Planning for CAVs in Small Cities

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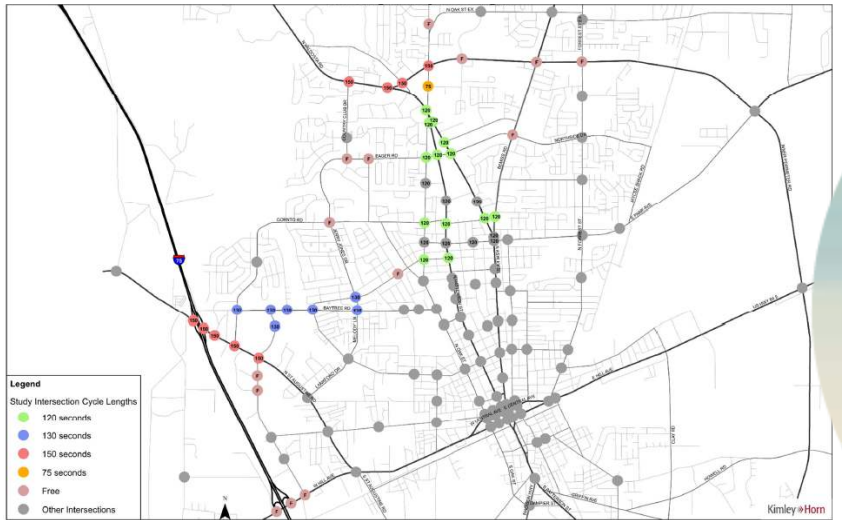
TAPA/GPA Conference
Chattanooga, TN; October 8, 2021

