NATIONAL ACADEMIES Sciences Engineering Medicine

TRB TRANSPORTATION RESEARCH BOARD

TRB Webinar:

Six Steps to Advance State DOT Connected and Automated Vehicle Programs

February 12, 2026

1:00 – 2:30 PM (eastern)

PDH Certification Information

1.5 Professional Development Hour (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at TRBwebinar@nas.edu

The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.

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You must attend the entire webinar

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Contact AICP (AICPCM@planning.org), not TRB, with questions

Purpose Statement

This webinar will highlight lessons learned from a nationwide peer exchange and share practical priorities and approaches to help state departments of transportation advance connected and automated vehicle(CAV) programs in collaboration with public and private partners.

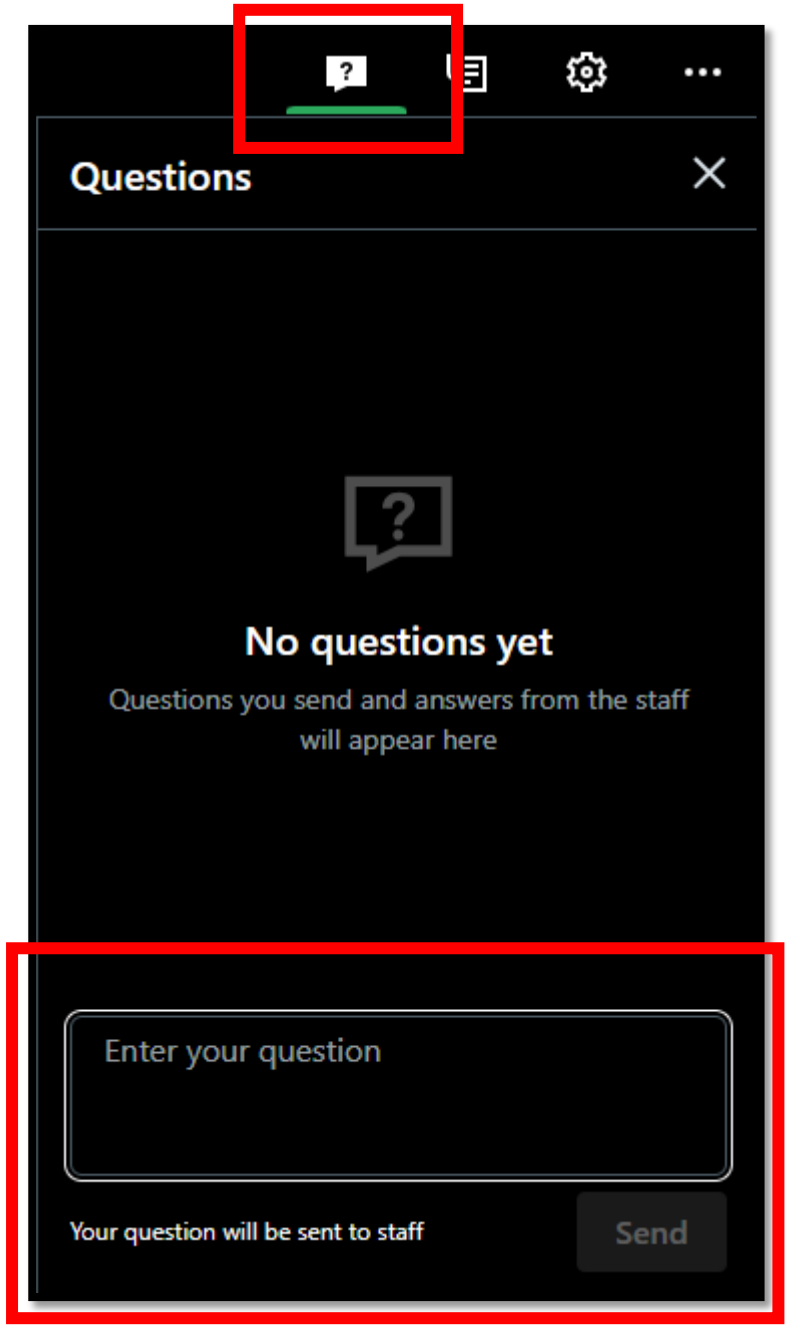
Learning Objectives

At the end of this webinar, participants will be able to:

- Identify and understand the key challenges state DOTs currently face in deploying CAV technologies;
- Explore opportunities to overcome these barriers and work with both private and public sector partners to advance deployment of technologies to address safety and mobility goals for your region; and
- Understand the current state of CAV deployment among U.S. states.

Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



Today's Presenters

Daniela Bremmer
daniela.bremmer@wsdot.wa.gov

WSDOT

Phillip Castro
prcastro@utah.gov

UDOT Keeping Utah Moving

John Kaliski
jkaliski@camsys.com

CAMBRIDGE SYSTEMATICS

Sarah Searcy
sesearcy1@ncdot.gov

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

STATE CAV PEER EXCHANGE

SIX STEPS TO ADVANCE STATE DOT CONNECTED AND AUTOMATED VEHICLE PROGRAMS

TRB WEBINAR

presented by

Daniela Bremmer
Washington State DOT

Sarah Searcy
North Carolina DOT

Phillip Castro
Utah DOT

John Kaliski
Cambridge Systematics, Inc.

February 12, 2026
NCHRP 20-24 (147)

CAV PEER EXCHANGE
A GRASS ROOTS EFFORT

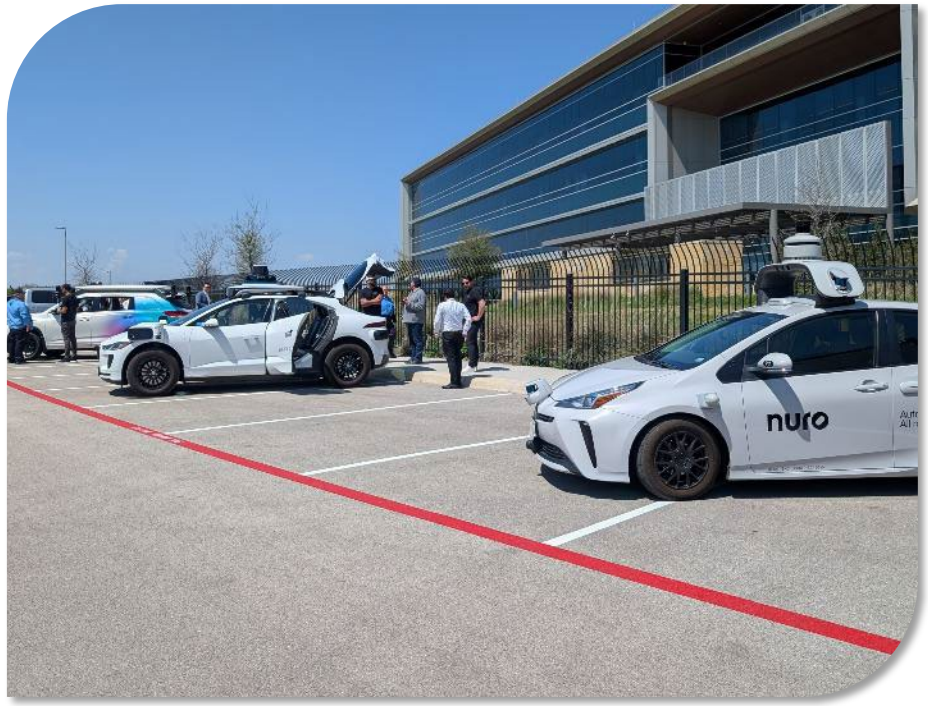
- In 2021, the AV/CV leads from many state DOTs (including WA, OR, CA, IA, AZ, CO, TX, MN, MI, PA, FL, MD, CT, KY, GA, OH, DE, VA, WY) identified a need for an in-person meeting to candidly discuss challenges and best practices
- WA along with CO, IA, OH, and MD led developing a proposal, initially for NCHRP 20-68 "U.S. Domestic Scan" program (CY-2022), followed by submitting for NCHRP 20-24 "Administration of Highway and Transportation Agencies" (CY-2023)
- The proposal also built upon the results of NCHRP 20-24(128), a state DOT CEO-led international scan on CAT/CAV
- AASHTO-CTSO leadership and several CEOs endorsed the proposal and the CAV Community of Practice became the driving force behind the effort
- The proposal was awarded $400K under NCHRP 20-24(147), with Cambridge Systematics as PI, and led to the first ever, in-person Peer Exchange for state DOT CAV leads in March 2025

