Joint Subcommittee on System Mobility and Emerging Technologies (SMET) Update

Update on

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

Daniela Bremmer-WSDOT, chair

CPBM Quarterly Meeting
Thursday, September 15, 2022

Agenda

- Introductions
- Project Objectives
- Project Tasks
- Research Scan
- Engagement Strategy
- Emerging Tech Identification

SMET Subcommittee Scope -Overview :

- The AASHTO joint subcommittee on System Mobility and Emerging Technologies (SMET) was created to formally merge the related work of the
    - Committee on Transportation System Operations (CTSO)
    - Committee on Performance-Based Management (CPBM)
- 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

NCHRP 20-123(12) : System Mobility and Emerging Technologies (SMET): Strategic Plan and Research Roadmap
Project Objectives

The objectives of this research are to:

(1) to develop a 10-year strategic plan with a 2-year action plan to guide SMET's activities to enhance coordination with other AASHTO's committees and partners (TRB, FHWA, ITS America, etc.); and

(2) develop a research roadmap to continue to advance the state of practice in system mobility and emerging technologies.

The research results are intended to guide future SMET activities and research in a coordinated fashion for SMET to support state DOTs and infrastructure owner and operators.
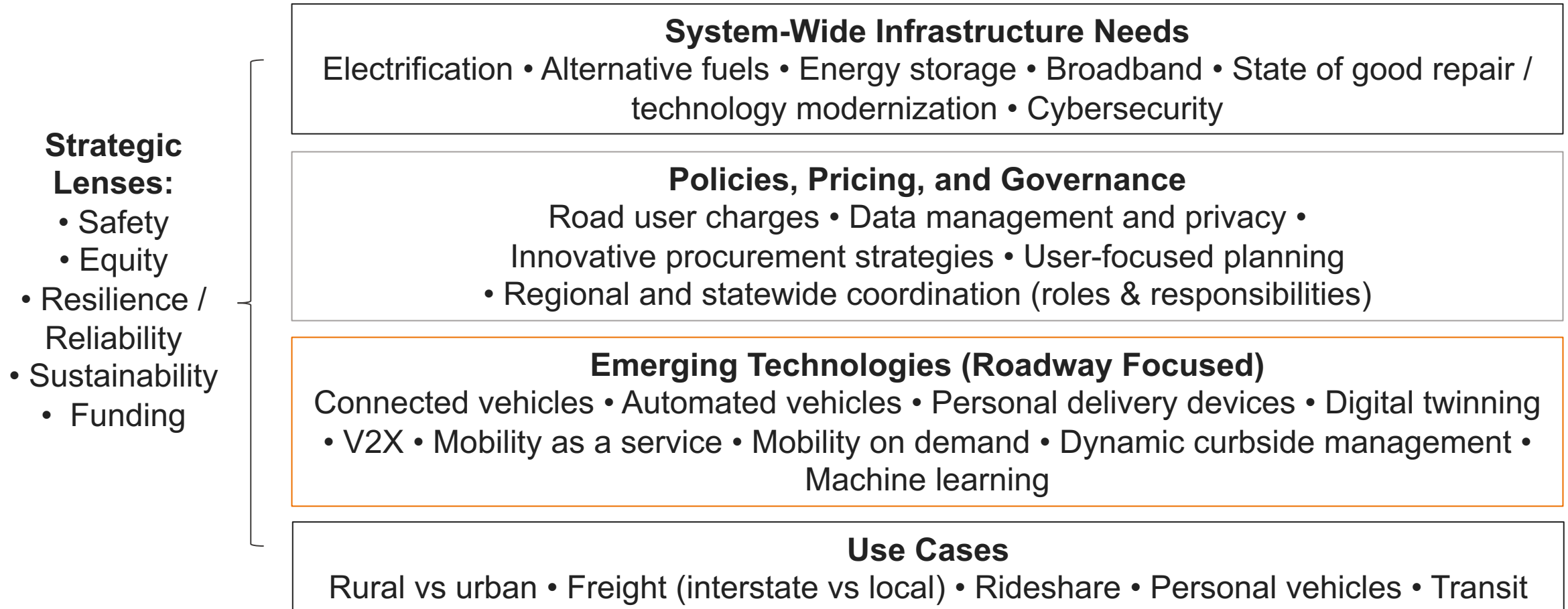
- The consultant team is comprised of Stantec, Highland Planning, and the Plum Catalyst
  - Carmen Monroy, Principal Investigator, Stantec, carmen.monroy@stantec.com

Project Tasks

- **0: Kickoff Meeting** – Complete
- **1: Strategic Planning and Research Roadmap Scan** – Ongoing
- **2: Engagement Strategy** – Ongoing
- **3: Emerging Technology Identification** – Ongoing
- **4: Interim Report**
- **5: Stakeholder Engagement (Survey and Virtual Workshop)**
- **6: Draft Strategic Plan and Research Roadmap**
- **7: Second Stakeholder Engagement Event**
- **8: Final Deliverables**

Task 1: Strategic Planning & Research Roadmap Scan

Strategic Lenses:
- Safety
- Equity
- Resilience / Reliability
- Sustainability
- Funding

System-Wide Infrastructure Needs
Electrification • Alternative fuels • Energy storage • Broadband • State of good repair / technology modernization • Cybersecurity