SOUTHERN GEORGIA REGIONAL COMMISSION

Valdosta is a Small City

- 56,095 in City
- 125 Smart Signals in Valdosta



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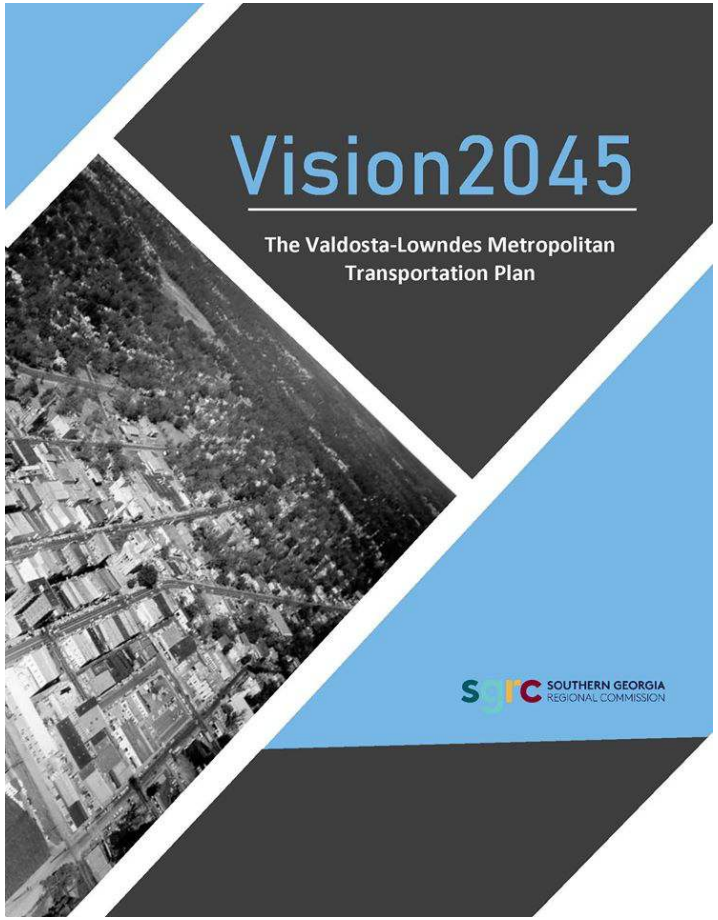
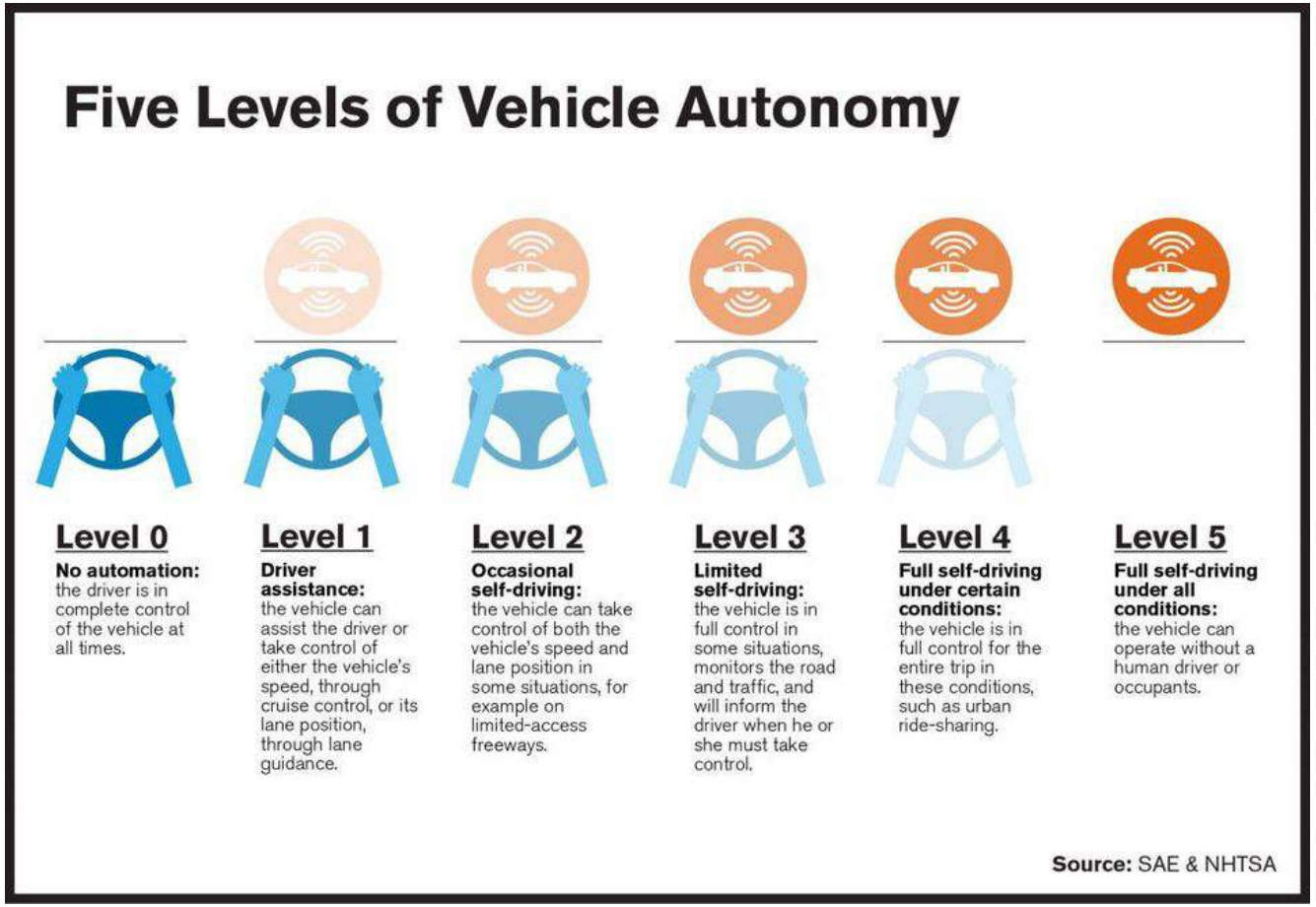
How is your City planning for CAVs?

