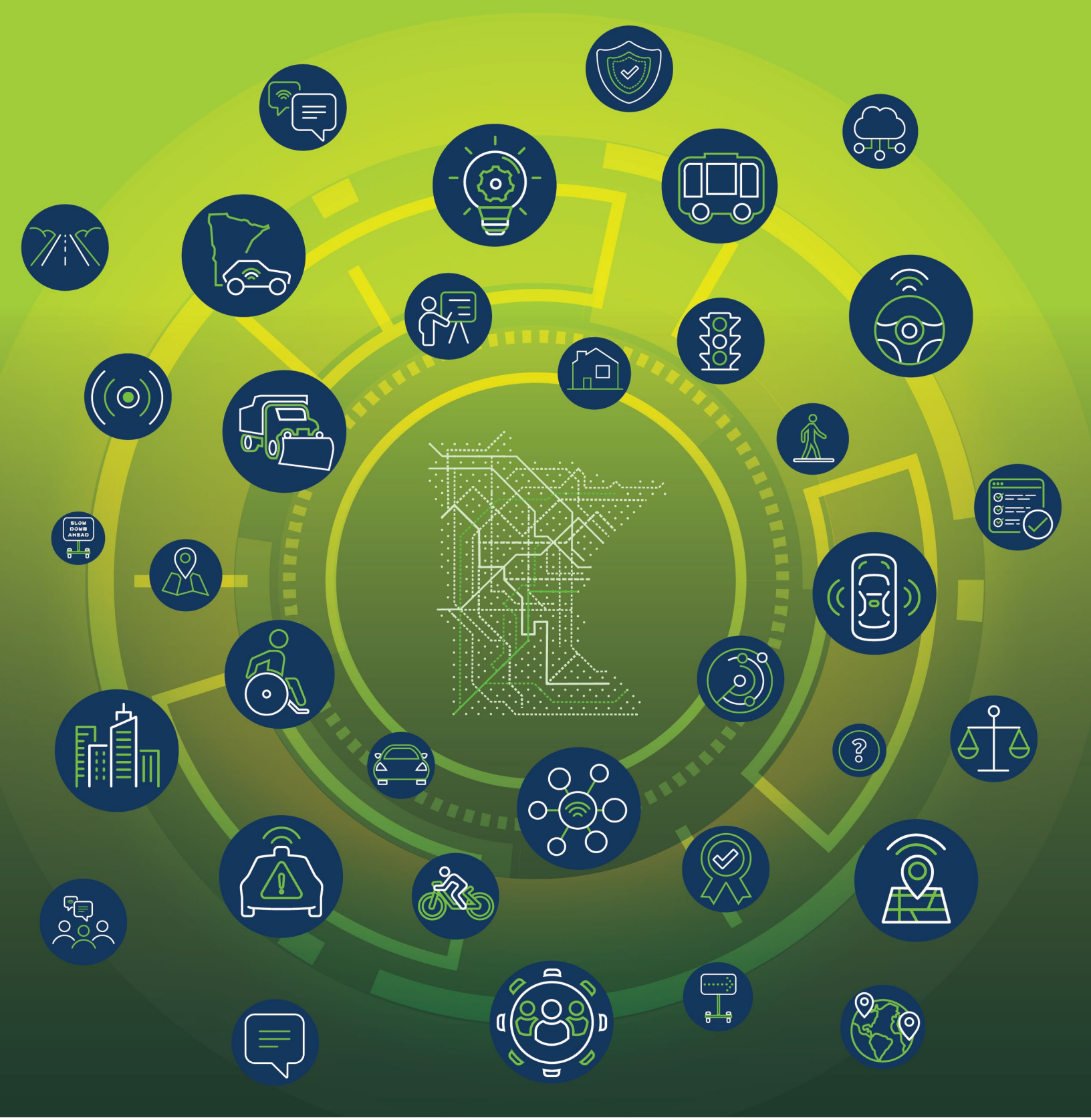

MINNESOTA GOVERNOR'S COUNCIL ON CONNECTED AND AUTOMATED VEHICLES

2025 ANNUAL REPORT

February 2026

This report was prepared by the Minnesota Department of Transportation's Office of Connected and Automated Vehicles.

To request this document in an alternative format, please contact the Office of Equity and Diversity at 651-366-4723 or 1-800-657-3774 (Greater Minnesota); or 711 or 1-800-627-3529 (Minnesota Relay).

You may also send an email message to *ADArequest@state.mn.us*. Please make your request at least one week in advance.

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Prepared with support from:
Center for Transportation Studies,
University of Minnesota

MESSAGE FROM COUNCIL CO-CHAIRS

2025 was a landmark year for the Governor's Council on Connected and Automated Vehicles. With a clear focus and shared commitment, the Council prioritized the development of a forward-looking policy framework to guide the safe and legal deployment of automated vehicles (AVs) in Minnesota. This work is essential to unlocking the transformative benefits of connected and automated vehicle (CAV) technology—enhancing safety, expanding mobility and accessibility, and driving economic opportunity across our state.

Minnesota's proactive and inclusive approach to explore AV policy for the state has earned national recognition from peer state DOTs and industry leaders. While Council members bring diverse perspectives to the table, the dialogue has been thoughtful and constructive, resulting in robust policy recommendations that reflect a wide range of stakeholder input. These recommendations are especially timely as Minnesota becomes a testing ground for Waymo, a leading autonomous ride-hailing service—marking a significant milestone in our state's CAV journey.

In 2025, the Council also hosted its second annual Minnesota CAV Summit, convening national experts, state legislators, and community voices—particularly those facing transportation barriers. These conversations directly informed our policy work and reinforced our commitment to equity and innovation in transportation.

We are proud to highlight the continued success and expansion of **goMARTI**, Minnesota's flagship AV pilot project in Grand Rapids. With leadership from the Minnesota Department of Iron Range Resources and Rehabilitation and support from the federal ATTAIN program, goMARTI has grown from 70 stops to more than 150 stops covering approximately 20 square miles. It serves not only Grand Rapids but also the communities of La Prairie, Cohasset, Ball Club, and Deer River—bringing accessible, automated mobility to more Minnesotans.

In the Twin Cities metro, **Southwest Transit** has partnered with May Mobility to explore integrating AV technology into the microtransit services of their **SW Prime** on-demand rideshare service in Eden Prairie, further demonstrating Minnesota's leadership in real-world CAV applications.

We extend our sincere gratitude to all Council members and ex officio members for their dedication, insight, and collaboration throughout the year. Your contributions have been instrumental in shaping Minnesota's CAV future.

This annual report has been prepared to inform the governor and the Minnesota Legislature of the Council's work in 2025. We welcome the opportunity to discuss our deliberations, consultationsand findings. We look forward to continuing this important work in the year ahead.

NANCY DAUBENBERGER AND DAMIEN RIEHL

CO-CHAIRS OF THE GOVERNOR'S COUNCIL ON CAV

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MnDOT CAV staff presenting at community meeting

1. COUNCIL'S VISION AND GOALS

Background

Formed in 2018, MnDOT's CAV Office actively plans and prepares for the impact of technology on Minnesota's transportation future. Connected and automated vehicles (CAVs) are integral to that future, with basic levels of CAV technology already on Minnesota roadways. However, vehicles that are fully automated in all settings are still years away. Infrastructure that accommodates connected vehicle technology—such as fiber optic cable, sensor networks and smart traffic signals—is currently being tested and deployed.

Minnesota is at the forefront of testing and understanding CAV technology, with a particular focus on safety and winter weather. MnDOT's CAV Office and its partners advocate for not just testing the technology, but also making sure it supports how people live, work and play.

This report highlights the work done in 2024 by MnDOT's CAV Office to help prepare Minnesota for the future of transportation.

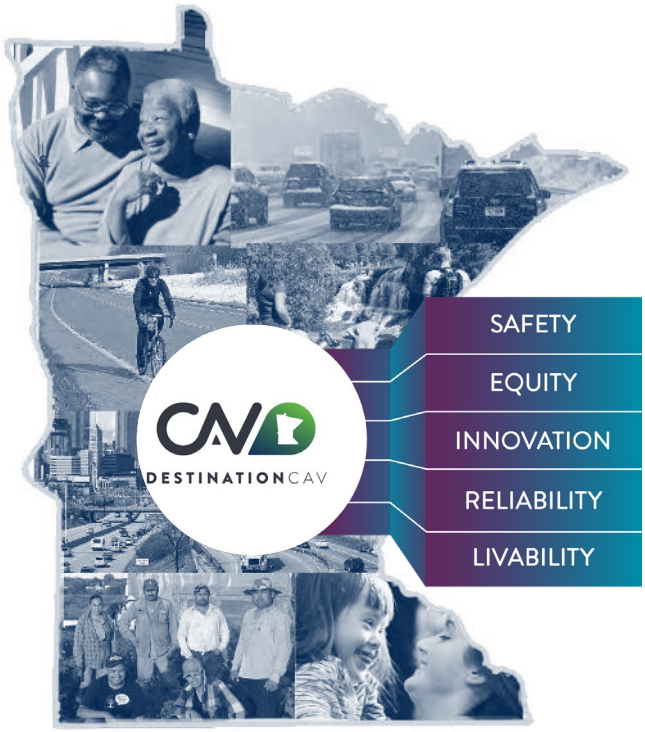


Figure 1: *MnDOT CAV Office values: safety, equity, innovation, reliability, and livability*

Minnesota's CAV Goals

Equity, Mobility, and Accessibility
CAVs have the potential to reduce transportation barriers for people with disabilities, older adults, and low-income families. They could also improve access to jobs, health care, and other transportation modes.

Economic Development and Small Business
Advancing CAV policy could grow Minnesota businesses, attract new ones, and expand opportunities for small businesses.

Jobs and Workforce Development
CAVs present opportunities to reskill and upskill workers, attract new talent to the STEM field, and develop jobs of the future while protecting the jobs of today.

Public Health and Sustainability
CAVs could help reshape the way we plan communities to prioritize health and sustainable multimodal transportation. Because many CAVs are electric, they could reduce emissions to advance sustainability goals.

Safety and Efficiency
CAVs could reduce congestion and crashes by addressing some aspects of human error that contributed to approximately 400 fatalities on Minnesota highways in 2023.

MnDOT CAV staff presenting work at industry conferences

2. WHAT IS CAV

Connected and automated vehicle (CAV) technology encompasses a broad range of connectivity and automation, functioning both independently and cooperatively. These technologies are designed to enhance the transportation experience—making it safer, more efficient, and more accessible.

Connected Vehicles

Connected vehicles use technology to communicate with each other; connect with traffic signals, signs, and other road items; and/or obtain data from the cloud. This information exchange can enhance safety and improve traffic flow.

