

# Governor’s Advisory Council on Connected and Automated Vehicles

April 14, 2021 Meeting Summary

*National CAV Policy Priorities and State Updates*

Attendees: Tara Andringa; Josh Fisher; Ben Lowndes; Kristin White; MAK; Phil Magney; Bill Goins; Jason Gadd; Ryan Daniel; Ashley Hudson; Jon Beck; Todd Biewen; Bret Weiss; Kevin Chan; Chelsea Arbury Prorok; Dan Chen; John Dukich; David Fenley; Frank Douma; Gina Baas; Ginny Crowson; Chris Hadfield; Dan Chen; Mike Hanson; John Hausladen; Cory Johnson; Andrew Lewis; Tim Lynaugh; Margaret Donahoe; Kevin McKinnon; Michael Gorman; Myrna Peterson; Skip Foster; Kim Norton; Patrick Hynes; Patrick Weldon; Thom Pedersen; Mark Philips; Mel Reeder; Vicky Rizzolo; Alice Roberts-Davis; Sara Psick; Tim Sexton; Adam Shell; Emily Smoak; Tammy Meehan Russell; Rohit Tandon; Tim Drake; Tarek Tomes; Becca Wagner; Charlie Zelle; Dan Sullivan; Cathy Chambers; Bryan Nemeth.

1. **Welcome – Chair Margaret Anderson Kelliher welcomed members. Member roll call was held, with all members present, excepting regrets from: Amber Backhaus; Danielle Elkins; Ed Reynoso.** John Hausladen motioned to approve the January 13<sup>th</sup> meeting minutes, seconded by Damien Riehl. Minutes were approved.
2. **The Future of Transportation Policy – Perspectives on National and Federal Policy Priorities**
  - Alliance for Automotive Innovation – *Josh Fisher, Director of State Affairs*
  - Partners for Automated Vehicle Education – *Tara Andringa, Executive Director*
  - ITS America – *Tim Drake, Vice President for Public Policy and Regulatory Affairs*
  - US DOT – *Michael Shapiro, Deputy Assistant Secretary for Economic Policy*

Alliance represents OEMs, suppliers, mobility companies to present policy recommendations that represent industry consensus approach, with a focus on innovation. They represent 99% of the vehicle market. Newer trade association, January 2020, of a merger with other trade associations. Many of the members transformed facilities from auto production to PPE production during pandemic. They released their innovation agenda to outline a need for comprehensive national strategy. They also released an AV roadmap. US DOT plays a key role in this work.



Mr. Fisher covered the policy roadmap’s 14 recommendations. Member companies feel a sense of urgency for an AV framework. Recommendations include:

- Create a new vehicle class for AVs.
- Create a robust AV pilot program
- Improve exemption process

- Raise cap on exemptions for AVs

We are at a pivotal time on the pathway to a cleaner, safer, and smarter transportation future. There is no doubt that Level 3-5 automated vehicles (AVs) are an important component of this future.

Focused and sustained leadership from policymakers is required to ensure this technology and the benefits it can deliver are realized. To that end, the Alliance for Automotive Innovation puts forward this FOUR-YEAR ACTION PLAN for federal policymakers to significantly advance the testing and deployment of AV technologies in the United States.

The 14 specific recommendations contained within this plan fall within the following pillars: (1) Reform Regulations to Allow for AV Deployment at Scale, (2) Harmonize Federal, State, and International Policies, and (3) Lay the Foundation to Achieve Longer-Term Objectives.



**RECOMMENDATION 1  
CREATE A NEW VEHICLE CLASS FOR AVs**

The U.S. Department of Transportation (DOT) should create a new vehicle class within the Federal Motor Vehicle Safety Standards (FMVSS) for AVs. Since the current regulations were first written, AVs are a unique, emerging technology that does not fit into the current vehicle class structure. AVs are not subject to the DOT's existing safety and performance testing requirements for conventional vehicles. AVs should be subject to the DOT's existing safety and performance testing requirements for conventional vehicles, but should also be subject to the DOT's existing safety and performance testing requirements for conventional vehicles. AVs should be subject to the DOT's existing safety and performance testing requirements for conventional vehicles, but should also be subject to the DOT's existing safety and performance testing requirements for conventional vehicles.

