

# CAT Coalition

## Planning Scenarios Working Group

### March 11, 2020 Webinar

### Notes and Summary of Discussions

---

#### Welcome

Sondra Rosenberg, Working Group Co-chair welcomed all to the call and previewed the agenda and the intent to take a broader look at a couple of AASHTO related activities before opening it up to updates from all on the webinar.

#### ITS World Congress – AASHTO Delegation Recap

Sondra reviewed AASHTO's engagement and takeaways from the Singapore World Congress that took place last October. AASHTO's State DOT CEO delegation represented a number of CAT-related focus areas in their involvements in the program and deliberations via AASHTO International Day and the bilaterals with Australia and Singapore. Sondra emphasized the multitude of resources available as part of the ITS World Congress's proceedings and the AASHTO International Day presentations posted on the NOCoE website (see links embedded on the slide deck). AASHTO looks forward to supporting and participating in the upcoming US-based World Congress in Los Angeles this October 4-8, 2020.

#### NCHRP 20-24 (128) State-of-the Art Review of CAT Systems

Sondra Rosenberg presented a status report on the NCHRP funded "CAT Scan" whose purpose is to document and disseminate lessons learned from Cooperative Automated Transportation (CAT) system deployments (both domestic and international) that can have immediate benefit to State DOT executive leaders. Early findings underscore the importance of:

- Partnerships--"Cooperation is the new competitive advantage."
- Data: What data do we need? Who analyzes the data? How do we address protection/ownership of data?
- Readiness: Real time road conditions (traffic control, incidents), improvements for the human and the driverless vehicle, and as operators of the system what could they bring to the system?

Plans are underway present and discuss the findings from the scan and its engagements at the ITS World Congress in Los Angeles in October.

## Member Updates and Volunteers for Future Planning Presentations

Sondra opened the floor to updates and volunteers for future webinar presentations.

- Ginna Reeder (I-95 Corridor Coalition) volunteered to present an overview of I-95 Corridor Coalition (soon to be renamed the Eastern Transportation Coalition (May)
- Tom Kearney (FHWA) noted the rumbling among the equipment supply community regarding the disruption around 5.9 GHZ
- Hari Sripathi (Virginia DOT) offered to present on a future webinar (in 5-6 months) on VDOT's reflections on what it needs to do as an organization to accommodate CAT
- Ray Derr (TRB) expressed willingness to cover any TRB topic of interest to the Working Group, ranging from the connected road classification system to how TRB selects NCHRP projects to a general overview of research
- Kyle Miller (Washington State DOT) shared with the group that WSDOT continues to develop CAT policy framework and offered to cover this in more detail on a future webinar

Sondra thanked everyone for their ideas and willingness to share their initiatives. She and Matt Hardy will follow-up

## Close

With no other business presented, the webinar was adjourned at 12:45 pm EST.

## CAT Planning Working Group – March 11, 2020 Webinar Participants

- Bob Hazlett
- Charles Wade
- Ed Seymour
- Ginna Reeder
- Hari Sripathi
- Jeff Lindley
- Kyle Miller
- Mark Wingate
- Pete Koeppel
- Ray Derr
- Scott Belcher
- Sondra Rosenberg
- Tom Kearny
- Tom Kern
- Will Lusk

# AASHTO Committee on Planning: CAV Planning Working Group &

## CAT Coalition: Planning Scenarios Working Group

**Webinar**  
March 11, 2020



1

## Welcome and Agenda Review

1. Welcome
2. ITS World Congress (Oct. 2019) AASHTO Delegation Recap
3. NCHRP 20-24 (128) State-of-the Art Review of CAT Systems
4. State DOT CAT/CAV Planning Efforts
5. Next Webinar / Close



2

2



3

## AASHTO ITSWC Delegation: Focus Areas

1. AV and CV – Policy, Legislative and Regulatory Affairs and Overall CAT Deployment
2. Digital Infrastructure - data and telecom Infrastructure – big data and telecommunications – 5.9 GHZ and 5G
3. Freight Mobility and CAT
4. Infrastructure Readiness, Connectivity and Automation – V2I and C-V2X
5. CAT – Roadway and Roadside Considerations – Pavement Markings, etc.
6. Congestion Pricing Land use – CAT and other Technologies
7. MaaS, MoD, Ride Share, Livability and Active Transportation

**AASHTO**

4

4

## AASHTO ITSWC Delegation: Activities

1. Executive Session or Special Interest Sessions
2. AASHTO International Day
3. US-Singapore and US-Australia Bilateral Exchanges
4. Meet with international officials to offer a US perspective and encourage knowledge transfer among countries and organizations
5. Collaborate with AASHTO staff to identify and collect information resources useful for AASHTO Committees and NOCoE

The AASHTO logo is displayed in white text on a black rectangular background, which is part of a decorative footer element with a red-to-white gradient.