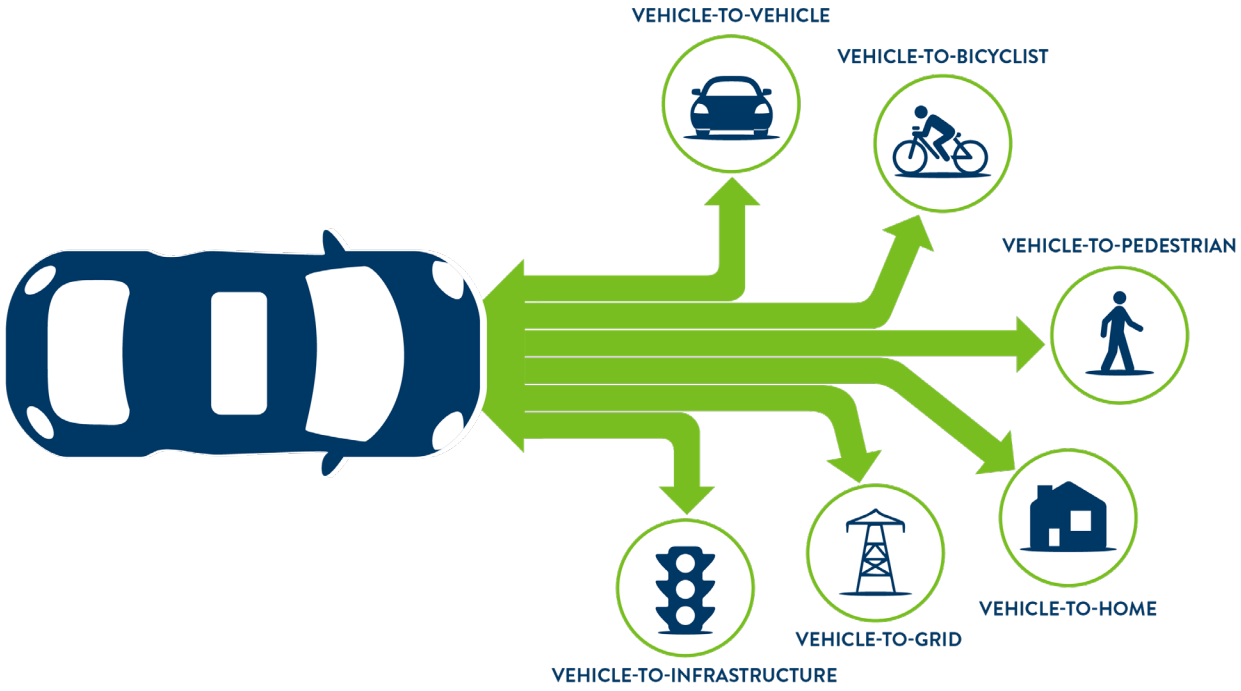


Figure 2: *Sample connected vehicle interactions*

Automated Vehicles

Automated vehicles (AVs) use technology to perform driving functions—such as steering, accelerating and braking—with little to no human input. Some vehicles still require a person to monitor the roadway, while others operate without human intervention.

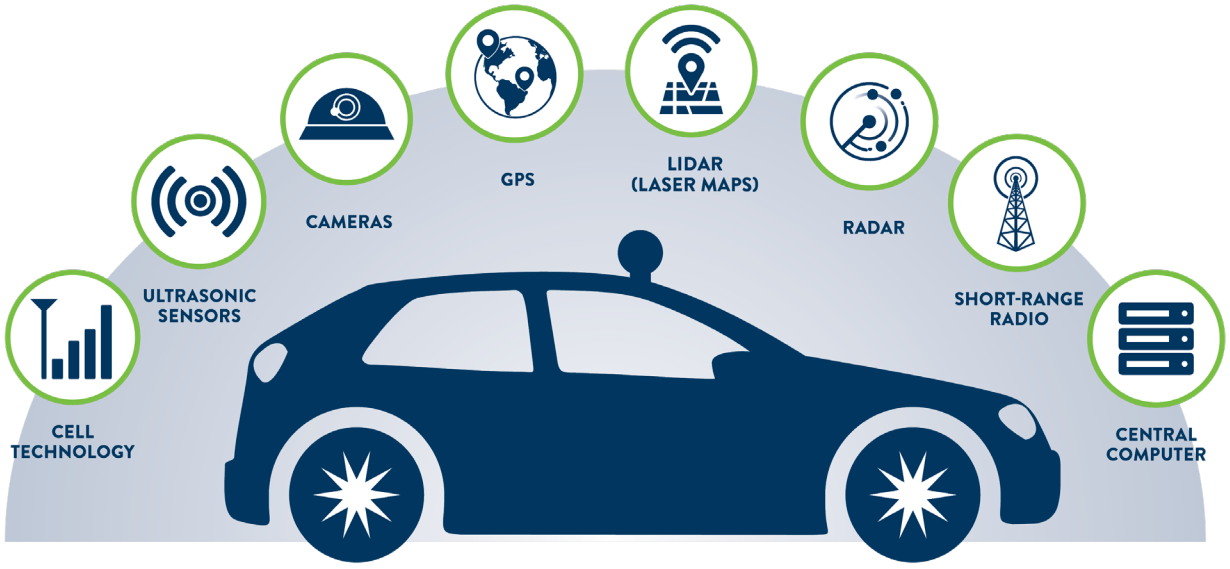


Figure 3: *Example technologies used for automated vehicles*

2025 MN CAV Summit

3. COUNCIL'S 2025 WORK

The Council is required to meet at least four times per year. They review developments and emerging technologies in connected and automated vehicle, explore partnership opportunities for the State of Minnesota, implement recommendations from the 2018 Council, engage communities facing transportation barriers and advise/ propose policies on the safe testing and deployment of CAV technology.

Figure 4 illustrates how the Council fulfilled its responsibilities, followed by summaries of the Council's 2025 meetings. Additional details on the Council and reflections from 2025 are available in Section 8–Appendix A: Governor's Council on Connected and Automated Vehicles 2024 Progress Report.

	Meeting Requirement	Review Developments	Explore Partnerships	Propose Policies	Implement Recommendations	Engage Communities	Advise On Testing and Deployments
January Meeting	YES	YES	YES	NO	YES	NO	NO
April Meeting	YES	YES	NO	YES	YES	NO	NO
July Meeting	YES	YES	YES	YES	YES	NO	YES
August Policy-Specific Meeting	NO	NO	NO	YES	YES	NO	YES
September CAV Summit	YES	YES	YES	YES	YES	YES	YES
October Meeting	YES	YES	YES	YES	YES	YES	YES
December Meeting	YES	YES	YES	YES	YES	NO	YES

Figure 4: *Summary of 2025 council meetings*

2025 Meetings

January Meeting

In January, the Council kicked off the year with its first official meeting by reviewing and approving the 2024 Governor's Council on CAV Annual Report and then focusing discussions on CAV education and outreach. The 2024 MN CAV Summit brought to light the need to further educate and expose Minnesotans, including elected officials, to CAV technology capabilities and limitations. The Council decided to prioritize education focused on safety, accessibility and economic opportunity. The Council agreed to offer the Minnesota Senate Transportation Committee and House Transportation Policy and Finance Committee an informational hearing to share information about CAV work done in Minnesota to date, potential opportunities for the future and the national landscape of AV policy.

April Meeting

The April Council meeting focused on providing Innovation Alliance Committee updates.

Committee updates:

Safe Testing of CAV shared it was working on defining terms that may need to be included in AV policy in Minnesota.

Members helped to develop a MN CAV Business Catalog to share information about Minnesota-based businesses working in the CAV space.

Transportation Infrastructure reported that it's exploring the cost implications of new and changing infrastructure investments, and that MnDOT will quantify the cost of vehicle-to-infrastructure (V2X) deployments on the state system.

Traffic Safety and Regulations shared it was discussing crash reporting requirements and identifying what data agencies and professionals use.

Cyber Security, Data Privacy, and Data Governance shared it finalized the CAV data taxonomy with definitions and different types of CAV data, how that data can be used, and what is the level of need for it.

Minnesota's Path to Driverless AV Framework was introduced and shared goals, critical milestones, and key themes/topics.

July Meeting

July focused on sharing highlights from the Mid America Association of State Transportation Officials (MAASTO) CAV Summit that was hosted in Minnesota in June. All 10 MAASTO states were represented with more than 70 attendees over the two and a half days. Key themes included AV policy, education and engagement and CAV data. The Council discussed plans for the 2025 MN CAV Summit, including confirming goals and planned sessions. To continue the Council's work on AV policy framework recommendations, guest speakers Stephanie Dock- innovation branch manager at the District of Columbia DOT- and Zeke Reyna - emerging technology team lead at Texas DOT- discussed their state's differing approaches to AV policy. The Council had additional discussion on the AV themes based on the guest speakers' remarks and council input.

August Policy-Specific Meeting

The Council asked to meet on a separate occasion to walk through the AV policy themes in more detail and so met virtually in August. The meeting resulted in hearing from new voices and perspectives, narrowing in on consensus for several of the themes and moving towards Council recommendations.

September Summit

The Council held its second annual MN CAV Summit, dedicating time for the Council to hear from industry partners, key stakeholders, and communities not represented on the Council with the goal of advancing the Council's AV policy framework recommendations.

The summit kicked off with presentations providing an industry and Minnesota overview of CAV. Presenters from MnDOT, Partners for Automated Vehicle Education (PAVE), Waymo, and Southwest Transit. Each shared insights about work around the country and in Minnesota. All panelists agreed that education and exposure is critical to ensure the public understands the technology and that collaboration is key.

Next, the Council heard from a panel of Minnesota state elected officials, all of whom agreed that the time is now for AV policy in Minnesota. They said the Council needs to be strategic to ensure the benefits

of AV are realized throughout the state and to ensure accessibility needs are addressed. Additionally, the panelists emphasized the continued need for education and exposure for both elected officials and the public and they discussed considerations to keep in mind regarding the workforce.

The third panel of the day represented Emergency Services and First Responders. Panelists, which included an assistant fire chief from the Phoenix Fire Department, brought unique perspectives based on their exposure, knowledge, and questions. Panelists emphasized the need for training and information sharing, industry standardization, and information on how to access critical data and manage incidents.

The last panel of the day was made up of communities experiencing transportation barriers not represented on the Council. Panelists included a blind individual, a college-student without a driver's license, and a motorized wheelchair user. All shared about their individual unique challenges and identified overlaps across communities. They expressed excitement about the potential to address existing barriers and improve transportation equity while also being skeptical of the cost and safety of meeting their unique transportation needs.

The second day of the summit featured a technology showcase to highlight Minnesota-based companies and pilots working to advancing CAV in our state. The summit ended with a world café activity that allowed all participants to discuss operation of AVs, identify additional stakeholders to connect with, and determine the Council's next steps.

The Minnesota CAV Summit Summary in Section 8– Appendices provides more details on this event.

October Meeting

The Council met in October, a month after the MN CAV Summit, to finalize its AV policy framework recommendations. The Council first discussed the findings from the more than 50 AV industry stakeholder interviews conducted by the MnDOT CAV team, in which stakeholders aligned and differed in preferred approaches. Additionally, the Council discussed the recommended approach, the reasoning for the approach, and the alignment of the approach with national direction. The Council also started discussing drafting the *2025 Governor's Council on CAV Annual Report* and seeking council input on content to include.

December Meeting

The Council rounded out the year with its seventh meeting to finalize the AV policy framework recommendations (full copy available in Section 8 – Appendices) that will be shared with the governor and state legislators. Members also brainstormed ideas for focus areas for the Council in 2026, which will continue to include supporting the state AV policy framework, tracking federal AV policy legislation, and identifying the needs for Minnesota as technology continues to be implemented.

Interagency CAV Team

The Interagency CAV team did not formally meet in 2025, but MnDOT coordinated efforts with state enterprise agencies to discuss development in AV policy framework recommendations and application to respective agencies.

CAV Innovation Alliance

The Innovation Alliance committees were established by the Council based on the priority recommendations it wanted to act on this year. All committees began their work in 2024 and continued throughout 2025 to work towards their respective goals. Committees prioritized work they identified as most beneficial and summarized their meetings, how their topics impact Minnesota and specific recommendations for 2025. Additional information regarding committee work can be found in the CAV Innovation Alliance 2025 Progress Update in Section 8–Appendices.

Council and Innovation Alliance members at the MN CAV Summit

Figure 5: *Innovation Alliance Committee goals*

goMARTI self-driving shuttle operating in a Minnesota winter

4. HOW MINNESOTA IS PREPARING FOR CAV

Minnesota continues to prepare for CAV technologies by observing trends and advances in vehicle automation, connected vehicle technology and other emerging areas. Below are some examples of work done by Minnesota CAV partners in 2025 in the areas of testing, research, engagement and partnerships.

Testing and Research

Minnesota continues work to better understand how CAV technology functions in our state and challenging environmental conditions, how transportation infrastructure will play a role in supporting CAV technology, and what we should be prioritizing based on evolving technology and capabilities. Exploration of CAV helps us to be better prepared to ensure that goals of safety, accessibility, mobility, and efficiency are realized.

Work Zone and Construction Connectivity

Connected Work Zones

MnDOT is exploring implementing connected workzone technology to enhance the safety of work zones and share real-time information to travelers about work-zone locations. MnDOT is installing technology on arrow boards to provide real-time information in Minnesota's 511 system. We are also exploring technologies to research and recommend for connected flagger operations.