PEER EXCHANGE OBJECTIVE

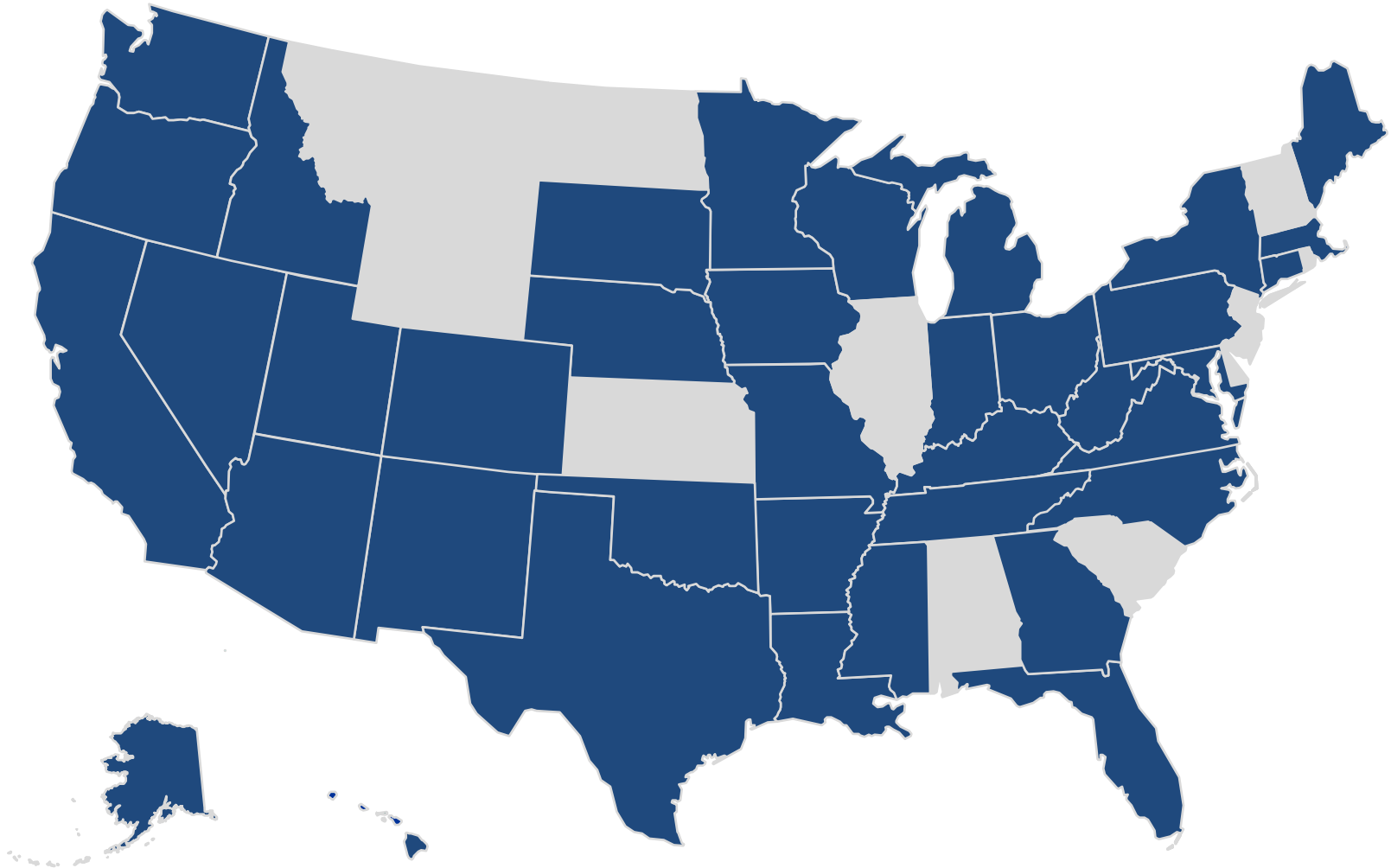
Identify a set of ***best practices and lessons learned*** to help ***inform state departments of transportation*** (DOT) in making ***practical and feasible investment and policy decisions*** related to connected, automated/autonomous, and emerging transportation technologies.

PEER EXCHANGE OVERVIEW

- **First of its kind**
- 1.5-day peer exchange initiated by AASHTO CTSO CAV CoP members
- Funded through NCHRP and hosted by TxDOT HQ in Austin
- 82 participants from 39 state DOTs
- Coordinated with meeting of AV Pooled Fund
- Included demos from ~10 AV vendors