**RECOMMENDATION 2  
CLARIFY APPLICABILITY OF "MAKE INDETERMINATE" PROHIBITION**

Existing DOT regulations prohibit manufacturers from changing steering, braking, and/or suspension systems on a motor vehicle in compliance with an applicable motor vehicle safety standard. This prohibition has been interpreted to mean that motor vehicles that are equipped with reversible AV features that temporarily deactivate conventional driver controls while the vehicle is operating safely in autonomous mode. To address this, DOT should clarify the interpretation of conventional driver controls in "dual mode" vehicles, where the vehicle is in AV mode, does not fall under the "make indeterminate" prohibition of the make a vehicle safe at all applicable motor vehicle safety standards when in manual driving mode.

**RECOMMENDATION 3  
ESTABLISH A NATIONAL AV PILOT PROGRAM**

DOT should establish a robust national pilot program for AV testing and deployment. Such a program would not only provide a venue to advance DOT research objectives related to AVs, but also provide AV developers the chance to participate with an alternate pathway to AV testing and deployment. A robust pilot program created out under DOT's oversight could increase public exposure to the technology and provide the DOT with the data that it will need to create new safety regulations for AVs.

**RECOMMENDATION 4  
IMPROVE THE EXEMPTION PETITION PROCESS**

Current state processes DOT to grant manufacturers exemptions from existing safety standards, provided that vehicle safety is not compromised. As the safety standards are being updated in line with RECOMMENDATION 1, DOT should simplify and streamline the existing exemption process for AVs to provide greater clarity to manufacturers. As part of the effort, DOT should issue guidance that specifies what data is required as part of the exemption application.

- Maintain traditional fed/state roles – Don't want to make 50 vehicles for each state market. Don't want states dictating design requirements.
- State must coordinate AV policies across state lines.
- Align traffic laws – If Michigan's stopping distance for school buses is 50 feet, but Minnesota's is 30, how do we harmonize these laws?
- Promote industry standards, like SAE, ISO, IEEE
- Prepare road infrastructure: Lane markings, clear signs and MUTCD recommendations.
- Support US leadership. Work with fed government and states to place us auto/AV industry as a global leader

<https://www.autosinnovate.org/avroadmap>

**RECOMMENDATION 7  
MAINTAIN TRADITIONAL FEDERAL AND STATE ROLES**

The U.S. Congress should enact legislation to clarify federal and state roles related to AVs. The federal government should maintain responsibility for the design, construction, and performance of motor vehicles, while states should continue to oversee licensing of human drivers, registration, insurance, and traffic laws.

**RECOMMENDATION 8  
COORDINATE STATE AV POLICIES**

The current patchwork of AV laws and regulations at the state level presents challenges for manufacturers seeking to test and deploy AVs in multiple states. AV testing and deployment across state lines could be significantly improved if states coordinate with each other and support to ensure consistency of AV laws and regulations. A federal grant program could be established to provide funding to states that agree to work together to harmonize policies that govern the testing and deployment of AVs. In addition, a unified approach to AV licensing and registration should be encouraged.

**RECOMMENDATION 9  
ALIGN STATE TRAFFIC LAWS**

Harmonizing state traffic laws creates additional challenges for AV developers. AV developers must translate each state's traffic laws into the system's programming and custom them to the unique differences, and then continuously monitor state laws for any updates or changes. To the extent possible, states should be encouraged to harmonize traffic laws and regulations, particularly those that apply to the operation of AVs on public roads. Uniformity of state traffic laws and regulations would provide benefits not only to AV developers, but also to any road user who crosses state lines. As a mechanism, a single resource of state traffic laws and real-time updates to those laws that is accessible by AV developers should be created. In addition, states should review their existing laws and identify any provisions that would prevent the deployment of AVs.