AV Technology Capabilities and Advancements

goMARTI 2.0 Expansion

After three years of operation and more than 35,000 rides, the goMARTI project launched its federally funded expansion in the fall of 2025. The expansion adds more than 70 stops, connecting the communities of Cohasset, Deer River and Ball Club—including key destinations within the Leech Lake Band of Ojibwe Reservation—and brings the fleet total to nine vehicles: six AVs, one fully electric vehicle, and two hybrid vehicles.

goMARTI 2.0 marks a milestone in rural accessibility, serving as a model for how on-demand, innovative micromobility transportation can empower communities, bridge gaps and drive the future of public transportation nationwide.

Polaris

Polaris is conducting two proofs of concept in CAVs, specifically in the agriculture sector. The vehicles are operating at small-business and large corporate farms and vineyards chosen on the basis of the unique characteristics of the vehicles: light terrain footprint, small size for vineyards and specialty crops, and low emissions for organic certifications and products. The AVs are performing tasks ranging from agronomy and hydrography imaging to irrigation maintenance and cultivation.

AI Transportation Technologies

Truck Parking

MnDOT tested a new truck parking detection system to determine truck parking availability at a truck stop and convey the number of available spaces through Minnesota's 511 system and message boards along the highway. The project

was successful in technology functionality and accuracy and is continuing to be used and tested to determine best next steps.

High-Occupancy Vehicle (HOV) Detection

MnDOT tested technology that would help Minnesota State Patrol more effectively enforce Minnesota's HOV lanes using technology that informs officers if multiple people are in a vehicle when using the lane.

Queue Warning and Wrong-Way Driving

MnDOT tested new traffic cameras with camera analytics software that detects traffic queuing to inform travelers when traffic ahead is stopped, thus mitigating risks of rear-end crashes. Technology was tested on different road types with different challenges and is now testing the limitations and capabilities of the system.

Data

Integrated Data Environment (IDE)

MnDOT is exploring the value of deploying an Integrated Data Environment platform to centralize data from various sources. After completing the concept of operations and identifying system requirements, the state will determine the feasibility of proceeding with development of the system, considering both the technical impact and business case benefit perspectives.

Apple Car Play and Android Auto

MnDOT is working to enhance the existing Minnesota 511 app by adding Apple Car Play and Android Auto support, which will enable real-time safety alerts to be delivered directly to drivers via infotainment dashboards.

Personal Delivery Devices

The City of Minneapolis is in year two of a personal delivery device pilot program, which has permitted one delivery robot company to operate on and around the University of Minnesota Twin Cities campus. City staff are monitoring the pilot along with developments in the industry and exploring ways to transition the pilot to a permanent program.

University of Minnesota Research

Teleoperations

As part of a National Science Foundation (NSF)-funded project, a University of Minnesota (UMN) team has developed an AV teleoperation system and conducted initial testing over commercial 5G networks. The team has also instrumented the University's MnCAV vehicle and made it "remote drivable."

Remote Driving

An academia–industry team led by UMN has received a two year, $7 million award from the NSF to develop improvements to existing 5G networks. This includes making them "vertical-aware" to effectively support remote and cooperative driving.

GPS-Based Driving

With funding from the Minnesota Local Road Research Board (LRRB), UMN researchers have developed and implemented an autonomous steering control system suitable for rural roads that utilizes the MnCORS correction systems for GPS-based driving. The system has been evaluated on the MnCAV research vehicle.

Preventing Vehicles from Running Red Lights

Researchers have also developed and tested an in-vehicle warning system that tells drivers they need to brake to avoid running a red light. During phase one of this LRRB-funded project, a prototype of the red light running warning system was demonstrated at an intersection in Scott County. Phase two of the project began in 2025 and will further develop the technology towards general driver use.

Planning

We are planning for a future transportation system with multiple unknown variables. MnDOT focused planning work on how to improve our state's CAV program and processes and on exploring the benefits of V2X technology and the cost implications of enhancing our infrastructure.

CAV Tactical Plan

As part of the Transportation Systems Management & Operations Strategic Plan effort, the MnDOT CAV team began drafting the CAV Tactical Plan in 2025. The CAV Tactical Plan details the goals, objectives, and strategies that the MnDOT CAV program will focus on during the next three to five years. The CAV Tactical Plan will be finalized in early 2026.

EZ Pass Systems Engineering

MnDOT conducted a systems engineering evaluation on the state's high-occupancy vehicle and fee lanes, known as EZ Pass. The project explored the operational needs of the state and new tolling technologies to be considered for future operational needs. Recommendations aim to achieve improved operational results of the lanes, including reducing rates of violation.

I-35 Corridor ITS Feasibility Study

MnDOT conducted an intelligent transportation systems (ITS) feasibility study on the I-35 corridor in Duluth to study potential ITS solutions to address traffic and weather-related issues. The final feasibility report will include ITS recommendations to be considered and installed on future roadway projects.

City of Minneapolis

The City of Minneapolis was awarded Stage 2 funding from the USDOT SMART Grants Program to scale up a digital curb management pilot project. The project is building a city-wide digital curb map and installing smart sensor technologies in eight commercial districts throughout the city. One of the primary goals of the project is to enable digital communication of curb regulations for uses such as by autonomous vehicles.

University of Minnesota

Minnesota AV Policy Gaps and Opportunities

UMN researchers led a project for MnDOT to review Minnesota executive orders, previously proposed legislation in Minnesota, laws passed in the 35 states that have taken action, and model legislation that would permit operation of CAVs in Minnesota, at a minimum for testing and demonstration purposes. The research identified legal issues on which Minnesota law is currently silent and identified language from these other sources that may be adapted and applied in draft legislation.

Engagement

Public engagement and education continue to be a priority in Minnesota, and MnDOT in particular, for CAV. The more people increase their knowledge about CAV, the more informed they will be and the more likely to support future projects, programs and policy to best meet the transportation needs of people in our state.

Stakeholder Interviews

From May to September 2025, MnDOT's CAV team proactively engaged with more than 50 stakeholders to inform and shape potential AV policy that reflects the diverse needs of Minnesota's partners. Participants represented a wide range of sectors that included labor, AV developers, insurance, local and state government, manufacturers, public safety, transit, tribal nations, and the trucking industry. The meetings served as a platform to share information, gather feedback, and identify key interests, concerns, and opportunities.

Conferences, Speaking Engagements, and National Leadership

Minnesota is a recognized leader in CAV, with a strategic focus of testing, learning, and understanding what our needs are. Minnesota CAV industry partners have presented at a number of conferences and events including but not limited to the Minnesota statewide Toward Zero Deaths Conference, MN State Transportation Center of Excellence, WTS International Conference, MAASTO CAV Summit, MAASTO Annual Meeting, ITS World Congress, MOVE America, SAE Automated Transportation Symposium, Minnesota Chamber of Commerce, Florida AV Summit, Minnesota Transportation Conference, North Dakota DOT Maintenance Conference, ITS MN, and Autonomous Trucking Conference.

Attendees from 10 state DOTs at the 2025 MAASTO CAV Summit

CAV Camp

The University of Minnesota's Center for Transportation Studies (CTS) hosted its fifth CAV Careers Pathway Camp in August 2025, engaging 19 students in grades 10–12. The camp was funded by the Federal Highway Administration (FHWA) and CTS and administered by MnDOT's Office of Civil Rights. Programming partners included MnDOT, The Plum Catalyst, 3M, SICK Sensor Intelligence, HDR Engineering, Minnesota Pollution Control Agency, and several UMN departments.

Highlights this year included multiple opportunities to experience driving simulations: The PLUM Catalyst provided a lesson on digital twins and testing in simulated environments. During the University of Minnesota Research Day, students got to test out a virtual reality driving simulator and take a drive in the Human Factors Safety Lab's driving environment simulation. Additionally, students visited two local technology leaders with field trips to SICK Sensors's new Bloomington facility and the 3M Innovation Center.

Partnerships

Minnesota and CAV-industry partners have worked together and with other industry partners across the country and world in testing, research, engagement efforts, data sharing, policy development, and more to learn from and build off one another.

Organizational Memberships and Participation

MnDOT and other Minnesota industry partners are members of the Intelligent Transportation Society of Minnesota (ITS MN), Intelligent Transportation Society of America (ITS America), and Institute of Transportation Engineers (ITE), participating on committees, sharing information through webinars, and learning from other partners. MnDOT is a member of several transportation pooled funds administered by the https://highways.dot.gov/ that enable all state DOTs to pool funding, subject matter expertise, and resources to address shared research needs. Additionally, several Minnesota industry partners, from state, private entities, and academia serve on several boards and in leadership roles across the state, region, and nation. Some of these roles include board or leadership positions with ITS MN, MAASTO, UMN CTS Research Councils, Center for Connected and Automated Transportation Technology Advisory Board, American Association of State Highway and Transportation Officials (AASHTO) CAV Community of Practice, Partners for Automated Vehicle Education (PAVE), Governor's Highway Safety Association (GHSA), and many more.

Center for Connected and Automated Transportation (CCAT)

Since 2023, the University of Minnesota has been a part of the Center for Connected and Automated Transportation (CCAT), the University Transportation Center for USDOT Region 5. Led by the University of Michigan, CCAT is a consortium of nine institutions conducting research on topics related to safety, congestion, connected vehicles, connected infrastructure, and autonomous vehicles. In 2025, two new research projects were funded at the University of Minnesota:

- A project to develop and validate advanced traffic-smoothing controllers for CAVs to address critical safety and mobility challenges in mixed-traffic environments, in partnership with Purdue University.
- A project to evaluate V2X network performance and enhance safety and security in sensor data sharing for CAVs, in partnership with the University of Michigan and Purdue University Connected and Automated Driving.

Governor's Advisory Council members and staff provide testimony at the Minnesota Capitol

5. AV POLICY FRAMEWORK RECOMMENDATIONS

At the beginning of 2025, the Governor's Council on Connected and Automated Vehicles established a goal of developing recommendations for how Minnesota could legislatively establish a path for fully automated vehicle (AV) operations. It was understood that if Minnesota does not develop this path, the people of Minnesota will miss out on the potential benefits AVs provide—namely, enhanced safety for all roadway users, greater accessibility and mobility for people and goods (especially for those unable to drive themselves), and economic growth.

In 2025, The Council developed Automated Vehicle Policy Recommendations based on the work of the Council, MnDOT, and the MN Department of Public Safety to understand what other states have implemented for AV policy and consider the input from many stakeholder groups. They include the AV industry, accessibility advocates, the insurance industry, labor, local government, safety advocates, state government agencies, transit, Tribal nations, the trucking industry, vehicle manufacturers and more. Not all groups are represented on the Council.

The recommendations include detailed proposed actions, reasons behind the proposed actions, and perspectives of different Council members to highlight the diverse opinions of the Council. The recommendation themes are: 1) testing, deployment, and operations; 2) safety verification; 3) registration, permitting, and date reporting requirements; 4) ability to remove bad actors (enforcement); 5) emergency services interaction plan; 6) liability and insurance; 7) role of the driver/operator; 8) accessibility requirements; 9) workforce implications; 10) state and local governance; and 11) privacy and security. In addition to the recommendations, the Council's work helped support the creation of the AV policy themes document developed as part of this process.

Council Members join May Mobility and others at the launch of goMARTI

6. COUNCIL'S PLANS FOR 2026 AND RECOMMENDATIONS

The Council's work of 2025 lays the foundation for the council's work in 2026, building off the Council's AV policy framework recommendations.

