

TRANSPORTATION  
**TECHNOLOGY** & TRENDS



# Minnesota Guidestar Connected Automated Vehicles (CAV)

# FHWA Update on CAV



## **JIM MCCARTHY, PE, PTOE**

Traffic Operations Engineer, FHWA

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Jim works on traffic analysis, traffic operations and ITS deployment in Minnesota. He is currently working on a number of ITS projects, including ITS deployments, managed lane projects, and connected vehicle operational tests. Jim is also a friend of TRB's Highway Capacity Manual Committee and a member of FHWA's Traffic Analysis Team, which supports the Analysis, Modeling and Simulation (AMS) program.

Jim holds a Bachelor of Science in Civil Engineering and a Master of Civil Engineering from the University of Minnesota. He is a licensed professional engineer in Minnesota and a PTOE, and is active on the Board of Directors of ITS Minnesota, North Central ITE and Minnesota Guidestar.

# MnDOT Update & Summary of San Francisco Automated Vehicle Symposium



**KRISTIN WHITE**

CAV Innovation Director, MnDOT  
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Kristin White is MnDOT's new CAV Innovation Director. She manages policy, strategic planning, research, and deployment of these technologies. Kristin has a decade of experience advising federal, state, and local agencies on public policy and has represented public organizations in a variety of transportation, planning, and innovation matters.



**JAY HIETPAS**

CAV Executive Director, MnDOT  
[Jay.hietpas@state.mn.us](mailto:Jay.hietpas@state.mn.us)

Jay is the Director of MnDOT's new Office of Connected and Automated Vehicles (CAV-X). In this role, he leads the statewide policy, research and deployment of CAV technology. Jay has 22 years experience in transportation, and holds a bachelor and master degree in civil engineering from the University of Minnesota.

# ITS America Update



## JIM BARBAROSSO

HNTB Fellow, Senior Vice President and Practice Leader  
Intelligent Transportation Systems

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Jim Barbaresso has more than 39 years of experience in transportation planning, transportation operations, and ITS in both the public and private sectors. He provides subject matter expertise on highway, transit, aviation and tolling projects across the US, including some of the nation's most challenging emerging mobility programs like *Smart Columbus* and the *Tampa Connected Vehicle Pilot*. He is an advisor for many state DOTs and cities on smart city solutions and automated vehicle planning. Jim also is involved in the development of two of the USDOT automated vehicle proving ground initiatives.

Jim has written numerous white papers and articles on public agency considerations regarding new mobility solutions in our age of connectivity and automation, and has given a TED talk on the impacts of connected automation.



