

2019 AASHTO

COMMITTEE ON MAINTENANCE ANNUAL MEETING

JULY 13-18 • GRAND RAPIDS, MI

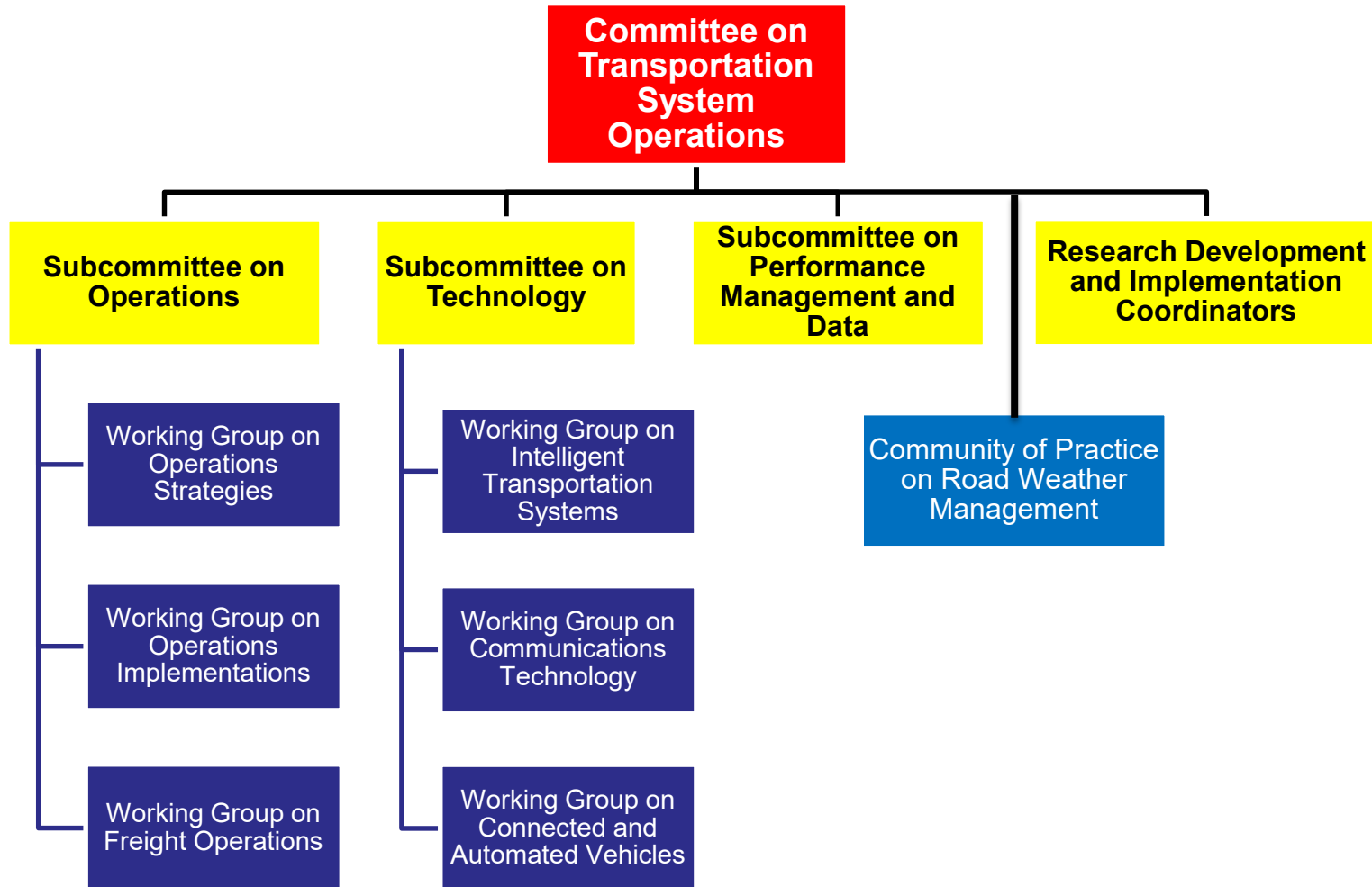


AASHTO
Committee on Transportation System Operations
(CTSO) Update

July 15, 2019

CTSO – Organizational Structure

Chair: Jennifer Cohan, DE Vice-Chairs: Russ Buchholz, ND & Tony Kratofil, MI



Committee on Transportation System Operations (CTSO)

Focus Areas

- Strives to transform the national transportation community to a transportation systems management and operations (TSMO) culture:
 - ✓ With a focus on effectively managing and operating the surface transportation system
- Responsible for all aspects of vehicle operations, communications, and systems management on the highway system
- Operations, wireless communication, and highway transport
- Guides the National Operations Center of Excellence and the Operations Technical Service Program, in collaboration with ITE and ITS America
- 2019 AASHTO CSTO Annual Meeting in Jackson, Wyoming, August 25-29. Joint meeting with Committee on Transportation System Security and Resilience and the Subcommittee on Risk Management.

