

CPBM - CTSO Joint Subcommittee on System Mobility and Emerging Technologies (SMET)

CPBM Annual Meeting, Denver, September 2023

CTSO-Annual Meeting, Orlando (TBD)

Daniela Bremmer, WSDOT: Chair

Vice-Chair: Vacant

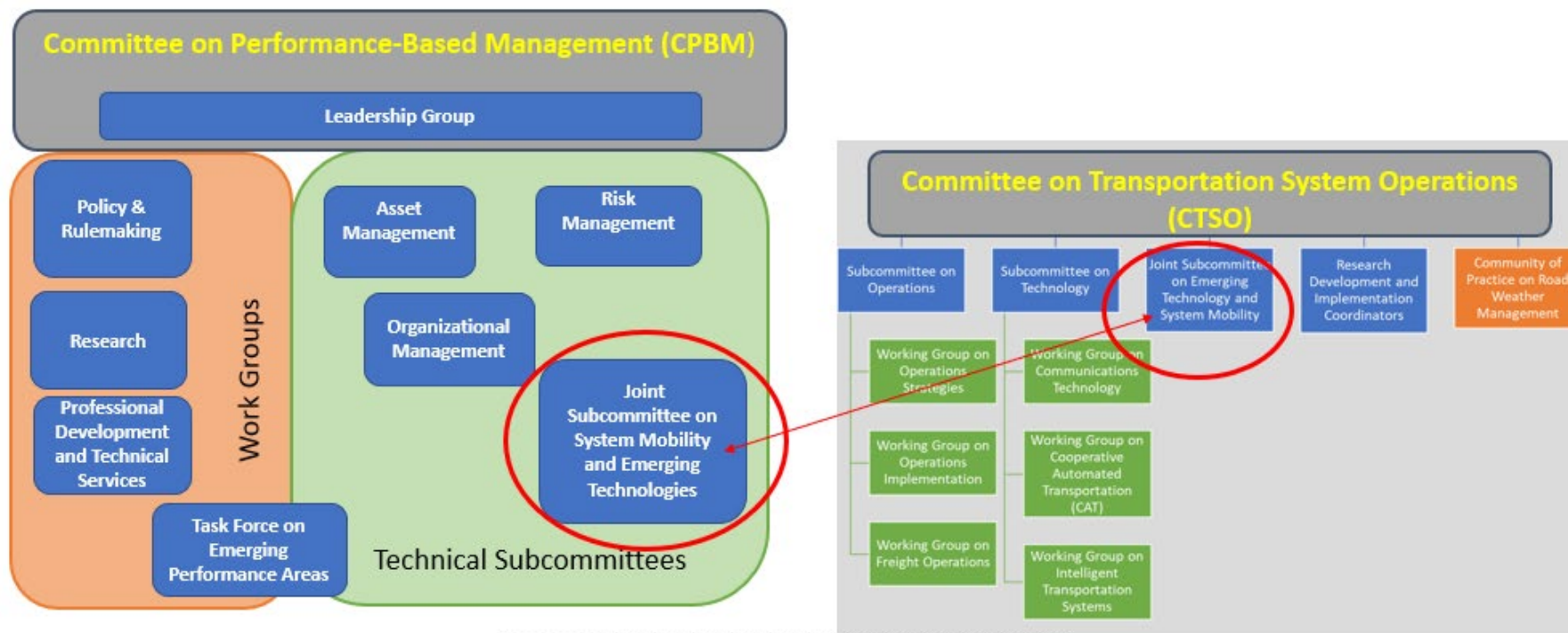
Ali Lohman : AASHTO Liaison

SMET: Subcommittee on System Mobility and Emerging Technologies

- Chair: Daniela Bremmer (WSDOT), bremmed@wsdot.wa.gov
- Vice-Chair (s): Vacant
- AASHTO Liaison CPBM: Anna McLaughlin, mclaughlin@ashto.org
- AASHTO Liaison CTSO (lead): Ali Lohman , alohman@ashto.org
- FHWA Liaison: Rich Taylor, Rich.Taylor@dot.gov
- <https://www.tpm-portal.com/community/smet/>
- Virtual Meetings: third Tuesday/even month
 - Zoom (<https://us02web.zoom.us/j/85178495458?pwd=ejJrYVZCRFV6Yi91Y25hcGNJQ1Jodz09>)
- Please Join Us! (Email Ali Lohman to be added to mailing list)

SMET: Subcommittee on System Mobility and Emerging Technologies

- The AASHTO joint subcommittee on System Mobility and Emerging Technologies (SMET) was created to formally merge and streamline the related work of the
 - Committee on Transportation System Operations (CTSO)*
 - Committee on Performance-Based Management (CPBM)*
 With a collaborative relationship with the *Committee on Data Management and Analytics (CDMA)*



