TOPIC
SAFETY
Potential adverse impacts on safety due to AVs
Determining how safe is safe enough?
What is the tipping point for safety?
Developing new certification tools and processes
State and local policies to ensure safety prior to deployment
Clarifying federal and state responsibilities
Roles of simulation, modeling, and off-road testing vs. on-road testing
Risk management strategies during on-road testing
Standards for vehicle responses in emergency situations
Potential safety scenarios during the transition to highly automated vehicles
Educating drivers on AV capabilities
Re-engaging drivers' attention when human intervention needed
Examing the role of human behavior in maintaining safe operation
Implications of long term mixed vehicle fleet
Interacting/communicating intent with manually operated vehicles and vulnerable road users
Liability in a world of AVs
Impacts on insurance and tort law
Impacts on law enforcement and first responders
Minimum set of safety data needed for AV operations and crashes
Impacts of shared mobility on safety
Impacts on evacuations
Safe operations of commercial vehicles
TRANSPORTATION SYSTEM IMPACTS
Infrastructure Enablers for AVs & Shared Mobility
Future designs of highways, streets, intersections, etc.
At what point should we dedicate lanes to AVs?
Infrastructure needs for V2I
Establishing a stable technology environment to enable public agencies to support connectivity
Impacts on public agencies' procurement policies
Impacts on existing standards and standards-development processes
Critical paths to level 4/5 automation for light and heavy-duty vehicles (use cases)
Timeline scenarios
Synergy within the transportation ecosystem
Convergence between connected vehicles and automated vehicles
AV deployment in a shared mobility environment

- Urban/suburban/intercity/rural environments
- Heavy duty vehicles/light duty vehicles/transit/bikes/pedestrians
- Impacts of truck platooning on other users
- Accommodating low-speed automated delivery vehicles (e.g., robots)

Potential impacts of higher level automated vehicles and shared mobility on traveler behavior and freight movement

- Impacts of shared mobility on VMT & system capacity
- Behavior of other road users around highly automated vehicles
- Should zero occupancy vehicles be regulated?

Impacts of shared mobility on transit

- Helping transit agencies solve first mile/last mile issues
- Models for integration of AVs & shared mobility with transit/micro-transit

Impacts on infrastructure funding

- Impacts on traditional revenue streams
- Pricing levers to support policies and societal goals
- Continued funding support for legacy systems
- Risks and rewards for investment planning

AVs impact on asset management practices

- Overall impacts on pavements and structures
- Deterioration from vehicles travelling on same track

Implications for work zones

SOCIAL, ENVIRONMENTAL, ENERGY, & ECONOMIC IMPACTS

Net positive and negative social impacts of AV deployment and shared mobility

- Managing unintended consequences (e.g., security, privacy, labor impacts, insurance)
- What are the right metrics and measurements that should be used to improve social outcomes?
- Diverse planning tools to address key social and environmental transportation issues

Addressing social inclusion and equity

- Helping to ensure equity of access to AVs and shared mobility
- How to best serve those with special needs

Impacts on land use, and how land use impacts AVs and shared mobility

- Facilitating active/livable communities
- Impacts on the built environment
- What's in it for rural areas?

Integrating shared mobility for mega-regions

Evaluation of pilot deployments to determine contributions to various societal goals

Preparing the future workforce

- Jobs displaced vs. jobs created
- Support for those whose jobs are displaced
- Attracting the "best & brightest" into the transportation profession

DATA & ANALYSIS CONSIDERATIONS

Models for sharing of data

- Public sector use of private sector data
- Sharing of safety & crash data
- Making data available for research and planning models
- Development of V2X communication protocols and procedures
- Protocols for data sharing and management for real-time operations & freight supply chains
- Use of transportation data to support Smart Cities
- Access to data by law enforcement agencies

Getting the most out of "Big Data"

- Limitations and capabilities of future technologies and the cellular network
- Identifying & sharing good practices in data curation, sharing, and management
- Investment planning for IT systems, data, and staffing
- Development of data formatting standards
- Analytic techniques to translate data into actionable intelligence in near-real time

Meeting cybersecurity and privacy challenges

- Cybersecurity and privacy for V2I communications
- Cybersecurity for traffic management systems
- Ensuring that data is adequately anonymized
- interdisciplinary collaboration with researchers in wireless communications, computing methods, ethics, and social science

Framework for automated/connected vehicle pilot and smart cities data analytics for policy guidance

CROSS CUTTING TOPICS

Alternative scenarios for synergy among automated vehicles, shared mobility, & alternative fuels

- Models for scenario planning (with critical paths) and use cases
- Developing means of estimating likely times for start of deployment and rates of market growth for the different new services
- Auto ownership & mode choice scenarios and implications
- Rate of deployment of mixed fleet, and implications
- Impacts on land use; density
- Common set of deployment tools for freight operations
- How strong are the various links among AVs, CVs, EVs, and shared mobility?
- Models for Mobility-On-Demand (MOD)/Mobility-As-A-Service (MaaS)

- Impacts on airport landside operations, seaports, and intermodal facilities

Systems approach – how will this all work from beginning to end with all players in ecosystem?

Implications for transportation planning and planning models

- Modeling the impacts of increased penetration of AVs & shared mobility
- New plannng tools - revisiting the traditional 4-step planning process
- Moving to objective-based planning
- Evolution to near-term or real-time planning
- Planning for rural areas

What constitutes success/failure of pilots and deployments?

Education

- Training for all users
- Clarifying the value of new systems/technologies
- Consumers attitudes/perceptions regarding safety, security, and privacy
- Informing policy makers

Precursory policy analysis for these technologies and services

- Policy framework for government intervention/regululation
- Impacts on the traditional roles of the public and private sectors
- Risks of "doing nothing"

Cooperative national research plan for automated vehicles and shared mobility systems

- Develop widely shared and continuously updated research roadmap
- Conduct gap analysis
- Develop topology for setting priorities and for conducting research
- Facilitate public/private/academic research partnerships
- Streamlining of traditional research processes
- What is the barrier breaking research that enables transformation?