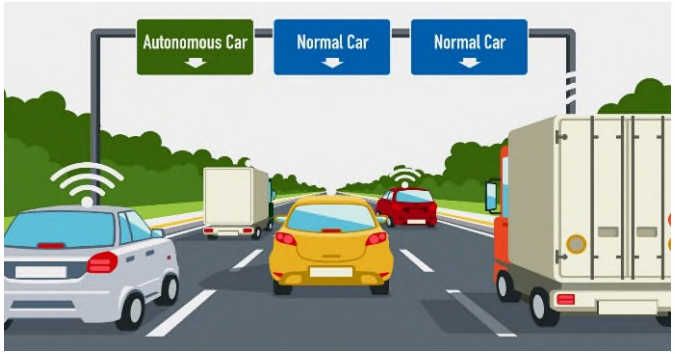
- CAV-Ready design standards
  - Pavement markings
  - Signage
- Locational reference markers
- LED Traffic Signals

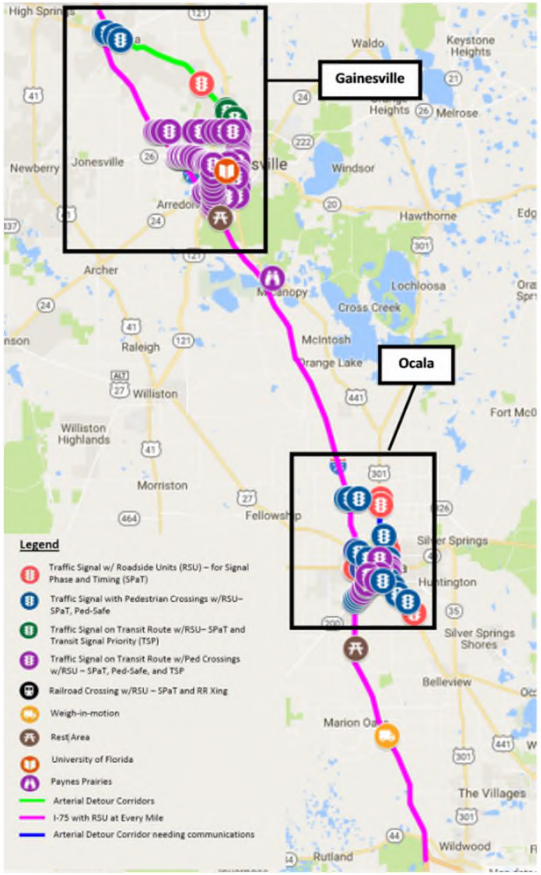


HAV Implications

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%)

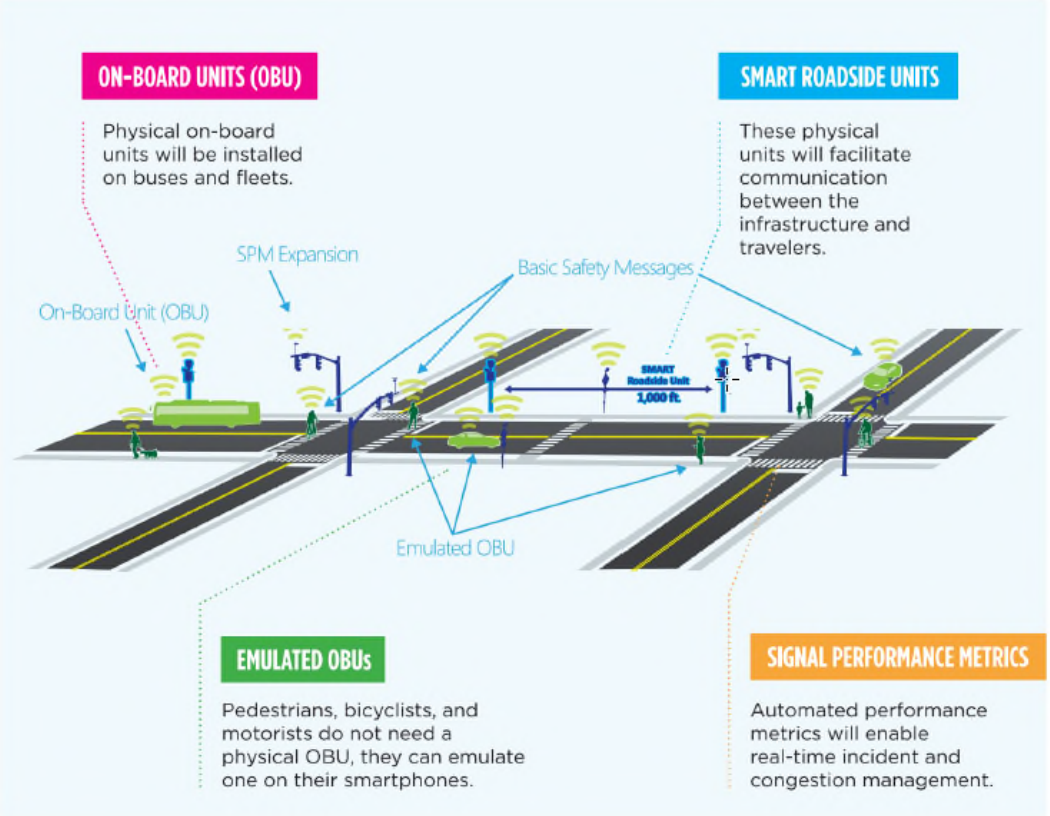
Connected Vehicle Implications

SIS Highway

- Fiber Optics
- Road Side Units (RSUs) Deployment

SIS Highway Connector

- Advanced Traffic Signal Controllers (ATSC)



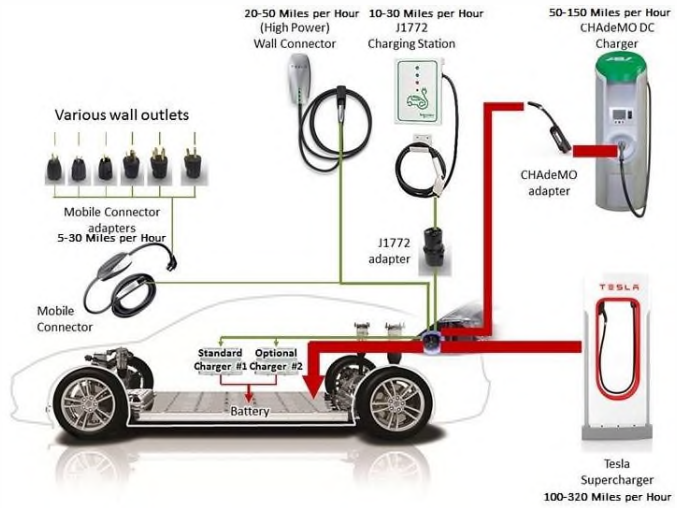
Trend C: Electric Vehicles

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 Implications

<u>SIS Highway</u>

- 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%)

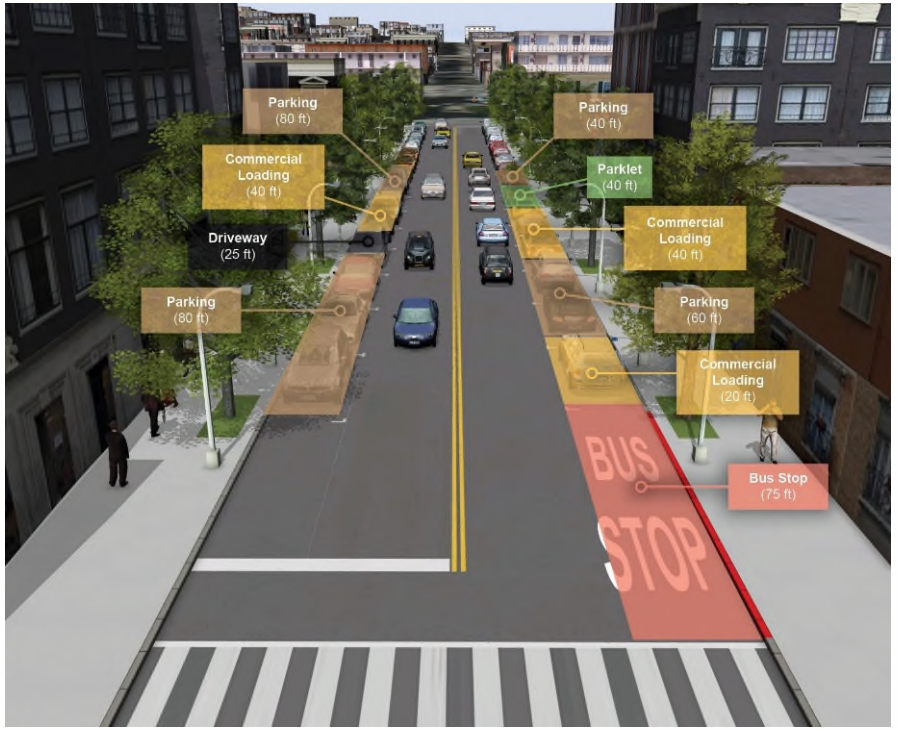
Shared Mobility Implications

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



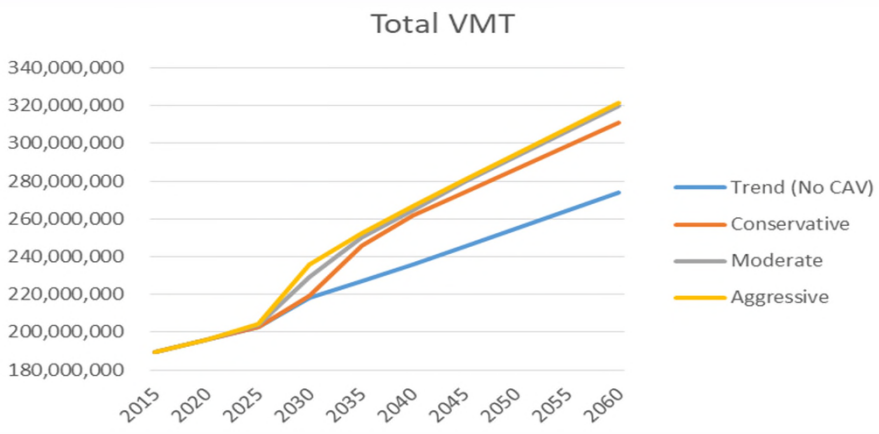
Assessing the Impacts

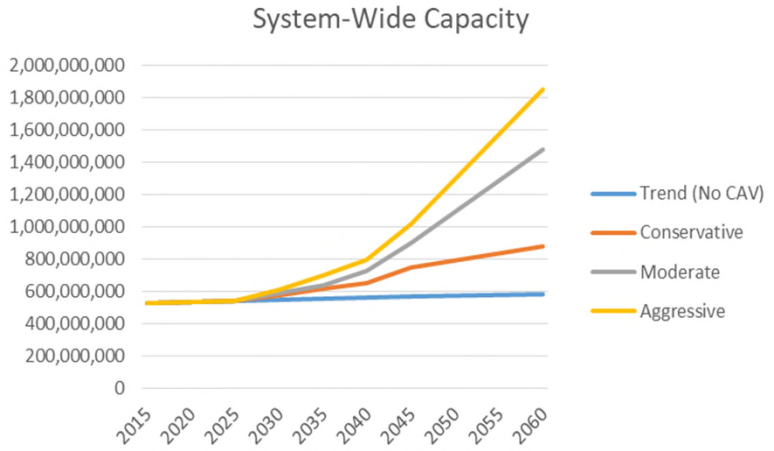
3 SCENARIOS

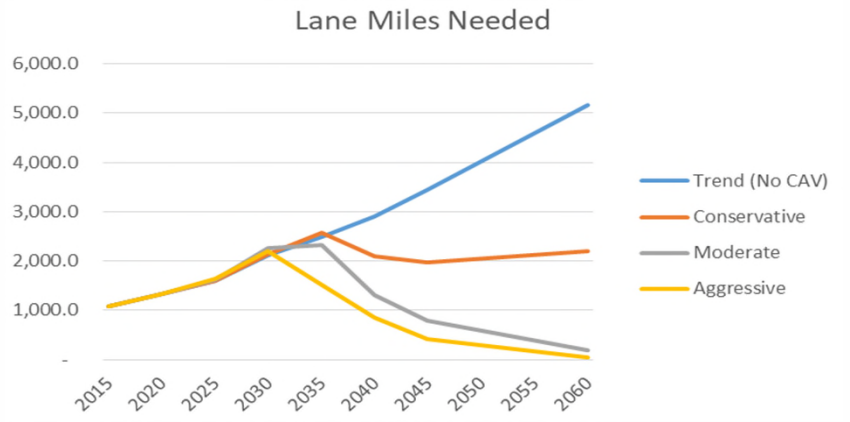
CONSERVATIVE	MODERATE	AGGRESSIVE

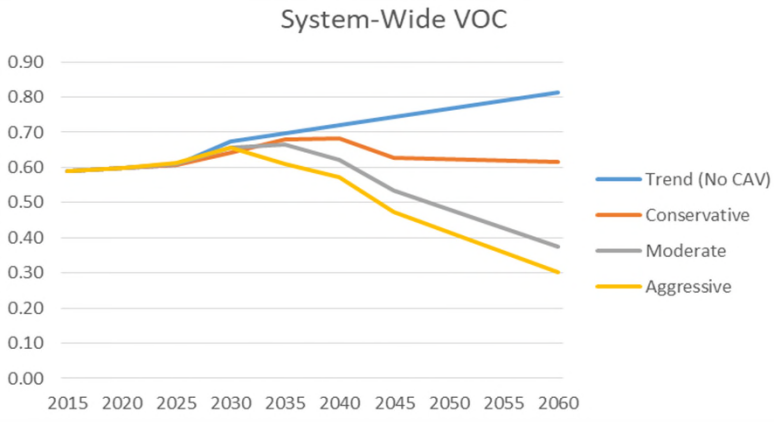
The analysis showed that all three scenarios are expected to yield substantial capacity, economic, and safety improvements to the SIS network. Based on the analysis, all three scenarios are expected to yield substantial capacity, economic, and safety improvements to the SIS network. These results identify the potential impacts from the emerging technologies that can be addressed and/or be leveraged by the SIS program.