5

5

## AASHTO Take-aways

1. The Plenaries focused on:
  1. Multi-intermodal autonomous mobility, infrastructure and policy, noting the recent leap in technology, enabled by progress in AI, new sensors and computing power is helping us to approach this new frontier faster
  2. Efforts to enable a truly integrated multi-modal and a just in-time mobility service that brings together public authorities, new transport service providers, travel brokers, public transport operators and other stakeholders
  3. Intelligent Mobility Solutions for a Sustainable Smart City and multi-modal options and preferred mode choices
2. Virtually all the demonstrations featured autonomous shuttles and vehicles.
3. Find presentations and papers at:  
<https://itsworldcongress2019.com/programme/congress-proceedings/PW=smartmobility19>


The AASHTO logo is displayed in white text on a black rectangular background, which is part of a decorative footer element with a red-to-white gradient.

6

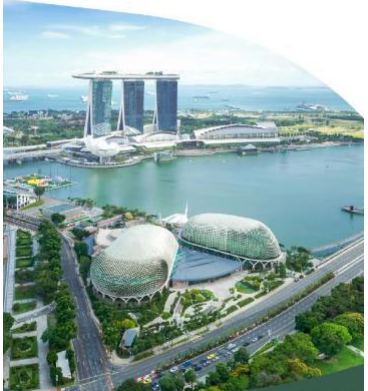
6

# 16th AASHTO International Day

**AASHTO International Day**  
at the 2019 ITS World Congress  
Monday, October 21, 2019



**AGENDA**



8:00 a.m. - Noon | Room 325

**AASHTO International Day of the 2019 ITS World Congress**  
Monday, October 21, 2019 | 8:00 a.m. - Noon | Room 325

**AGENDA**

8:00 a.m. **Welcome Remarks**  
Welcome by Jim Tymes, Executive Director, AASHTO, USA  
Welcome by ITS WC Regional Directors  
Preview of the World Congress, Singapore Land Transport Authority

9:15 a.m. **Introduction and Overview**  
Jim Tymes, Executive Director, AASHTO, USA

8:20 a.m. **Panel 1: The Research, Policy, Legislative, and Regulatory Framework related to Cooperative Automated Transportation:**  
1) Training, design, and standards  
2) ModS, ModI implications (including ride share and first/last mile transportation needs), and  
3) Pricing and tolling strategies and technologies.  
Moderator: **Paul C. Aljabes, Ph.D.**, Director, Michigan DOT, USA  
Presenters: **Shawn Ng**, Senior Manager, Land Transport Authority, Singapore  
**Katayna Abo**, Director, Road Bureau, Ministry of Land, Infrastructure, Transport and Urbanism, Japan  
**Johanna Tsoukaki**, Director, Innovation & Deployment, ETRICO  
**Fes Leonard**, U.S. Department of Transportation, USA  
**Roger Miller**, Secretary, Washington State DOT, USA

9:45 a.m. **Break**

10:00 a.m. **Panel 2: Ongoing implementation initiatives related to Cooperative Automated Transportation with attention to:**  
1) Digital telecommunications infrastructure including 5G and SD-WAN  
2) Big data and cyber security, and  
3) Impact on safety and mobility.  
Moderator: **Patrick McFadden**, Director, Missouri DOT, USA  
Presenters: **Huang Shiao Fei**, Deputy Group Director, Land Transport Authority, Singapore  
**John Wall**, Program Manager for Future Vehicles and Technology, Australia  
**Michelle Dresler**, Senior Manager, ETRICO  
**Valerie Briggs**, U.S. Department of Transportation, USA  
**Carole Reardon**, Executive Director, Utah DOT, USA

11:15 a.m. **General Discussion/Q&A**  
Moderator: **Kevin Tibbatt**, Secretary, Florida DOT, USA

11:45 a.m. **2020 ITS World Congress Preview—ITS America**

Noon **Adjourn**

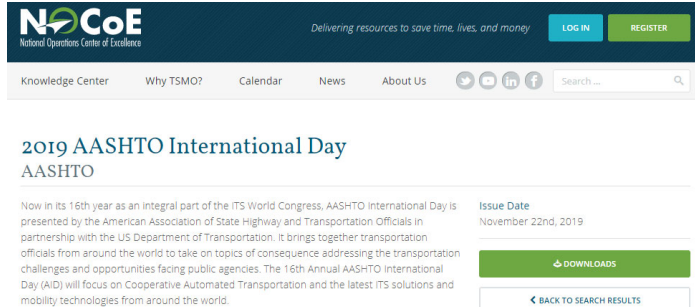
**SMART MOBILITY, EMPOWERING CITIES**

AASHTO
7

7

## Resources

- CAV/CAT presentations and papers predominated the ITS WC Program. Their content would be impossible to summarize, but AASHTO International Day offered a preview to the World Congress week and its presentations (available as noted below) are available to all on the NOCoE website.