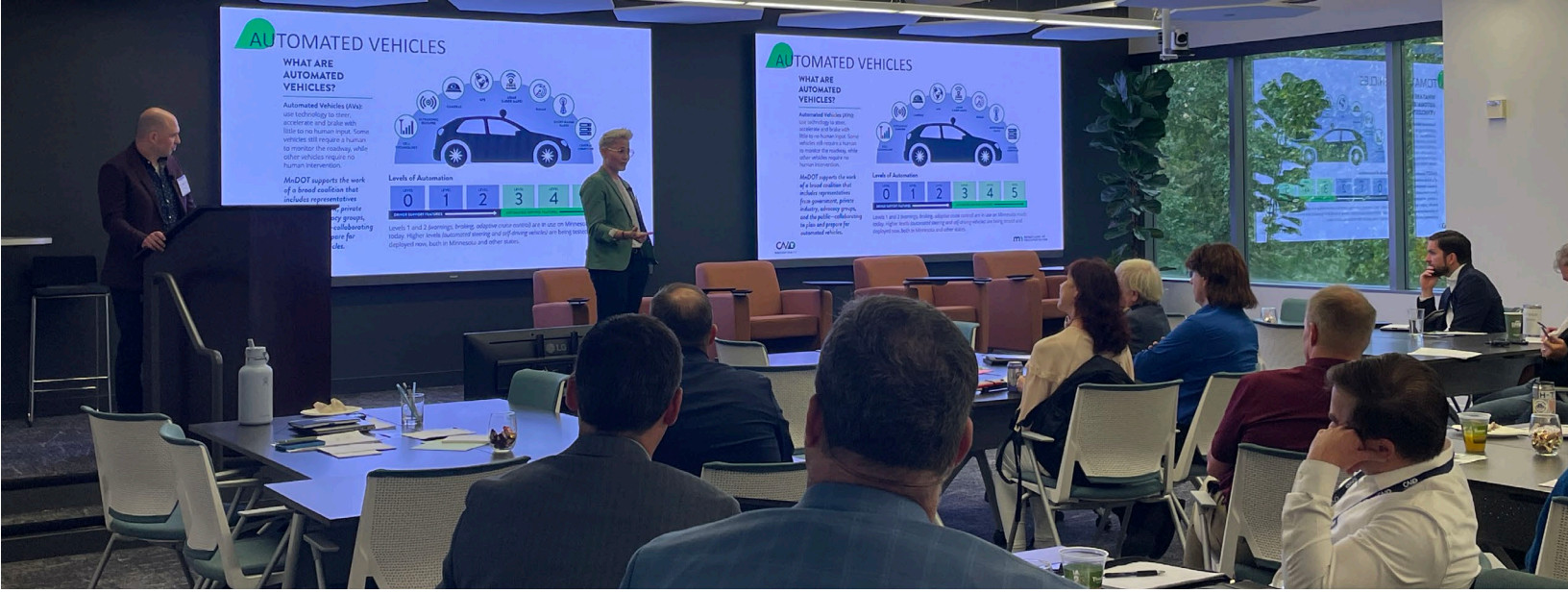
Plans for 2026:

- Continue to support and follow the state AV policy legislation process
- Track federal AV legislation and regulations
- Study workforce impacts of AV operations
- Participate in engagement opportunities
  - AV Day at the Capitol on April 14, 2026
  - MN CAV Summit in late summer/early fall 2026
- Establish a state-wide committee for first responders and incident responders

Additional areas to explore in 2026:

- How to emphasize equity and accessibility in AV deployments and operations
- Sustainable funding for pilot AV projects
- Expanded AV public education
- CV industry partnership for data gathers

Figure 6: *Council's four Innovation Alliance committees*



Council members at the 2025 MN CAV Summit.

7. GOVERNOR'S COUNCIL ON CAV MEMBERS

NANCY DAUBENBERGER, CO-CHAIR
Commissioner, Department of Transportation

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Polaris

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Willshire Consulting

8. APPENDICES

Appendix A: 2025 MN CAV Summit Summary

Appendix B: Automated Vehicle Policy Recommendations

Appendix C: CAV Innovation Alliance 2025 Progress Update

Appendix A:
Governor's Advisory Council on Connected and Automated Vehicles 2025 MN CAV Summit Summary

Background

In April 2019, Governor Tim Walz issued an executive order appointing a Connected and Automated Vehicle Advisory Council to study, assess, and prepare for the opportunities and challenges associated with the widespread adoption of connected and automated vehicles (CAV) and other transportation technologies. After a brief pause in 2023, a new Advisory Council was appointed and began work in January 2024. To build on the knowledge and work of the new council, a summit was held in October 2024 to bring together Council members, ex officio members, and Innovation Alliance Committee members. This event combined stakeholder panels, facilitated discussions, and committee work time focused on how to best prepare Minnesota for CAV and other transportation technologies. The summit was renewed in September 2025 to continue making progress through these meaningful conversations. The 2025 iteration also featured a technology showcase highlighting important research and innovation happening now in Minnesota.

Focus and Goals

The focus of the 2025 MN CAV Summit was to explore an AV policy framework for Minnesota. The goals of the summit included:

- Serve as a valuable convening of the Council to work towards actionable outcomes
- Allow for productive working sessions to move forward with an AV policy framework
- Hear from key stakeholders who are not on the Council

Summit Topics

- Industry and Minnesota Overview
- Minnesota State Elected Officials Panel
- Emergency Services and First Responders Panel
- Communities Experiencing Transportation Barriers Panel
- Technology Showcase
- World Café Activity

Key Takeaways

- There are benefits to exposing people to automated vehicle technology
- Minnesota is ready for AV policy
- Emergency services and first responders need to be prepared for AVs
- Minnesota has the responsibly to ensure all people in our state benefit from AV technology
- Minnesota businesses are engaged and recognized in the AV industry

DESTINATIONCAV

Day One Summary: Panel Sessions

Throughout day one, four panel sessions were hosted that brought in key stakeholders to share their perspectives. All panelists were asked about the challenges and opportunities CAV technologies could bring for their industry and communities. Questions, tailored to each group, aimed to identify areas of focus for the Council and state of Minnesota as CAV technology and potential policy language develop.

Following each panel, attendees broke into table discussions and responded to topic-related questions. A summary of themes from these table discussions can be found in Appendix A.

Industry and Minnesota Overview Panel

Goal of session: Provide attendees with a broad overview and understanding of AV work in Minnesota and around the country.

Panelists:

- Erik Hansen, CEO, SouthWest Transit
- Adam Lane, State and Local Public Policy Manager, Waymo
- Katelyn Magney-Miller, Communications Director, PAVE

Moderator:

- Thomas Johnson-Kaiser, Policy and Planning Manager, Connected and Automated Vehicles Office, MnDOT

During this panel, the three panelists and moderator provided context to ground the audience in a shared understanding of where Minnesota and the nation are with CAV technology. Despite speaking from different perspectives, the speakers agreed that continued public interaction with these technologies is key to increasing acceptance.

Ahead of the panelist presentations, Tara Olds, Director of MnDOT's Connected and Automated Vehicles Office, provided an overview of Minnesota's CAV activities over the past several years and level-setting definitions of AVs. MnDOT worked with several partners to begin testing AV technology in 2017. After seeing demonstrations in warmer climates, an Easy Mile shuttle was brought to Minnesota to test its capabilities in winter weather. Initially, the shuttle could not function well in snow. This early testing identified the clear need for AVs to be tested in challenging winter weather conditions for Minnesotans to successfully see the benefits of these new technologies.

These early realizations led to many successes in the state, including establishment of the Governor's Advisory Council on Connected and Automated Vehicles, funding for pilots and research through the Connected and Automated Vehicles Office at MnDOT, and three successful demonstration pilots across the state.

Public Trust as a Barrier

All four speakers emphasized the importance of building public trust in the technology. Both in Minnesota and nationally, the general public is mixed in terms of its willingness to accept CAVs in their communities. Data shared from a 2025 MnDOT survey showed that many Minnesotans remain concerned about the safety of the technology. People lack clarity on how CAVs will integrate into and benefit their communities. Katelyn Magney-Miller shared results from a recent AAA survey that revealed

6 out of 10 U.S. drivers were fearful of riding in a self-driving vehicle. Building public trust and understanding of the benefits of CAVs is critical to successful deployment.

Education and Exposure Increase Acceptance

All surveys discussed during the panel shared a critical theme: Once members of the public are exposed to automated technology, their comfort and trust grow. Data show that automated vehicles are safer than human drivers, and it is important to get that information in front of stakeholders, legislators, and the general public. Demonstrating the potential benefits to a community, including increased service areas and accessibility features, will help generate an understanding of how CAVs can make positive equity impacts. Additionally, getting people into vehicles and allowing them to interact with the technology will increase trust and acceptance. In over six months of AV service through SouthWest Prime, a microtransit service in Eden Prairie, only one rider refused to get into the vehicle. More than 73 percent of trips are now repeat riders, which SouthWest Transit CEO Erik Hansen says speaks to the acceptance within the community. Whether through deployments or demonstrations, this type of exposure is important for fostering a smooth transition for CAVs.

Collaboration is Key

When deploying CAVs in a community, a wide range of stakeholders need to be at the table. It is important for emergency services and other agencies that may interact with a CAV to understand how these vehicles may differ from their usual daily interactions. Additionally, getting buy-in from key public figures could increase public trust in the service. This includes government officials such as mayors, city managers, and commissioners as well as key advocates such as bike safety groups and the disability community. Fostering relationships ahead of a deployment can mitigate equity concerns and ensure increased acceptance.

Robotaxi and Transit Focus

When examining the national landscape and progress of the technology, panelists agreed that robotaxi and transit deployments will continue to lead the way for CAVs on the road. There is limited availability for higher levels of automation in personal vehicles. Awareness efforts should tailor messaging and education to focus on transit and rideshare applications of CAVs. Policy decisions should not exclude the possibility of personal vehicle ownership but should focus primarily on the more imminent forms of CAVs on the roads.

Minnesota State Elected Officials Panel

Goal of session: To hear from Minnesota elected officials on AVs, the opportunities they see for Minnesota, and the questions they have for the Council.

Panelists:

- Senator Jim Carlson (District 52)
- Senator John Jasinski (District 19)
- Representative Erin Koegel (District 39A)
- Representative Andrew Myers (District 45A)

Moderator:

- Kyle Shelton, Director, Center for Transportation Studies, University of Minnesota

During this panel, the legislators shared their own interests in transportation technologies, perspectives on the concerns and opportunities facing their communities, and areas of focus for the state of Minnesota. They agreed that now is the time for Minnesota to move forward with CAV technology to avoid falling behind other states. All legislators raised potential benefits for their constituents but cited concerns around funding and balancing resources across the state.

Funding and Investments Statewide

The panel emphasized the need to consider all areas of Minnesota when considering investment and funding decisions related to CAV adoption. Although there are potential benefits to Minnesotans in both urban and rural areas, the private market will more easily integrate its services into the metro areas. It will be important for state leaders to ensure rural Minnesota doesn't fall behind. Long-term funding concerns were also raised as electric CAVs become more prevalent.

Potential Accessibility and "Last Mile" Benefits

All legislators agreed that a key benefit of CAVs is increasing accessibility for constituents who cannot or do not drive. Panelists noted that this increased accessibility could help further community connectedness and provide a solution to the "last mile" problem, especially in winter weather. Ensuring CAVs are equipped to handle rural roads in all seasons will be a critical component to realizing these benefits.

Opportunities for Learning

When considering Minnesota's path forward with CAVs, the panel advocated for state leaders to learn from other states around the country. Some panelists suggested introducing the technologies in small deployments before widespread local implementation. It is time to allow the technology into Minnesota and continue learning and making improvements tailored to the needs of Minnesota.

Role of Government

Legislators discussed a few main roles for government: Communicate trust to the public, partner to solve barriers, and ensure the technology can operate between corridors. Panelists mentioned the need to continue educating themselves on the technology and continue to be realistic on how CAVs may roll out across Minnesota. Part of this challenge remains finding the right balance between state and local control that will allow communities to see the benefits of CAV technology.

Workforce

Panelists discussed the potential displacement of workers and acknowledged concerns for certain communities while agreeing that this concern extends beyond CAV technology to automated intelligence technology more broadly. Workforce challenges and transitions need to remain at the forefront of conversations as technology expands. The technology will not stop to preserve jobs, so the state needs to consider how to partner across industries to address retraining and reskilling.

Emergency Responders and Services Providers Panel

Goal of session: To hear thoughts and perspectives on AVs from folks in the emergency services space. What are the challenges and opportunities with the technology? What are lessons learned? What should Minnesota be thinking about from a legislative perspective? What information do emergency service providers need for safety and how should we require that as part of an emergency responder interaction plan?