Mobility Analysis – Results



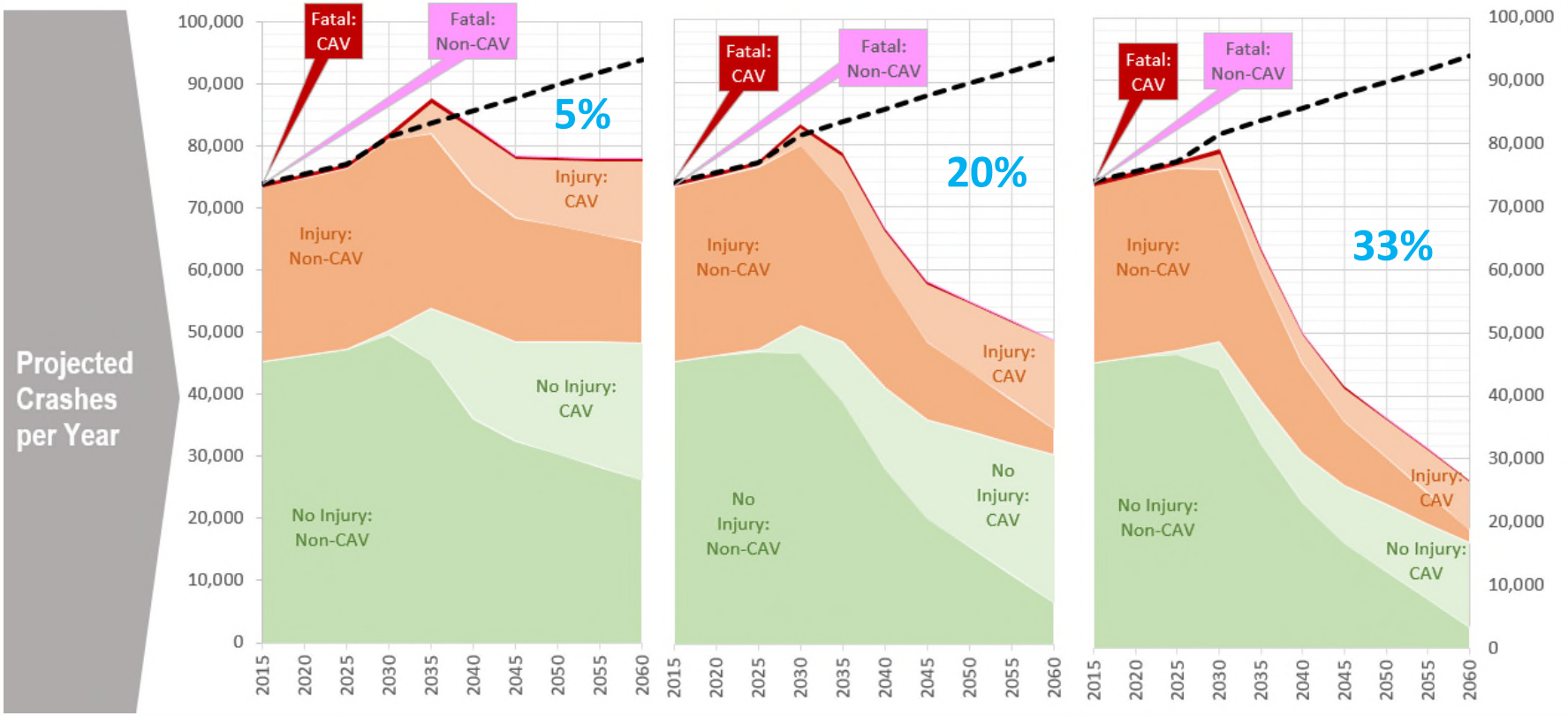






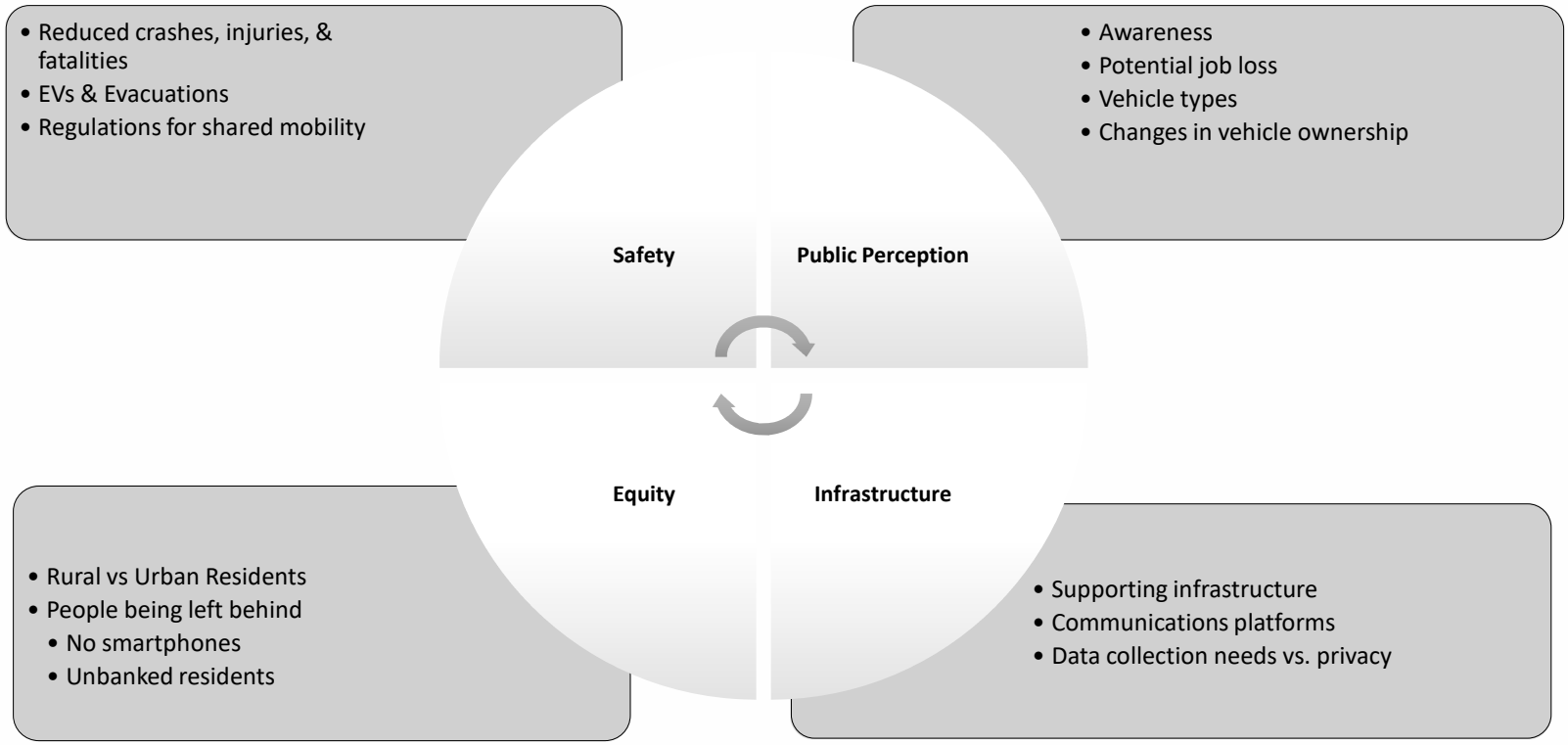
Safety Analysis – Crash Reductions

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



SWOT Analysis

Four Overarching Themes



Common Themes

- AV, CV, and EV have opportunities with freight
  - Improved travel reliability
  - Cost reductions for freight companies
- AV & Shared Mobility have opportunities to repurpose parking structures
- EV & Shared Mobility could lead to different revenue generation options
- AV & CVs
  - Potential capacity increases on SIS network
  - Subject to disruptions due to weather & natural disasters

Recommendations

Guiding Principle #1 – Sustainable Funding for SIS Program

Specific Strategy: Set aside funding annually for ACES Upgrades

Recommendations

Explore funding options to address potential shortfalls in the State Transportation Trust Fund due to electric vehicles and potential reduction in vehicle ownership due to MaaS

Set aside SIS funding annually for SIS eligible ACES projects

Guiding Principle #2 – Identify Specific Eligible Expenditures

Specific Strategy: Redefine capacity in SIS Policy Plan to focus more on total throughput of people and goods, rather than additional lane-miles

Recommendations

- *Redefine capacity*
- *Redefine capacity improvement projects to include CAV Ready Infrastructure*
- *Explore SIS Designation Criteria to leverage and/or mitigate ACES technology*

Specific Strategy: Expand eligible SIS projects to allow for additional ACES infrastructure

Recommendations

- *Redesign of existing facilities (AV)*
- *Fund fiber optic cabling, sensors and other roadside equipment (CV and ITS)*
- *Support electric vehicle infrastructure (EV)*
- *Add curbside management strategies and staging areas (MaaS)*

Guiding Principle #3 – Coordinate with internal FDOT Offices and external Partners

Specific Strategy: Review and update all FDOT Policies and Procedures to develop, design, and maintain CAV Ready Infrastructure

Recommendations

- *Coordinate with the FDOT Office of Design and TSM&O to develop CAV Ready Infrastructure Design standards.*
- *Coordinate with the FDOT Office of Maintenance to update the Maintenance Rating Program to future-proof FDOT investments*
- *Review other FDOT operating procedures, guidelines, and handbooks to ensure continuity in future-proofing transportation infrastructure across the modes and throughout the project development process*

Specific Strategy: Work with Districts to assess their needs, develop a roadmap, and protect their infrastructure

Recommendations

- *Develop District guidelines on how to plan and implement ACES technology by working with the Traffic Engineering and Operations Office*
- *Collaborate with Transportation Technology Office to develop cybersecurity and resiliency plans for digital infrastructure*

Specific Strategy: Form partnerships with different organizations to develop innovative strategies to implement the emerging technology

Recommendations

- *Work with local governments, MPOs, transit agencies, and other organizations to identify and implement innovative strategies to support ACES technology*

Guiding Principle #4 – Incorporate Technology into Planning Documents

Specific Strategy: Monitor Technology Adoption Rates

Recommendation

- *Include in the FDOT Source Book information on the number of ACES vehicles in operation, miles of Alternative Fuel Corridors, location of public charging stations, and other technology measures*

Specific Strategy: Include ACES Components in updates to SIS Planning Documents

Recommendations

- *Conduct a readiness review for technology deployment across the entire SIS network*
- *Update the SIS Needs Plan, Cost Feasible Plan, 2nd Five Year Plan, and 1st Five Year Plan to include ACES Technology*
- *Enhance existing SIS project selection tools to incorporate considerations for ACES*
- *Develop an ACES Planning Toolbox to serve as a screening mechanism to evaluate all alternatives during project development to quantify if a technological solution is warranted or would perform better than traditional capacity projects*

Discussion

Contact:

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

Autonomous Vehicle and Alternate Fuel Vehicle FL Market Penetration Rate and VMT Assessment Study