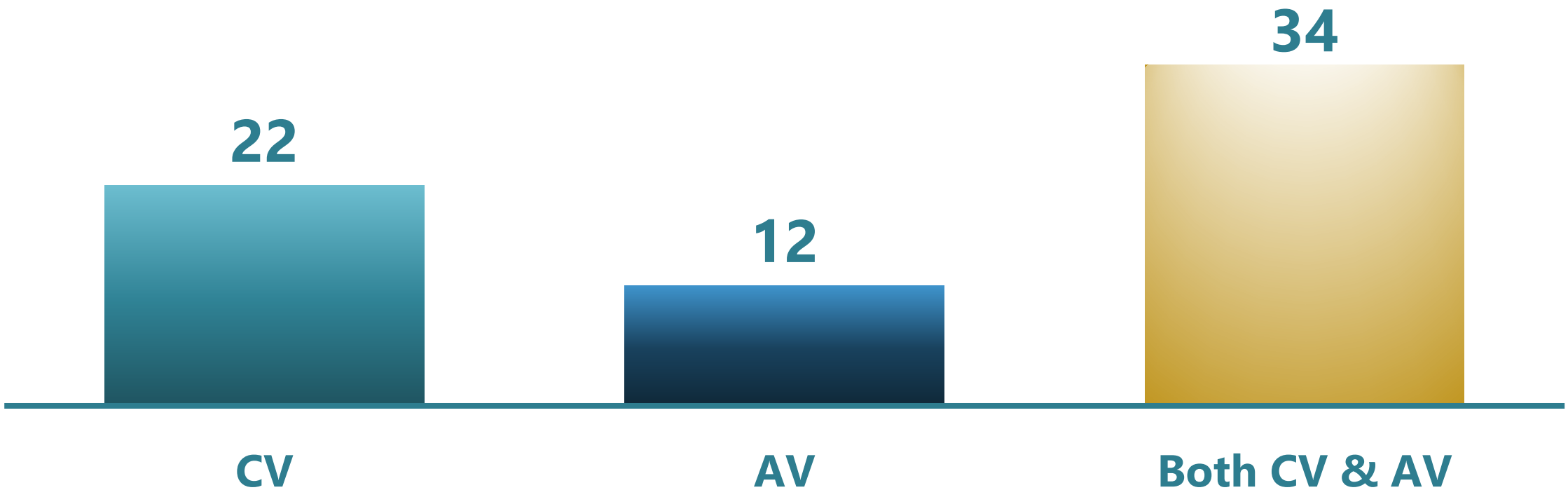


PARTICIPATING STATES



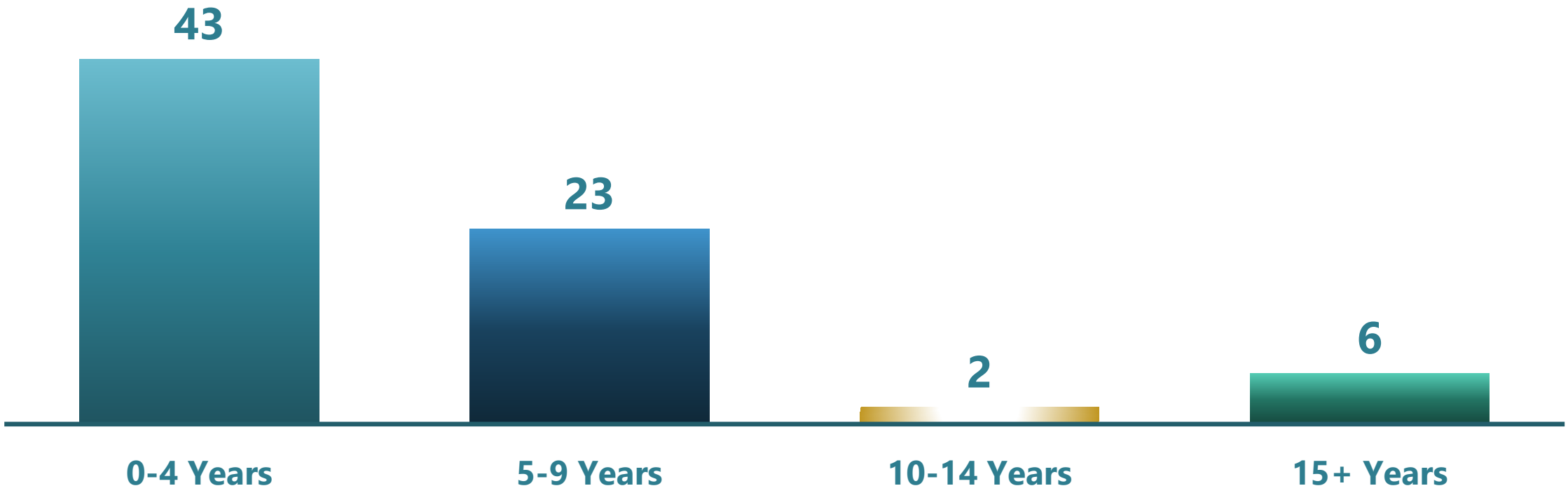
PARTICIPANT BACKGROUND

Is your area of expertise CV, AV, or both?



PARTICIPANT BACKGROUND

How long have you been in your current role?

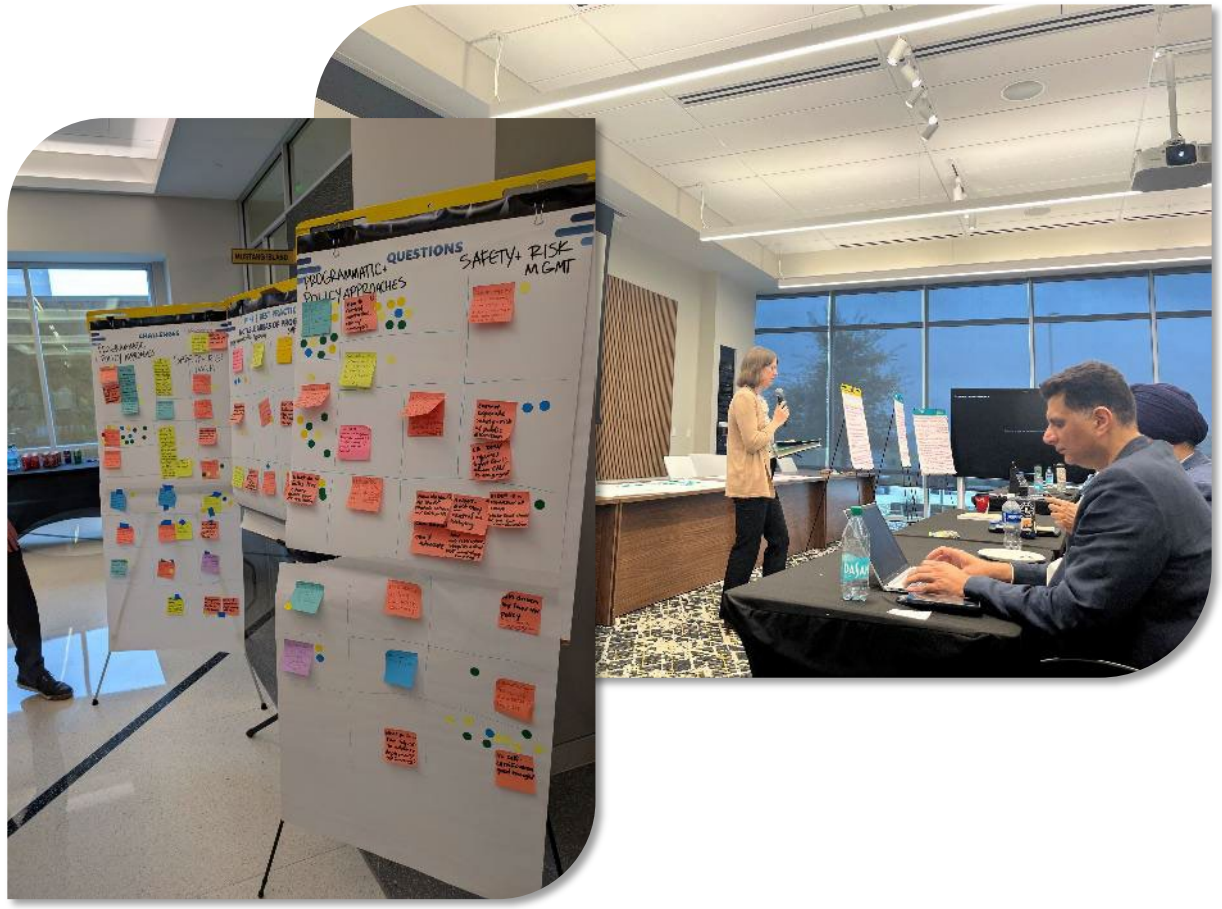


PREPARATORY ACTIVITIES

- Synthesis of key terms and definitions
- Scan of existing research and activities
- Pre-meeting survey