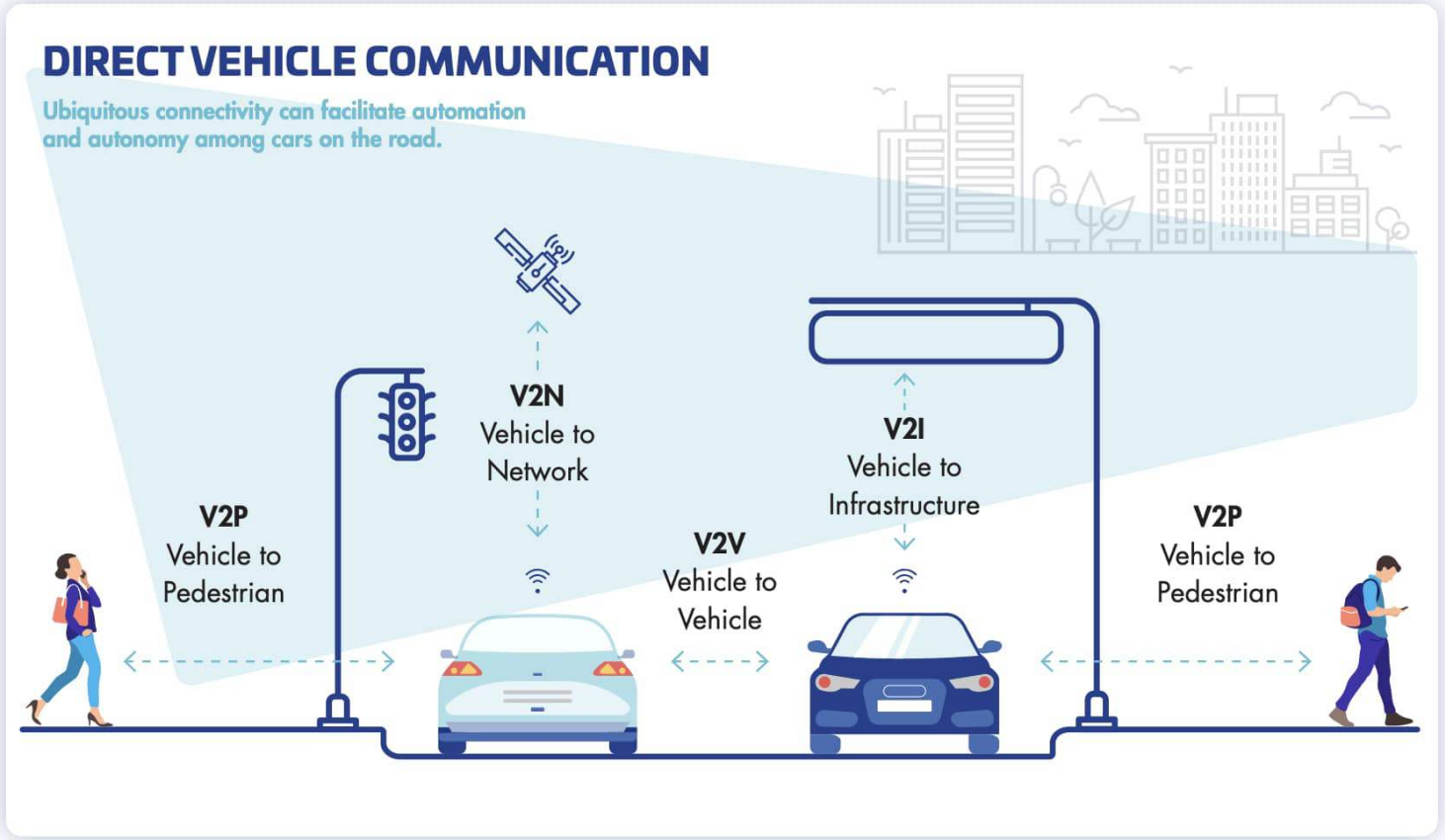
- Addressed in Transportation Plan?
- Activities in Annual Budget?
- Have you talked with other departments?
- Are you working with MPO?



AVs


Five Levels of Vehicle Autonomy
Level 0
No automation: the driver is in complete control of the vehicle at all times.
Level 1
Driver assistance: the vehicle can assist the driver or take control of either the vehicle's speed, through cruise control, or its lane position, through lane guidance.
Level 2
Occasional self-driving: the vehicle can take control of both the vehicle's speed and lane position in some situations, for example on limited-access freeways.
Level 3
Limited self-driving: the vehicle is in full control in some situations, monitors the road and traffic, and will inform the driver when he or she must take control.
Level 4
Full self-driving under certain conditions: the vehicle is in full control for the entire trip in these conditions, such as urban ride-sharing.
Level 5
Full self-driving under all conditions: the vehicle can operate without a human driver or occupants.
Source: SAE & NHTSA

CVs - Vehicle to Everything (V2X)



Current CAV Infrastructure Technologies

- Infrastructure
  - Smart Signals
  - EV Charging Stations
  - 5G Communications
- Vehicles
  - Sign Recognition
  - Lane Warning Departure