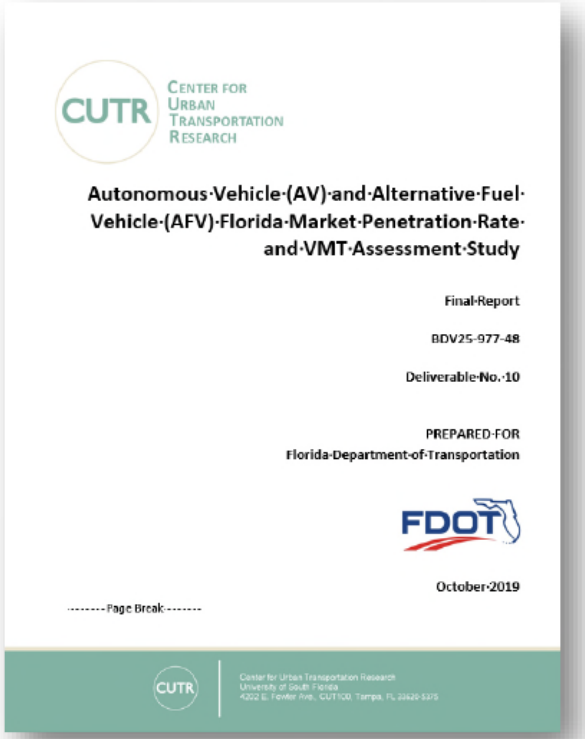
Sisinnio Concas, Ph.D., Program Director
Autonomous and Connected Mobility Evaluation

ACES Subcommittee Meeting #5
February 3, 2020

University of South Florida
Center for Urban Transportation Research

Background

- Autonomous Vehicle (AV) and Alternative Fuel Vehicle (AFV) Florida Market Penetration Rate and VMT Assessment Study
- Funded by FDOT
- 24-month project
- Completed: October 2019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CENTER FOR URBAN TRANSPORTATION RESEARCH

Autonomous·Vehicle·(AV)·and·Alternative·Fuel·Vehicle·(AFV)·Florida·Market·Penetration·Rate·and·VMT·Assessment·Study

Final·Report

BDV25-977-48

Deliverable·No.·10

PREPARED·FOR
Florida·Department·of·Transportation

FDOT

October·2019

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Reasons for Analysis

- To effectively plan and create a transportation system for the future, it is important for the state to consider AFV and AV market penetration scenarios and their potential impact on the state's vehicle miles traveled (VMT).
  - What impact will AFV and AV will have on transportation revenues?
  - What additional investments may be needed to facilitate their adoption?
  - What potential savings may be realized?

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Project Objectives

1. Conduct a comprehensive market penetration analysis of autonomous (AV) and alternative fuels vehicles (AFV) and their impact on the state's VMT over 30-year period
2. Produce high, medium, and low projections of market penetration rates and VMT
3. Estimate the impact to current motor fuel-based revenue sources
4. Identify potential investments needed and anticipated cost savings
5. Identify policy considerations for further development by FDOT and policymakers for transportation infrastructure design, construction, maintenance, and operation

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AV Market Penetration Rate Analysis – U.S.

- Review of relevant studies relating increased AV market penetration to changes in VMT at the national level
- By 2035, AVs may make up about 11-14% of private vehicle fleet and approximately 35% of private-vehicle VMT
  - AV technologies are expected to be adopted in luxury segment first
  - Level 4 may be available in medium, small, and lower priced vehicle categories in the mid-2020s to early-2030s.
- Level 5 expected to have an impact in the mid- to late-2030s.
- Providing shared mobility to underserved population can add 2-14% to VMT

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AFV Current Market Analysis – U.S.

- Review of relevant studies/literature
- 361,000 EVs sold in 2018 (2% of LD sales), half in CA
- EV vehicle stock remains low – 0.37% of LD vehicles
- 160,000 NGV vehicles in U.S., mostly HD
- Primary driver of EV/PHEV sales – battery cost
  - Cost of automotive batteries decreased from $1,000/kWh in 2010 to under $200/kWh in 2018
  - Projected to fall below $100/kWh in 2025-2030 (EV will become comparable in price to ICE)

Other factors influencing EV market: government policy, consumer awareness, fueling infrastructure

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AFV Market Forecast – U.S.

- Projections vary significantly from source to source
- National forecasts imply short-to medium-term (10-15 years) annual growth rates of EV sales of 20.6%-25.1%;

  long-term (20+ years) growth: 7.5% - 16% per year.

- NGV sales: 10% of new MD and HD
- Fuel cell vehicle: 0.6% of total vehicle sales
- National EV stock projections range from 7 million vehicles in 2025, to 15 million vehicles in 2030 and to 41 million EVs in 2040
- EV fleet is not expected to exceed 15 percent

  of the overall U.S. vehicle stock in 2040.

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Florida VMT Projections

- Adjust FHWA long-term VMT forecast using weighted index of key demographic and macro-economic factors specific to Florida
- Categories of vehicles: LD vehicles, single unit trucks and buses, combination trucks
- Factors affecting VMT in Florida:
  - Population growth (higher than in U.S.)
  - Age (large percentage of 65+)
  - Population density (higher)
  - Household income (lower)
  - Geography and climate
  - Gasoline prices (lower)
  - AFV fueling infrastructure

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Florida eVMT Projections

1. Project number of EVs in Florida
   - Adjust national trend using weighted indexes
   - EV critical factors: growth in disposable income, gasoline prices, electricity rates, prices of PV, government rebates, etc.
2. Project average eVMT per EV (BEV & PHEV)
   - BEV/PHEV split
   - Improvements in battery technology/range
3. Combine number of EVs and eVMT per EV to obtain total eVMT forecast
   - LD, single-unit trucks/buses, combinations trucks

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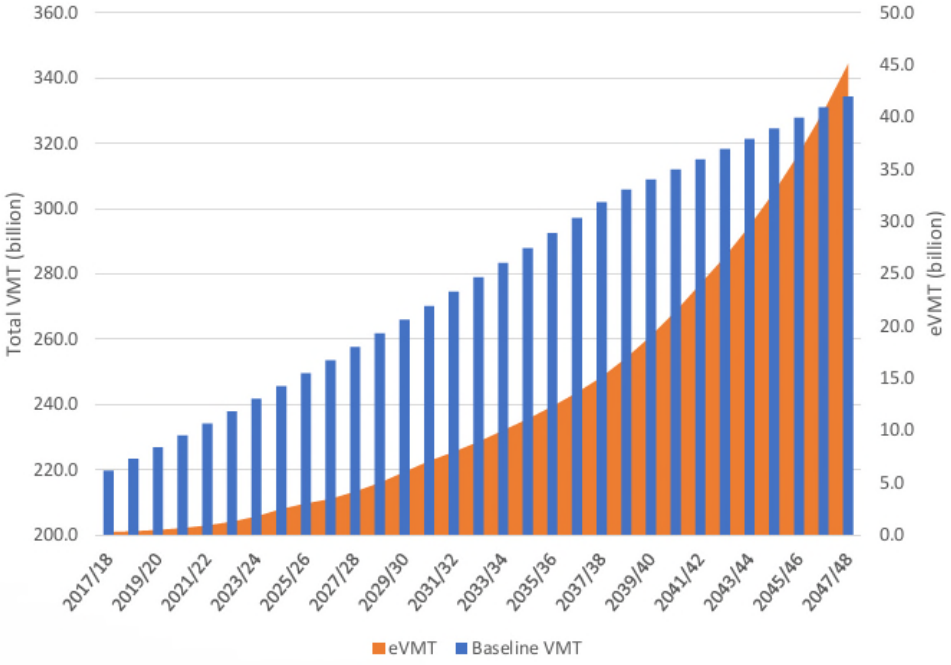
AFV eVMT Projections – Florida

- Moderate eVMT growth until 2030
- EV market accelerates after 2030-2035
- By 2048, eVMT will reach 47.5 billion (14% of the VMT)



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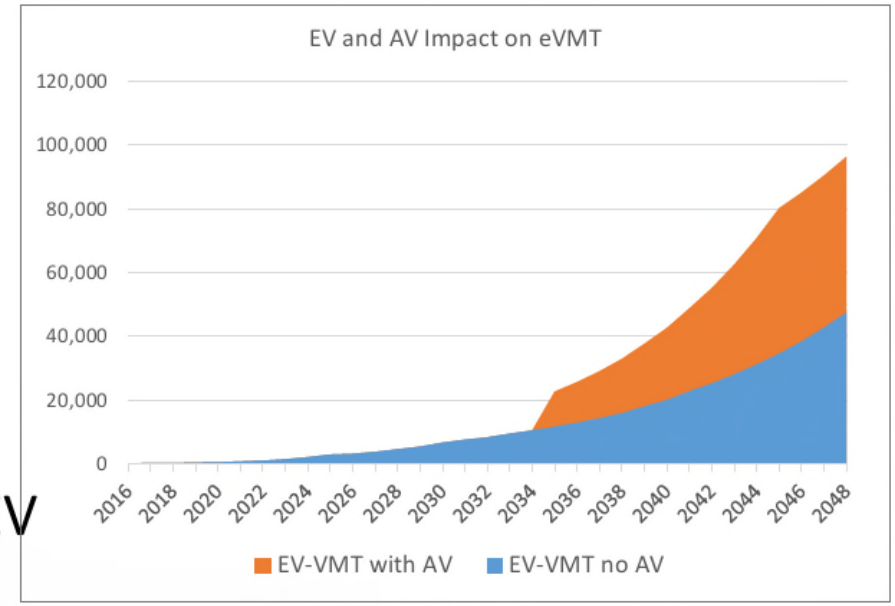
AV VMT Projections – Florida

- Low penetration rate until 2030-2035
- Starting in 2035:
  - eVMT will grow by 12% per year
- By the end of 2048:
  - 43% of vehicle fleet will be AV
  - VMT will increase by 14.6%
- eVMT will account for 25.1% of total VMT in 2028
- Increased AV VMT fully absorbed by EV (eVMT)
- By end of 2048 AV will double eVMT



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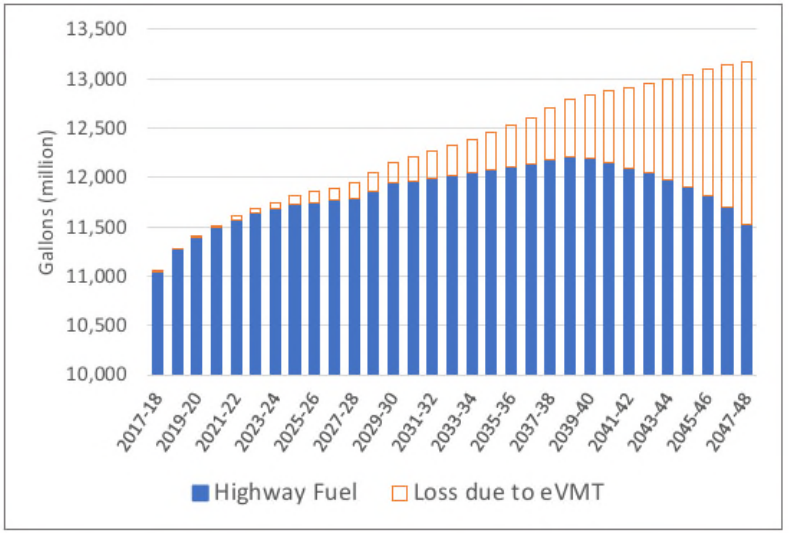
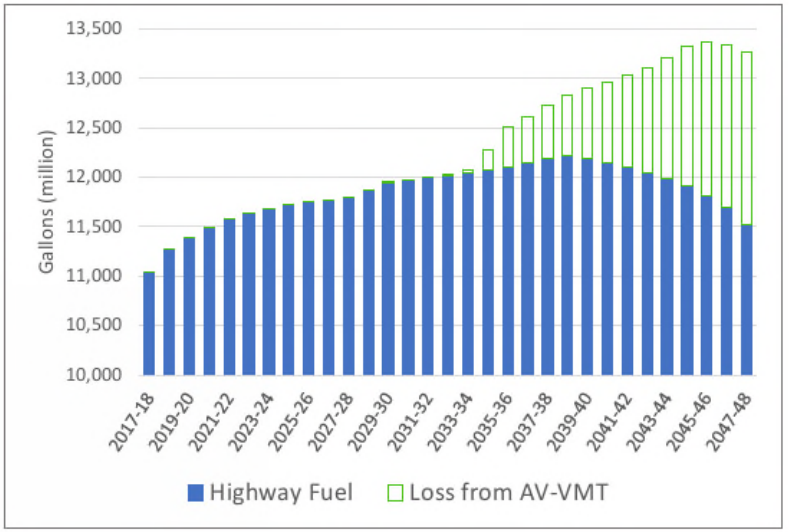
Revenue Analysis

- Assess the impact of AV and AFV on state revenues
  - Federal – Federal Gas (18.4 cents/gal); Federal Diesel Added 6 cents/gal
  - State – State Sales (14.1 cents/gal); SCETS (7.8 cents/gal); 7-percent of 1-6 cents local option
  - Local Option – 1-6 cents/gal; local option 1-5 cents/gal; 9 cents/gal; constitutional, county, and municipal.
- Some are automatically adjusted to CPI, others are adjusted periodically by legislative actions
- Use approach by Florida Office and Demographic Research Revenue Estimating Conference (REC). Extend to FY 2047- 48.
- Employ forecasts of vehicle fleet composition, MPG, VMT, etc.