AGENDA HIGHLIGHTS

- Roundtable updates from all 39 states
- Breakout discussions on 7 key themes
- Deep-dive discussions on 6 cross-cutting issues
- Brainstorming on potential next steps



HIGHLY RATED
STATE DOT CAV ROUNDTABLE

- Resulted in a rare and valuable compilation of reports from 39 State DOTs on :
  - Recent activities
  - Wins/noteworthy practices/lessons learned
  - Challenges

STATE CAV ROUNDTABLE
UTAH

- Participants at Peer Exchange
  - Phillip Castro – Transportation Technology Project Manager

- How would you describe your state today?
  - Our focus and emphasis is Connected Vehicles.
    - Deployments since 2016
  - Automated Vehicles
    - AV Shuttle Pilot Project
    - State law and policy is in place

- Transportationtechnology.Utah.gov

Data as of March 26, 2025

STATE CAV ROUNDTABLE
UTAH

- What is your most notable success related to CAV (or what has been your most recent learning)? What factors have been key to this success or learning?
  - AV Laws for Utah, Lessons learned from our AV Shuttle project
  - Today, our success is our deployment of CV technology
    - Existing Roadside Units (RSUs): 866
    - Existing On-Board Units (OBUs): 527
    - Connecting the West -- $20M Grant: “Saving Lives with Connectivity: Accelerating V2X Deployment”
      - 450 Intersection RSUs, 150 Interstate RSUs
      - 215 OBUs (buses, plows)
      - 20 VRU Warning Sites
      - 30%+ of signalized intersections in SLC Metro Area (57th)
      - 1200 Mile Interstate Loop: (2.5% of Interstate HS; 0.7% of NHS)

Data as of March 26, 2025
RSU/OSU as of February 2, 2026

STATE CAV ROUNDTABLE
UTAH

- What is your greatest challenge related to CAV and why?
  - Maintenance as we scale up deployments
  - Procurement of technology
  - Safety can be difficult to evaluate and measure

- What key question would you like to address today or moving forward?
  - National V2X Deployment Plan
    - How can we work together to move towards nationwide deployment?
    - How can we better share our lessons?
    - What can we do to work on interoperability together?

Data as of March 26, 2025

STATE CAV ROUNDTABLE
NORTH CAROLINA

- Participants at Peer Exchange:
  - Kelly Wells, State Traveler Information Engineer, NCDOT
  - Matthew Carlisle, State ITS & Signals Management Engineer, NCDOT
  - Robert Sawyer, Lieutenant Colonel, NC Division of Motor Vehicles License & Theft Bureau, NCDOT
  - Sarah Searcy, Emerging Technologies & Innovation Manager, NCDOT
- How would you describe your state today?
  - NCDOT has experience with both AV and CV mostly through research, demonstrations, and pilot programs and projects
  - North Carolina has laws regulating “Fully Autonomous Vehicles (FAV)” (2017), “personal delivery devices” (2020), and “neighborhood occupantless vehicles” (2021)
  - North Carolina has a legislatively mandated FAV Committee within the DOT (first convened in 2018)
  - Early adopter by supporting research, testing, evaluation, engagement, and education that informs development, encourages continuous improvement, fosters trust, and ensures the state’s readiness

Data as of March 26, 2025

STATE CAV ROUNDTABLE
NORTH CAROLINA

- What is your most notable success related to CAV (or what has been your most recent learning)? What factors have been key to this success or learning?
  - Multiple collaborative automated shuttle pilot projects (two tested CV features) with publication of data, findings, lessons learned, and recommendations for future work
  - Federal grant wins for:
    - Multimodal Connected Vehicle Pilot (MMCVP) Project [ATC-MTD]
    - Automating Actionable Road Anomalies (AARA) for Traveler Information [SMART]
    - Smart Signals in Our Communities [ATTAIN]
  - First statewide deployment of a Work Zone Data Exchange (WZDx) feed in the U.S.
  - Ongoing statewide broadband expansion
  - N.C. A&T State University's CAV testbed, rural test track, and first open road demonstration
  - Dedicated lead for CAV in NCDOT's Office of Strategic Initiatives and Program Support
  - State CAV strategic plan update and reengagement of FAV Committee

Data as of March 26, 2025

STATE CAV ROUNDTABLE
NORTH CAROLINA

- What is your greatest challenge related to CAV and why?
  - Resources & Funding including dedicated, designated resources for testing and evaluating emerging technologies
  - Organizational Readiness especially capacity building and clear pathways for collaboration
  - Scalability & Commercialization relative to the actual capabilities and limitations of technology
- What key question would you like to address today or moving forward?
  - How do other states effectively organize, staff, and fund their work related to CAV?
  - How do we educate DOT and contractor field staff who need to inspect some CV elements?
  - What is the #1 benefit you've seen for Infrastructure Owner/Operators and the traveling public from CAV deployments?
  - How do you balance regulation without stifling innovation?
  - How do you encourage testing data and reporting sharing?

Data as of March 26, 2025

STATE OF CAV DEPLOYMENT TODAY

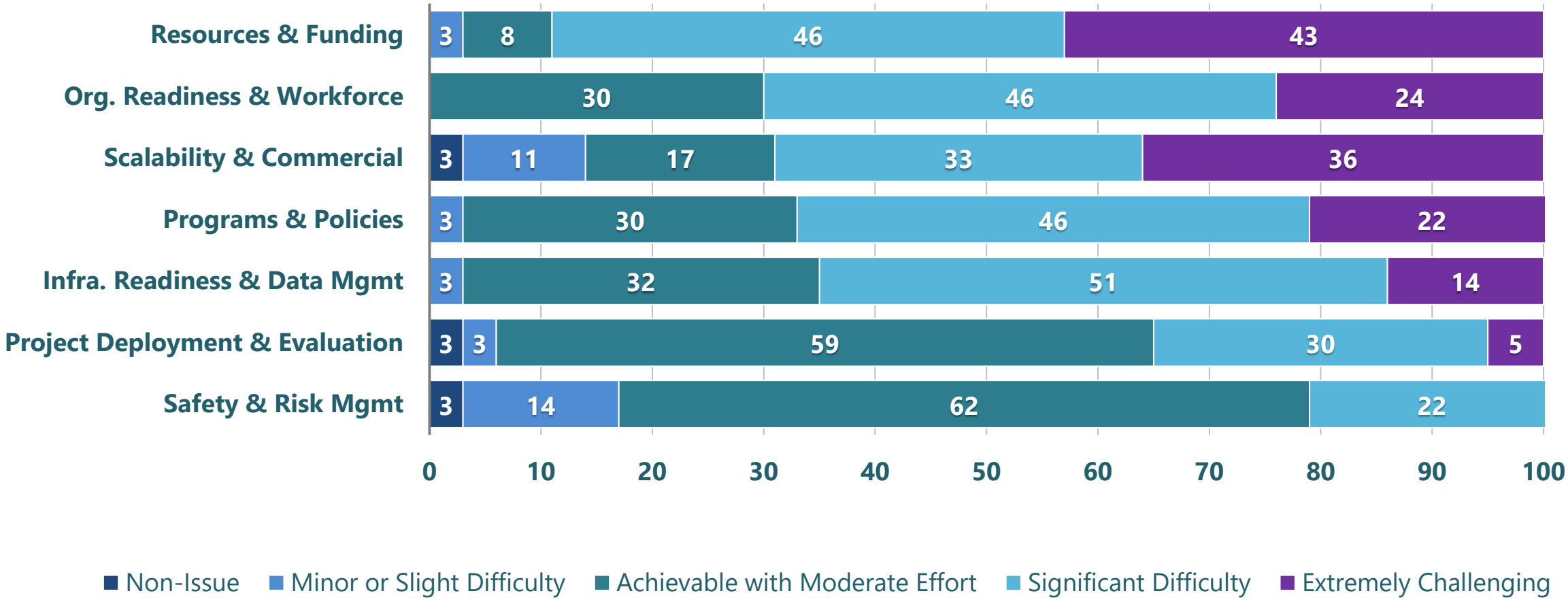
- State DOTs have organized for CAV in a variety of ways
  - Some have dedicated offices; some have assigned staff in existing offices
  - Some CAV leads have dedicated staff and resources; others play a coordinating role
- More than 3 out of 5 state DOTs are addressing both AV and CV
- States are at various points of deployment
  - 14 states are “early adopters” for some aspect of CAV
  - 15 states are “in between” early and recent deployment
  - 8 eight states are recent deployers