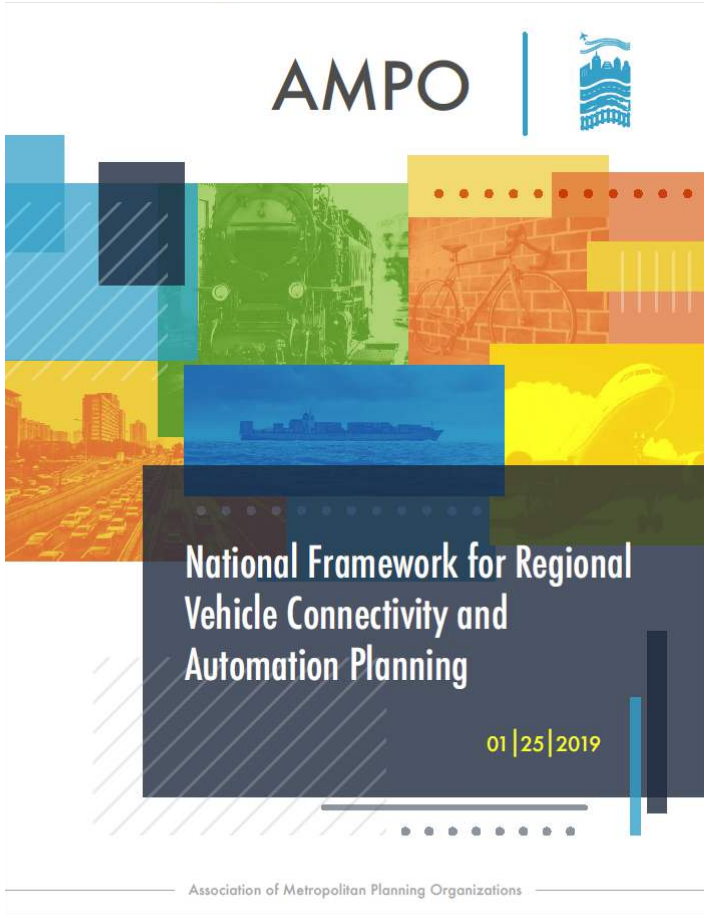
What technologies have been deployed in your community?

What do cities need to plan for now to address current technologies?

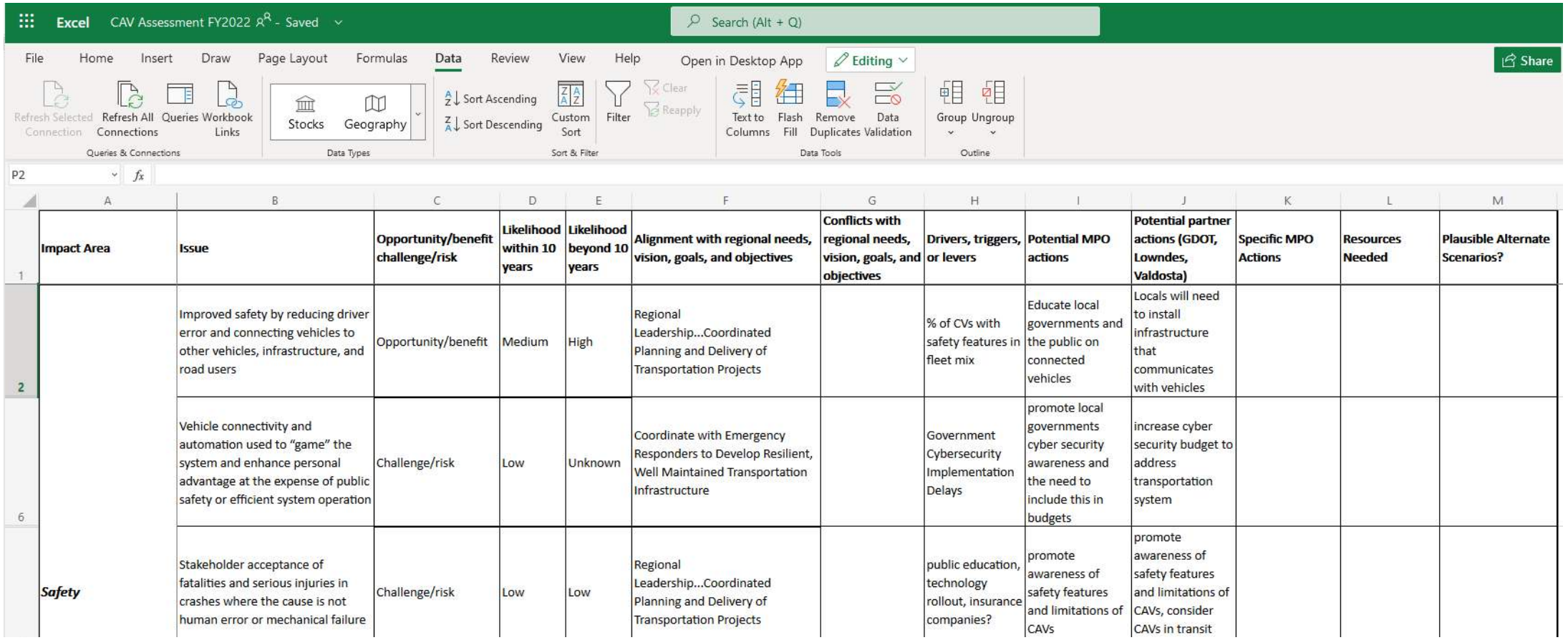
How should your city be planning for CAVs?