**2019 AASHTO International Day**  
AASHTO

Now in its 16th year as an integral part of the ITS World Congress, AASHTO International Day is presented by the American Association of State Highway and Transportation Officials in partnership with the US Department of Transportation. It brings together transportation officials from around the world to take on topics of consequence addressing the transportation challenges and opportunities facing public agencies. The 16th Annual AASHTO International Day (AID) will focus on Cooperative Automated Transportation and the latest ITS solutions and mobility technologies from around the world.

Issue Date  
November 22nd, 2019

[DOWNLOADS](#)

[← BACK TO SEARCH RESULTS](#)

<https://transportationops.org/publications/2019-aashto-international-day>

AASHTO
8


8



## AASHTO Delegation at the 27<sup>th</sup> ITSWC



9



### THE NEW AGE OF MOBILITY

The 27th ITS World Congress in Los Angeles, CA, October 4-8, 2020 will explore *The New Age of Mobility*. The recent explosion of new technologies and new forms of mobility are transforming the future of transportation. At a time in which we are focused on moving people, data and freight, how will we prepare for a future that is increasingly more connected, autonomous, shared and electric? The technologies that make our roads safer will also reduce congestion and greenhouse gas emissions, and move us closer to a future of seamless mobility — one that is safer, greener and smarter.

<p style="text-align: center;"><b>Program Themes</b></p> <ol style="list-style-type: none"> <li>1. Seamless Mobility and Changing Behavior</li> <li>2. Fuelling the Future: Alternative Fuels and Emissions</li> <li>3. The Path to Vision Zero</li> <li>4. Disruption on the Digital Highway: Data</li> <li>5. Technology from Entry to the Last Mile</li> <li>6. Connectivity or Spectrum / Networks</li> <li>7. Intelligent, Connected and Automated Vehicles</li> <li>8. Organizing for Success, Governance, Business Models, International Cooperation</li> </ol>	<p style="text-align: center;"><b>Cross-Cutting Technologies</b></p> <ul style="list-style-type: none"> <li>• Artificial Intelligence / Machine Learning</li> <li>• Automated Vehicle</li> <li>• Communications / Spectrum</li> <li>• Connected Vehicle</li> <li>• Cybersecurity</li> <li>• Data Access / Privacy</li> <li>• Electric / Alternative Fuels / Emissions</li> <li>• Goods Movement</li> <li>• Infrastructure</li> <li>• MOD / MaaS</li> <li>• Rural</li> <li>• Smart City</li> <li>• Transportation Systems Operations</li> <li>• Truck Operations/CVO</li> <li>• V2x</li> </ul>
--	---