NATIONAL DIALOGUE ON  
**HIGHWAY AUTOMATION**

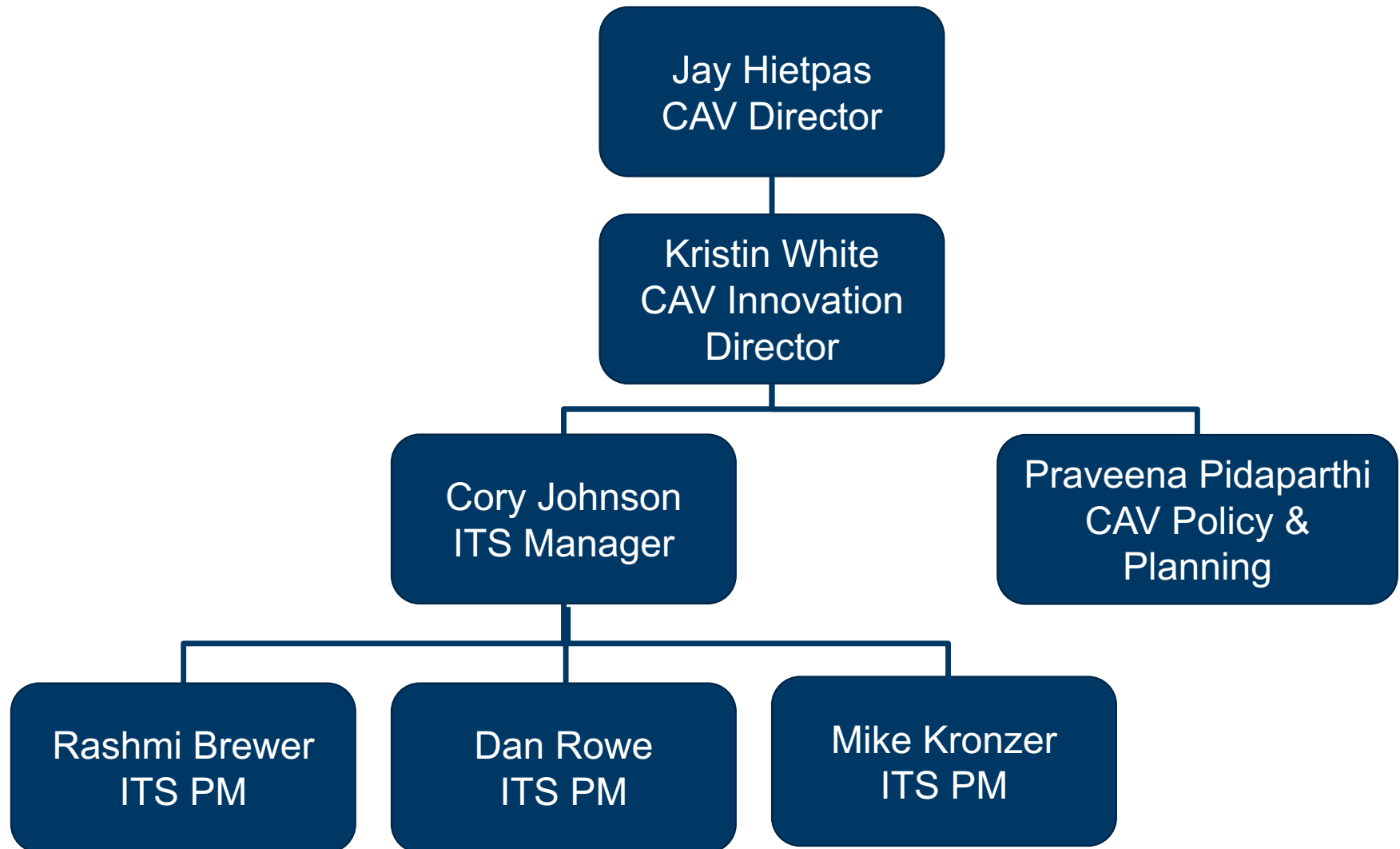


U.S. Department of Transportation  
**Federal Highway Administration**

# Announcement to T3 Forum July 18, 2018

James P McCarthy, PE, PTOE  
Minnesota Division

<https://ops.fhwa.dot.gov/automationdialogue/index.htm>  
*(Search on "FHWA National Dialogue")*



Improve the quality of life for Minnesota residents, guests and businesses by fostering the research and implementation of emerging transportation technologies such as ITS, connected, automated, shared, and electric vehicles.

# Duties of the Advisory Council



**Consult** with  
government,  
stakeholders, auto  
& tech industry,  
business, labor,  
advocacy groups,  
universities,  
underserved  
communities

**Prepare and  
submit a report to  
the Governor and  
Legislature by  
December 1, 2018**

Develop testing and  
deployment of CAV



# Activities

- U of M Visioning Session
- Stakeholder Engagement
- Public Survey
- State Fair
- Position Paper



# Strategic Plan Overview

- ✓ Identify short, mid, and long-term opportunities for policy, regulations, partnerships, research, pilot demonstrations and technology deployments
- ✓ Use the scenarios to inform current and future long-range planning, regulatory, programming, design, operations, and business planning efforts.
- ✓ Increase the probability of achieving the potential benefits of CAV technology in MN and reduce the risks, confusion and potential negative implications of the technology in MN.