Impact from AFV and AV on Highway Fuel

- Fuel consumption will peak toward the end of current REC forecasts and will decline after FY 2038-39
- By FY 2047-48 increased AFV market penetration will reduce demand for motor fuel by 1.6 billion gallons annually
- By FY 2047-48 AVs will reduce motor fuel demand by about 1.7 billion gallons annually





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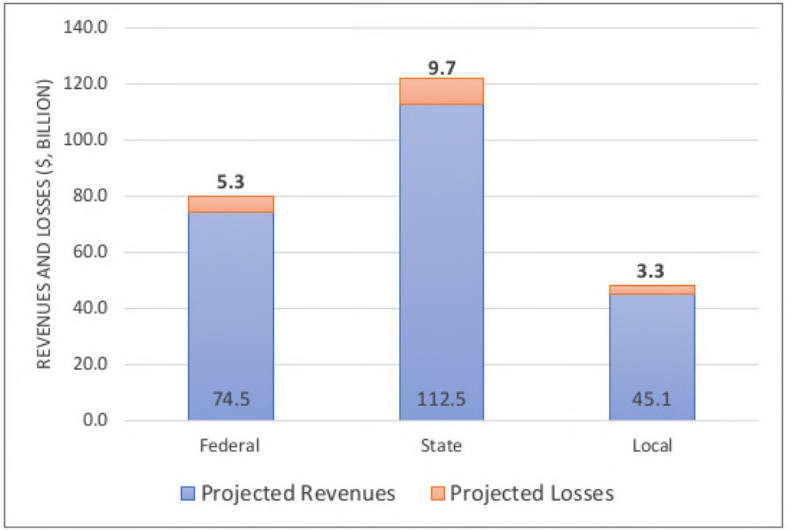
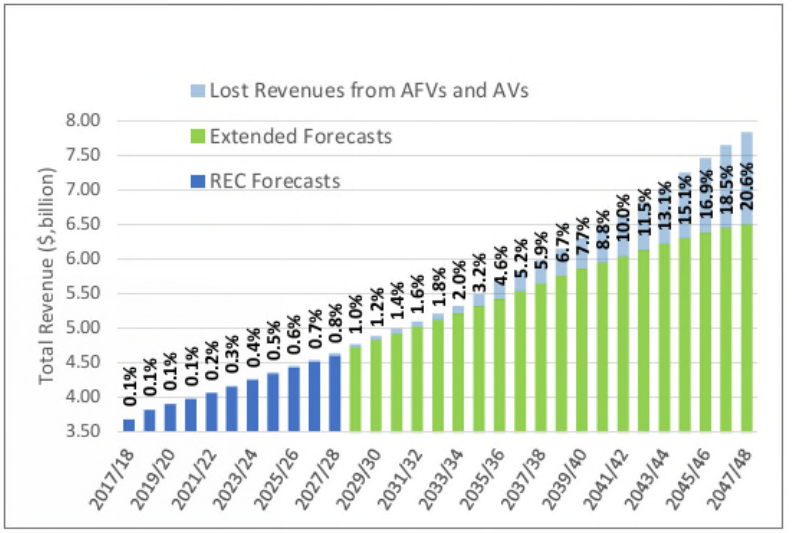
Combined Impact of AFV and AV on Revenues

- Cumulative Revenue Loss over 30-year period
  - $18.3 Billion federal, state and local
  - $9.7 Billion loss from states sales
  - 8.6% of state revenues
  - Revenue loss until FY 2027-28 is insignificant
- By FY 2047-48 annual revenue losses will drastically increase
  - $2.4 Billion/year
  - About 21 % of total revenues or 26 % of annual fuel-based state portion





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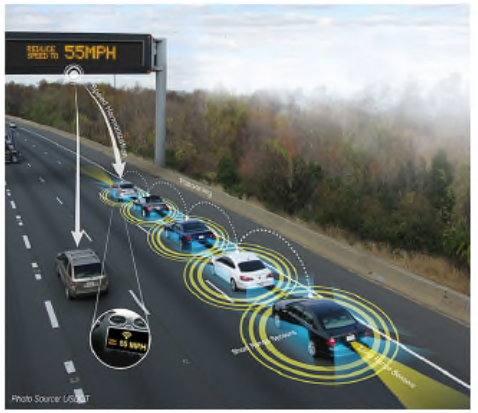
AV and AFV Investment Requirement



- Most of AV capacity improvements will be achieved through vehicle cooperation
- Low levels of market penetration are associated with minimal capacity impacts
- As market penetration increases, the capacity increases remain minimal for non-cooperative AV but increase exponentially for connected AVs
  - 10%-40% connected AVs result in 12%-15% capacity increase
  - 100% connected AVs – 49%-270% capacity improvement
- Special infrastructure considerations for AVs: road markings and signage, managed/dedicated lanes, addition of drop-off lanes, ITS roadside devices (VTI), demand management strategies, etc.
- EV charging infrastructure needs in Florida (by 2040):
  - Additional 19,000 Level-2 public charging stations
  - Additional 2,350 DCFC

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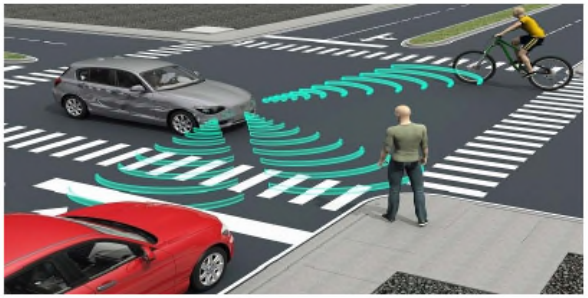
AV and AFV Cost Savings

- Cumulative benefits for EV owners (2018-2048)
  - Fuel cost savings of $15.6 billion
  - Life-cycle cost savings of $40 billion
- HD vehicles will not demonstrate TCO savings until 2030-2035
- Significant savings can be expected from AVs:
  - Crash cost reductions (94% of all crashes can potentially be avoided)
  - Reduction in congestion (improvement in capacity)
- Capacity improvements do not eliminate the need to invest in road construction to address growth in travel demand



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Factors Affecting the Projections

- Continuous improvements in ICE fuel efficiency not fully accounted for
- Average miles driven by EV and ICE
- PHEV utility factor (% of eVMT to total miles)
- Age of vehicle fleet
- EV and AV adoption rates
- Impact of EVs on fleet fuel efficiency
- Behavioral changes

Courtesy: EPA

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Conclusions and Recommendations

- Identify policy-feasible alternatives that are revenue loss neutral and focused on infrastructure preservation.
- Conduct sensitivity analysis of selected policy options
- Continued monitoring of key trends affecting market adoption and VMT generation
- Update forecasts to include recent AFV-AV market developments and changes in regulation

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Thank you!

concas@cutr.usf.edu

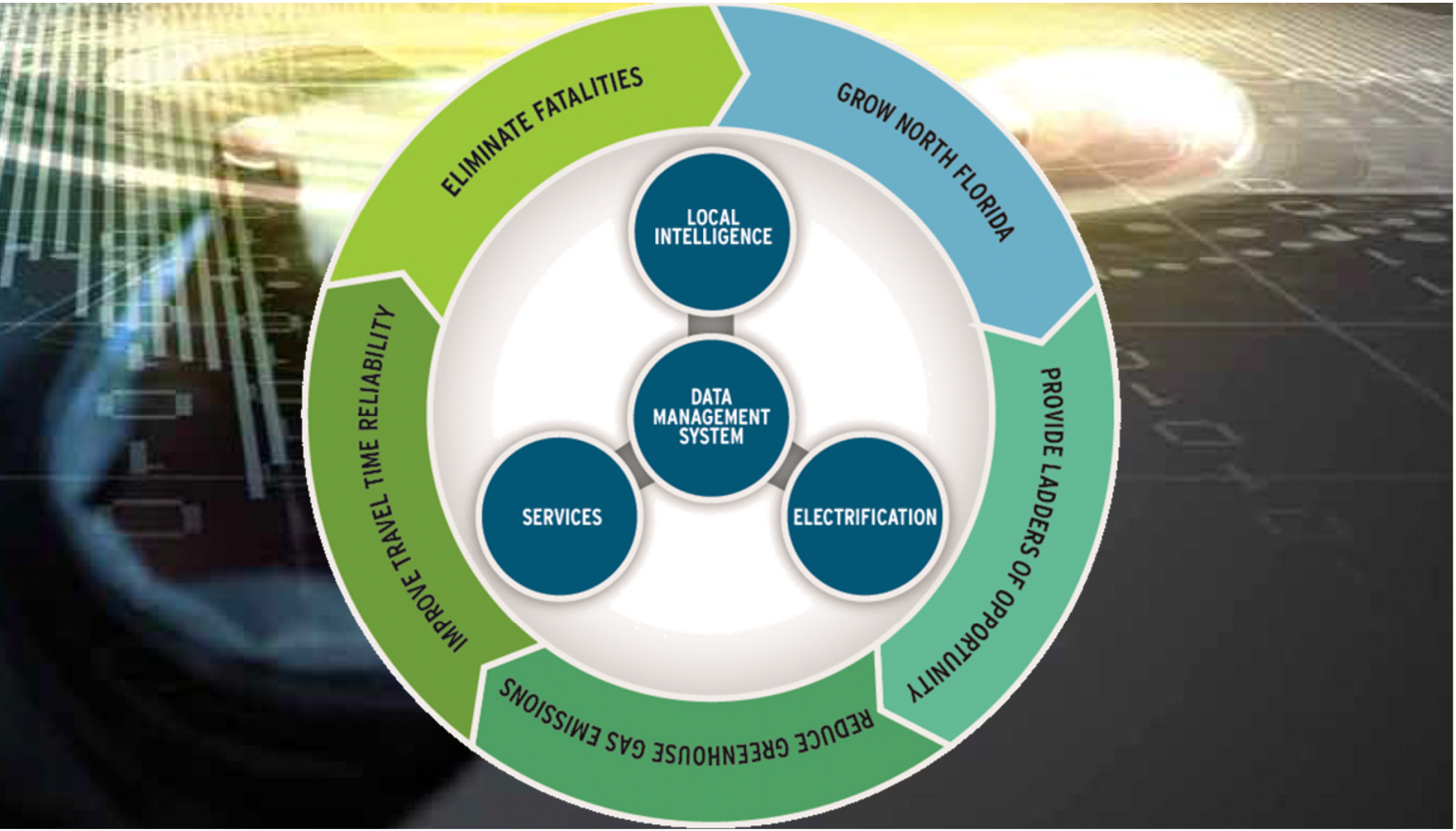
813-974-7760

Smart North Florida

Jeff Sheffield, North Florida TPO

SMART NORTH FLORIDA

Harnessing the power of **Smart Technologies**, **Coordinated Data**, and **Regional Collaboration** to improve North Florida's economic competitiveness, sustainability and quality of life.


ELIMINATE FATALITIES
GROW NORTH FLORIDA
PROVIDE LADDERS OF OPPORTUNITY
REDUCE GREENHOUSE GAS EMISSIONS
IMPROVE TRAVEL TIME RELIABILITY
LOCAL INTELLIGENCE
DATA MANAGEMENT SYSTEM
SERVICES
ELECTRIFICATION

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SIGNATURE PROJECTS

SAFER

EASIER


PAY WITH THE APP
PARK
ST AUG
ZONE
20010
Sign up at ParkStAug.com
VISA
Passport
Parking

PREVENTABLE

BETTER AT BASICS

THE BAY JAX
innovation corridor

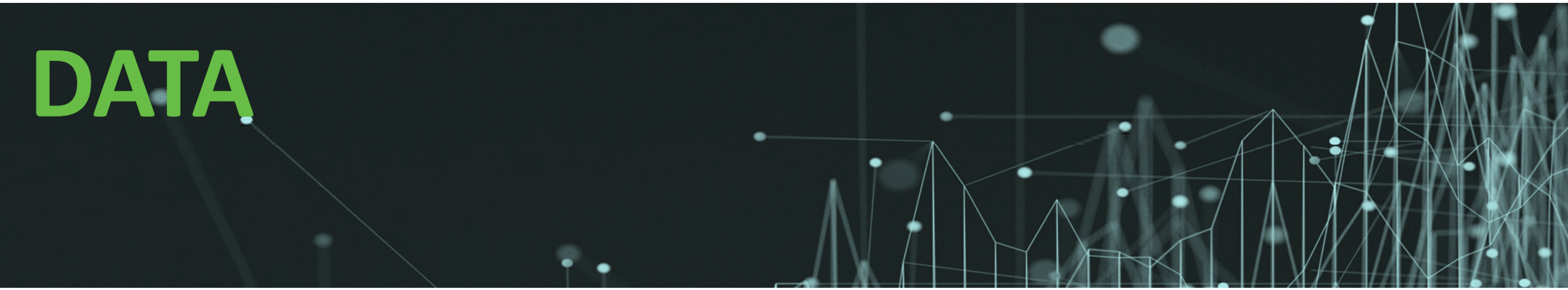
The BayJax, an innovation corridor along Bay Street, will be an important first step in creating a safer, smarter region, growing Jacksonville and North Florida as a rising center for technology jobs, e-commerce, telecommunications and education.

