

AASHTO
Committee on Transportation System
Operations (CTSO) Update

July 23, 2018

CTSO - Strategic Planning Workshop

- Initial Strategic Planning conducted through a Task Force of CTSO members, November 2017, Beckman Center, CA
- Committee working groups developed purpose statements, goals, and actions items
- Recruiting for volunteers – from CTSO membership and others in your organization – to actively participate in subcommittees/working groups

CSTO Strategic Purpose

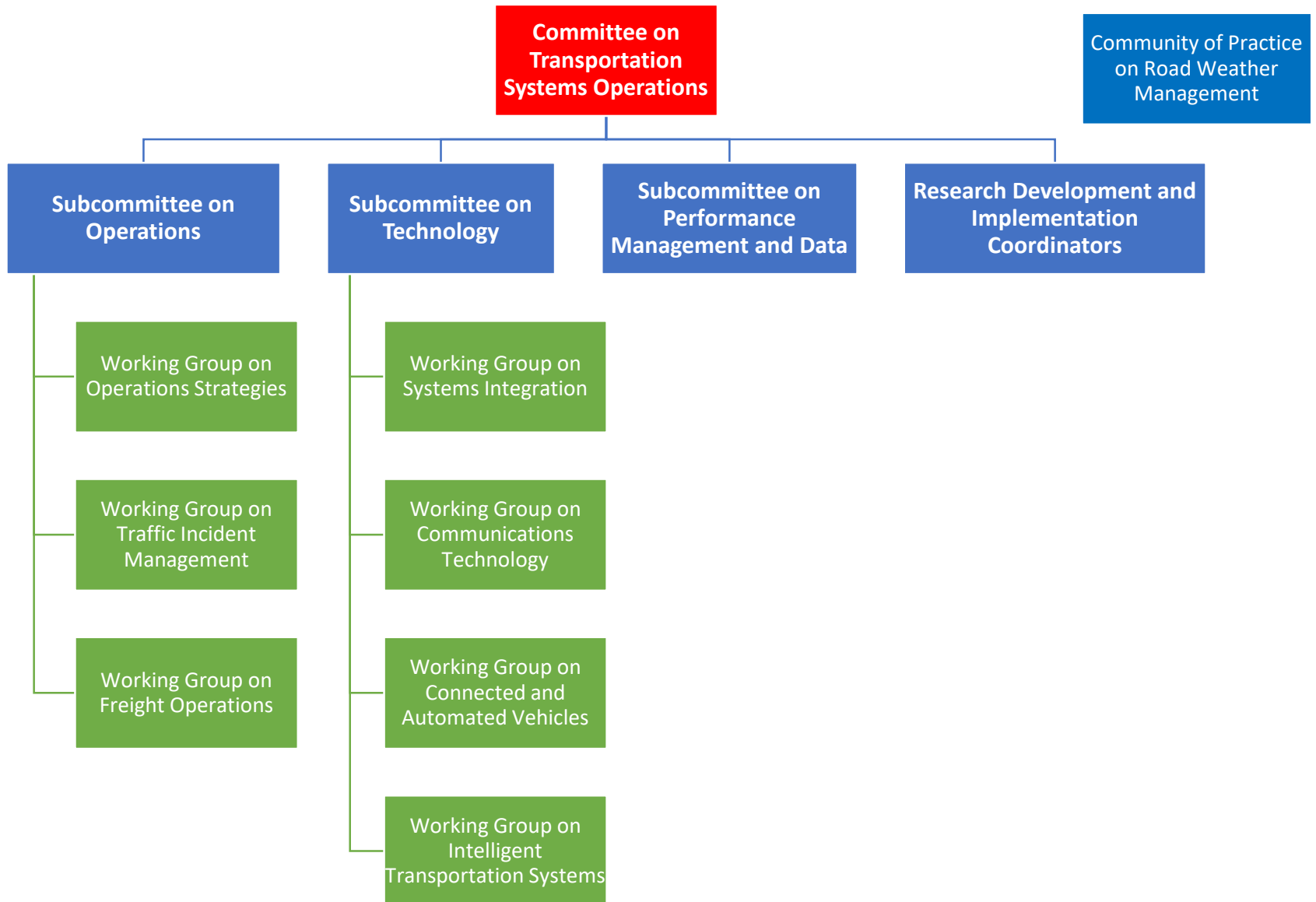
Focus on transportation operations and emerging technology with a goal of improving safety, system reliability, and highway system performance.