CTSO & Working Groups Areas of Focus

- NOCoE – Held workshops on maintenance and operations (Montgomery, AL) & TSMO365 CoP on RWM (SLC, Utah) initiatives
- State DOTs continue to organize for TSMO and developing strategic plans
- National ITS STDs and Policies
- Interoperability (equipment, software/hardware, etc.)
- Cybersecurity
- Staffing changes
- Jurisdictional issues (minimizing patch work across boundaries)
- O&M concerns as TSMO deployment increases
- Operational funding issues
- Balance between Capital Expansion/Rehabilitation and the need to integrate TSMO initiatives/technology - Safety and Travel Relativity needs – Managing Congestion and Mobility concerns

CTSO & WGs Areas of Focus - Continued

- **5.9 GHz vs. Cellular - V2X:** 5.9 GHz available now (lobbying to secure spectrum), Cell-V2X is emerging however; no standards exist, and technology is untested.
- **Data Sharing:** DOT driven traveler info vs. sharing data with 3rd party traveler info providers (WAZE, Google, etc.).
- **Signal Phase and Timing (SPaT) Challenge:** AASHTO initiative challenging states to broadcast SPaT at 20 intersections by 2020 using DSRC (NOCoE website has US map showing deployment areas).
- **CAV Data Use:** States trying to figure out applications from CAV data for DOT business purposes.
- **Signal Performance Monitoring:** Being deployed all over the country.
- **Active Traffic Mgt Strategies:** Great benefits for safety and reliability but initial cost of Capital and annual O&M can be high.
- **Promoting NOCoE peer exchange workshops**

CTSO CAV WG - Vehicle and Infrastructure Communication

- CTSO ballot at August meeting in Jackson, WY:
 - **Infrastructure Owner Operators (IOOs) Guiding Principles for Connected Infrastructure supporting Cooperative Automated Transportation (CAT)**
 - ✓ Purpose to establish criteria for infrastructure Owner Operators (IOOs) to deploy connected infrastructure supporting cooperative automated transportation (CAT) solutions.
 - ✓ Collaboration with AASHTO, ITE, and ITS America - encourage interoperability and consistency in CAT deployments and enable IOOs to communicate their intentions to NHTSA.
 - ✓ Webinar Tuesday, July 16, 2019, 2-3 PM EST
- SURVEY - Current and Planned Utilization of Dedicated Short-Range Communications (DSRC) in the 5.9 GHz Spectrum: University of Arizona supporting CTSO to develop a comprehensive understanding of DSRC utilization in the 5.9GHz spectrum for CV/ITS applications.
 - Objective of survey: seek comprehensive and accurate information about spectrum deployments and plans, including the deployed applications and channel usage within the 5.9 GHz CV/ITS spectrum.
- June 3rd NHTSA and Federal Motor Carrier Safety Administration (FMCSA) issued notices of proposed rulemaking to allow “safe introduction” of AV and CV (currently seeking comments).