IMAGINE...

- People, infrastructure, cars and services will be connected through a public broadband network to give you the information needed to meet your shopping, entertainment and mobility needs in real-time.
- You can use bus rapid transit or automated vehicles to reach destinations along the corridor.
- Sensors know when you cross the street and notify drivers.
- Signals are connected to vehicles to optimize traffic flow.
- Lanes change colors to direct traffic for special events.
- The electricity needed to power the signals and lighting in the corridor is generated in the sidewalks using solar panels.
- During storms, flood warning sensors provide time to evacuate safely.

Working with our partners in the Smart Region Coalition - the City of Jacksonville, JAX Chamber, Downtown Investment Authority, JTA, JEA and the Jacksonville Jaguars, we're making Bay Street connected, convenient, efficient and safe.

SMART NORTH FLORIDA



NORTH FLORIDA SMART REGION VISION

- Air quality monitoring
- Rapid response information

- Smart recycling
- Sophisticated waste management

- Demand responsive distribution
- Intelligent meters

- Building environmental conditions
- Incident response management
- Remote monitoring and management

- Infrastructure monitoring
- Predictive maintenance
- Security and safety detection and notification

- Car sharing
- Connections to transit
- Ride sharing incentives
- Remote health care
- Smart cards
- Transportation for the disadvantaged
- Technology jobs

- Integrated data exchange
- Public WiFi
- Regional shared fiber
- Security

- Connected vehicles and corridors
- Integrated corridor management
- Smart parking management
- Pedestrian warning and detection

- Automated vehicles
- Neighborhood connectors
- Special event management
- Skyway modernization (U2C)
- Transit signal priority

- Bike sharing
- Pedestrian and bicycle warning
- Wayfinding and event management kiosks
- Smart lighting

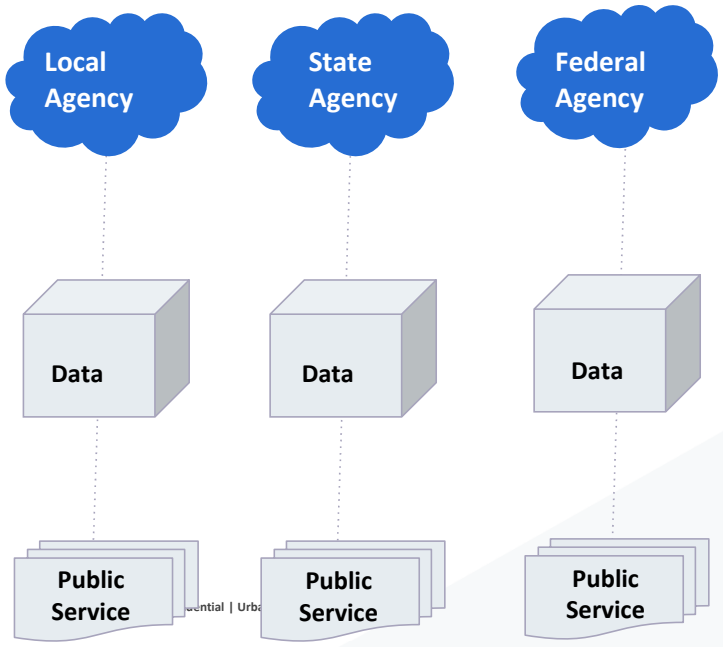
- Loading zone parking management
- Rail crossing safety system
- Truck parking on Interstates
- Truck parking at JAXPORT
- Truck priority at key locations

- Automated parking enforcement
- Crime detection and notification
- Incident management
- Gunshot detection
- Rail crossing notification
- Traffic information for first responders

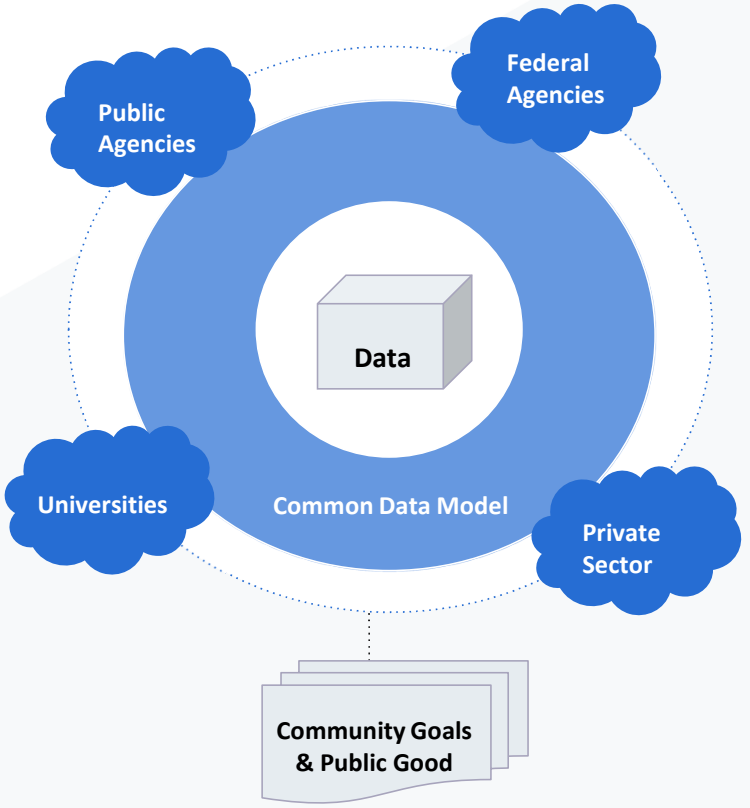
- High wind warnings
- Street flooding warnings
- Visibility warnings (fog and rain)

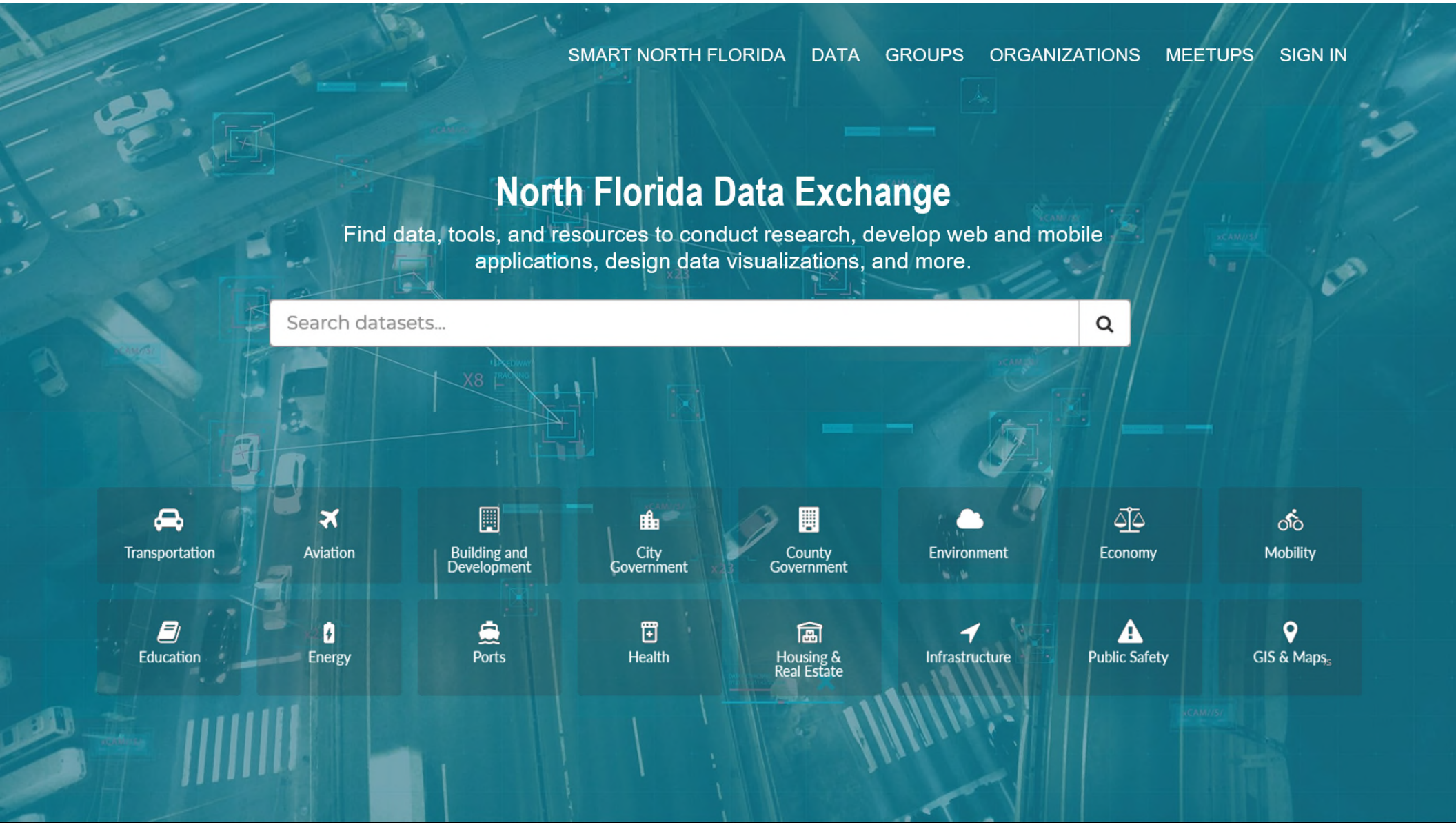
- CNG and LNG logistics
- Electric vehicle charging stations
- Solar roads and paths
- Smart grid
- Advanced detection lighting sensors
- Smart recycling
- Intelligent water distribution

Current state



Future state

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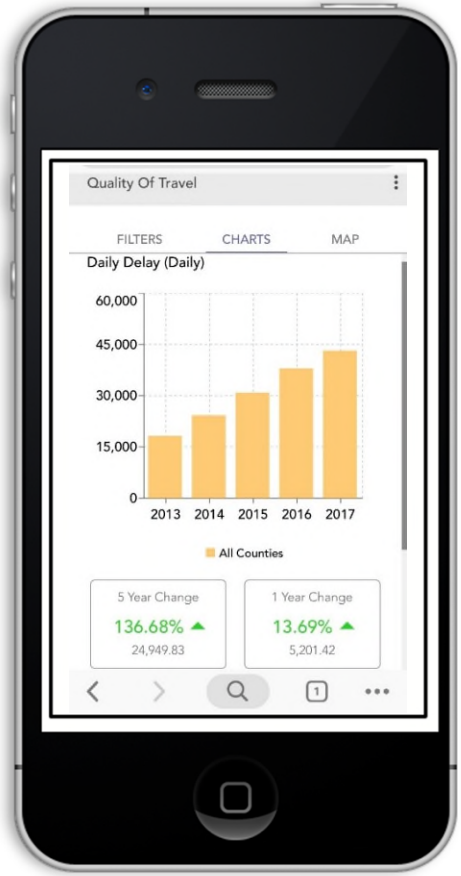
DATA
GROUPS
ORGANIZATIONS
MEETUPS
SIGN IN
North Florida Data Exchange
Find data, tools, and resources to conduct research, develop web and mobile applications, design data visualizations, and more.
Search datasets...
Transportation
Aviation
Building and Development
City Government
County Government
Environment
Economy
Mobility
Education
Energy
Ports
Health
Housing & Real Estate
Infrastructure
Public Safety
GIS & Maps

