

CONNECTED ^{AND} AUTOMATED VEHICLES SUMMIT

— OCTOBER 16–18, 2019 —

Summit Summary

On October 16, 2019, the Wisconsin Department of Transportation (WisDOT), with the University of Wisconsin–Madison’s Traffic Operations and Safety Laboratory (TOPS Lab) and Mid America Association of State Transportation Officials (MAASTO) convened the Connected and Automated Vehicles (CAV) Summit in Madison, Wisconsin. This three-day meeting continued a region-wide conversation on how new technologies have, are, and may impact state transportation systems.

Nine of the ten MAASTO states were in attendance and provided an overview of their current efforts. Speakers provided perspectives on CAV issues ranging from motor vehicles and law enforcement considerations, to planning, policy, operations and construction components. Participants also experienced a demonstration ride in a near-fully automated vehicle.

Summit materials, including all presentations, can be found at <https://topslab.wisc.edu/cav/>.



Wisconsin Governor Tony Evers welcomes MAASTO CAV Summit participants.

This report highlights the challenges this emerging technology presents to the states and opportunities to collaborate as a region. The formation of a MAASTO Committee to continue a collaborative CAV effort is highly recommended.

Challenges and Opportunities:

The individual state presentations and the conversations that followed, highlighted the topics and issues that present the greatest regional challenges and opportunities in preparing for, and responding to, the integration of connected and automated vehicle technology. While not an exhaustive list, the items summarized in this report generated the most discussion at the summit.

DOT Initiatives

States are at various stages of responding to CAV issues. Initiatives range from researching management models, developing strategic plans, defining department functions, assessing budgetary needs, as well as implementation of testing and pilot efforts.



MAASTO can help by collecting and distributing information on best practices and experiences on a range of topics:

- organizational structure
- testing and piloting of technologies
- state legislative actions
- integration with planning, policy, operations, construction and maintenance programs

Partnerships, Communication and Stakeholder Engagement

CAV is a broad topic that involves a tremendous number of stakeholder interests and industries. Discussions on needs, issues and opportunities must continue and include partnering with government (federal, state and local), industry and academia.

Manufacturers and regulators need consistent standards for common vehicle communication systems and Intelligent Transportation Systems (ITS) across states. MAASTO needs to collaborate on advancements in ITS and Vehicle-to-Infrastructure Communication (V2I) and Vehicle-to-Everything Communication (V2X). MAASTO must adopt a proactive and collaborative approach with freight carriers to understand how new technology impacts their business decisions. States should investigate the immediate and long-term needs of companies to help manage a broad range of topics, from a lack of truck parking, to the replacement of truck mirrors with cameras for increased fuel efficiency. Furthermore, since many businesses operate in several or more states and countries, there is a need to address issues of interoperability across state lines.



Summit participants broke into small groups to discuss opportunities for collaboration.

Pilot programs and pooled studies on CAV-related topics may be expensive and resource intensive. Investment levels and maintenance needs of these technologies are unknown. State transportation departments, federal regulatory agencies such as the National Highway Transportation Safety Administration (NHTSA), universities, and private partners, including automobile manufacturers, should collaborate on these advancements. In addition, state transportation departments need to assess whether their state laws promote or hinder infrastructure testing with automated vehicles on their roadways.

MAASTO states together and individually should utilize and leverage academic and other technical experts. Efforts should include investigating the opportunity to create a Mega-Region Automated Vehicle Research Coalition and a Regional Research and Technical Center to bring together industry, government agencies and universities.

Public engagement to further the understanding and acceptance of new technology and innovation is also critical. Efforts may focus on:

- Engaging law enforcement and first responders regarding enforcement and public safety.
- Encouraging state transportation departments to gain understanding of and support for legislative efforts regarding urgent CAV issues identified by state DMVs.
- Working with local community organizations to address issues of accessibility for the disabled and disadvantaged.
- Assisting local governments in preparing for CAV technology through education and continued communication on CAV topics.



The UW TOPS Lab is one of 10 designated proving ground pilot sites for CAV technology. The PERONE Robotics TONY automated vehicle demonstrated how the automated shuttle can operate on public roads at a variety of speeds.

Long-Term Planning

Platooning vehicles, V2I signal coordination, driverless shuttles and the potential positive or negative impacts to state transportation systems have not been fully integrated into state long range planning. The effects on budgets, projects and operational planning need to be developed. The MAASTO Planning Committee should continue investigating and identify ways to quantify the CAV impact on operations, planning and budgets.

Data Sharing

Identifying opportunities to share in the full range of data collected across the states was a common theme throughout the three-day summit. MAASTO should focus resources and leverage industry partners and academic expertise to research V2I and V2X data system issues and share the results. This body of work would assist states in implementation as well as create compatible data systems. New demands to transfer and store massive quantities of data will challenge today's information technology infrastructure.

Freight Mobility

While automated features are already incorporated into trucks on the road today, state trooper inspectors need guidance on how to respond to automated trucks and automated freight movement. Statutory requirements for truck movements, such as minimum following distance, and required vehicle safety features vary by state. MAASTO has several highly-used freight corridors that traverse state lines. Opportunities exist for MAASTO to work together to coordinate with industry and stakeholders to establish uniform regulations and procedures regarding truck movement and automated freight.

Many participants suggested that the seamless movement of CAV freight across the region could be the initial nexus for the MAASTO collaboration, as exemplified by the [Mid-America Freight Coalition](#).

Recommendation: A MAASTO Innovation Committee on Connected and Automated Vehicles

All participants agreed that further collaboration as a MAASTO region was critical. Several participants at the summit suggested that MAASTO create a standing committee with public and academic participants to explore, prepare and respond to the future of connected and automated vehicles. This committee would facilitate cross-state collaboration to integrate CAV technology, and allow the region to define unified and consistent responses.

Once created, the steering committee may utilize the tools listed below:

Memorandum of Agreement/Understanding

- Create a memorandum of agreement/understanding between the MAASTO states to share the results from connected and automated vehicle pilots and internal studies (e.g. through the creation of a regional database).

Pooled Funds Projects

- Expand current and create new Transportation Pooled Fund studies to conduct collaborative connected and automated vehicle planning and research with a regional focus.

Region-wide models

- Create region-wide forecasting and scenarios to plan for the potential impacts of CAVs.

Annual Conferences

- Host an annual MAASTO connected and automated vehicle conference to discuss ongoing initiatives and opportunities for regional collaboration and improvement.

Model Legislation

- Develop model legislation, and a legislative initiatives handbook, to help states more effectively pass regionally consistent CAV laws.

Grants

- Collaborate on applications for grants and execution of work plans (e.g., fiber optics on priority corridors).

Contact Info:

Brad Basten, Program Initiatives Officer
Division of Budget and Strategic Initiatives
Brad.Basten@dot.wi.gov; (608) 266-0786



Andi Bill, UW TOPS Lab traffic safety manager, demonstrated how a Dedicated Short-Range Communication unit within a vehicle broadcasts the signal phasing and timing information.