SMET: Subcommittee on System Mobility and Emerging Technologies

- SMET serves as a forum to share how state departments of transportation (DOTs) are managing system operation and surface transportation system mobility and how system performance is impacted due to current and emerging transportation technologies, operational strategies, and connected environments.
- Explores surface transportation system and mobility-related performance, data and analytical tools, performance communication, reporting approaches, research, and related private-sector partnerships.
- Examines the impacts of current and emerging system management approaches such as connected and automated vehicle (CAV) technology, cooperative automated transportation (CAT), and mobility on demand (MOD) programs



SMET: Subcommittee on System Mobility and Emerging Technologies

Membership & Admin Work Underway-

- mailing list clarification between the two standing committees
- clean up list-old/new names-lots of turnover at DOTs
- website work/plan a membership drive

Data Tools Information- MAP-21 -PM3 -NPMRDS

- Clarification sought -what task level buys what
- Invited CATT Lab to subcommittee meeting
- Working with AASHTO staff on a TPM TSP flier working with CATT Lab on proving context info to DOTs on each Data Tool task level- (many requests for detail/comparison)and embed into the new AASHTO flier)

Artificial Intelligence and Machine Learning for Systems Analysis

- Interest in exploring these topics/applications for DOTs
- Potential planning of webinar session (tbd-in collaboration with other SCs or WG?)

Seeking Vice-Chair(s)



NCHRP 20-123(12) SMET: Strategic Planning and Research Roadmap

Development: project status update

Product will be the basis for SMET work plan(s) and research proposals

Since we began in May, 2022- some important market changes include :

- Consolidation of the automated vehicle industry (21 companies stepping back or closing)
- Concept of “Digital infrastructure” is gaining momentum
- Institutionalizing equity is important but metrics/assessments are unclear

Work To Date includes:

- Refinement of research focus and development of recommendations underway
- Technology Identification Matrix and Engagement Survey complete
 - Technology analysis supported the development of survey
 - 160 +responses across different sectors

Highlights from the Survey

- For NCHRP Project 20-123(12), the consultant surveyed stakeholders on emerging tech issues
- Because the NCHRP project is still underway, we can't share the full results of the survey
- However, we've received permission to share some of the highlights with you today
- We won't be able to share these slides until the NCHRP project is finished



Sample questions and Survey Responses

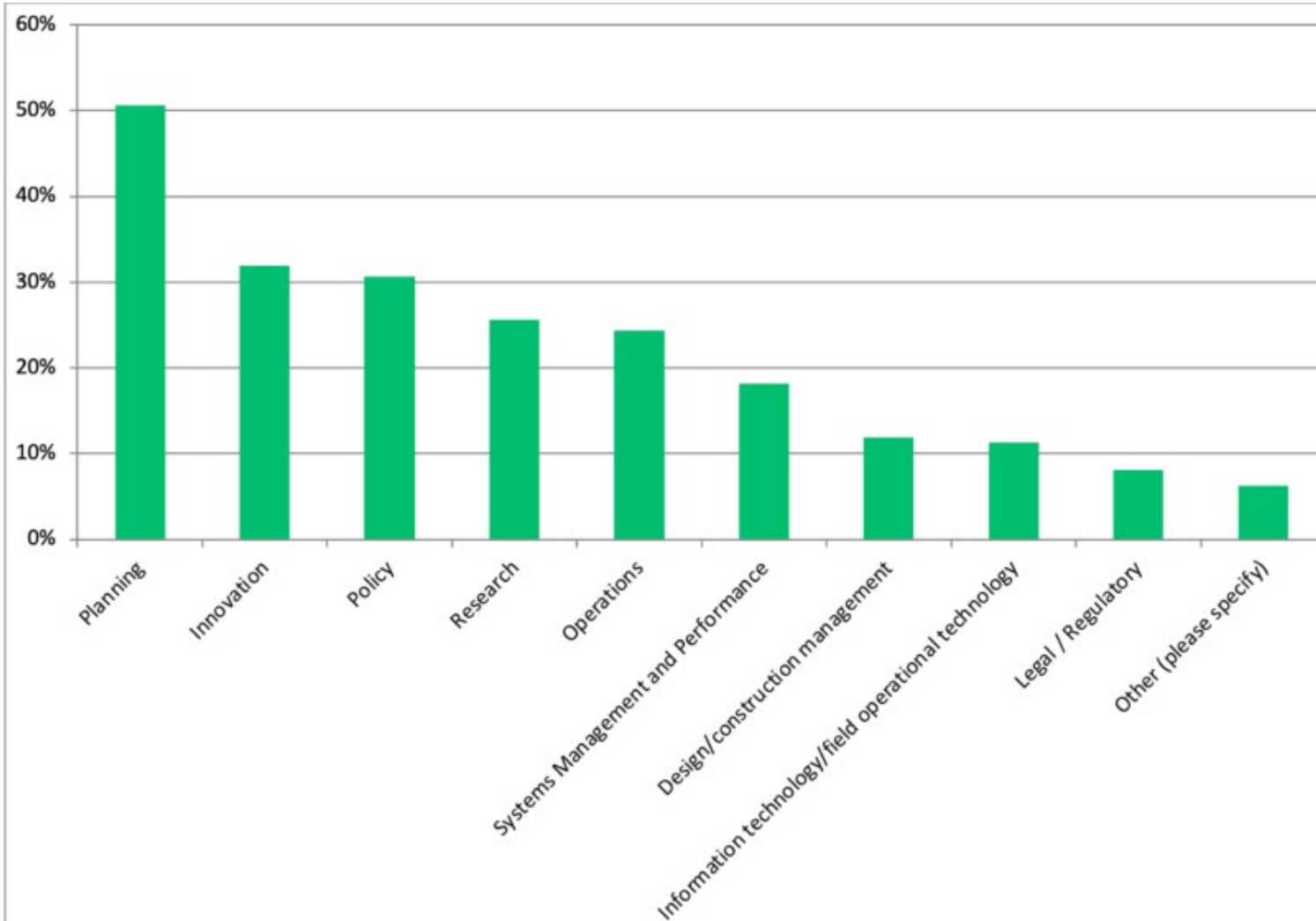
What did we ask?