STATE OF CAV DEPLOYMENT
FREQUENT "WINS"

- Engaging private sector partners
- Creating/updating CAV related policy frameworks and/or strategic plans
- Creating/updating technical roadmaps or concepts of operations
- Conducting successful demonstration or pilot projects
- Implementing initial data sharing tools

STATUS OF CAV DEPLOYMENT
KEY CHALLENGES

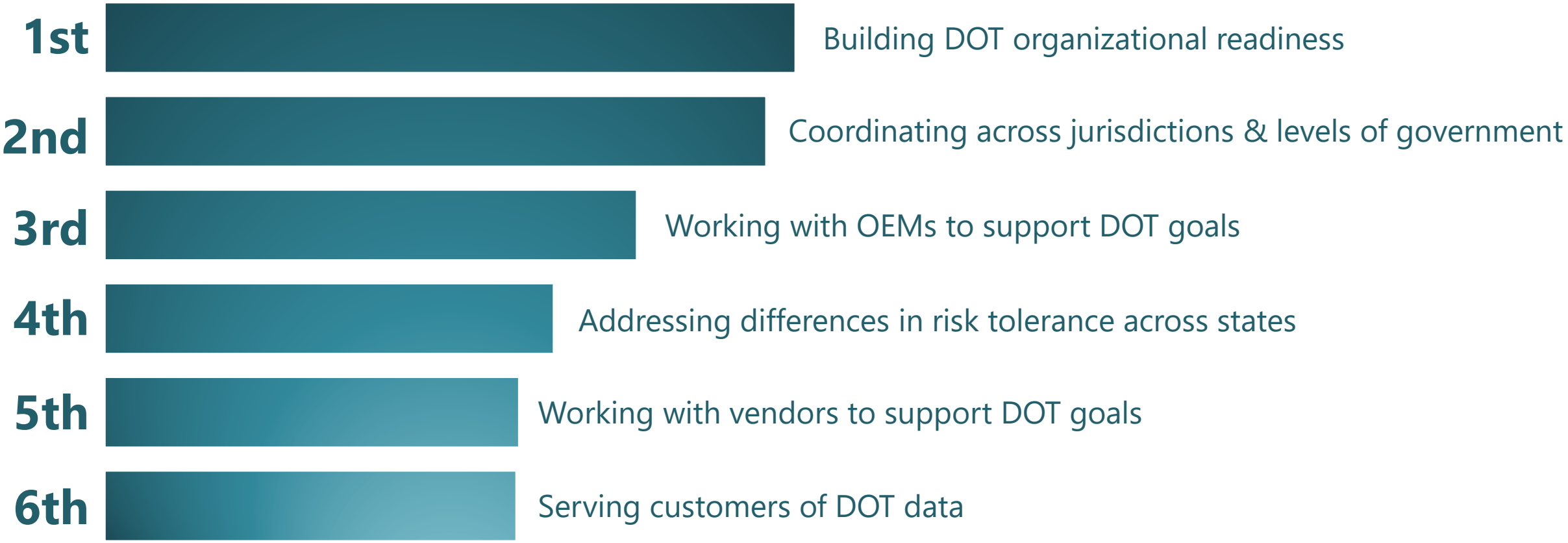
HOW SIGNIFICANT ARE THESE CHALLENGES FOR STATE DOTS?



STATE DOT CAV PEER EXCHANGE
NEXT STEPS: SIX AREAS FOR FUTURE ACTION IDENTIFIED

- Internal issues
  - Building DOT organizational readiness
- Coordination issues
  - Coordination across jurisdictions and levels of government
  - Addressing differences in risk tolerance across states
  - Working with OEMs to support DOT goals
  - Working with vendors to support DOT goals
  - Serving customers of DOT data

STATE DOT CAV PEER EXCHANGE
NEXT STEPS: SIX AREAS FOR FUTURE ACTION IDENTIFIED



BUILDING DOT ORGANIZATIONAL READINESS

KEY ISSUES & OPPORTUNITIES

Building and sustaining leadership buy-in

Working across silos (R&T/operations, HQ/Districts, DOT and IT agencies, etc.)

Workforce development

POTENTIAL ACTIONS

Demonstrate benefits/ROI to leadership and operations; tie to strategic goals

---

Strengthen internal coordination (single office and/or strong internal partnership)

Identify quick wins to build momentum

Integrate CAV into standard plans, processes

Define levels of readiness

WORKING WITH OEMS TO SUPPORT DOT GOALS

KEY ISSUES & OPPORTUNITIES

"Chicken and egg" problem – does the infrastructure or the OEM come first?

Unclear or differing goals and use cases

POTENTIAL ACTIONS

Use initial deployments to help build trust with OEMs

Invest in infrastructure that brings value in multiple situations

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Use muti-state/regional coalitions to advance solutions at scale with OEMs

COORDINATING ACROSS JURISDICTIONS AND LEVELS OF GOVERNMENT

KEY ISSUES & OPPORTUNITIES

Moving toward a patchwork solution today with a range of state DOT approaches

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Uncertainty about federal role

Need for more collaboration with MPOs, local governments

POTENTIAL ACTIONS

Use convening power of state DOTs, AASHTO, corridor/regional coalitions

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Identify key gaps (multistate freight movement, multi-jurisdictional personal travel) where national or regional frameworks are needed

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Focus on key priorities (safety, commerce, emergency response); start small and scale up

ADDRESSING DIFFERENCES IN RISK TOLERANCE ACROSS STATES

KEY ISSUES & OPPORTUNITIES

Balancing permissive and restrictive regulatory approaches whiles supporting safety and interstate commerce

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Emerging issues (self certification, liability, vehicle registration, human driver or passenger)