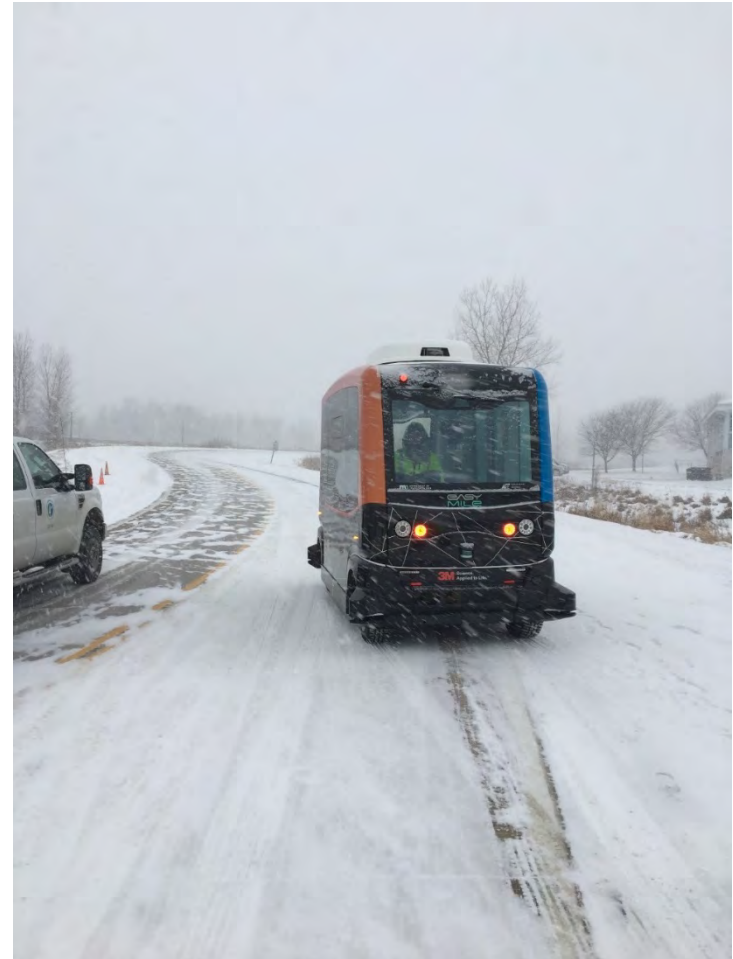
## Hot Topics

# Connected Corridor



# Automated Shuttle Update

- **Final Report is complete**
- **Over 3000 Riders**



<http://www.dot.state.mn.us/automated/bus/index.html>

# Other Hot Topics

- MnDOT CAV Partnership Program
- ITS Master Contract Update
- Prioritizing Research – Development – Deployment
- Identifying Testing Locations