THE PAST
Reports
Historical Data

NOW
Historic, Real-time and Predictive



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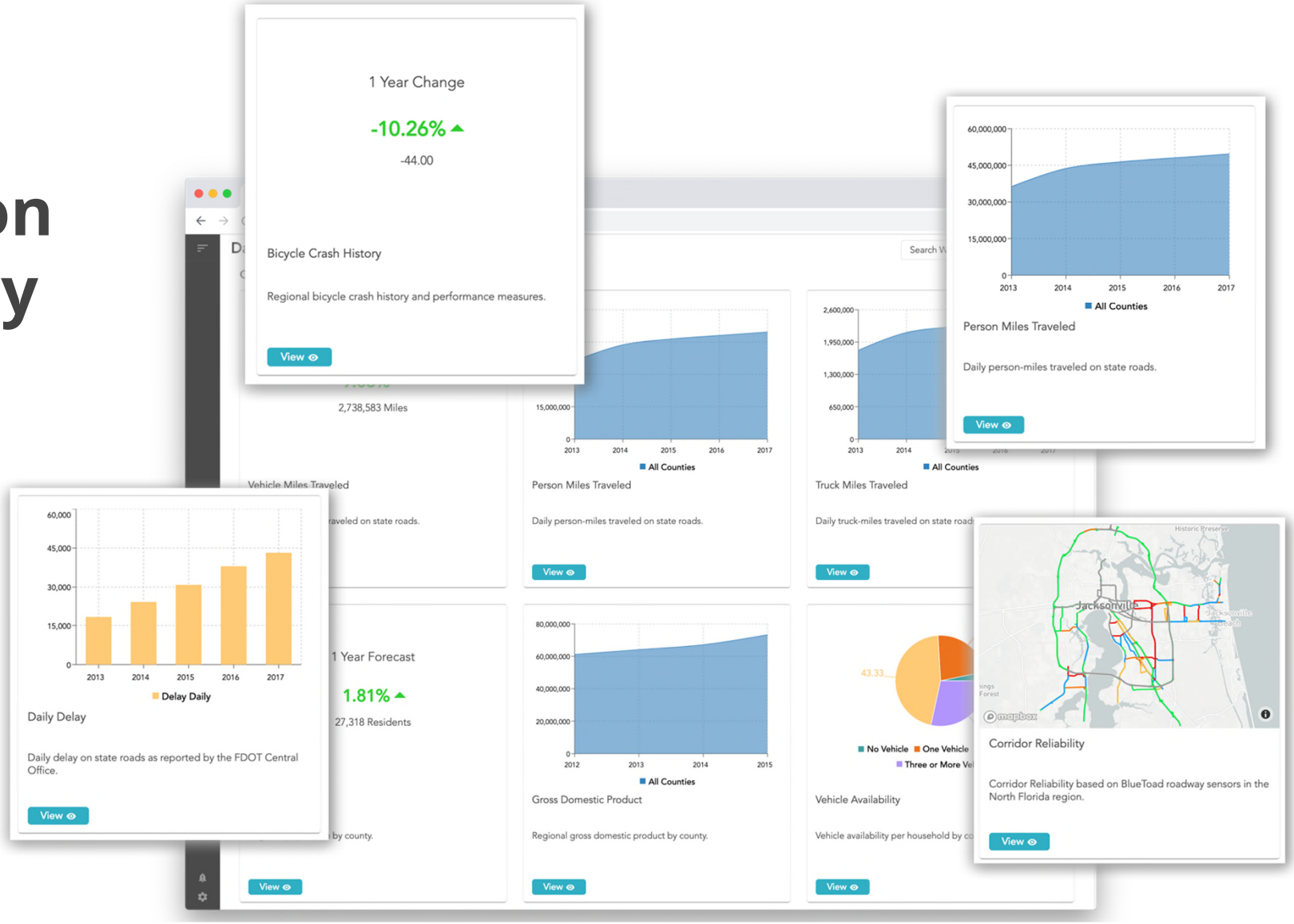
Congestion & Mobility



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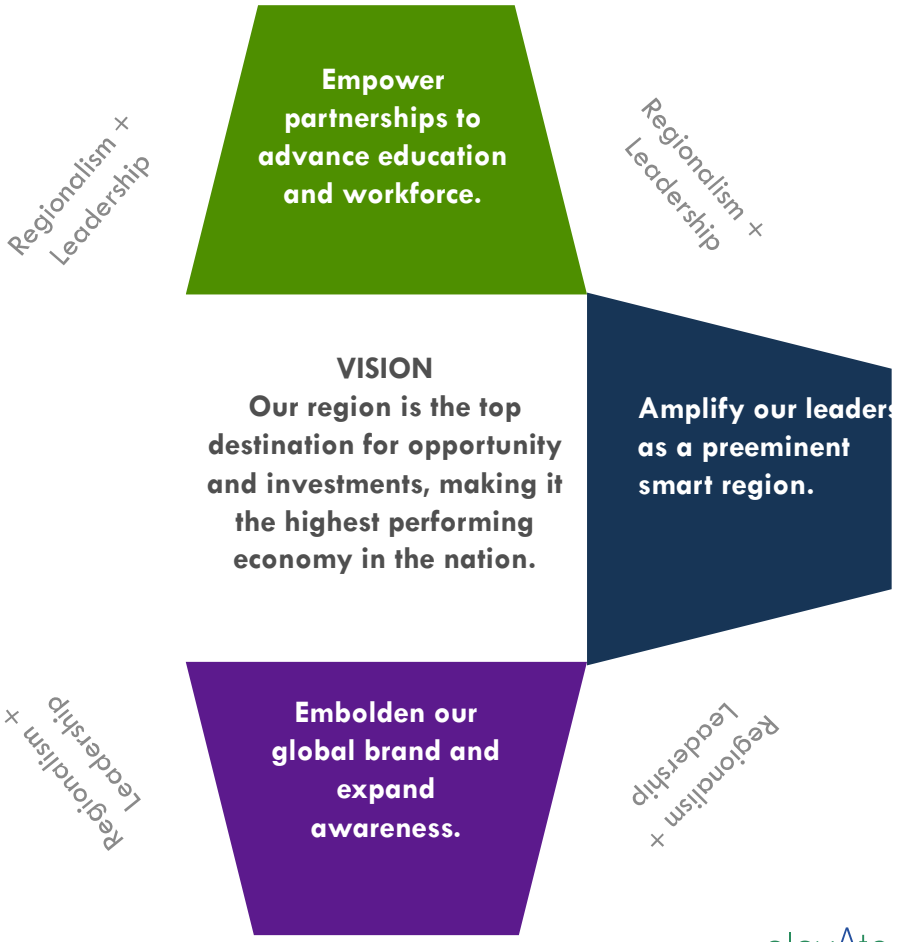
People & Partnerships

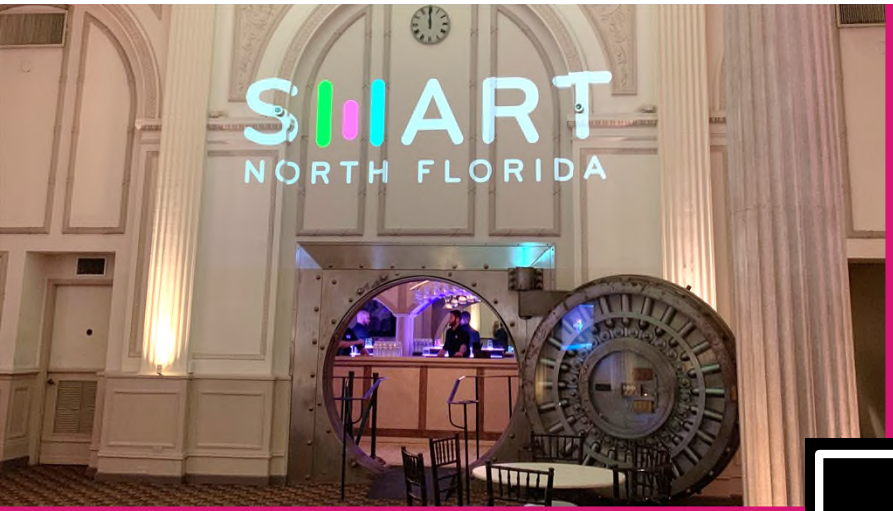
elevate northeast florida

5- Year Economic Development Strategic Framework

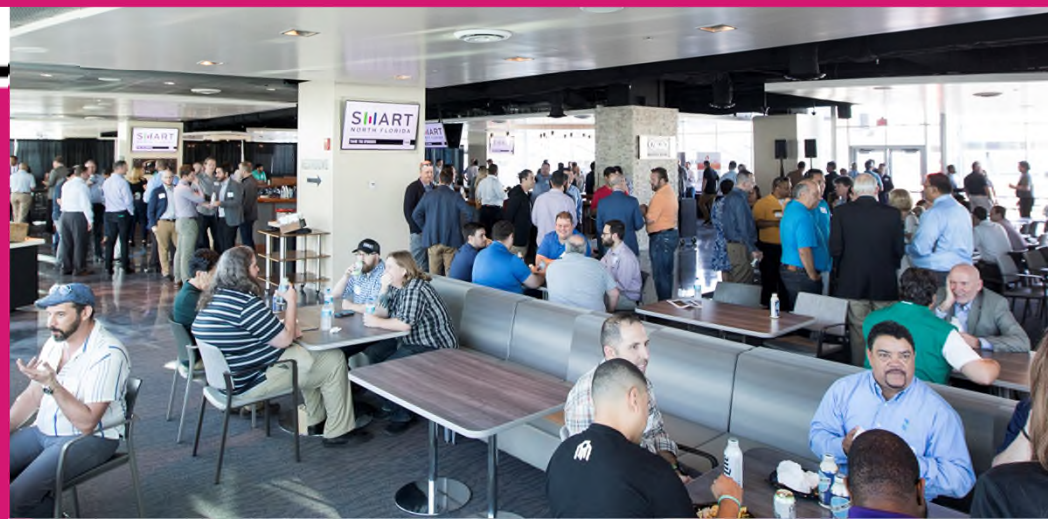
JAXUSA Partnership, the private, nonprofit division of the JAX Chamber, is the economic development initiative overseeing efforts in the seven-county Northeast Florida region