**RECOMMENDATION 10  
LEAD IN INTERNATIONAL FORUMS**

Many AV companies, including those developing the technology in the United States, may deploy in global markets. For this reason, international alignment on AV testing and deployment regulations is helpful. DOT should actively participate in international forums, like the United Nations Economic Commission for Europe, where AV policy is being developed. DOT should also strive to implement a national AV policy framework that is reasonably aligned with international rules within the borders of the U.S. self-certification regulatory regime.

**RECOMMENDATION 11  
PROMOTE INDUSTRY STANDARDS**

Industry consensus standards play an important role in the deployment of new vehicle technologies. Standards Developing Organizations (such as ISO, IEEE, and SAE) provide a neutral forum for technical experts to reach consensus on foundational elements of AV design. This alignment around effective practices helps to advance safety and increase public trust in the technology. To that end, policymakers should support and appropriately leverage the development of these industry standards.

**RECOMMENDATION 12  
BUILD KNOWLEDGE FOR A SAFETY ASSURANCE FRAMEWORK**

DOT should encourage research and seek input from industry stakeholders to inform the development of a national AV safety assurance framework. Along with providing the necessary leadership and to facilitate meaningful progress on the testing and deployment of AV technology in the United States, it is important that DOT stay abreast of the latest advancements in AV technology.

**RECOMMENDATION 13  
PREPARE ROADWAY INFRASTRUCTURE FOR AVs**

Roadway infrastructure can help facilitate the deployment of AV technology. For example, AV performance will benefit from consistent and well-maintained lane markings, signage, and traffic control devices. DOT should revise the Manual on Uniform Traffic Control Devices (MUTCD) to include items that will support and facilitate AV deployment. States should be encouraged and even incentivized to update their infrastructure consistent with any AV-related MUTCD updates.

**RECOMMENDATION 14  
SUPPORT U.S. LEADERSHIP ON AVs**

In addition to creating a regulatory environment that allows for AV deployment in the United States (as described in the above recommendations), policymakers should explore additional policies to ensure that the United States maintains a leadership role in the development of AV technologies. This could include specific tax or other incentives that support the research, development, manufacturing, and deployment of AVs in the United States. In addition, policymakers should adopt policies that strengthen the AV workforce pipeline and create a pathway for qualified AV developers to safely test their vehicles on public roads with NHTSA oversight. Finally, restrictions on the safety of developers to commercialize AV technologies should be avoided or eliminated.

PAVE's mission is: *Through a public education campaign, PAVE is helping to create an automated vehicle future that increases safety, mobility, efficiency and sustainability.* They're a nonprofit that seeks to raise level of public knowledge. Diverse membership includes industry, consumer advocates, nonprofits and 2 advisory councils – Academic and Public Sector. Belief is that we want as many voices in the conversation as possible when speaking with the public. Two beliefs: (1) we believe in the potential for AVs to improve safety, mobility and sustainability; and (2) public acceptance is essential.

- Pools show that 60% of people would trust AVs more if they understood it and could take a ride.

- PAVE tries to give the public the facts and information they need to empower them. Every single person is a stakeholder in transportation, and the current transportation system doesn't work for everyone. Don't want to talk down to them; their concerns are real. It's more about engaging and listening. This includes passenger, delivery, freight trucking and other modes.
- Public education is important. Examples include "Click it or ticket" campaign that started with industry and now seat belt usage rose to 90%. PAVE recognizes the AV work is different.
- Three pillars: (1) messaging and media; (2) events; (3) public sector engagement. This includes earned media, working with journalists. Events include demos, virtual reality helmets with LIDAR that shows how it sees objects, distracted driving simulators, mobility advocates that talk about their story. This is our once chance to show the vehicle and experience the technology. PAVE doesn't lobby or take positions.
- Public Sector Advisory Council includes early adopters to create lessons learned to help other cities prepare. Trying to figure out the information public sector needs, including workshops with first pilot in May in Ohio. Creating a toolkit that covers: AV 101, regulatory overview, first responders, infrastructure, moving people (integrating AVs into transit and passenger vehicles), moving goods, freight and trucking
- A key lesson learned is that a lot of the content is the same, but how you reach them and talk to them and where they get their information is very different.