Panelists:

- Katy Kressin, West Central Region Program Coordinator, Minnesota Toward Zero Deaths
- Andy Morgan, Chief of Police, Grand Rapids, Minnesota
- Reda Riddle-Bigler, Assistant Chief, Phoenix Fire Department
- Matthew Simpson, EMS Specialist, Minnesota Office of Emergency Medical Services

Moderator:

- Mike Hanson, Director of the Office of Traffic Safety, Minnesota Department of Public Safety

All panelists identified training and standardization as the overall priorities for their organizations, but time and funding remain barriers for successfully incorporating new information. Rural jurisdictions that rely on volunteers may face additional challenges. The panelists stressed the importance of industry standardization to eliminate the need for constant retraining and variability on scene. They also emphasized the types of information most critical for first responders and incident management, including ways original equipment manufacturers can partner with local agencies.

Training and Information

The unknown can create fear; how will CAVs react to emergency vehicles on the road, how will they engage with crash scenes, and is the vehicle safe to access or tow? These are some of the many questions emergency service providers have raised related to CAVs. Training, including broadening the general knowledge base of types of vehicles and their capabilities, is a critical component to easing these fears and ensuring uninterrupted service at the time of an emergency. There are several difficulties to incorporating this type of training, including a lengthy 24-month training cycle for most first responders and the rigid schedules of many volunteers. Training needs to be flexible and leverage digital platforms. Information on CAVs must extend to all levels of responders—dispatch, full-time staff, volunteers, tow truck drivers, crash reconstructionist, and more.

Industry Standardization

Inconsistencies across vehicles, manufacturers, and service providers emerged as a major challenge for first responders. Emergency/first responder interaction plans are generated by individual companies, and responders do not have the time or resources to retrain every time a new company enters the market. Collaboration between CAV operators and emergency service leadership can help create consistency for first responders.

Immediate and Critical Data Access

To safely deal with a crash scene, responders need easy access to information such as vehicle capabilities and safety instructions. Before clearing a scene, emergency personnel will want to know the capability of the vehicle and mode at the time of the crash and how to safely handle the vehicle when removing it from the roadway. This information needs to be readily available to any responder arriving at the scene. Important considerations include how to access this information without cell or wireless services for use in rural areas or when responders are communicating via radio. In addition to easy access inside the vehicle itself, real-time problem solving through a direct company liaison could be a valuable tool. This liaison needs to be immediately available and knowledgeable enough about the specific vehicle involved to be of assistance.

Incident Management

Key concerns from this panel included how CAVs operating on the road will interact with a closed safety scene, whether for special events or because of an emergency. Emergency service providers need a low-barrier way to direct driverless vehicles away from these zones. One solution offered from Phoenix was geofencing: the responding agency contacts an operator liaison with a critical incident location and the operating company reroutes its vehicles from its end. Incident management plans require positive partnerships between industry and safety agencies.

Communities Experiencing Transportation Barriers Panel

Goal of session: Hear from people from communities experiencing transportation barriers about what they see as opportunities with AVs and what we can do to help ensure those opportunities become a reality.

Panelists:

- Sam Jasmine, Host of Disability and Progress, KFAI Radio
- Sumukha Terakanamb, Public Policy Consultant, Minnesota Council on Disability
- Anoma Yang, Personal Care Assistant, Accra

Moderator:

- Tammy Meehan Russel, Chief Catalyst & Founder, PLUM Catalyst

Panelists discussed transportation barriers facing the communities they represent and identified potential solutions offered by AV technology. They highlighted the importance of inclusive engagement and equitable access from the design to deployment phases of CAVs. Panelists shared concerns about losing support currently offered by human drivers and questioned how vehicles without an operator can provide the same services.

Transportation Barriers

Panelists shared barriers they currently face in the existing transportation network, all of which can lead to a loss of personal independence. Current transportation services often lack reliability and availability, with rides often arriving late or not at all. On-demand options such as accessible taxi services are limited for power chair uses; riders sometimes face discrimination with drivers not accepting service animals. These barriers force individuals to spend time and energy developing emergency plans and tailoring their schedules to transit availability.

Potential for Efficiency and Equity

CAVs provide a significant opportunity to address current barriers including unreliability, limited on-demand options, and human bias and discrimination. Panelists expressed hope that technology could bring a flexible, on-demand experience that doesn't limit riders to a fixed-route system.

Financial Considerations

The panelists emphasized the importance of financial accessibility as new services are created. There is no financial assistance for rideshare services, which may limit the availability of these new technologies for individuals with disabilities. The cost of non-emergency medical transportation remains high. Considering financial equity is critical to ensure no community is left behind.

Safety and Support

The most critical takeaway echoed by all speakers is the need to involve the disability community, in a professional capacity, from the beginning. This inclusion will ensure the technology is built for all users and features inclusive design. Human drivers currently offer many supports to riders with disabilities, such as securing wheelchairs and other mobility aids, wayfinding, and drop-off safety. These considerations, as well as safety testing and standards that ensure the security of all types of riders, must be included when designing new systems.

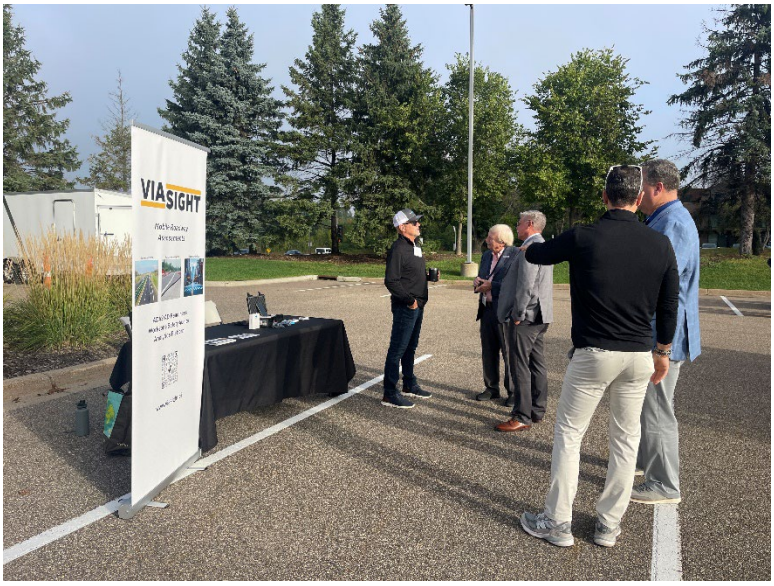
Day Two Summary

Day two began with a group review of highlights from the previous day of presentations and learning. The group then moved outside for a Tech Showcase where 10 displays featured CAV-related work from local organizations.

Tech Showcase

- **SouthWest Transit** showcased a vehicle from its SW Prime AV service in Eden Prairie, providing on-demand microtransit service in partnership with May Mobility.
- **ViaSight** provided information on its mobile analytics platform that captures and analyzes road infrastructure to assess and ensure compatibility with ADAS/autonomous-driving systems and improve roadway safety.
- **MnCAV Ecosystem** exhibited the feasibility and networking requirements for remote CAV operations. The team displayed its connected and automated 2021 Chrysler Pacifica minivan that serves as a customizable, experimental testbed for CAV research, education, and outreach.
- **Minnesota Department of Transportation** presented a snowplow, equipped with a driver-assist system to support drivers during low-visibility conditions, using an LCD display to indicate where they are in relation to the lane's center and warn of upcoming obstacles.
- **3M** featured wet reflective and removable pavement marking to increase driver safety, especially in wet and rainy conditions.
- **Starship** demonstrated a personal delivery robot, currently serving customers on two college campuses in Minnesota.
- **The PLUM Catalyst** shared about the launch of goMARTI 2.0 in Grand Rapids, expanding service to rural and tribal communities, along with PLUM Mobility Labs' offerings for students to explore new tech and transportation.

The PLUM Catalyst



ViaSight

Starship

SouthWest Transit

MnCAV Ecosystem, University of Minnesota

Minnesota Department of Transportation

World Café Activity

The final large group session of the summit featured a world-café-style activity that allowed participants to offer feedback and ideas to inform CAV policy in Minnesota. Participants rotated through three topics:

- Operations of AVs
- Stakeholders
- Council next steps

Questions discussed and highlights from each discussion are listed below. A more comprehensive summary for each question is included at the end of this document.

Operations of AVs

Questions

1. What is needed to feel confident/comfortable with full operations?
2. What questions/concerns remain?
3. What do successful AV operations look like in Minnesota?

Highlights

- Consistent exposure, education, and transparency is needed to continue building public confidence
- Critical priorities are safety, accessibility, and inclusivity

Stakeholders

Questions

1. Who else does the Advisory Council need to connect with on AV policy?
2. What strategies should the Advisory Council use to engage with stakeholders?
3. If AV legislation is passed in 2026, who are priority stakeholders to educate and engage with?

Highlights

- Wide range of partners should be engaged, including groups not always represented in transportation policy
- Leveraging existing events and networks to tailor engagement strategies can be an effective way to meet outreach goals

Council next steps

Questions

1. What are the next steps for the Council if AV legislation is passed in 2026?
2. What are the goals of the Council moving forward if AV legislation passed?
3. Are there areas of interest the Council wants to focus on based on was learned at the summit?

Highlights

- Implementation leadership will follow policy; focus on communication and education
- The Council will remain a trusted convener of the public, private, and labor interests while advancing accessibility and safety

Day 2 Conclusion

Governor's Advisory Council on CAV members and ex officio members stayed for a working lunch to prioritize actions for the remainder of 2025. The Council will reconvene in October to discuss next steps and review the suggestions developed at the summit.

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2025 Minnesota CAV Summit World Café Themes

1. Operations of AVs

Participants emphasized that building public confidence in AV operations will require consistent exposure, education, and transparent communication. People need hands-on experiences—rides, demonstrations, and real-world data—to feel comfortable with AV technology. Outreach strategies such as marketing campaigns, safety data sharing, and public events (such as the State Fair or auto shows) were highlighted as key to normalizing AVs and reducing risk aversion. Ensuring that AVs operate safely and reliably in all weather conditions, particularly Minnesota's winters, was viewed as essential to earning public trust.

Accessibility and inclusivity emerged as critical priorities. Participants called for AVs that accommodate people with disabilities and serve both urban and rural areas. They envisioned a future where AVs are affordable, universally available, and seamlessly integrated with existing transit and traffic systems. The group also raised important concerns about workforce impacts, equity, data transparency, and the potential for AVs to increase or reduce disparities. Success, they agreed, will depend on developing clear operational standards, emergency response protocols, and equitable access across all communities.

2. Stakeholders

The discussion about stakeholders highlighted the wide range of partners that the Advisory Council should engage, from local governments, tribes, and emergency responders to disability advocates, rural residents, and labor unions. Participants underscored the importance of including groups not always represented in transportation policy—such as youth and community-based organizations—to ensure AV implementation reflects diverse perspectives. Industry partners, insurance and lending institutions, agriculture, and repair facilities were also named as essential players in shaping AV readiness and adoption.

To reach these audiences, participants recommended tailored engagement strategies: demonstration events to demystify AVs, education campaigns through trusted local organizations, and inclusion of community representatives in leadership roles. Using existing events and networks (such as TZD or engineering associations) and creating open data dashboards were seen as practical tools to build trust. If AV legislation passes in 2026, outreach should prioritize emergency responders, local authorities, labor groups, and the general public.

3. Council Next Steps

If AV legislation passes in 2026, participants envisioned the Council transitioning from policy development to implementation leadership. Key next steps include identifying gaps in legislation, developing targeted educational materials, and coordinating statewide outreach to explain new laws and AV operations. Creating media toolkits, FAQs, and town halls would help manage communication and public expectations. The Council was also encouraged to take on a monitoring role—evaluating winter performance, work-zone operations, and safety outcomes—to ensure Minnesota's AV systems meet reliability and equity standards.

Looking forward, participants saw the Council as a trusted convener, connecting public, private, and labor interests while advancing universal accessibility and safety. Goals for the Council include forming

AV task forces, tracking federal policy, and promoting Minnesota as a leader in AV deployment. Education and engagement—especially for the workforce, emergency services, and legislators—were viewed as top priorities to help Minnesotans understand how AVs fit into daily life. Participants stressed that the Council should champion inclusion, communicate transparently, and guide Minnesota's path toward safe, equitable, and widespread AV adoption.