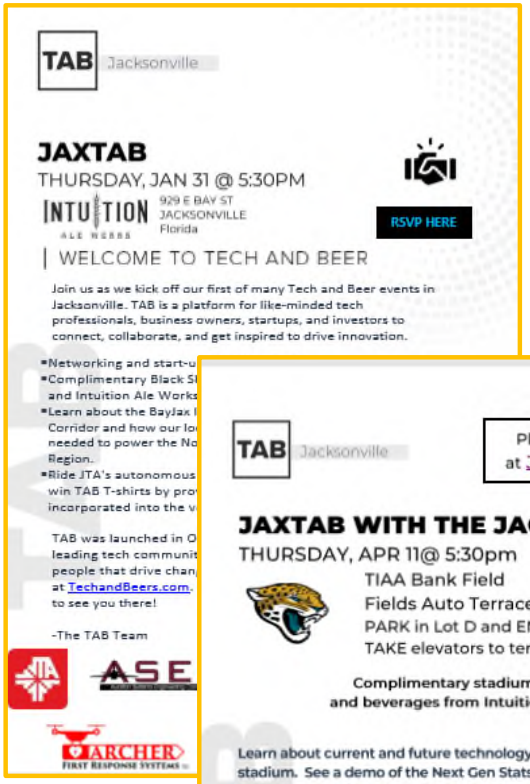


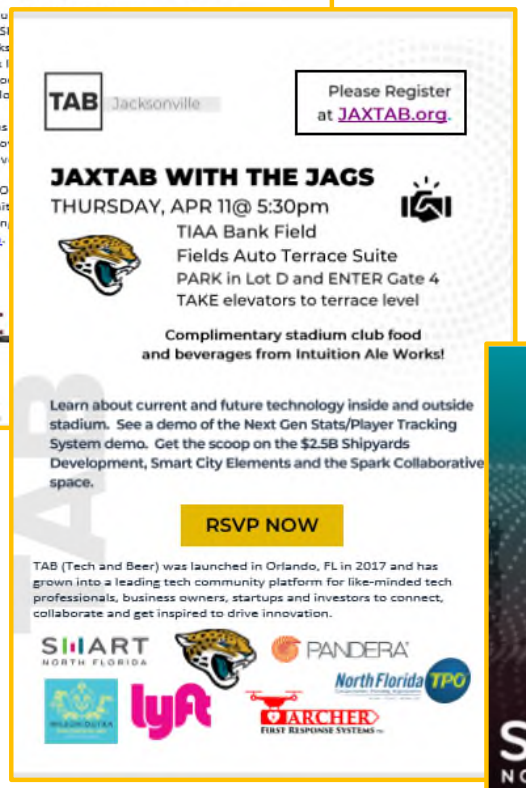
elevate northeast florida

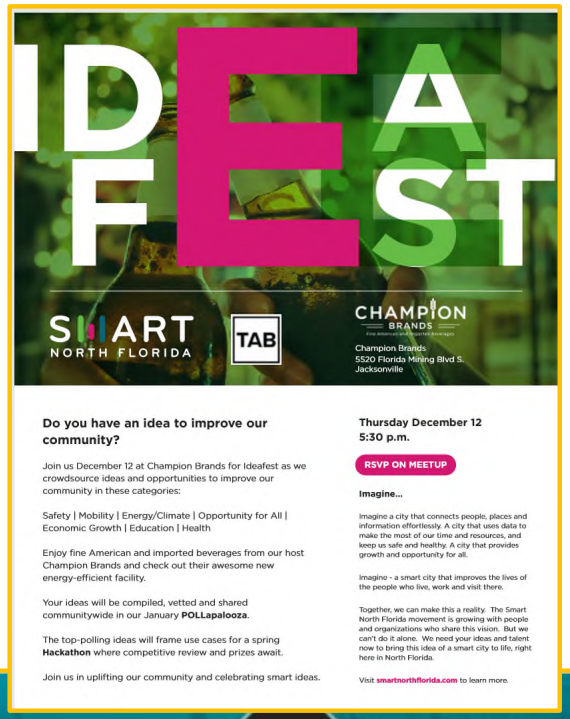


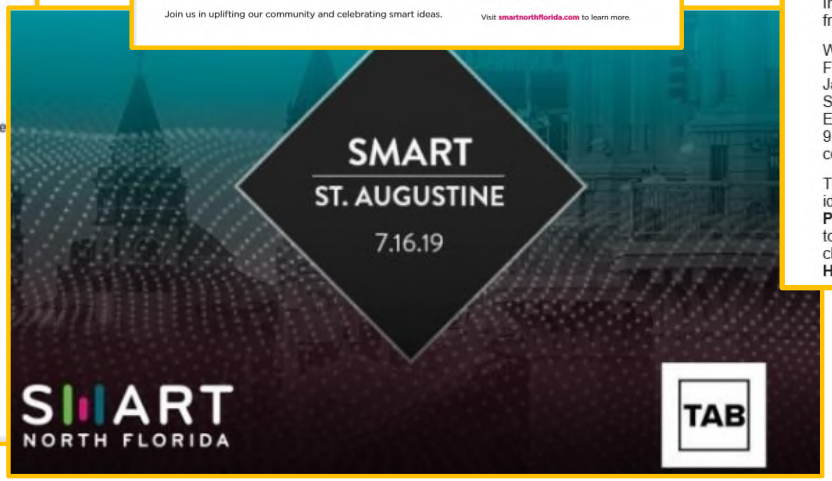
[redacted] TAB ENGAGEMENT

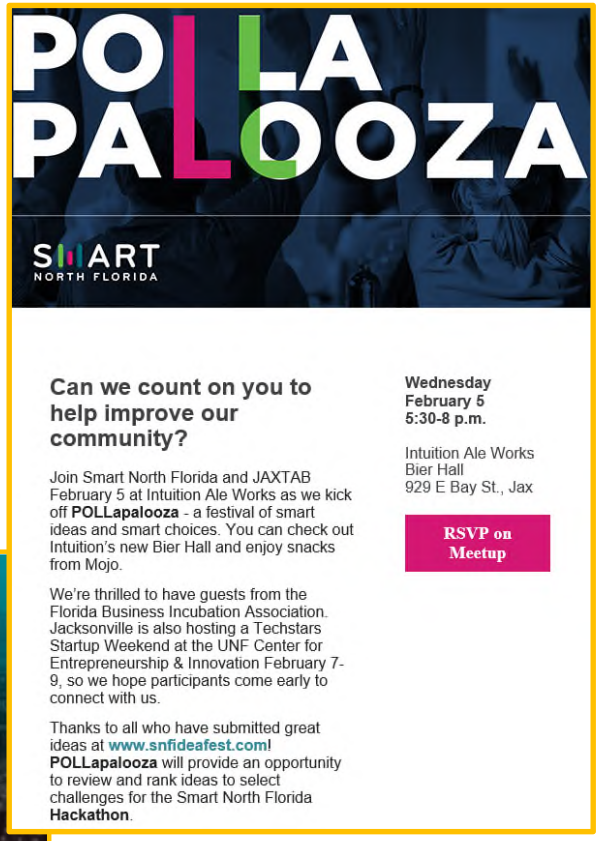



TAB Jacksonville
JAXTAB
THURSDAY, JAN 31 @ 5:30PM
INTUITION ALE WORKS
929 E BAY ST
JACKSONVILLE
Florida
RSVP HERE
WELCOME TO TECH AND BEER
Join us as we kick off our first of many Tech and Beer events in Jacksonville. TAB is a platform for like-minded tech professionals, business owners, startups, and investors to connect, collaborate, and get inspired to drive innovation.
ASE
ARCHER
FIRST RESPONSE SYSTEMS


TAB Jacksonville
Please Register at JAXTAB.org.
JAXTAB WITH THE JAGS
THURSDAY, APR 11@ 5:30pm
TIAA Bank Field
Fields Auto Terrace Suite
PARK in Lot D and ENTER Gate 4
TAKE elevators to terrace level
Complimentary stadium club food and beverages from Intuition Ale Works!
Learn about current and future technology inside and outside stadium. See a demo of the Next Gen Stats/Player Tracking System demo. Get the scoop on the $2.5B Shipyards Development, Smart City Elements and the Spark Collaborative space.
RSVP NOW
TAB (Tech and Beer) was launched in Orlando, FL in 2017 and has grown into a leading tech community platform for like-minded tech professionals, business owners, startups and investors to connect, collaborate and get inspired to drive innovation.
SMART NORTH FLORIDA
PANDORA
North Florida TPO
lyft
ARCHER
FIRST RESPONSE SYSTEMS


IDEAFEST
SMART NORTH FLORIDA
TAB
CHAMPION BRANDS
Champion Brands
5520 Florida Mining Blvd S.
Jacksonville
Do you have an idea to improve our community?
Join us December 12 at Champion Brands for Ideafest as we crowdsource ideas and opportunities to improve our community in these categories:
Safety | Mobility | Energy/Climate | Opportunity for All | Economic Growth | Education | Health
Enjoy fine American and imported beverages from our host Champion Brands and check out their awesome new energy-efficient facility.
Your ideas will be compiled, vetted and shared communitywide in our January POLLapalooza.
The top-polling ideas will frame use cases for a spring Hackathon where competitive review and prizes await.
Join us in uplifting our community and celebrating smart ideas.
Thursday December 12
5:30 p.m.
RSVP ON MEETUP
Imagine...
Imagine a city that connects people, places and information effortlessly. A city that uses data to make the most of our time and resources, and keep us safe and healthy. A city that provides growth and opportunity for all.
Imagine - a smart city that improves the lives of the people who live, work and visit there.
Together, we can make this a reality. The Smart North Florida movement is growing with people and organizations who share this vision. But we can't do it alone. We need your ideas and talent now to bring this idea of a smart city to life, right here in North Florida.
Visit smartnorthflorida.com to learn more.


SMART
ST. AUGUSTINE
7.16.19
SMART NORTH FLORIDA
TAB


POLLAPALOOZA
SMART NORTH FLORIDA
Can we count on you to help improve our community?
Join Smart North Florida and JAXTAB February 5 at Intuition Ale Works as we kick off POLLapalooza - a festival of smart ideas and smart choices. You can check out Intuition's new Bier Hall and enjoy snacks from Mojo.
We're thrilled to have guests from the Florida Business Incubation Association. Jacksonville is also hosting a Techstars Startup Weekend at the UNF Center for Entrepreneurship & Innovation February 7-9, so we hope participants come early to connect with us.
Thanks to all who have submitted great ideas at www.snfideafest.com! POLLapalooza will provide an opportunity to review and rank ideas to select challenges for the Smart North Florida Hackathon.
Wednesday
February 5
5:30-8 p.m.
Intuition Ale Works
Bier Hall
929 E Bay St., Jax
RSVP on Meetup

SMART

NORTH FLORIDA

Opportunities

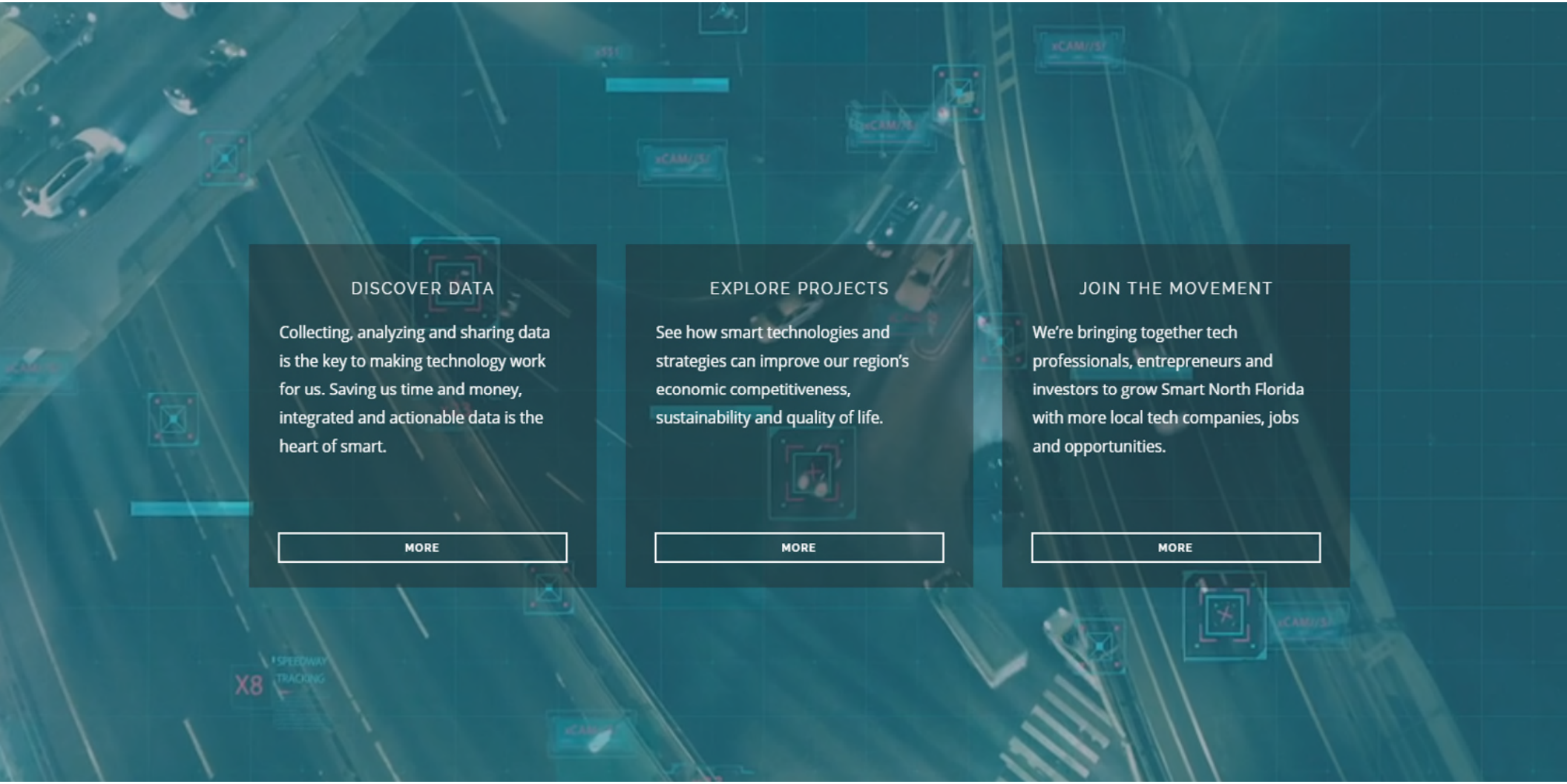
HOMELESSNESS

EDUCATION

HEALTHCARE

SMART
NORTH FLORIDA

HOME ABOUT DATA EXCHANGE PROJECTS ENGAGE RESOURCES NEWS



DISCOVER DATA

Collecting, analyzing and sharing data is the key to making technology work for us. Saving us time and money, integrated and actionable data is the heart of smart.

MORE

EXPLORE PROJECTS

See how smart technologies and strategies can improve our region's economic competitiveness, sustainability and quality of life.

MORE

JOIN THE MOVEMENT

We're bringing together tech professionals, entrepreneurs and investors to grow Smart North Florida with more local tech companies, jobs and opportunities.

MORE

jsheffield@northfloridatpo.com

Strategies Discussion

Partnerships: Key Questions

- How might the roles of existing agencies/partners change as we embrace new technology?
  - Role of DOT or MPO in managing mobility, data
- What new types of partners need to be engaged in transportation planning and decision making?
  - E.g., technology providers, vehicle manufacturers, insurance,…
- How do encourage public private partnerships foster innovation?