Tim Drake, of ITS America, represents auto manufacturers, suppliers, insurance, research, tech, states and locals. ITS America's work has a significant focus on AV technology and policy. Transportation industry is unanimous in opposing the FCC reallocation, FCC approved a proposal to reallocate portions of the safety spectrum to cellular technologies. ITS America encouraged states to review the proposed rule. ITS America is creating a map of all the connected vehicle projects across the country. ITS America is still working with members to understand how they can provide critical services with this change in regulations. Priorities for the coming year include:

- the importance of V2X technologies for safety, equity and environment. At a time when we're seeing traffic fatalities on the rise – weight reduced miles traveled – and growth in pedestrian fatalities in lower-income communities, shows we need to improve walking and bike lane infrastructure and use connected vehicle technology.
- Working with FCC to avoid interference of cellular safety technologies

ITS America's AV Standing Advisory committee held 10 hours of cross-industry conversations including: auto makers, city, county, state transportation agencies, insurance, and researchers. Full report will be public soon, but preliminary highlights include:

- Infrastructure improvements aren't necessary because AVs are being designed to operate under current infrastructure
- Communications infrastructure like ITS tech needs to be installed
- Continue 5G, broadband and telecommunications investments
- FCC was wrong to reallocate safety spectrum and regulatory uncertainty prevented V2X deployment
- Unnecessary to mandate EVs since industry is naturally moving in that direction.
- AVs have an ability to impact equity outcome. Private ownership will reduce equity while fleet models could advance equity.
- Areas of disagreement exist, and group will diver deeper into these issues.

ITS America preparing a *Technology Readiness Report* mapping 8-10 key factors to be ready for deployment. This will be a dashboard to identify gaps to measure progress toward goals (e.g. does a state have AV laws?). One example may be to map GHG emissions with penetration of EVs with availability of charging stations and the power grid. Other topic areas may include: equity and accessible mobility, connecting to employment, education and activities; connectivity – the ability to transmit usable information to improve safety; CAV deployments; and urban air mobility.

Mike Shapiro, Deputy Asst. Secretary for Economic Policy for US DOT, overviewed the administration's priorities, including responding to key crisis including: public health, economic crisis, social justice, and the crisis of longer-term climate change. A close colleague is Robin Hutcheson. Mr. Shapiro's personal background involved working at Sidewalk Infrastructure Partners in Michigan, building connected corridor, CAVue.

Infrastructure is a top priority and the focus on CAV. President laid out the American Job's plan, and a core component includes generational investment in infrastructure including future-proofing using innovative technologies. This plan is about addressing historic underinvestment and building the economy back better and making America globally competitive. This is about a long-term transformation of our economy.

- Starts with highways, ports, airports and other modes
- Deliver clean drinking water, high speed broadband, the grid
- Upgrading hospitals, childcare facilities
- Supporting US manufacturing and R&D to train for jobs of the future, while creating good paying jobs with prevailing wages
- Creating jobs for the care economy

Parts of the plan that address CAV – including \$600B investment – starts with a focus on:

- repairing roads and bridges. CAVs could create wear and tear on road with fixed path, so better pavements help support that. Modernizes 20k miles of roads, including economically significant bridges and 10k rural/tribal connections.
- Focus on transit, repairing buses, rail cars, stations and track. Bringing affordable transit
- Reliable rail service and expanding intercity and highspeed passenger rail
- Flagship investment is creating jobs in electrifying vehicles
- Addressing historic inequities and building the future of transportation. Transportation assets are very-long lived. The interstate divided communities.
- As we're making 10-40 year generational investments, we have to think about futureproofing. This includes basic research, ITS infrastructure, advanced pavements and creates a Transformative projects Funds into 'shovel worthy' ideas into 'shovel-ready' projects.