POTENTIAL ACTIONS

Create inventory of state laws and policies

Share effective practices across states; use coalitions to support coordination

---

Build policy framework that anticipates liability issues and reciprocity across jurisdictions

WORKING WITH VENDORS TO SUPPORT DOT GOALS

KEY ISSUES & OPPORTUNITIES

Technology readiness may not meet expectations

Procurement and vendor management is challenging and varies across states

POTENTIAL ACTIONS

Share best practice in vendor intake, procurement, management

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Enhance procurement practices (best value bids, performance-based or agile RFPs)

Create multi-state/corridor-scale procurement opportunities

Provide training for DOT staff re vendor management

SERVING CUSTOMERS OF DOT DATA

KEY ISSUES & OPPORTUNITIES

Limited insight into who users our data for which purposes; uncertain value of data

---

Time and effort needed to coordinate with many new partners

Data privacy, security, and cost concerns

POTENTIAL ACTIONS

Focus initially on standard exchange standards

Strengthen coordination with third-parties/other private sector data users

---

Leverage national/regional/multi-state groups to work on data standards and roadmaps

FEEDBACK:
WHAT DID YOU LEARN FROM THE PEER EXCHANGE?

A ton of ideas! The progress by other DOTs in this space is amazing!

Favorite part was the state roundtable.

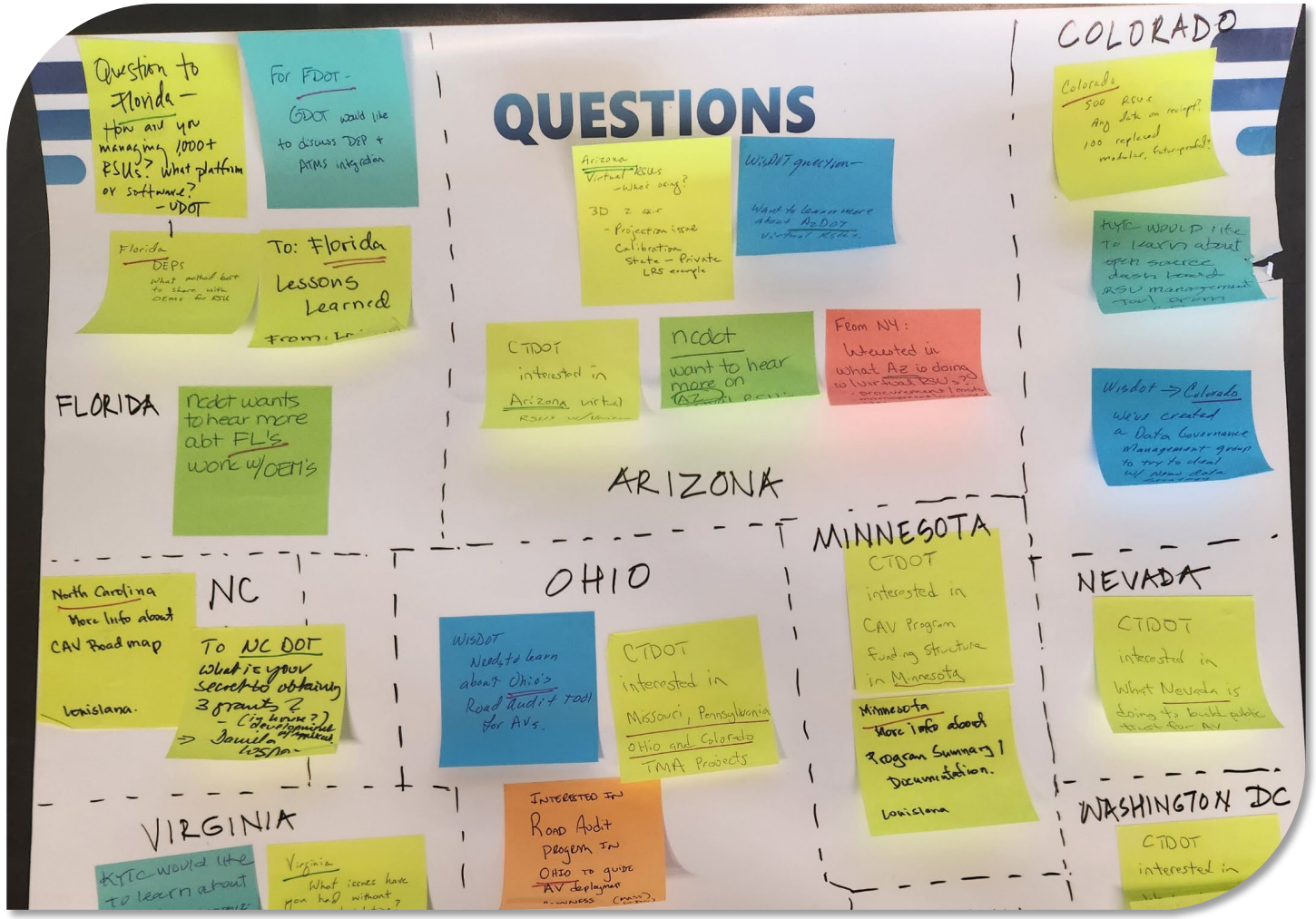
Our state is not as far behind as originally thought.

Names of peers doing similar work.

The DOT community is still learning and developing in the CAV space. There is tremendous opportunity to learn and adopt from each other.

Appreciate that all DOTs are experiencing similar challenges.

WHO WOULD YOU LIKE TO HEAR MORE FROM?