10

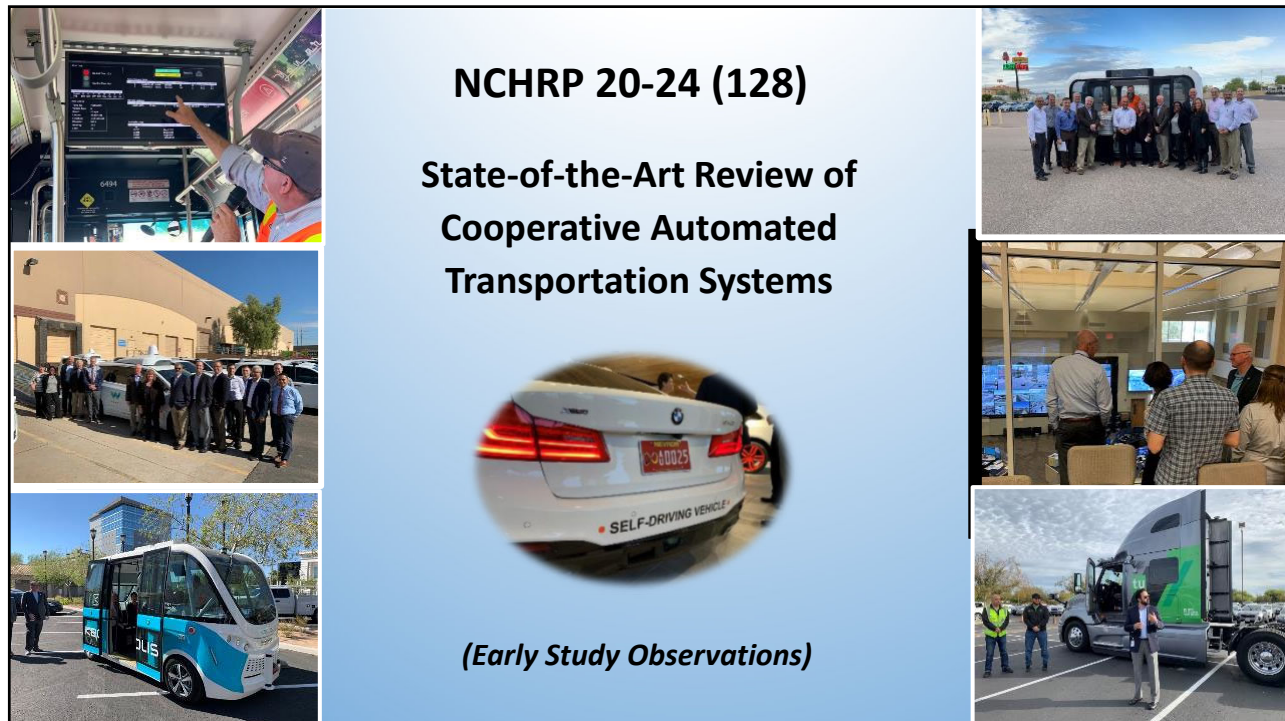
10

# Agenda Item #2: NCHRP 20-24 (128) State-of-the Art Review of CAT Systems

Sondra Rosenberg



11



**NCHRP 20-24 (128)**  
**State-of-the-Art Review of  
Cooperative Automated  
Transportation Systems**

*(Early Study Observations)*

The complex block features a central light blue background with the title and subtitle. Below the title is a circular inset image of the rear of a white BMW self-driving car with a license plate '4AD025' and 'SELF-DRIVING VEHICLE' text. Surrounding this central area are several smaller images: a person in a hard hat pointing at a control panel, a group of people standing in front of a building, a small blue and white autonomous shuttle, a group of people in a control room looking at multiple screens, and a large white semi-truck with a green trailer.

12



## NCHRP 20-24 20-24(128)

### COMPOSITION & PURPOSE

- **Composition:**
  - 13 Panel Members (10 states and 3 national organizations)
  - All Senior Level Management
- **Purpose:**
  - The objective of this research is to document and disseminate lessons learned from Cooperative Automated Transportation (CAT) system deployments (both domestic and international) that can have immediate benefit to State DOT executive leaders.
  - The research findings will help support and promote cooperation between Infrastructure Owner Operators (IOOs) and the private sector to ensure mutually beneficial outcomes with public safety being the primary goal. It will also help advance information sharing as public agencies prepare for future CAT deployments.

13

## NCHRP 20-24(128)

### SCHEDULE

- **Scans Completed:**
  - Las Vegas, NV (July 2019)
  - ITS World Congress Singapore (October 2019) (Singapore, Australia)
  - Phoenix, AZ (Dec. 2019) (included UT, CA)
- **Scans Planned:**
  - Central Florida (April 2020)
  - Europe (June 2020)
  - Columbus, Ohio/ Pittsburgh, Pennsylvania (August 2020)
- **Culminating:**
  - ITS World Congress Los Angeles, California (October 2020)

14



## Partnerships

- Statewide/Regional CV/AV workgroups have proven beneficial
- Variety of partnerships is growing Public / Private / Academia
  - More agencies involved Federal, state, local
  - Economic development
  - Incident Response
    - More interfacing between systems
  - More start-ups
- Procurement

*“Cooperation is the New Competitive Advantage”*

15



## DATA

- Utilizing data in new configurations/combinations
- Managing, storing, analyzing data
- Not knowing what data we want
- Real-time road conditions \*

16




## INFRASTRUCTURE READINESS

- Shuttles
  - Fixed/defined routes, slower speeds, frequent stops
- Fleet Vehicles
  - Mixed traffic , higher speeds, safety drivers
- Artificial intelligence (AI)
  - Continuous mapping and AI learning
  - Designing a better driver vs. a driverless vehicle
  - Discussion of reframing the question – as users of the system what could be brought to the system

17

## Early Observations Recap

- Partnerships
  - “Cooperation is the new competitive advantage.”
- Data
  - What data do we need?
  - Who analyzes the data?
  - Protection/ownership of data.
- Readiness
  - Real time road conditions (traffic control, incidents)
  - Improve for the human driver improves for the driverless vehicle
  - As operators of the system what could they bring to the system?



18

# Questions?

Tracy Larkin Thomason, PE, PTOE  
tlarkin@dot.nv.gov



19

## Other Member Updates



20

## Future Webinar Topics

- May Webinar
  - What topics would you like to cover?
  - Volunteers or suggestions for speakers?

21

## Any Other Business / Adjourn

22