Road Weather Management Community of Practice

**TSMO365 Peer Exchange
Summary
Salt Lake City, Utah
June 2019**

TSMO365 CoP on RWM Workshop Objectives

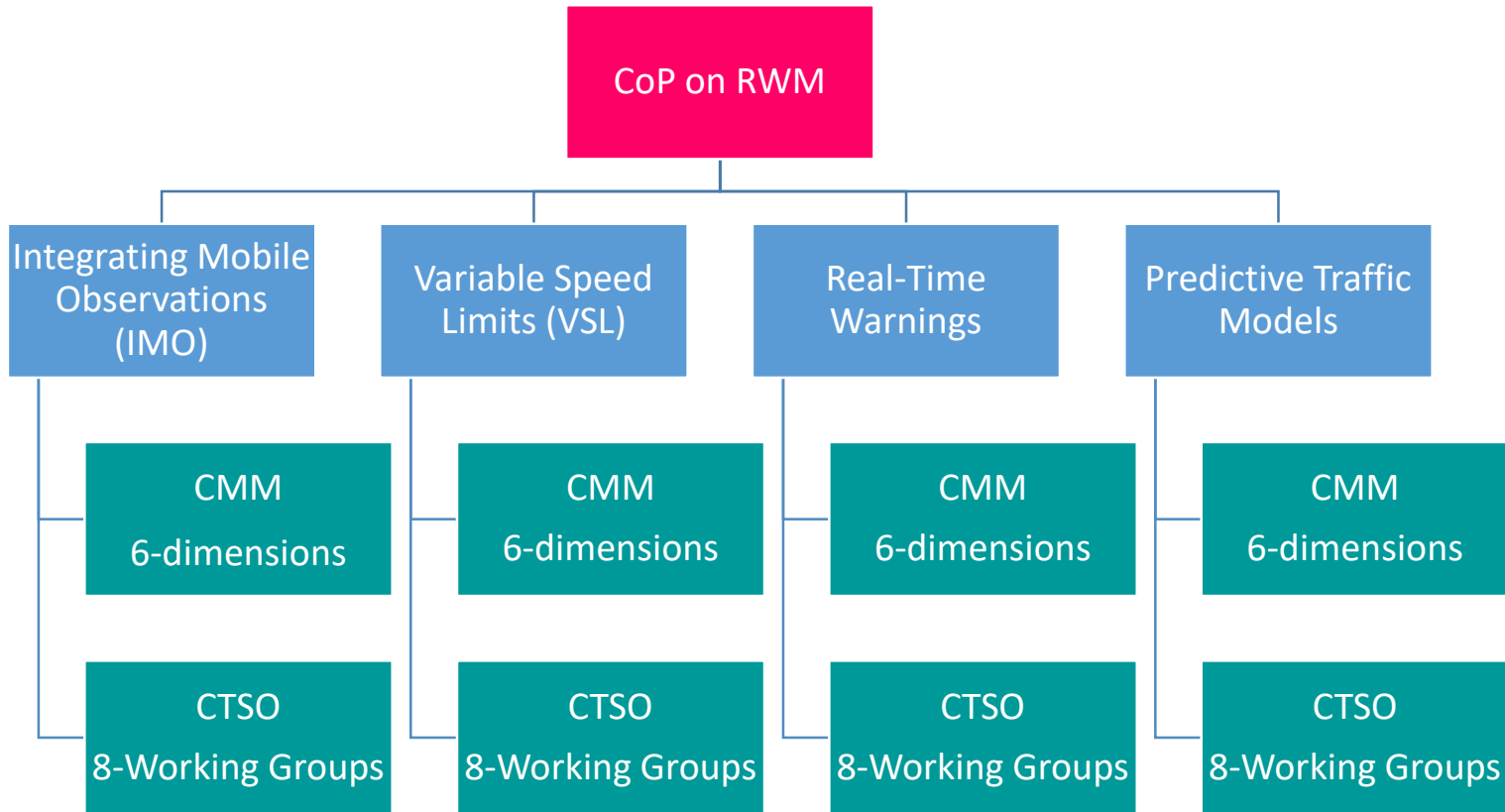
- Gather information based on webinar poll questions – completed January 2019
- Develop amplifying RWM questions for a TSMO365 survey – completed March 2019
- Survey identified top 4 - TSMO365 priorities for high pay-off RWM strategies – completed March 2019
- Peer exchange workshop to help identify (completed June 25 & 26, 2019):
 - How CoP on RWM should be structured within CTSO
 - Issues and challenges facing RWM integrating with CTSO initiatives/activities
 - Top RWM priorities in the next 1-3 years
 - Strengths & weaknesses of RWM program(s)
 - Gaps and needs in RWM: data, system automation, communication to TMC/TOC, public, etc.
 - Future of RWM strategies and the impact on CAV
 - Better use of data driven performance measures
- Coordinate outcomes with other stakeholders (AASHTO CTSO WGs, SICOP, Clear Roads, Aurora, MDSS, FHWA, etc.)

Focus of this Workshop: 4 Topics for RWM

This workshop focused on 4 topics *within RWM* that the CoP survey identified as priority areas:

1. **IMO:** Integrating Mobile Observations about road weather for decision-making
2. **VSL:** Variable Speed Limits driven by road weather
3. **Real-Time Warnings:** Active real-time motorist warning systems for road weather hazards (road ice, wind, visibility, flooding, etc.)
4. **Predictive traffic models:** Predictive traffic condition models integrating road weather forecasts

TSMO365 Tabletop Exercise



TSMO365 CoP RWM Workshop Top 8-Priority Action Items

2-Integrating Mobile Observations (IMO) Top Priorities:

- Illustrate benefits of IMO through case studies and best practices analysis
- Set de facto data standards (fixed and mobile ESS) and develop strategies for IMO implementation and integration

2-Variable speed Limit (VSL) Top Priorities:

- Develop and document system engineering criteria (Con-ops, requirements, design specs, life cycle costs) for VSL for road weather
- Develop a research statement for the benefits of VSL for road weather (overall and drill into regulatory versus advisory)

2-Real-Time Warnings Top Priorities:

- Conduct systems engineering analysis for real-time warnings for road weather which includes technologies, common core specs, best practices, compliance requirements
- Study best practices/use cases in real-time warnings to identify effective applications

2-Predictive Traffic Model Top Priorities:

- Understand and communicate predictive traffic models (PTM) for road weather state of the practice and pilot projects
- Define PTM needs and goals with the help of diverse group of stakeholders



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