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2025 Minnesota CAV Summit Table Themes

Industry and Minnesota Overview

1. **Public trust and perception** of CAV technology are strongly influenced by data privacy concerns, company reputation, and negative media stories.
2. **Safety potential is significant**, with early data (e.g., from Waymo) showing reductions in crashes compared to human drivers, though transitions such as Level 3 automation still raise concerns.
3. **Demographics and user preferences** shape acceptance, with some groups more favorable toward robotaxis or automated transit options.
4. **Branding Minnesota's role in CAVs** requires highlighting unique challenges like winter weather and building a strong, transparent identity.
5. **Accessibility and inclusivity** must be designed into systems (e.g., securement, voice commands) to ensure that all riders benefit.
6. **Policy and education**—legislation to support testing, transparency to build trust, and ongoing public education—are essential.
7. **Labor and workforce impacts** need proactive strategies, including retraining and engagement with local agencies.

Minnesota State Elected Officials

1. **Broad bipartisan support** is emerging for CAV advancement, though urgency varies among legislators.
2. **Cost and funding responsibilities** remain a central concern, with questions about the state's financial role.
3. **Metro vs. Greater Minnesota needs** continue to be debated, with rural deployment seen as both a challenge and opportunity.
4. **Policy gaps** include defining unsafe weather conditions, clarifying AV vs. ADAS, and balancing state vs. local authority.
5. **Accessibility standards** for people with disabilities must be proactively set rather than left to industry discretion.
6. **The Advisory Council's role** includes creating roadmaps, providing digestible education, and highlighting rural and workforce issues.
7. **Use cases likely to emerge first** include freight, small controlled environments, robotaxis, rural transit, and first/last-mile solutions.

Emergency Services Providers

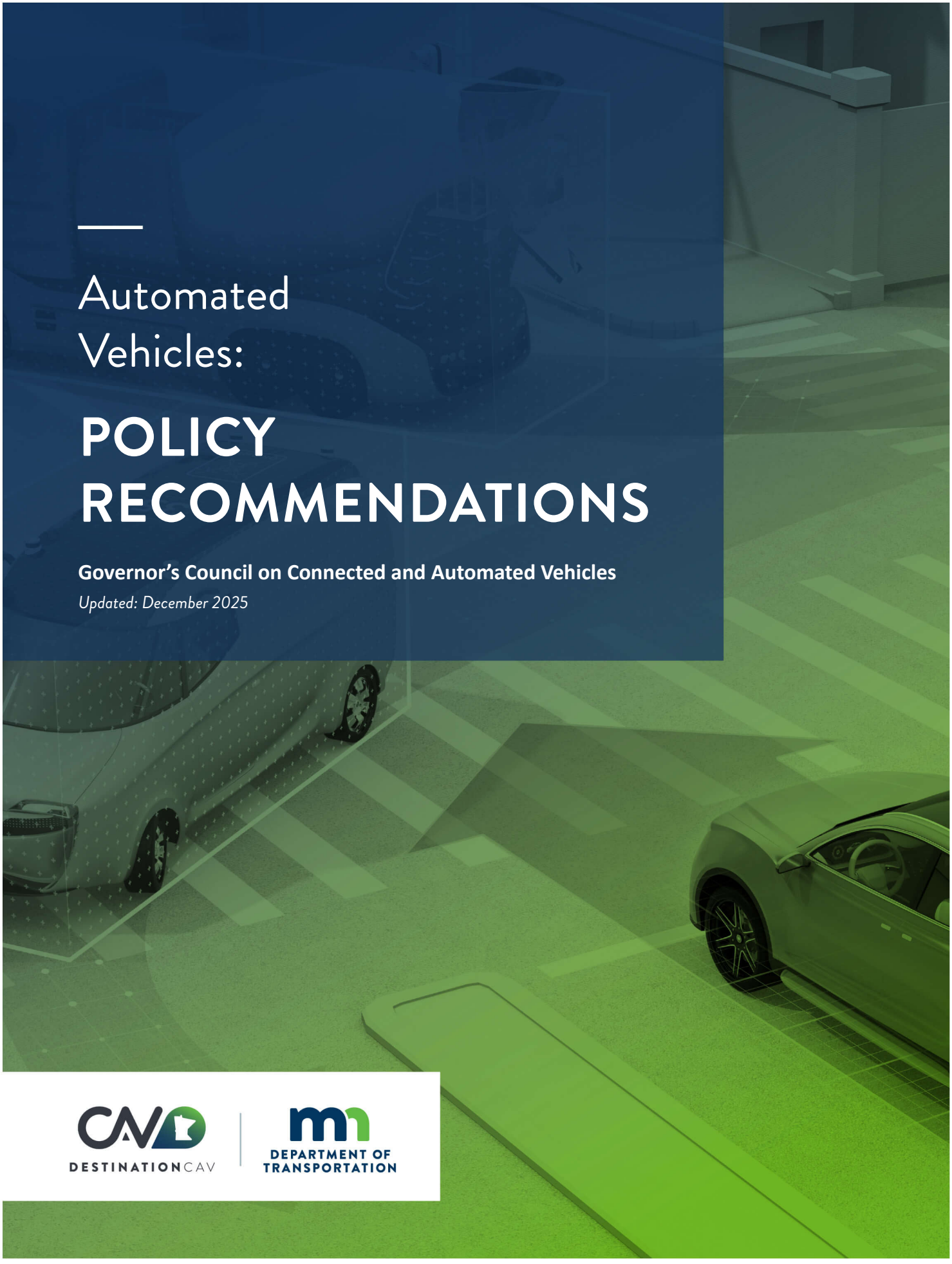
1. **Clear, consistent protocols** are needed for EMS, fire, and police to safely and quickly respond to CAV-related incidents.
2. **Training and education gaps** persist, with first responders lacking standardized processes across manufacturers.
3. **Vendor partnerships and direct contacts** are essential to reduce response times and address incidents effectively.
4. **Consistency and standardization** (e.g., safety placards, shutdown procedures, laminated quick guides) are critical to safe interactions.
5. **Multi-jurisdictional cooperation** and regular communication between industry, government, and first responders build readiness.
6. **Technology integration** should support real-time communication and situational awareness for EMS, particularly in rural areas.
7. **Resource needs** include funding, accessible training, and continuous learning to address rare but high-impact incidents.

Communities Experiencing Transportation Barriers

1. **Inclusive engagement** is essential: seniors, veterans, people with disabilities, families with children, immigrants, and disadvantaged groups must be part of planning ("nothing about us without us").
2. **Accessibility is non-negotiable**, requiring universal design principles, defined vehicle standards, and proactive policy action.
3. **Financial equity** is critical; subsidies, tax credits, or nonprofit partnerships may help offset costs for disadvantaged users.
4. **Technology solutions** (e.g., bias reporting apps, accessible fleet percentages, voice/attendant support) can improve inclusivity.
5. **Gaps in current transportation services**—especially on-demand, flexible, and door-to-door options—remain critical barriers to overcome.
6. **Seasonal and environmental challenges** (e.g., snowbanks, unshoveled sidewalks, wayfinding issues) highlight the need for holistic trip planning beyond the vehicle.
7. **Lived experiences** must shape decisions, with advisory councils and legislators encouraged to hear directly from affected community members.

Appendix B

Automated Vehicles: Policy Recommendations



Automated Vehicles: POLICY RECOMMENDATIONS

Governor's Council on Connected and Automated Vehicles

Updated: December 2025

DESTINATIONCAV | DEPARTMENT OF TRANSPORTATION

Background

At the beginning of 2025, the Governor's Council on Connected and Automated Vehicles established a goal of developing recommendations for how Minnesota can legislatively establish a path for fully automated vehicle operations.

It was understood that if Minnesota does not develop a path for fully automated vehicle (AV) operations that the people of Minnesota would miss out on the potential benefits automated vehicles provide, namely enhanced safety of all roadway users, greater accessibility and mobility of people and goods, especially for those who are unable to drive themselves, and economic growth.

These recommendations are established based on the significant work the Council, MnDOT, and Department of Public Safety has done to understand what other states have implemented for AV policy and take into consideration the input from many stakeholder groups both represented and not represented on the Council. Stakeholder groups include:

- AV industry
- Accessibility advocates
- Insurance
- Labor
- Local government
- Safety advocates
- State government agencies
- Transit
- Tribal Nations
- Trucking industry
- Vehicle manufacturers
- and more

Additional background information and detail can be found in the ***Automated Vehicles Policy Themes*** document that was developed as part of this process. These recommendations apply to fully automated vehicles that are owned and operated by a company or government agency, not an individual person.

GOALS

1. **Develop a clear path** for fully automated vehicles to operate without a driver in Minnesota to advance the potential benefits of AVs including safety, increasing accessibility, and economic opportunity.
2. **Create an AV regulatory framework** that is not overburdensome for AV operators or the State to administer, while also prioritizing the State's ability to ensure safe operations and understand the impact of AVs on our roadways and the people of Minnesota.
3. **Balance promoting innovation with the need to ensure safety** for all roadway users.

COUNCIL PERSPECTIVES

Fifteen council members rated how much they agreed with the recommendations for each theme. The results are shown as an average score along with an indicator of the overall level.

LEARN MORE

In April 2019, Governor Walz issued an executive order appointing a ***Connected and Automated Vehicle Advisory Council*** to study, assess and prepare for the opportunities and challenges associated with the widespread adoption of CAV and other transportation technologies.

Scan the QR code for information about the Council members, meetings, goals and annual reports.

Key Policy Themes

- Testing, Deployment, and Operations
- Safety Verification
- Registration, Permitting, and Data Reporting Requirements
- Ability to Remove Bad Actors (Enforcement)
- Emergency Services Interaction Plan
- Liability and Insurance
- Role of the Driver/Operator
- Accessibility Requirements
- Workforce Implications
- State and Local Governance
- Privacy and Security

THEME

Testing, Deployment, and Operations

NATIONAL DIRECTION

Recommendation is in alignment with national direction. Due to the evolution and advancement of the AV industry, very few states are taking a phased approach to fully automated vehicles, especially states that have enacted legislation in the last 2-3 years.

RECOMMENDATION

Allow fully automated vehicles to operate in Minnesota when the following conditions are met:

- The operation of fully automated vehicles with or without a human driver is subject to all applicable federal and state laws, except that any provision that by its nature reasonably applies only to a human driver does not apply to a fully automated vehicle operating with the automated driving system engaged.
- The fully automated vehicle is in compliance with all applicable Federal Motor Vehicle Safety Standards unless granted an exemption by NHTSA.
- If a failure of the automated driving system occurs that renders that system unable to perform the entire dynamic driving task relevant to its intended operational design domain, the fully automated vehicle will achieve a minimal risk condition.
- The fully automated vehicle must comply with all applicable traffic and motor vehicle safety laws of this state.
- The fully automated vehicle meets all applicable certificate of title, registration, licensing, and insurance requirements.
- The operator of the fully automated vehicle has received a permit to operate from the Commissioner of Transportation.
- Prior to operating a fully automated vehicle on the public roads of this state without a human driver, a person must submit a first responder interaction plan to the Department of Public Safety that describes:
  - How law enforcement, fire, roadside assistance, and emergency medical personnel can have safe interaction with the vehicle in emergency and traffic enforcement situations.
  - How to communicate with a fleet support specialist who is available during the times the vehicle is in operation.
  - How to safely remove the fully automated vehicle from the roadway and steps to safely tow the vehicle.
  - How to recognize whether the fully automated vehicle is in automated mode.

Failure to submit a first responder interaction plan may result in a cease-and-desist letter from the Department of Public Safety.

REASONING

Allowing full operations of AVs will help Minnesota realize the potential benefits of AVs, including increased safety, accessibility, and economic opportunity.

Restricting operations or requiring specific testing benchmarks would significantly limit the people of Minnesota's ability to benefit from AVs as many industry stakeholders stated they will not pursue AV deployments in states that require a phased approach. AV operators perform robust testing and safety verification prior to operating without a human driver at any location they deploy AVs.