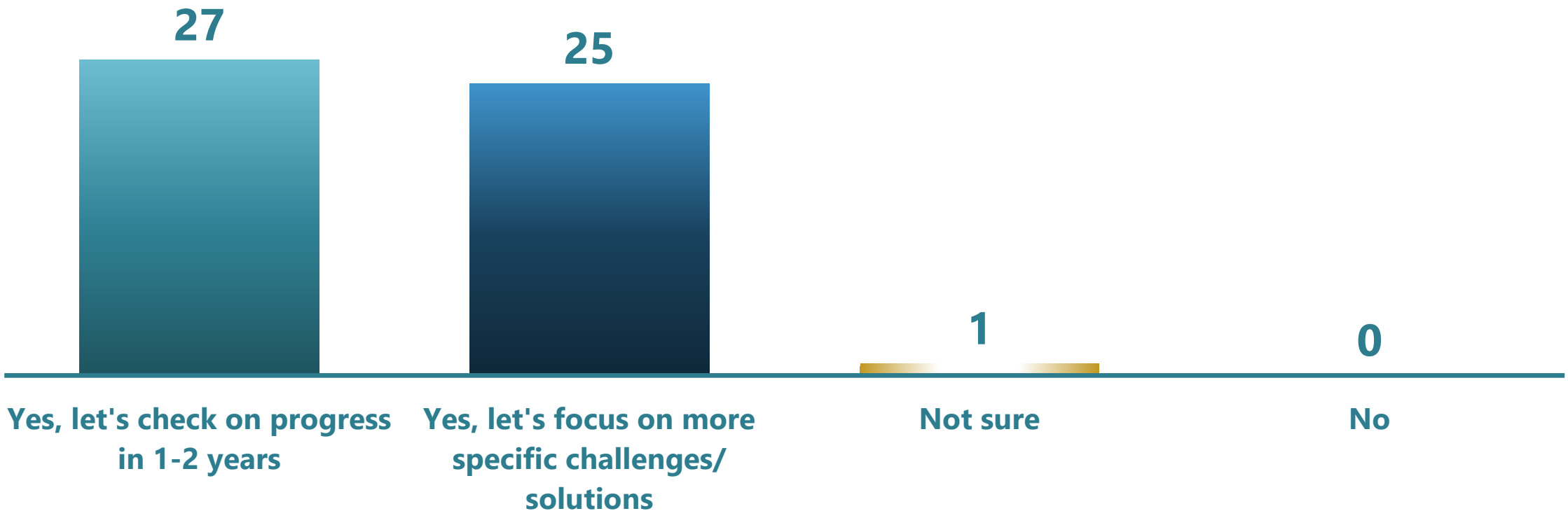


VALUE OF THIS PEER EXCHANGE:
ROI COMMUNICATING AND ADVOCATING

- Provided ***snapshot of current activities*** in 39 states
- Enhanced network of ***points of contact*** across the states
- Identified specific ***effective practices*** that could be implemented today
- Identified areas for future ***multi-state/regional/national action***

PARTICIPANT FEEDBACK

Would there be value in a similar peer exchange in the future?



ACTION PLAN

- ***Share peer exchange findings*** and recommendations with state DOTs, AASHTO, TRB, other key groups
- ***Reach out to other associations*** (AMPO, NACTO, SAE, etc.)
- ***Maintain list*** of state DOT points of contact
- Explore approaches to ***maintaining Resource Guide*** and other key content
- Continue ***forums for open dialogue*** among state DOT CAV program managers
  - Potential role for AASHTO CAV Community of Practice?

ACTION PLAN

- Identify key activities that could be ***future roles for AASHTO or other national/multi-state organizations***
  - Development of national CAV framework
  - Data exchange standards
  - Collaboration with OEMs, vendors, 3rd party mapping and navigation companies, etc.
- Identify potential ***future NCHRP research topics***
  - KPIs/business case development
  - Levels of organizational readiness/capability maturity models
  - Syntheses of CAV policies, strategic plans, procurement practices, etc.
  - Case studies
- Plan ***future peer exchanges***
  - Proposal has been submitted for NCHRP Implementation Support

SUGGESTIONS FOR A FUTURE EXCHANGE?
SAMPLE OF INITIAL SUGGESTIONS

This is such a dynamic topic that almost requires frequency of interaction between the states. Suggested annual meeting.

Pair experienced CAV DOTs with those wanting to learn and get started.

Separate tracks for CV and AV.

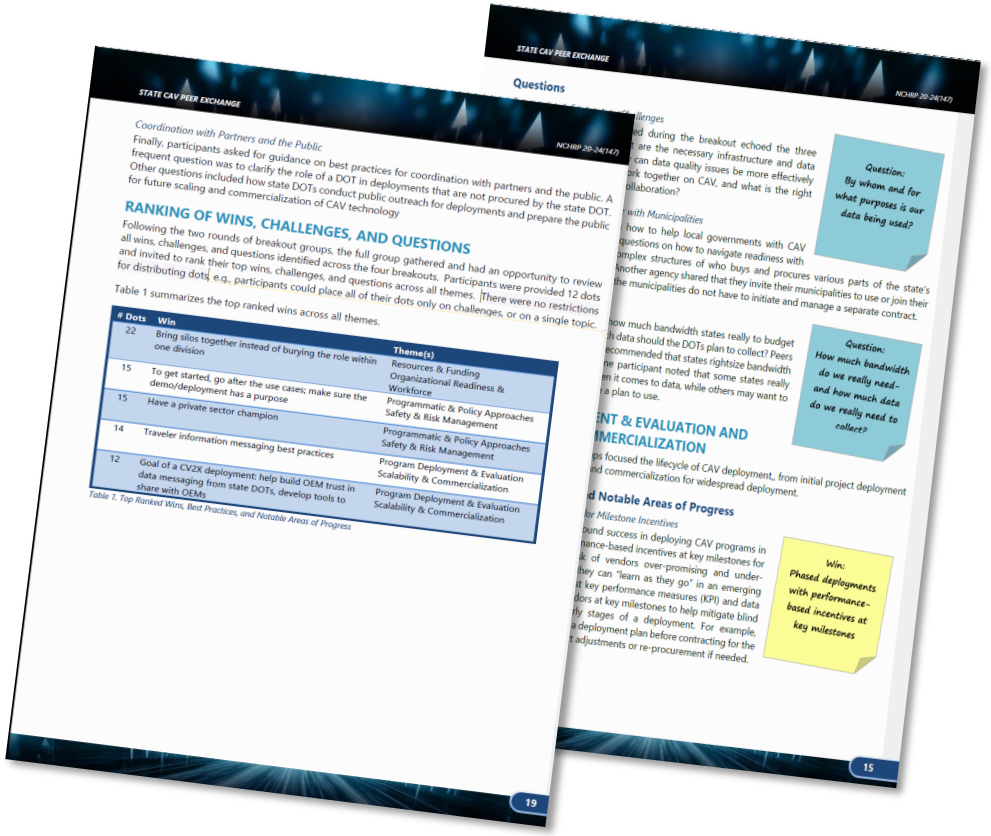
Breakout sessions to work on target solutions, framework, messaging.

Bring in more partners: OEMs, other agencies like DMVs, cities.

Defining goals that states can accomplish and report on.

PEER EXCHANGE PRODUCTS

- Peer Exchange Summary with appendices
  - Agenda and other materials
  - Presentation including State DOT roundtable
  - Summary presentation
- State DOT CAV Resource Guide
- Implementation Plan
- Available at
  - https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=5426
  - Look under FINAL DELIVERABLES



NCHRP 20-24(147) [Final]

Identify Best Practices for Automated Driving Systems and Other Emerging Technologies

[NCHRP 20-24 (Administration of Highway and Transportation Agencies)]

Project Data	
Funds:	$400,000
Research Agency:	Cambridge Systematics, Inc.
Principal Investigator:	John Kaliski
Effective Date:	3/15/2024
Completion Date:	9/14/2025

BACKGROUND

Many state departments of transportation (DOTs) plan and invest resources to improve their ability to mitigate, prepare for, and respond to emergencies; combat climate change; and build transportation systems that provide equitable services, improve multimodal access, and support long-term resilience.

Current technology advances and deployments of connected and automated vehicle (CAV) technologies have the promise of significant system safety, operational improvements and equity and mobility opportunities to address current, unmet needs and support resiliency goals. However, available solutions and applications also pose challenges for infrastructure owners and operators (IOOs) who seek guidance as the learning curve is steep, risk tolerance is low, public perception is skeptical, and resources are constrained in the post-COVID-19 era. Organizational readiness for automated solutions is becoming paramount and pressing.

Many unknowns remain for CAV. These include: the path and timeline to deployment is unclear; the CAV industry continues to evolve, consolidate, and change. While IOOs have limited resources, they are urged to embrace and deploy technologies. The results of this proposed peer exchange are to help IOOs to implement available technologies while achieving the American Association of State Highway and Transportation Officials (AASHTO) policy goals and related strategies. https://mobility.transportation.org/wp-content/uploads/sites/65/2021/10/CAV-Policy-Principles-v4-press.pdf

OBJECTIVE

The objective of this project is to conduct an in-person peer exchange and develop a document that identifies a set of best practices and lessons learned through the peer exchange to help inform DOTs in making practical and feasible technology investment and policy decisions.