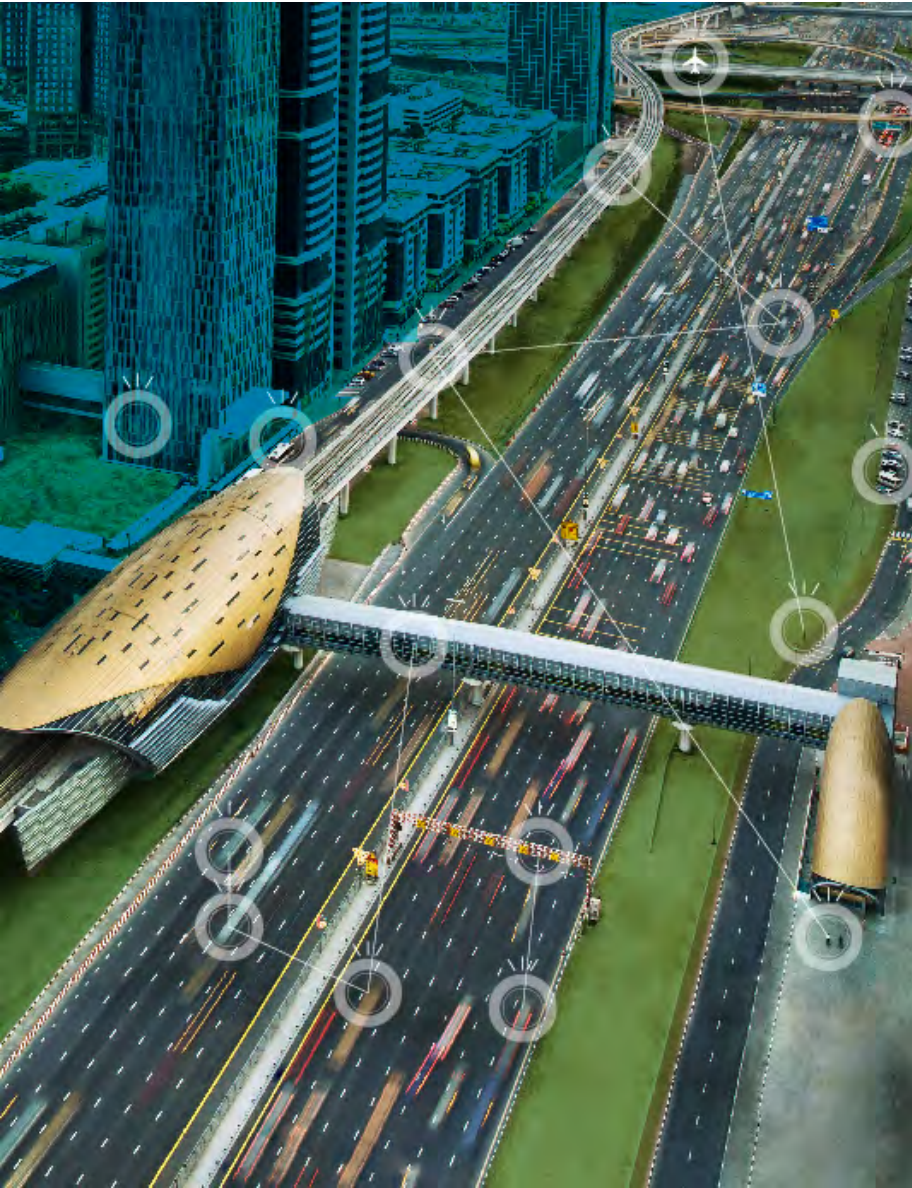
# National Trends

- National Committee on Uniform Traffic Control Devices (NCUTD)
  - CAV Task Force – Working on marking recommendations
- FHWA National Dialogue on Policy
  - DOT/OEM's talking together about infrastructure and policy
- Other Items
  - Level 5 Vehicles – timing
  - Few states have national presence



1. **LISTEN:** Gather input from a diverse group of stakeholders.
2. **ENGAGE:** Facilitate information sharing among industry, public agencies, associations and others.
3. **INFORM:** Raise awareness of FHWA and USDOT activities in automation and emerging technologies.
4. **EVOLVE:** Adapt existing programs, policies and research to address automation.



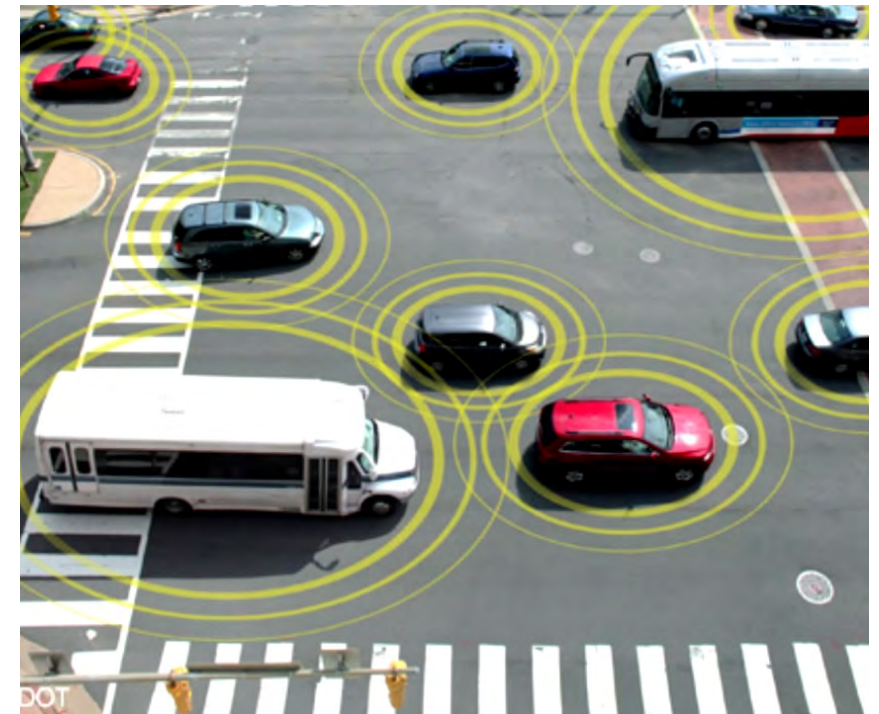
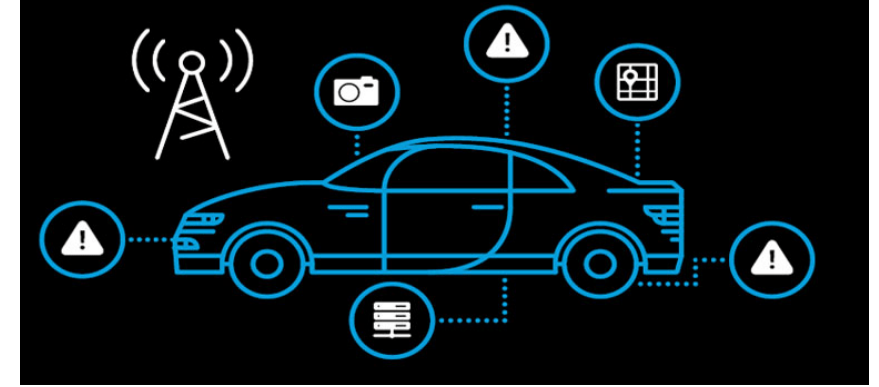