7 - Goals:

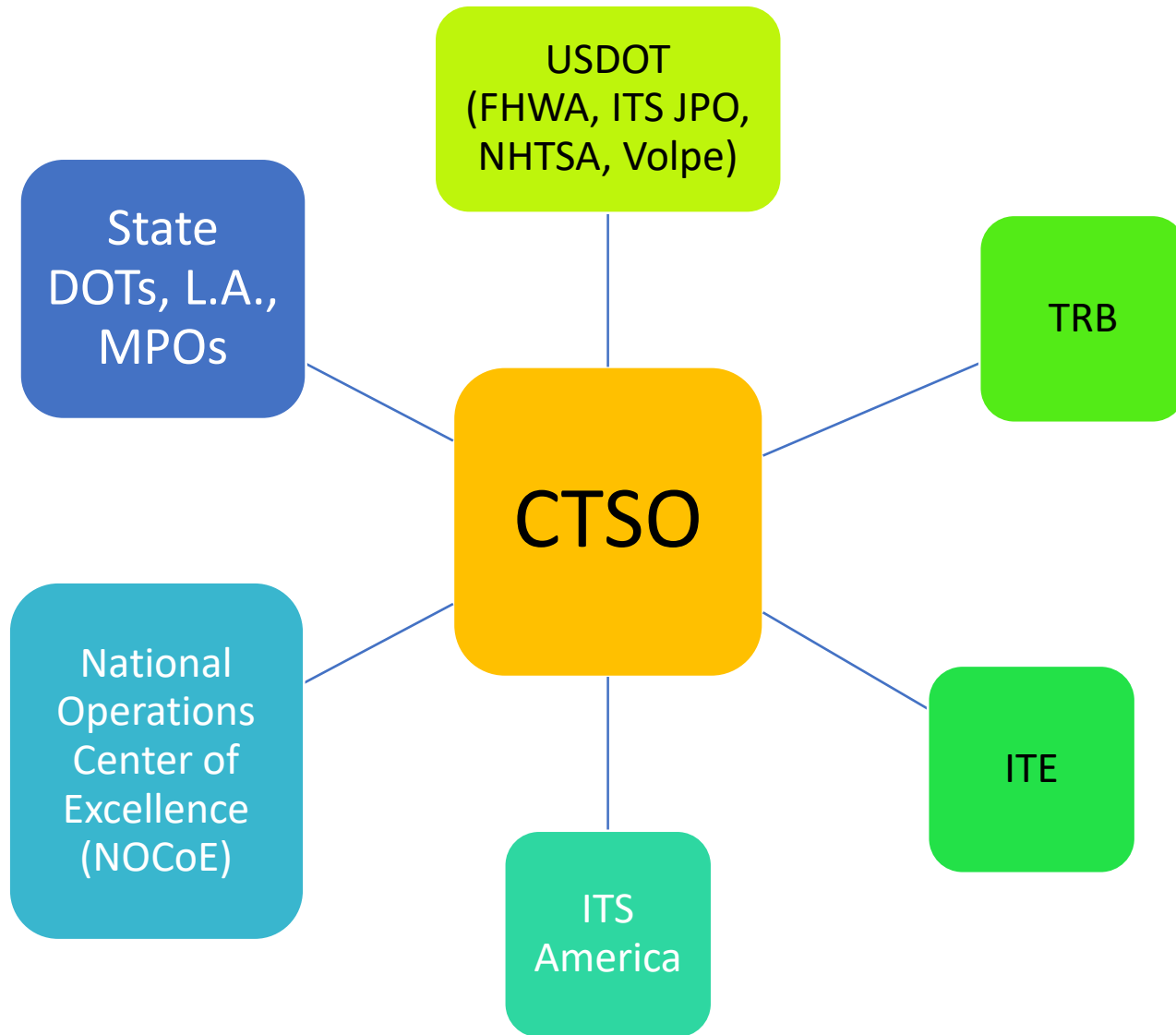
- Advance the state of practice and deployment of operation systems.
- Advance the state of practice and performance of traffic incident mgt nationally.
- Facilitate the safe, efficient movement of freight and federal movement mandates.
- Implement best practices for system integration, operability, standards, and cybersecurity.
- Integrate new and emerging CAV technology to improve safety, increase reliability, preserve infrastructure, and reduce congestion.
- Ensure that existing communication technologies remain available for transportation and capture the benefits of new and emerging communication technologies.
- Increase standardization and consistency of ITS deployment and the modernization of technologies and their integration into agency operations.