It is in the best interest of all AV providers to ensure any AV provider operates as safely as possible. In lieu of nationally established AV safety standards, this approach minimizes the use of state resources to implement AV operations while complimenting the recommendations under permitting, registration and enforcement that allow the state to support safe operations. The guardrails detailed in the permitting, registration, enforcement, and insurance recommendations support safe operations of AVs.

COUNCIL PERSPECTIVES 4.3/5

A vast majority of Council members agreed with the recommendation.

Many Council members felt comfortable with allowing for full operations of AVs given that operators are required to receive a permit prior to operating and that there are clear enforcement mechanisms in place.

Hannah Alstead of the Teamsters Joint Council 32 expressed that AVs should not operate without a human behind the wheel and stated concerns that the recommendation is tailored towards business interests.

THEME

Safety Verification

NATIONAL DIRECTION

Recommendation is in alignment with national direction. Almost all states rely on self-certification due to the lack of federal guidance and established AV safety standards.

RECOMMENDATION

To achieve effective, consistent, and efficient safety verification, automated vehicle safety verification should be done at the federal level, like how general vehicle verification is done. With no federal or industry standard set for safety verification of AVs, legislation should require AVs to self-certify that they can perform safe operations and apply for a permit prior to operate. To achieve self-certification, AV legislation should include a section on operation of an AV that includes the below conditions.

- The operation of fully automated vehicles with or without a human driver is subject to all applicable federal and state laws, except that any provision that by its nature reasonably applies only to a human driver does not apply to a fully automated vehicle operating with the automated driving system engaged.
- The fully automated vehicle is in compliance with all Federal Motor Vehicle Safety Standards unless granted an exemption by NHTSA.
- If a failure of the automated driving system occurs that renders that system unable to perform the entire dynamic driving task relevant to its intended operational design domain, the fully automated vehicle will achieve a minimal risk condition.
- The fully automated vehicle must comply with all applicable traffic and motor vehicle safety laws of this state.
- The fully automated vehicle meets all applicable certificate of title, registration, licensing, and insurance requirements of this title.
- Prior to operating a fully automated vehicle on the public roads of this state without a human driver, a person must submit a first responder interaction plan to the Department of Public Safety that describes:
  - How law enforcement, fire, and emergency medical personnel can have safe interaction with the vehicle in emergency and traffic enforcement situations.
  - How to communicate with a fleet support specialist who is available during the times the vehicle is in operation.
  - How to safely remove the fully automated vehicle from the roadway and steps to safely tow the vehicle.
  - How to recognize whether the fully automated vehicle is in automated mode.
  - Failure to submit a first responder interaction plan may result in a cease-and-desist letter from the Department of Public Safety.

REASONING

With no federally established or nationally recognized safety verification standards for automated vehicles developed, it would require significant state resources and investment if detailed safety verification was done at the state level as the State is not currently set up to perform safety verification of vehicles. There is industry consensus that safety verification should be done at a federal level and there is increased optimism that federal guidance regarding AVs will be introduced soon. Self-certification in addition to the operating and permitting requirements, and detailed enforcement plan provides, a framework for safe AV operations. Minnesota uses a self-certification approach coupled with a detailed enforcement plan in other aspects of state regulations, including how household goods movers are currently regulated by the state.

COUNCIL PERSPECTIVES 4.5/5

A vast majority of Council members agreed with the recommendation.

Multiple Council members expressed that self-certification is not ideal but is an appropriate interim approach due to the lack of federal safety regulations for automated vehicles.

Hannah Alstead of the Teamsters Joint Council 32 stated that it is a problem if the state does not have its own regulations on safety and technology with the absence of federal regulation.

THEME

Registration, Permitting, and Data Reporting Requirements

NATIONAL DIRECTION

There are mixed approaches from states on if they require permitting and registration of AVs. Recently states are moving in the direction of requiring AVs to be registered and permitted and that is in alignment with the Governor's Council's recommendations.

RECOMMENDATION

Before operating a fully automated vehicle on public roads without a human driver, the owner of an AV fleet must apply for a Fully Automated Vehicle Permit with the Commissioner of Transportation. The permit application must include but is not limited to the following information submitted in the manner prescribed by the commissioner:

- The number of fully automated vehicles operating within the state
- The type of vehicles operating, including what accessibility features they have
- The Operation Design Domain of the fully automated vehicles
- Where the fully automated vehicles will operate
- Confirmation of their First Responder Interaction Plan is accepted by the Department of Public Safety
- Details on previous automated vehicle testing, performance, and operations

Require each AV be registered as an automated vehicle and comply with the State's requirements for registration of motor vehicles, including these details.

- If a motor vehicle that is not registered as an AV becomes an AV, the owner shall obtain a new registration for the vehicle, under the requirements for an AV, before automated operation.
- At registration of a motor vehicle, the owner shall indicate to the Department of Public Safety whether the vehicle is an AV. This indication should not bind the Department of Public Safety to register the vehicle as an AV.
- The Department of Public Safety may decline, suspend, revoke, or decline to renew the registration of an AV that is not: (1) properly maintained; (2) lawfully insured; (3) compliant with a registration requirement; (4) fit to be operated; or (5) not in compliance with regulations for AVs.
- If the Department of Public Safety suspends, revokes, or declines to renew the registration of an AV, the Department of Public Safety may grant a temporary registration that applies to the vehicle only when it is not under automated operation.
- The Department of Public Safety may grant, maintain, or renew the registration of a motor vehicle that is no longer an AV only if the registrant represents under penalty of perjury to the Department of Public Safety that the vehicle cannot presently and will not be used under automated operation on a road open to the public.
- Registration of an AV does not create a presumption as to the safety of the vehicle or its equipment.
- Require the owner of the fully automated vehicle, or a person on behalf of the vehicle owner, to report any crashes to the Commissioner of Public Safety consistent with the crash reporting requirements set forth by NHTSA, including, but not limited to the ***Third Amended Standing General Order 2021-01***.

The Department of Public Safety should be the agency responsible for registering each individual AV and the Department of Transportation should be responsible for permitting AV companies to operate in Minnesota.

REASONING

The State should require AVs to be permitted and registered to know what AVs are operating in Minnesota, to know how and where the AVs intend to operate, to understand the testing or previous operations conducted by the AV provider, and as a means for enforcement if an AV is not complying with existing rules and regulations. The goal is to have an efficient registration and permitting process, while also maintaining clear mechanisms to enforce existing rules and regulations to ensure safety.

COUNCIL PERSPECTIVES 4.5/5

A vast majority of Council members agreed with the recommendation.

Ryan Daniel of St. Cloud Metropolitan Transit noted the permitting and registering automated vehicles and installing data reporting requirements is essential for accountability and transparency. Dillon Fried from the City of Minneapolis stated that it is important that any state legislation doesn't preclude additional data reporting requirements established by local ordinances for different types of business operating models. Tammy Meehan Russell of The PLUM Catalyst expressed that the State will need to make sure to properly resource the administrative needs of permitting automated vehicles in order to have an efficient process.

THEME

Ability to Remove Bad Actors (Enforcement)

NATIONAL DIRECTION

Recommendation is in alignment with national direction. States continue to understand the need for clear enforcement mechanisms to ensure public safety.

RECOMMENDATION

Establish clear mechanisms for the state to be able to stop AV operators from operating if they are not adhering to established rules and regulations. The mechanisms should include the ability to suspend or revoke the AV operator's permit at a company level so if there is an issue with one AV then all similar AVs can be regulated accordingly.

The mechanisms for enforcement should include:

- The ability of the Department of Public Safety to provide a notice of intent to suspend, revoke, or cancel the ability to operate and/or impose restrictions on the operation when the AV is determined to be endangering the public and/or is not adhering to established rules and regulations.
- The notice of intent should include a summary of the State's determination and evidence supporting determination. The State should provide the AV operator with a reasonable period to correct any identified issues.
- Prior to continuing operation, the AV operator must ensure the issues identified are corrected.

Specify that failure to submit a first responder interaction plan may result in a cease-and-desist letter from the Department of Public Safety.

REASONING

To ensure public safety, clear enforcement mechanisms must be established to give the state the ability to regulate and/or remove any AV operators not adhering to the established rules and regulations.

COUNCIL PERSPECTIVES 4.8/5

All Council members agreed with the recommendation.

Patrick Weldon of Polaris noted that the ability to remove bad actors gives the necessary authority to the State that will be needed to ensure safety.

Kyle Shelton of the University of Minnesota said that enforcement is key for public trust and that it should be clear how actors would be removed in the event of incidents and what it would take for them to return.

THEME

Emergency Services Interaction Plan

NATIONAL DIRECTION

Recommendation is in alignment with national direction. Almost all states require first responder interaction plans.

RECOMMENDATION

Require that prior to operating a fully automated vehicle on the public roads without a human driver, an AV company must submit a first responder interaction plan to the Department of Public Safety that describes:

- How law enforcement, fire, and emergency medical personnel can have safe interaction with the vehicle in emergency and traffic enforcement situations.
- How to communicate with a fleet support specialist who is available during the times the vehicle is in operation.
- How to safely remove the fully automated vehicle from the roadway and steps to safely tow the vehicle.
- How to recognize whether the fully automated vehicle is in automated mode.

Specify that failure to submit a first responder interaction plan may result in a cease-and-desist letter from the Department of Public Safety.

REASONING

Submitting a first responder interaction plan is common practice for AV operators as it is essential for first responders to know to interact with and engage vehicles that may not have a human operator. Minnesota should follow industry standards and require first responder interaction plans prior to AV operations.

COUNCIL PERSPECTIVES 4.9/5

All Council members agreed with the recommendation.

Ryan Daniel from St. Cloud Metropolitan Transit said ensuring that law enforcement, fire, EMS, and roadside personnel know how to interact with fully automated vehicles promotes safety, clarity, and consistency across emergency situations.

Bret Weiss of WSB noted that it is important that there is an easy way to access emergency services interaction plans.

THEME

Liability and Insurance

LIABILITY RECOMMENDATION

Include specific language regarding liability in AV legislation, with the understanding that the requirements may have to be changed after AV legislation implementation.

LIABILITY REASONING

There are no widely established AV liability recommendations. With so many factors to consider, it would be unwise to provide clear guidelines or regulations as AV technology continues to develop. However, broad starting language is appropriate.

INSURANCE RECOMMENDATION

Include very minor language regarding insurance, requiring that automated vehicles submit proof of financial responsibility via permissible insurance or self-insurance satisfactory to the Commissioners of Public Safety and of Commerce that the fully automated vehicle is covered by insurance or proof of self-insurance that satisfies applicable Minnesota law requirements regarding vehicle insurance.

THEME

Role of the Driver/Operator

RECOMMENDATION

The current definition of a person/driver in Minnesota statue is broad enough to cover AVs so no changes are needed.

- Clarify that when an automated driving system is engaged, the system is considered the driver for the purpose of assessing compliance with applicable traffic or motor vehicle laws and shall be deemed to satisfy electronically all physical acts required by a driver or operator of the vehicle, and system is considered to be licensed to operate the vehicle.
- Specify that a person may operate a motor vehicle equipped with an automated driving system capable of performing the entire dynamic driving task if such system will issue an intervention request whenever the system is not capable of performing the entire task, with the expectation that the person will respond appropriately to such a request.
- Specify that there are no restrictions on a human driver from operating a fully automated vehicle equipped with controls that allow for the human driver to control all or part of the dynamic driving task.

NATIONAL DIRECTION

Recommendation is mostly in alignment with national direction. Some states specify insurance requirements or liability recommendations, but due to guidance from the Insurance Federation of Minnesota and the Department of Commerce, the Governor's Council decided it would be appropriate to establish some initial minimum standards.

INSURANCE REASONING

Insurance requirements change over time. It would be wise to include some language to protect consumers. Individual AVs should have insurance requirements starting with coverage of at least $5,000,000. As implementation widens, it would be appropriate to re-engage with the insurance industry and the Department of Commerce to talk through requirements for AVs.

COUNCIL PERSPECTIVES 4.3/5

A majority of Council members agreed with the recommendation.

A few Council members expressed concern with the $5,000,000 insurance coverage requirement, thinking that the cost barrier is too high and that the market risk should determine the coverage needed as AVs might be proven to be safer than traditional vehicles. Some Council members noted the need to fine tune the details of insurance requirements and liability.