# Connected & Automated Vehicles: Industry Insights

# CONNECTED VEHICLES

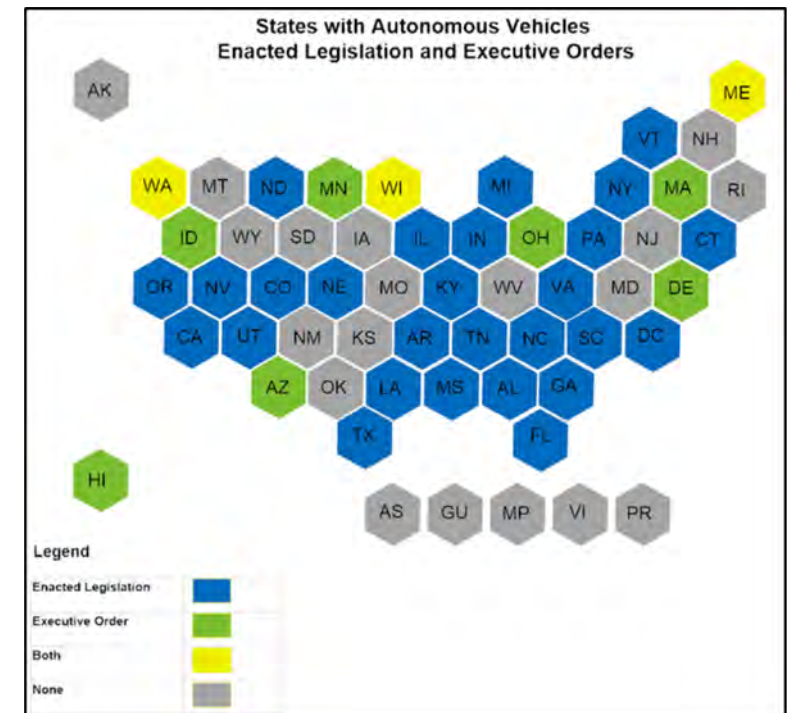
- Toyota will add V2V across spectrum of models in 2021
  - DSRC
  - Pushing other OEMs
- GM to expand V2V offering to more models in 2023 (DSRC or C-V2X?)
- Panasonic, AT&T, Qualcomm & Ford collaborate on C-V2X pilot in Colorado

## Cellular-V2X: Expanding Vehicle Communication



# AUTOMATED VEHICLES

- GM to offer Super Cruise across entire Cadillac lineup in 2020
- AV shuttle operations initiated in downtown Detroit
- Smart Columbus and San Francisco Metropolitan Transportation Agency issue RFPs for AV Shuttle Operations
- 32 states have AV legislation or executive orders





# EMERGING MOBILITY

- VW launches WE electric shared vehicle program
- Ford purchases abandoned Detroit landmark for new mobility headquarters
- MaaS-A launched
- ITS America Forum on Cybersecurity Risk and the Future of Mobility (July 31- August 1, 2018)