CTSO – Organizational Structure

Chair: Bill Panos, WY Vice-Chair: Russ Buchholz, ND



External Partners



TSO Subcommittee on Operations

Co-Chairs: Brad Freeze, TN and John Nisbet, WA

Subcommittee Purpose:

Advance the state of practice relative to System Operations programs and strategies, Freight Operations, and Traffic Incident Management across State DOT's

Operations Working Groups	Co-Chairs
Operations Strategies	<ul style="list-style-type: none">• Brent Cain, AZ• Sue Porter, MN
Freight Operations	<ul style="list-style-type: none">• Matt Hedge, PA• Dave Huft, SD
Traffic Incident Management	<ul style="list-style-type: none">• Tim Lane, AZ• Joey Sagal, MD

TSO Subcommittee on Technology

Co-Chairs: John Hibbard, GA, and TBD

Subcommittee Purpose:

Focus on the technology that supports Transportation System Operations through policy, standards, sharing best practices and deployment guidance.

Technology Working Groups	Co-Chairs
Systems Integration	<ul style="list-style-type: none">• Collin Castle, MI• Robert Cunningham, DE
Communications Technology	<ul style="list-style-type: none">• Paul Gilbert, TX• Ferdinand Milanes, CA
Connected and Automated Vehicles	<ul style="list-style-type: none">• Blaine Leonard, UT• Greg Larson, CA
Intelligent Transportation Systems (ITS)	<ul style="list-style-type: none">• Raj Ponnaluri, FL• Brian Simi, CA

TSO Subcommittee on Performance Management and Data

Co-Chairs: Tony Kratofil, MI and Daniela Bremmer, WA

Subcommittee Purpose:

Assist AASHTO members in compliance with MAP-21 performance measurement rules and regulations regarding systems operations and freight performance, and advocate for the collective concerns within the AASHTO community.

Community of Practice on Road Weather Management

Lead: Steve Cook, MI

Purpose:

Promote the implementation of Road Weather Management (RWM) solutions and strategies that minimize the impacts of weather events on transportation system operations to increase safety and reliability.

TSO Research Development & Implementation

Coordinators: Galen McGill, OR and Scott Marler, IA

Subcommittee Purpose:

Coordinate, support, and promote TSMO-related research through the development of research problem statements, prioritization of research needs, implementation of research products, and dissemination of research results.

Transportation Systems Management & Operations (TSMO) Strategies and Solutions

- ITS Strategies
- CAV (infrastructure investment)
- Work Zone Management
- Traffic Incident Management
- Special Event Management
- Road Weather Management
- RWIS
- Transit Management
- Freight Management
- Traffic Signal Coordination & Performance
- Traveler Information
- Ramp Management
- Managed Lanes
- Active Traffic Management
- Integrated Corridor Management
- Variable Speeds Limits
- Truck Parking
- Harmonization Traffic Flow
- Improved Bicycle and Pedestrian Crossings

Hot Topics Nationally with TSMO

- NOCoE – looking at new state DOT **maintenance** initiatives
- State DOT organizing for TSMO and developing strategic plans:
 - Leverage FHWA TSMO Workshops (SHRP 2 L06 CMM)
 - Staffing changes
 - Funding usage issues
 - O&M concerns as TSMO deployment increases
 - Jurisdictional issues
 - Balance between Capital Expansion/Rehabilitation and the need to integrate TSMO initiatives/technology - Safety and Travel Relativity needs – Managing Congestion and Mobility concerns
- **DSRC vs. Cellular** - V2X: DSRC is available now, Cell-V2X is emerging however; no standards exist, technology is untested, technology cant operate legally in the 5.9 GHz spectrum.
- **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.
- **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:** Has the potential to have great benefits for safety and reliability. But the cost of Capital and O&M is quite high.