We shouldn't just be scaling technology for technology's sake. Department came up with a set of policy principles:

- Increasing safety
- Equity and social and racial justice
- Climate and resilience
- Making sure we create good paying job and economic strength
- Long-term transformation and high-performance

Question for us to ask: Is your state or local priority advancing these priorities above? Asking the above questions are principles we have to keep in mind when making investments.

### 3. Discussion

- *Q: Great to see the ambitious infrastructure plans from the Biden administration. What are the primary strategies to improve Roadway Safety in the US, both short and long term? A: Safety is a fundamental and transformative investment. This is a top concern for the Dept, and personal to the president who's suffered from roadway accidents himself. We've seen a troubling trend in greater pedestrian deaths. Includes \$20B for safety for all users, including HSIP and a new Safe Streets for All to fund state and local vision zero programs. Boston and New York have reduced fatalities by implementing vision zero plans. Alliance feels Biden's proposal aligns with their goals. ITSA feels that one of the biggest safety improvements we can make is to deploy technologies more broadly, including V2X.*
  
- *Q: Discuss how freight movement and heavy duty trucks fit into their AV vision and what would be appropriate next steps. Put differently, is the path forward for truck AV different than for passenger vehicles. A: Alliance focuses on passenger vehicles. Need to try platooning that is short of high-levels of automation, with many states looking at platooning. US DOT is committing to investing in improving freight and reliability of freight. It's a critical aspect of nation's economy and economic security. BUILD and INFRA help to improve the freight system. Important to think about disruptions and innovations in other systems; innovations must be guided by asking key principle questions on safety, equity, sustainability, jobs, and performance and accountability. ITS America feels it's easier to deploy CAVs in a more limited geographic environment and in key corridors like freight corridors. PAVE has been emphasizing that trucks and freight are one of the first CAV technologies they will see.*
  
- *What is one key policy priority or critical investment states and state DOTs should advance for CAV? Starting with Michael, then Josh, Tim and Tara. A: ITS America feels V2X technologies. Safest vehicle will be a connected one. But there are some unknowns here with FCC rules. Continue to engage in the process with FCC, ITS America, and US DOT.*
  - a. *PAVE: Public engagement for public at-large and helping us think what this means for people not well served by the current system. Also, policy makers – how can we help communities prepare themselves. What we hear include: what are the low-hanging fruit we can make for fixing roads, how you get a pilot program.*
  - b. *USDOT: US DOT wants to be an active partner. US DOT takes the view of state and local partners very seriously; they want to be collaborative across all the modes, including NHTSA, FHWA, FTA and others. Change in administration and the new infrastructure plan, we need honest, frank stakeholder feedback, like the NETT Council, reaching out to engagement folks, or providing input to Deputy Secretary. We want states to arm themselves with information and resources to meet their goals.*
  - c. *Josh: Agree with other speakers. Look for existing barriers in statute. Think about what would prevent deployment. State laws speak to human drivers. Think regionally and harmonize traffic laws across state lines.*
  
- *Q: Minnesota's CAV program focuses on readiness in winter weather, expanding access for rural communities, advancing transportation equity and broadening transportation access. How can*

*Minnesota advance these goals with industry, government and your organizations? Start with Tara.*