NATIONAL DIRECTION

There is limited national direction to define AV driver or operator. Using different states' legislation helps form as clear definitions as possible given AV complexity. This recommendation goes further to define teleoperation.

- Specify that an AV equipped with a teleoperation system may operate without a physically-present human operator when the system is engaged, if the human performing teleoperation is currently licensed to operate the specific vehicle type in the jurisdiction where they legally reside.

REASONING

It is very challenging to address all potential driver/operator scenarios with AV advancements and changes. Therefore, the goal of these recommendations is to clearly establish the definition of the driver/operator when an ADS is engaged for key likely situations that are broad enough to cover most instances.

COUNCIL PERSPECTIVES 4.4/5

A majority of Council members agreed with the recommendation.

Kyle Shelton of the University of Minnesota noted that the recommendation seems aligned with current procedures elsewhere and is a good approach given the current state rules. Hannah Alstead of the Teamsters Joint Council 32 said there must be a human operator available in any automated vehicle.

THEME

Accessibility Requirements

RECOMMENDATION

Do not include any accessibility requirements in AV legislation.

REASONING

The potential to increase transportation options for Minnesotans, especially those who are unable to drive themselves, is a key reason why the Governor's Council wants to see AV operations expand in Minnesota. However, requiring anything specific regarding accessibility in legislation is untenable for the following reasons:

- Any accessibility requirements that currently exist for the vehicle category the fully automated vehicle would fall under, such as transit, would still apply.
- State agencies do not have the power to dictate original equipment manufacturers.
- AV providers have competing goals, for example many providers prioritize electric vehicles, while there are not accessible electric vehicles yet on the market due to where the battery is located and an individual using a wheelchair would need to sit and be fastened.

NATIONAL DIRECTION

Recommendation is in alignment with national direction.
No states have established accessibility requirements for AVs.

The Governor's Council and the State remain committed to promoting increased transportation accessibility programmatically outside of specific legislation. Increasing AV operation in Minnesota is a key part of increasing accessible transportation options.

COUNCIL PERSPECTIVES 4.4/5

A vast majority of Council members agreed with the recommendation.

Tammy Meehan Russell of The PLUM Catalyst stated that she would like to see some commitment from OEM's for investment and a development/commercialization path for Minnesota deployment of driverless wheelchair accessible vehicles.

Dillon Fried of the City of Minneapolis noted that through permitting and/or local ordinances, commercial passenger services should be incentivized to provide accessible options.

Myrna Peterson of Mobility Mania said requirements vary greatly for the kind of ability of each individual and that transparency of communication is very important.

THEME

Workforce Implications

RECOMMENDATION

Include legislatively mandated research to study the potential workforce impacts the advancement of fully automated vehicles would have in Minnesota. Part of the research should include recommendations for a state led program to support reskilling and upskilling impacted workers.

REASONING

The advancement and widespread implementation of fully automated vehicles could have a significant impact on some workforce sectors in Minnesota, including truck drivers, TNC drivers, auto mechanics, IT professionals, and more. With the emergence of AV technology still in its infancy, what the impacts will be is unknown. To better understand the impacts so Minnesota can adequately prepare, a research study should be conducted. The initial impact to the workforce will most likely be limited due to AV technology still needing to advance to see widespread fully automated vehicles, but research is needed to understand the long-term impacts.

NATIONAL DIRECTION

Recommendation goes beyond national direction.
No states have included workforce implications in AV legislation.

The Governor's Council and the State remain committed to understanding and preparing for the workforce impacts that fully automated vehicles may bring to Minnesota. To prepare, Minnesota needs to understand what upskilling, reskilling and other strategies can be implemented to mitigate the impacts.

COUNCIL PERSPECTIVES 4.5/5

A majority of Council members agreed with the recommendation.

Kyle Shelton of the University of Minnesota said there is a great deal to understand and track about workforce impacts and these recommendations establish a path to do so. Hannah Alstead of the Teamsters Joint Council 32 stated that workforce implications are an extremely important piece of any new industry coming to our state and that companies should have to share all impact data to the Department of Labor and Industry or the Department of Employment and Economic Development. Bret Weiss of WSB mentioned that he is not sure a study makes sense. The market will dictate what is necessary and business will step up to fill the gaps.

THEME

State and Local Governance

NATIONAL DIRECTION

Recommendation is in alignment with national direction. Almost all states set AV rules and regulation at the state level and limit local government authority.

RECOMMENDATION

Do not allow any political subdivision, municipality, or local entity to prohibit the operation of fully automated vehicles or automated driving systems, or otherwise enact rules or ordinances that would impose taxes, fees, or other requirements (including performance standards), specific to the operation of fully automated vehicles, or automated driving systems.

In legislation, do not remove the ability for local governments to regulate AVs in the same way they can regulate any other type of vehicle. Therefore, local governments should still have authority over curb management, parking, and any other ways they regulate vehicles currently.

REASONING

Allowing local governments to impose requirements or restrictions on AVs could lead to an incredibly challenging operating environment, making interoperability across the state difficult. It is the norm for other states to take this approach and the AV industry has expressed they would be hesitant to operate in a state that allows for local governments to impose requirements or restrictions.

COUNCIL PERSPECTIVES 4.2/5

A majority of Council members agreed with the recommendation.

Multiple Council members mentioned that controlling authority should be at the state level to avoid a patchwork approach.

Dillon Fried of the City of Minneapolis said state legislation should govern AVs as a category of vehicle. Commercial vehicle services should continue to be subject to local ordinances as they are for standard types of vehicles.

THEME

Privacy and Security

NATIONAL DIRECTION

Recommendation is in alignment with national direction. Very few states include specific data privacy and security laws for automated vehicles.

RECOMMENDATION

Do not include any specific language regarding data privacy or data security in AV legislation. Minnesota should rely on broader data privacy laws, such as the Minnesota Consumer Data Privacy Act. This approach assumes that personal information regarding AVs is not different enough from other transportation data to warrant specific legislation.

REASONING

Instead of including data privacy and security specifications in AV legislation, the Minnesota Government Data Practices Act (MGDPA) should be reviewed and amended to align with modern data privacy laws and practices. The MGDPA was originally enacted in 1974, similar to the federal Privacy Act of 1974, and has been periodically updated and amended.

However, in the last eight years, the private sector has been more diligent about updating and modernizing privacy and security laws with respect to data practices. On May 24, 2024, Governor Tim Walz signed the Minnesota Consumer Privacy Act of 2024 (and became effective July 31, 2025), which modernized consumer data protection laws to improve individual privacy and align Minnesota's state privacy laws with those of other states and emerging international standards.

COUNCIL PERSPECTIVES 4.7/5

A vast majority of Council members agreed with the recommendation.

Multiple Council members appreciated the approach of using existing systems and requirements to regulate data privacy and security for automated vehicles.

Appendix C:
CAV Innovation Alliance 2025 Progress Update

The Innovation Alliance committees began their work in April 2024. Each group started with the priority recommendations identified by the full Council and developed an action plan for its committee. This work continued through 2025. The following sections summarize each committee's work for the past year.

Safe Testing of Connected and Automated Vehicles Committee

Goal

Authorize and test CAV technologies on Minnesota trunk highways and local roadways by determining the policy, regulation, and infrastructure changes needed to ensure safety for all roadway users.

Recommendations

1. Identify Minnesota's unique cases to attract and market to companies to test, research, and deploy in Minnesota.
2. Identify all existing state policies and regulations affected by CAV testing and deployment and assess future needs, changes, and additions for clearer legislation, regulations, and definitions.
3. Determine if the state wants to establish requirements and/or registration for all testing conducted in Minnesota.
4.

Summary of 2025 work

Following discussion on the definitions of "safe" and a literature review of national and international AV legislation conducted in 2024, this committee focused its 2025 work on drafting content to include in potential Minnesota legislation. Once the full Council began drafting AV Policy Framework Recommendations with the help of MnDOT staff, this committee spent most 2025 meetings discussing and refining recommendations for the larger policy document. In particular, this group homed in on striking the balance between encouraging testing and deployment of new technologies while managing workforce concerns. Comments from these discussions were incorporated into the overall framework.

Transportation Infrastructure Committee

Goal

Strategically invest in infrastructure that provides value to human drivers and advanced driver-assist systems (ADAS) today, and likely computer-driving systems in the future, while also improving safety and user experience for all road users.

Recommendations

1. Identify and prioritize the expected infrastructure needed to aid safe operations of CAVs in the future as well as those that are known to aid safe operations for human drivers today.
2. Assess Minnesota's transportation infrastructure and ability to support current CAV technologies.
3. Expand partnerships with businesses—in particular, Minnesota businesses—to research and support CAV infrastructure and technology.
4. Enhance collaboration between state and local agencies related to advancing technologies and data sharing.
5.

Summary of 2025 work

The Transportation Infrastructure Committee hosted a webinar, "The Role of Hard Infrastructure," in May. Marlene Lopez of 3M discussed pavement markings and the technologies that support ADAS. Jon Dege from The PLUM Catalyst shared infrastructure-related lessons from the goMARTI project in Grand Rapids, MN. Following the webinar, this committee decided to suspend work for the remainder of 2025 because of the V2X National Deployment Plan implementation consuming the state's infrastructure focus in the near term.

Traffic Regulations and Safety Committee

Goal

Create policies and regulations that support human and automated driving while also protecting vulnerable road users such as cyclists, pedestrians, aging populations, and transit riders; reducing fatal and serious-injury crashes; and increasing comfort for all.

Recommendations

1. Explore ways to include automation designation on crash reports.
2. Fund research on the safety benefits of CAV technologies that can be realized in Minnesota.

3. Fund research on the safety areas of concern for vulnerable road users with CAV technologies.

Summary of 2025 work

The first half of 2025 focused on identifying updates to the Minnesota crash report system. Updating the system to include new technologies and be more consistent across individual responders will provide better data for the state regarding the safety of new vehicles and automated technologies. The group shared these recommendations with representatives from the MN Department of Public Safety who coordinated with the groups working on the crash report updates.

In June, the committee hosted a webinar titled "The Effectiveness of General Motors Advanced Driver Assistance System Features," which was presented by Raymond Kiefer and Andrew Leslie of the University of Michigan Transportation Research Institute. The webinar reviewed a study that showed substantial crash prevention and injury reduction safety benefits from this technology and identified continued research needs.

In addition to this work, committee discussion focused on identifying uses for crash data and potential research questions for future years' work.

Cyber Security, Data Privacy, and Data Governance Committee

Goal

Ensure that CAV vehicles and CAV data are secure, reducing the risk of cyberattacks and bolstering privacy protections.

Recommendations

1. Further develop a "security by design" platform for CAV data.
2. Monitor best practices for data encryption, standardization, and security for implementation as appropriate.
3. Identify what CAV data are available to Minnesota, how it is used, and how it should be governed.
4. Develop a triage system to determine when identifiable data must be collected, would be useful to collect but not required, or are unnecessary to collect in recommending updates to the Minnesota Data Practices Act accordingly.
5. Identify what CAV data can be shared across government and/or industry.

Summary of 2025 work

Continuing work from 2024, this committee continued to fine-tune the MN CAV Automotive Data Taxonomy, a catalog of data types currently or potentially collected by connected and

automated vehicles. Alongside this work, the committee reviewed the MNIT Data Protection Categorization Standard and suggested edits that would cover data collected by CAVs. A list of edits was shared with MNIT representatives, including the addition of the MN CAV Automotive Data Taxonomy as an appendix to the document.

In December, the committee hosted a webinar featuring Representative Steve Elkins, MN House of Representatives, and Dean William McGeveran, University of Minnesota Law School. Dean McGeveran discussed transportation privacy principles and how they may be affected by new vehicle technologies. Representative Elkins followed with commentary on ways the Minnesota Consumer Data Privacy Act affects those issues. Frank Douma, Humphrey School of Public Affairs, and Damien Riehl, Clio, moderated the discussion.

The webinar concluded the committee work for 2025, though the committee plans to continue its work toward developing best practices for the state of Minnesota.

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