AMPO Framework

- V2I, V2V, V2P
- Potential Impacts
  - Benefits/Opportunities
  - Challenges/Risks
  - Planning Process Considerations
- Recommendations and Resources
- Worksheet



Impact Areas Worksheet



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**Impact Area**	**Issue**	**Opportunity/benefit challenge/risk**	**Likelihood within 10 years**	**Likelihood beyond 10 years**	**Alignment with regional needs, vision, goals, and objectives**	**Conflicts with regional needs, vision, goals, and objectives**	**Drivers, triggers, or levers**	**Potential MPO actions**	**Potential partner actions (GDOT, Lowndes, Valdosta)**	**Specific MPO Actions**	**Resources Needed**	**Plausible Alternate Scenarios?**
2		Improved safety by reducing driver error and connecting vehicles to other vehicles, infrastructure, and road users	Opportunity/benefit	Medium	High	Regional Leadership...Coordinated Planning and Delivery of Transportation Projects		% of CVs with safety features in fleet mix	Educate local governments and the public on connected vehicles	Locals will need to install infrastructure that communicates with vehicles			
6		Vehicle connectivity and automation used to "game" the system and enhance personal advantage at the expense of public safety or efficient system operation	Challenge/risk	Low	Unknown	Coordinate with Emergency Responders to Develop Resilient, Well Maintained Transportation Infrastructure		Government Cybersecurity Implementation Delays	promote local governments cyber security awareness and the need to include this in budgets	increase cyber security budget to address transportation system			
	Safety	Stakeholder acceptance of fatalities and serious injuries in crashes where the cause is not human error or mechanical failure	Challenge/risk	Low	Low	Regional Leadership...Coordinated Planning and Delivery of Transportation Projects		public education, technology rollout, insurance companies?	promote awareness of safety features and limitations of CAVs	promote awareness of safety features and limitations of CAVs, consider CAVs in transit			

Impact Areas Worksheet

Privacy

Air Quality Conformity

Funding and Financing

Safety

Equity

Data Collection

Land Use

Security

Analysis

Housing

Transportation Demand

New Transportation Service Markets

Operations

Mobility and Mode Choice

Freight

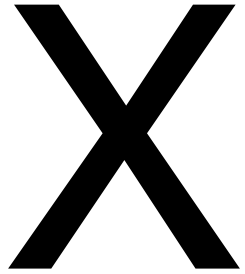
Sharing

Public Acceptance

Engagement and Coordination

Employment

Infrastructure Requirements



Alignment with Plans

Risk

Challenge

Drivers, Triggers, Levers

Opportunity

Conflict with Plans

Short Range

Benefit

Long Range

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VLMPO CAV Approach

- What do our local governments need to be doing?
  - Local Infrastructure
  - Local Policies
  - Reactionary vs. Proactive
  - Public Education
- What role can the MPO play in CAV deployment?
  - Policy and Project Development
  - Research and Analysis
  - Public Education
- Priority: Short Range Likelihood
- Challenges: Technology Unknowns

Priority Activities

- Users/Public
  - Users develop a false sense of security at lower levels of automation
  - Tension between data access, privacy, safety, and security concerns related to any personally identifiable information contained in the data
  - Public concerns over privacy, safety, and other potential challenges slow adoption
- Scenario Planning
  - Long term infrastructure planning difficult to gauge as capacity needs outside of traditional markets may emerge to accommodate demand
  - Additional infrastructure and operational capacity needed to meet demand
- Local Awareness of Costs
  - Ensuring proper use and maintaining accuracy in data sharing
  - Cost of managing large amounts of data
  - The proprietary nature of private sector data sources
- Local Partnerships and Awareness
  - Building partnerships with local, state, transit, and federal agencies, industry, academia, and stakeholder associations
  - Wide range of knowledge and perceptions of vehicle connectivity and automation

How are cities raising awareness of CAVs in their communities?

How do cities mitigate drivers from developing a false sense of safety/ security in early phases of CAV deployments?

How are cities responding to concerns about personal data privacy?

How are cities using Scenario Planning to address CAVs in 2050 and beyond?

How are cities educating local elected officials about CAVs and non-traditional infrastructure needs?

How are cities building relationships with partners to build awareness of CAVs and V2I?

What are going to do differently in your city after attending this session?

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