TSMO Strategic Business Plan Workshop Template



TSMO Strategic Business Plan Workshop Template

TSMO Business Plan Strategies

<u>Business Processes</u> Planning, Programming, Budgeting, Implementation	<u>Systems & Technology</u> Systems Engineering, Standards & Interoperability	<u>Performance Management</u> Measures, Data, Analytics & Utilization	<u>Culture</u> Technical Understanding, Leadership, Outreach, and Program Authority	<u>Organization/Workforce</u> Structure and Capability Development	<u>Collaboration</u> Partnership with Other Public & Private Entities
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TSMO Business Plan Strategic Actions

Business Subject Area	Traffic Incident Management	Work Zone Management	Congestion (Recurring) Management	Safety (All Modes)	Modal Interaction & Integration	Road Weather Mgt	Field Equipment Asset & Functionality Management (Signals, ITS)	TOCs & Traveler Information Systems	Connected & Autonomous Vehicle Systems	Data Collection, Storage, Utilization, Analytics & Decision Support Systems (TAMS)
Strategic Dimension										
Business Processes										
Systems & Technology										
Performance Management										
Culture										
Organization/Workforce										
Collaboration										

2-3 SMART Action Items Each

Michigan DOT TSMO web page

www.Michigan.gov/TSMO

- Brief TSMO explanation and summary of benefits
- Includes 5 - Business Cases explaining TSMO to various audiences
- TSMO Implementation and Strategic Plan
- Relevant operational internal and external links

MDOT
Michigan Department of Transportation

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Transportation Systems Management and Operations

Tired of Sitting in Traffic? Us too.

The Michigan Department of Transportation (MDOT) works to maintain our roads, but we are also working to make the roads we have already built safer and less congested. Through our Transportation Systems Management and Operations (TSMO) program, we are adding advanced technologies and partnerships to our traditional practices - from construction to clearing crashes to plowing snow - increasing mobility, reliability and safety along the way. Some TSMO benefits include:

- Efficient commutes** - Optimally timed traffic lights help vehicles move more smoothly through intersections. Harmonizing traffic lights can reduce travel times by 8 to 20 percent.
- Clear routes** - Michigan Traffic Incident Management Effort (Mi-TIME) provides important training on quickly and safely clearing traffic incidents. So far, Mi-TIME has trained more than 5,600 responders.
- Safer construction zones** - Technologies to safely manage construction zones help decrease the number of work zone crashes, injuries and deaths.
- Easier-to-use travel information** - MDOT's [Mi Drive website](#) provides 24/7 traffic and incident information.
- Fewer wasted gallons of gas** - Travelers won't burn fuel idling in congestion, enhancing livability and sustainability.
- Better, faster, cheaper, safer, and smarter** - These solutions allow MDOT to more cost-effectively reduce congestion, increase safety, and provide Michigan residents with measurable benefits NOW.

Michigan leading the way - [Planet M](#) promotes innovation in transportation mobility technologies across the state.

[Michigan DOT TSMO Implementation and Strategic Plan](#)

Business Cases

National research has shown that most stakeholders are not familiar with the wide variety of benefits offered by TSMO. MDOT has developed these TSMO Business Cases for outreach and education. These documents, tailored to key stakeholder groups, summarize the mobility, safety, and reliability benefits that TSMO can bring to Michigan:

- Public** - An introduction to TSMO for the [general public](#).
- Legislators** - Information designed to foster understanding of TSMO concepts for [lawmakers](#) considering transportation policy.
- Partners** - TSMO information targeted to [transportation partners](#), such as consultants, universities, municipalities, other DOT's and agencies.
- MDOT Decision Makers** - A TSMO discussion aimed at [MDOT executives](#).
- Technical Staff** - TSMO information for other [MDOT technical staff](#).

MDOT Resources

- [Transportation Operations Centers \(TOCs\)](#)
- [Intelligent Transportation Systems \(ITS\)](#)
- [Congestion Mobility Reports](#)
- [US-23 Flex Route](#)
- [Safety](#)

National Resources

- [FHWA Systems Operations](#)
- [USDOT ITS Automated Vehicles](#)
- [AASHTO Committee on TSO](#)
- [ITS America](#)
- [Operations Center of Excellence](#)