Sharing our Ideas

- Poll Everywhere – multiple ways to access the polls:
  - Visit www.pollev.com/FDOTplanning from your phone, tablet, or laptop to access the polling questions
  - Text “FDOTplanning” to 22333 to join the poll and respond to the polls via text message
  - Scan the QR code to the right to go directly to the website
  - Important note: A record of the poll responses will be kept for statutory records retention requirements

How should PARTNERSHIP STRATEGIES evolve to support ACES in the future?

"Start with dismantling silos within the department."

"Increased time and effort into strengthening existing partnerships, pursuing partners beyond the traditional and expected (e.g. data partners as opposed to transportation partners), establishing and encouraging partnership opportunities. FDOT as a statewide "connector" between local, regional, statewide, regional, national partners."

"Regional partnerships would make more sense, leverage existing partnerships"

"More funding 😟"

"streamline data"

"Understand evolving business models and how best to leverage P3s"

"Invite developers of AVs, CVs, batteries, and components."

"The Florida Clean Cites Coalitions have initiatives along many of the lines you've discussed, such as First Responder Train for alternatively fueled vehicles."

"Finding ways to eliminate Federal and State limitations on how and why we collect & share data"

"Data sharing can be key"

"Expand the Clean Cities First Responder AFV Safety Training for First Responders offered by NFPA"

"Define roles and responsibilities - shared ownership."

"data sharing"

"Evolution of MPOs to become active in community solutions"

"Including total partnerships such as rural hospitals worth considering"

"Limit opportunities to participate, time is a commodity and partners only have so much as well...."

"Tap into the Florida Technology Council meetups and discussion groups to evolve the technology workforce"

"Reduce budgeting and procurement limitations on data services"

"Deployment of Broadband statewide is essential or this only works in urban areas"

"Possibly include a few "fiction writers" and other particularly creative individuals and groups."

"Reduce silos within FDOT."

"Local government often have the best sense of their constituents' needs"

"Leverage cost of about access with local partners such hospitals"

"Include peripheral partners such as real estate development, airports and seaports, software developers, etc."

"Workforce development"

"Need framework and guidance for public agencies to partner with private and mitigate risk to public in innovation space."

"Include public utilities in EV planning."

"Higher level of involvement by private sector"

"use crowd sourcing to create innovative solutions"

"Reduce the duplication of common tasks where possible"

"But also recognize limitations of partners' ability to participate"

"Continuous stream on new initiatives"

"Florida's Sunshine Law..."

"Incorporate social media and mass media to better understand partners and potential partners"

"Pilot projects to learn how to implement on a bigger scale"

Planning & Project Development: Key Questions

- How do we make the planning and project development process more agile and nimble?
  - Role of long-range and short-range plans
  - Changes to regulations and processes

How should PLANNING AND PROJECT DEVELOPMENT PROCESSES AND STRATEGIES evolve to support ACES in the future?

Funding: Key Questions

- What types of investments should be a priority for public agencies, and how best can they be advanced through existing or new programs?
  - R&D
  - Roadside infrastructure
  - O&M
- How will ACES and other innovations impact transportation funding?
  - Impacts on sources of funding
  - Impacts on uses of funding

Respond at **PollEv.com/fdotplanning**

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

How should FUNDING STRATEGIES evolve to support ACES in the future?

"Will need revenue generation from multiple sources and fees for various types of mobility"

"There are more issues to VMT tax than privacy"

"Applied research and development - solving existing or implementing private sector innovations"

"Higher franchise fees for ROW users"

"Distinguish what should be funded from public sector and what should be left for private sector."

"State to allow in-kind matching for construction, planning projects."

"Use license plates for allowance to drive similar to use in the 70s for gas rationing."

"Leverage Public/Private Partnerships"

"VMT tax will be required - and it will NOT be popular!"

"Recreational MJ tax"

"FDOTPLANNING"

"Roadside infrastructure first, laying the necessary infrastructure to support CAV implementation"

"Allow CMAQ funds to be used to support AV and EV deployment"

"Higher franchise fees for ROW users"

"VMT; VHT"

"Incentivize investments that optimize existing infrastructure"

"Example - florida new market tax credit program vis DEO"

"Funding at the state level is going to have to become more open minded for multimodal projects to accommodate changes needed for rideshare programs needed at air/seaports"

"Should it really be separated? Why not BAU...which is what it is."

"Leverage stakeholder interest and non traditional funds from private/ NGO"

"Data funding considerations in the work program development process"

"Use technology to improve equity"

"Link safety funding with NEW solutions"

"Behavior economics"

"Embed as much technology as possible into the infrastructure when designing and building."

"Will need to reduce or eliminate requirements on how we use transportation funds. Need flexibility."

"Tax to trip generators."

"ACES enables mileage based user fee"

"consider tech that adds capacity in lieu of more pavement"

"Employ proceeds of federal/state carbon or cap and trade for transportation infrastructure."

"Make infrastructure investments towards tech that is already operating on the infrastructure. Plan for what tech will be on the roadways in the near future."

"Fund mobility not modes"

"Congestion pricing: corridor; cordon; roadway functional class"

"MBUF seems the most logical solution."

"Return on investment analysis for economic and social benefit"

"Is traditional opposition to VMT still issue? Privacy issue has "left the barn""

"Tax credit for investing in infrastructure"

"Can we monetize data generated from the public facilities?"

Review of ACES Strategies

What other innovations should the FTP explore beyond ACES?

"Public engagement innovations"

"Big data analytics"

"Removing road segments as part of urban redevelopment."

"Fund security & technology in the future"

"Ways technology can improve partner collaboration"

"Consider how wearable tech will affect/change travel behavior - or continued advancements in smartphones - and how these may improve safety and mobility"

"space travel"

"Will privacy be a concern or not in total mobility connections?"

"Blockchain"

"Sustainability"

"Don't forget that you can't fix transportation w/o fixing land use"

"Advanced remote sensing for transportation data collection, assets, travel behaviour"

"Tap into Florida Technology Council"

"Promotion of better work from home/remote work opportunities"

"public involvement using new technologies"

"Micromanufacturing"

"Innovations in remote working environment setting."

"Hyperloop!"

"Teleportation"

"drones"

"geo-fencing"

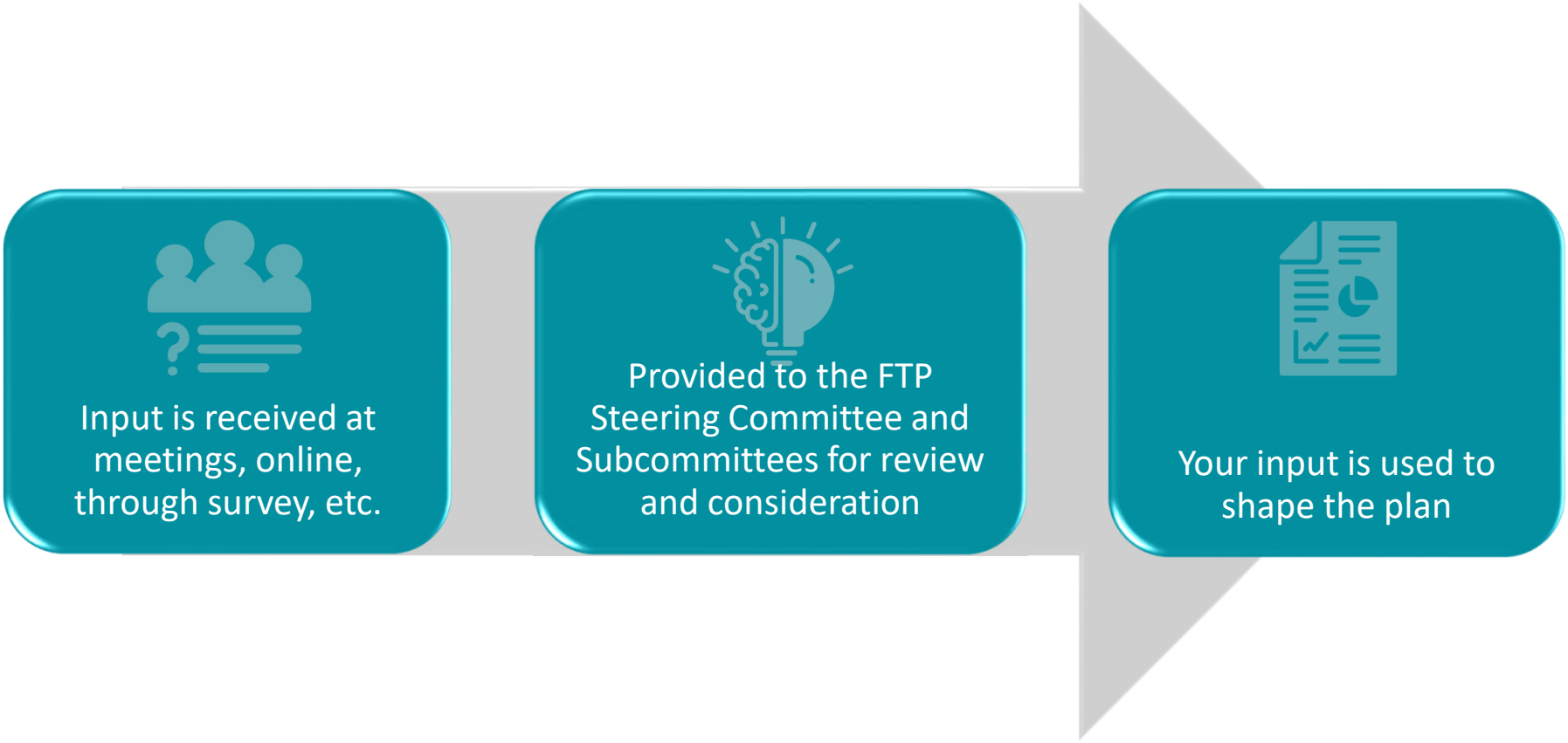
"VTOL vehicles and convertible mobility ."

Wrap Up and Next Steps

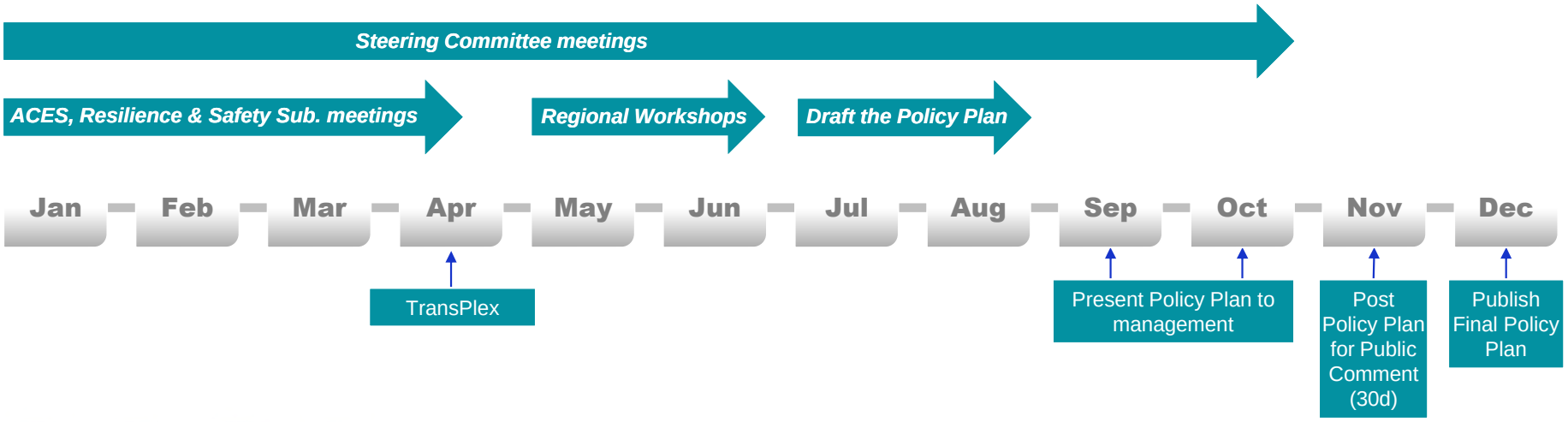
Next Steps

- By February 17th: survey to review draft strategies – 10-day turnaround
- March 3rd: 60-minute web conference to review survey input and revised strategies
- March 26th: report to full FTP Steering Committee

What Will We Do With Your Input?



FTP Events, Meetings, and Campaigns



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FDOT

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Office of Policy Planning
www.fdot.gov/planning/transplex
No registration fee

Get Involved!

www.floridatransportationplan.com

- *Share your thoughts and ideas through our values and preferences survey.*
- *Respond to our resilience and technology surveys.*
- *Join us at an FTP event.*
- *Become an ACES, Resilience, and/or Safety subcommittee friend.*
- *Request a presentation from FDOT.*
- *Provide general feedback.*

Questions?

JIM HALLEY
FDOT Office of Policy Planning
Jim.Halley@dot.state.fl.us
850-414-4817

www.fdot.gov/planning/policy