STATUS: Completed.

FINAL DELIVERABLES:

1. State Department of Transportation Connected and Automated Vehicle Peer Exchange Summary
2. State DOT CAV Peer Exchange Summary Appendices A, B, C, E, F
3. State DOT CAV Peer Exchange Summary Appendix D: Peer Exchange PPT
4. State DOT CAV Peer Exchange Summary Appendix G: Summary PPT
5. State DOT CAV Peer Exchange Resource Guide
6. State DOT CAV Peer Exchange Implementation Plan

THANK YOU!

- NCHRP, including staff and all NCHRP 20-24 Project Panel members and our PI, Cambridge Systematics
- USDOT, for collaboration and support
- AASHTO CTSO leadership and AASHTO CAV CoP Members
- Texas DOT, our facility host in Austin
- Automated Vehicles Pooled Fund for their partnership
- All Peer Exchange Participants

Daniela Bremmer
Chief Innovation Officer
Washington State DOT
NCHRP 20-24 (147) Panel Chair
daniela.bremmer@wsdot.wa.gov

John Kaliski
Vice President
Cambridge Systematics, Inc.
NCHRP 20-24 (147) Principal Investigator
jkaliski@camsys.com

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Upcoming events for you

February 19, 2026

TRB Webinar: Addressing Long-Term Effects of Aging Government Fleet Assets

February 27, 2026

TRB Webinar: Rethinking the Road Test to Identify High-Risk Drivers

https://www.nationalacademies.org/trb/events

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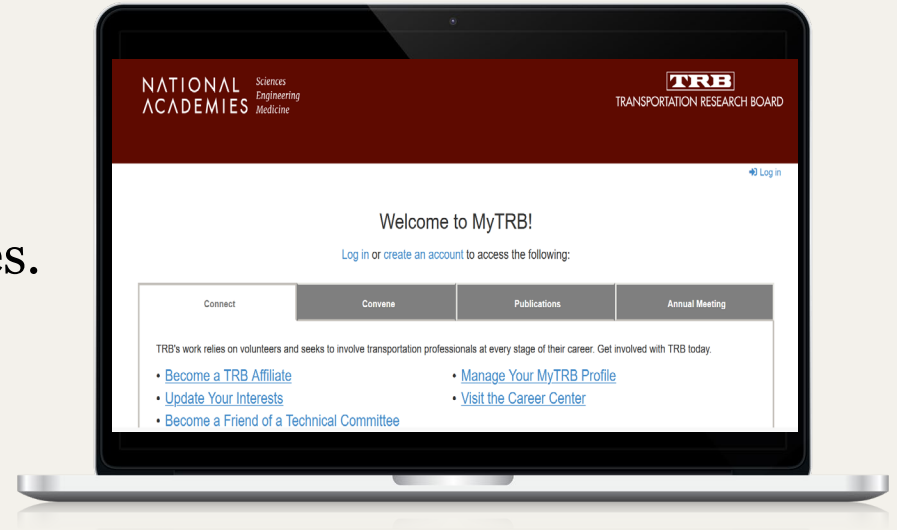

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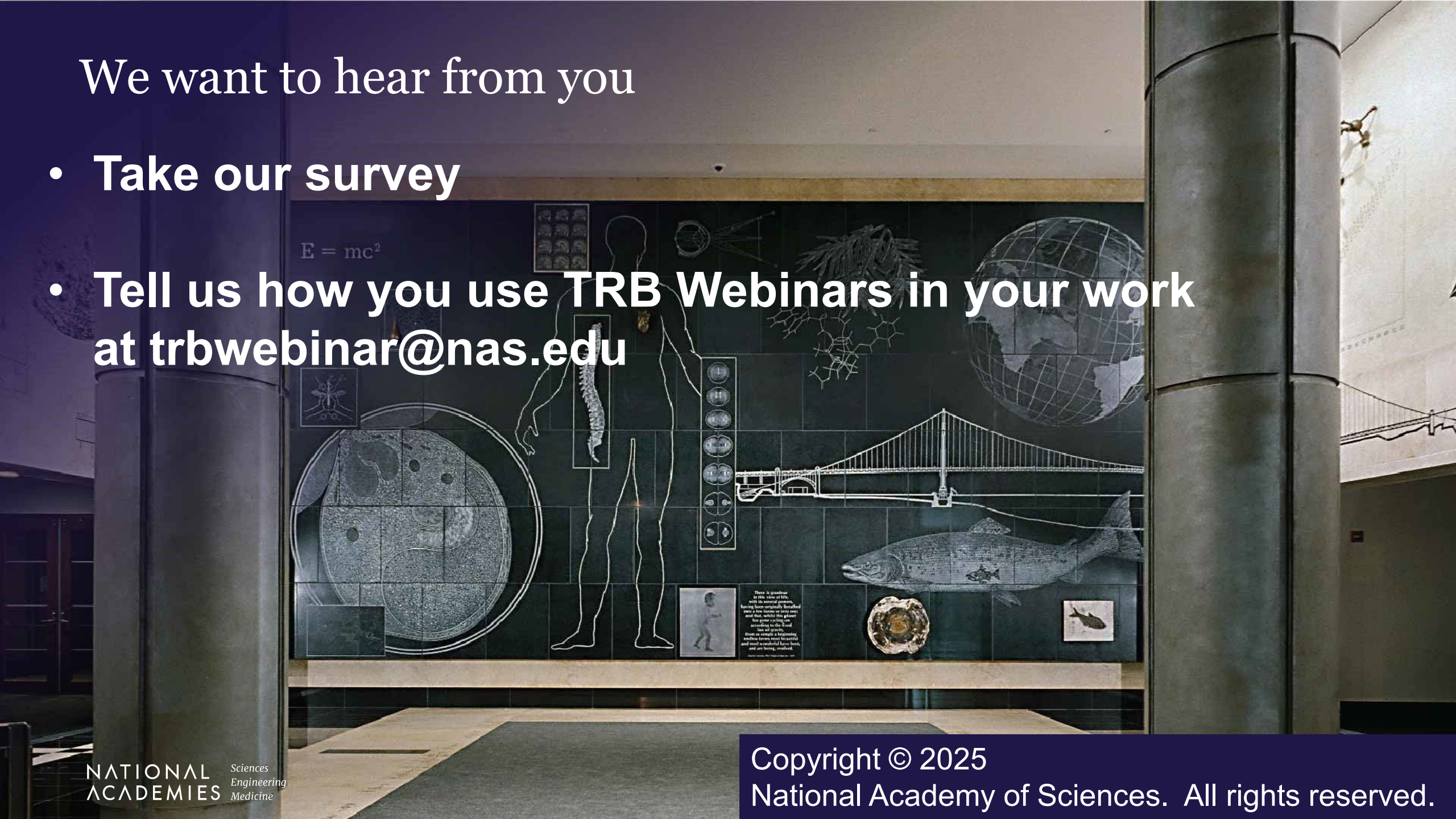

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