- a. Alliance: Need to think about the different needs and use cases, what population are we trying to serve and understand their needs and the best AV technology to meet those needs.*
  - b. PAVE: Look at folks that aren't well-served by the current system, including low vision, aging, different abilities. Over 80% of wheelchair users have challenges finding employment.*
  - c. ITS America: they try to evaluate issues and concerns from how can we deploy technology to address these needs and concerns. Problems in the transportation industry can be addressed by using technology as a piece to the puzzle.*
- *Q: Funding for infrastructure remains an important question - is it true that the Administration has ruled out user-based funding, such as gas tax increases (not changed since 1993) or VMT based fees? A: President made commitment that infrastructure investment will be made on a 15-year basis of corporate tax increases. President does not want to increase taxes on people making less than \$400k per year. Focus is on corporations are paying their fair share.*
  - *Q: What the panelists take away from the pilot AV programs in Arizona and elsewhere. For example, the Google/Waymo taxis in the Phoenix area. I am interested in both their view on the public response, as well as the safety data they have seen.*
    - *Arizona is a great example of how to test these technologies. This helps public perception, even if public polling is split. Need pilot and test programs in states.*
    - *USDOT's top priority is safety and making sure CAVs are being deployed to advance community goals. Need to make sure we're getting comprehensive regular data to evaluate those outcomes and their key goals.*
    - *PAVE: Testing is important for transparency and communication to the public. It's great for the public to see this, but when you ask people if they can buy this technology, we need to make clear that ADAS features are not the same as self-driving vehicles.*
    - *It's important to have opportunities to test in the real world environment.*

#### *Closing comments*

- *States and federal government must coordinate. Coordinate with Congressional delegations. Get engaged in FCC debate.*
  - *US DOT eager for feedback and participation in informing the plan. This is a truly generational moment; it's rare we get this opportunity to have a major infrastructure investment that's going to address our historic disinvestment with bipartisan support. This could be similar to The New Deal and interstate system investment. Would stress the urgency of the moment.*
  - *Thanks to Minnesota for being engaged*
  - *Echo opportunity to get engaged. While it's a once in a generation opportunity what we build now will last for generations.*
- 4. Minnesota CAV Guiding Policy Principles** – MnDOT presented an overview of the state's draft policy principles when adopting CAV policy, programs, and directing CAV investments. Communities, policy makers are unfamiliar with CAV and need support in developing technology policy. Principles help ask the right questions when directing public investment in technology. Some states and regions are developing their own principles. The draft principles were modeled after the Governor's Advisory Council on CAV has goals, shared values, and principles. No one document synthesizes all the above

into clear policy statements, and it's important for states like Minnesota to outline our priorities, particularly with Biden's American Jobs plan. The goal of these Guiding Principles is to help stakeholders ask the right questions when developing CAV policy and programs in directing investment

- *Q: How does freight movement fit in, relative to people movement? Freight is different and has different challenges. How do we ensure in these principles freight and goods movement is addressed? A: In first attempt we separated out equity and mobility and multi-modal access, but then combined them. Don't want to be so people-centric that freight isn't addressed.*
- *Council member Gorman noted that mobility applies to both people and goods/freight*
- CAV-X offered to meet with Council Members after the document is distributed to make sure that their concerns are addressed.

5. **[Tech Workforce Month](#)** – Adesewa Adesiji of DEED Workforce Strategies will highlight opportunities to showcase CAV careers during the month of April. Technology accounts for 3.8% of MN's total jobs, which is higher than the national average. This is concentrated in the Metro Area. This is a high-growing, high-demand industry. DEED reached out to Minnesota Technology Association. Governor issued a proclamation. Audience includes employers, educators, nonprofits, tech professionals, job seekers, youth – anyone interested in learning more about technology. Need to understand how to get more interested employees into tech jobs. Members can get involved by using #techmonthspotlight if they have any openings, hiring or career events, webinars. MnDOT will write a blog on the CAV program. Ms. Adesiji also shared a list of events, including Facebook live events focusing on BIPOC people in tech and career pathways for women in tech.
6. **[2021 CAV Annual Report](#)** – CAV-X will outline the framework for the new annual report, highlighting the work of the CAV Innovation Alliance and local partners.
7. **Public comment** – There were no public comments.
8. **Closing** – Co-chair Magney is so glad we're talking about ITS. ITS and CAV need to work cooperatively and we're starting to see those bridges being built. Darren Anderson of Texas DOT – who spoke at the Council in January 2020 - has invited VSI to come to Texas for a private event. Minnesota Transportation Conference last month was terrific. Next meeting is July 14<sup>th</sup>.