- Which technologies the agency/company is working on now
- Challenges of implementation
- Problems emerging technologies can realistically help solve
- How agencies/companies collaborate
- Which emerging technologies SMET should prioritize
- What research or other work would benefit this effort?

Survey Respondents by Organization

State Department of Transportation	53%	91
Local government / MPO / Transit	22%	38
Private sector company	12%	20
Academic or non-profit organization	10%	17
Federal agency	2%	4
Other (please specify)	2%	3
	Answered	173

Survey Respondents by Focus Area



1. Planning
2. Innovation
3. Policy
4. Research
5. Operations
6. Systems Management & Performance
7. Design/construction management
8. Information technology/field operational technology
9. Legal/regulatory
10. Other

Challenges & Barriers Emerging Tech Can Help Solve

Top

- Safety
- First/last mile

Middle

- Equity, accessibility
- GHG emissions
- Operational resilience
- Congestion

Bottom

- Maintenance & inspections
- User mode shift
- VMT reduction
- Infrastructure funding

Question: Which of these should SMET focus on?

Top Barriers to Emerging Tech, According to All State DOT respondents

- Interoperability of technology and systems
- Funding
- Consumer trust/adoption

Question: Should SMET focus on these? Are there other issues where SMET and the state DOTs have more leverage? E.g., standards, updating infrastructure, data sharing, workforce development, procurement, etc.

Emerging technologies state DOTs are considering:

Planning/Modeling	Capital Construction & Maintenance
1. EVs	1. Digital infrastructure
2. CVs	2. CVs
3. Digital infrastructure	3. EVs
4. AVs	4. AVs
5. Micro-mobility	5. Congestion pricing
6. On-demand transportation	6. Advanced air mobility
7. Personal delivery	7. On-demand transportation
8. Advanced air mobility	8. Personal delivery
9. Congestion pricing	9. Micro-mobility

Question: Why are these groups prioritizing different technologies?

What State DOTs need from private sector partners

Top

- Prioritize data sharing
- Infrastructure requirements

Middle

- Safety certifications
- Funding
- Commitment to user education/
- outreach

Bottom

- Equity focused solutions
- Revenue models

Question: Are there opportunities to make progress on any these?

Additional resources state DOTs need

1. Resources for staffing
2. Education and training
3. Technical assistance

Questions:

- Do these reflect the resources you most need at your DOT?
- Has anyone succeeded in accessing or developing these resources?

Recommended research topics for SMET

1. Data standards
2. Regulation & policy
3. Equity
4. Emissions impacts
5. Skills & workforce
6. Interactions with existing transportation systems
7. Interactions with existing transportation systems
8. Interactions with transit
9. Procurement
10. Rural Areas

Top concerns, according to other technical user groups

Academia

- Metrics for measuring technological impact
- Other
- Data sharing

Local Gov

- Equity
- Safety
- Infrastructure costs

Private Sector

- Lack of clear oversight
- Inconsistent laws & regs
- Lack of federal coordination on laws & regs

SMET: Subcommittee on System Mobility and Emerging Technologies

We want to hear from you: State Roundtable

- Introductions
- Your Updates-sharing priorities; challenges; opportunities; lessons learned
- Suggestions for 2023/2024 Subcommittee Work
 - How can we, AASHTO-SMET, support your work related to system and technology performance and impact analysis?
 - Program and Task Items?
 - Suggestions for Research topics
- AASHTO/Federal Partner Updates
- Closing

SMET: Subcommittee on System Mobility and Emerging Technologies

- **AASHTO Update**
 - Ali Lohman , alohman@ashto.org
 - Anna McLaughlin, mclaughlin@ashto.org
- **Federal Partner Update:** (TBD)
- **Closing** –Thank You

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