Policies, Pricing, and Governance
Road user charges • Data management and privacy • Innovative procurement strategies • User-focused planning • Regional and statewide coordination (roles & responsibilities)

Emerging Technologies (Roadway Focused)
Connected vehicles • Automated vehicles • Personal delivery devices • Digital twinning • V2X • Mobility as a service • Mobility on demand • Dynamic curbside management • Machine learning

Use Cases
Rural vs urban • Freight (interstate vs local) • Rideshare • Personal vehicles • Transit
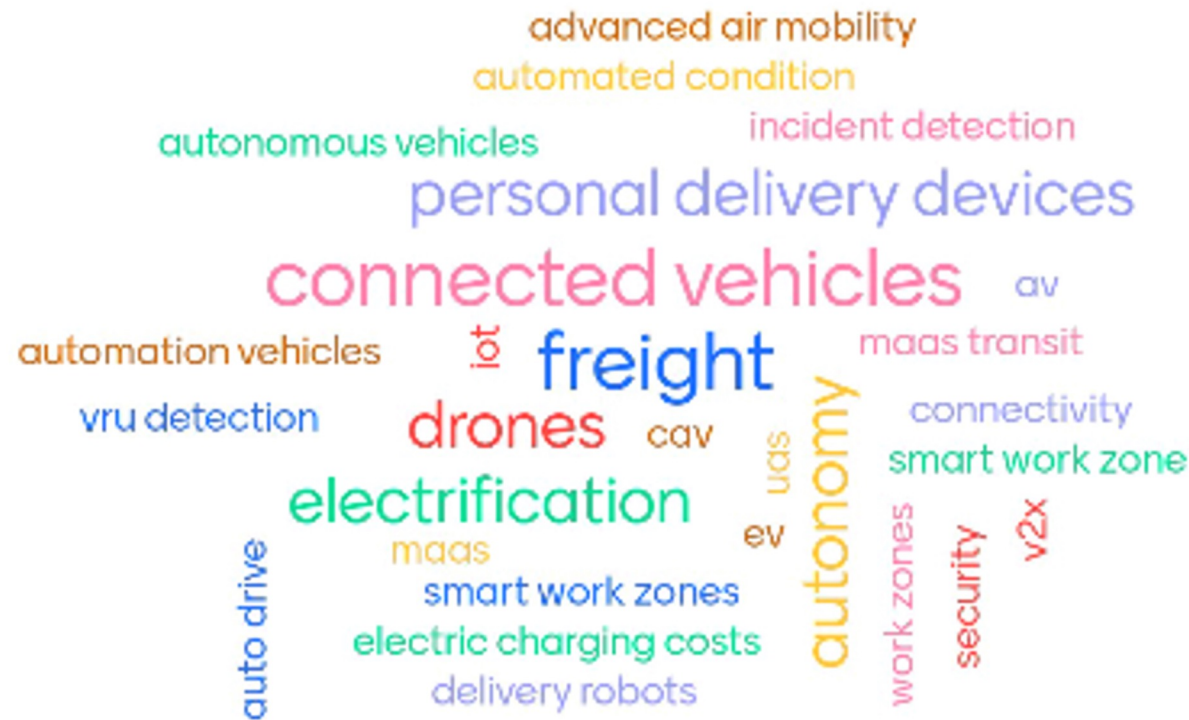
August Workshop :

- What emerging transportation technologies do you think SMET should focus on?

- What are key problems you think emerging technologies can solve?

Feedback Received:

What emerging transportation technologies do you think SMET should focus on?

advanced air mobility
automated condition
incident detection
autonomous vehicles
personal delivery devices
connected vehicles av
automation vehicles iot freight maas transit
vru detection drones cav connectivity
smart work zone
electrification
auto drive maas ev autonomy
smart work zones
electric charging costs work zones security v2x
delivery robots

Feedback Received:

What are key problems you think emerging technologies can solve?

Task 2: Engagement Strategy

What are the most important elements for engagement on this project?
- Shared understanding
- Transparency
- Documentation

How to optimize engagement opportunities?
- Target specific stakeholders
- Be strategic about the survey
- Define stakeholder roles
- Design highly interactive workshops

Positive outcomes we see coming out of engagement
- Engagement with private sector
- Define equity
- Balance between urban and rural

Task 3: Emerging Technology Identification

We are beginning our analysis of existing and emerging technologies and their impacts on future mobility and transportation system operations

Question:

What use cases are most important to consider?

For Use Case Input, Questions or Comments?

Please contact:
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Trey Wadsworth, NCHRP, TWadsworth@nas.edu

Other Business:
Subcommittee Vice-Chair position currently vacant

- Apply knowledge of and interest in current and emerging technology applications and operational strategies and related challenges and opportunities at State DOTs.
- Help initiate direction setting and strategic planning for subcommittee.
- Coordinate with other CTSO and CPBM Subcommittees and Working Group Co-Chairs and AASHTO staff
- Plan meetings, workshops and webinars to advance technical activities and sharing of best practices in support of CPBM and CTSO member needs
- Support leading subcommittee meetings (third Tuesday, even month, 230-330pm eastern)
- Participate in CPBM and CTSO Leadership Team meetings
- Commitment to equity and diversity in support of AASHTO's strategic goals.

If interested in serving, have questions, please contact:

Chair: Daniela Bremmer (WSDOT), bremmed@wsdot.wa.gov, or

AASHTO Liaison CTSO: Patrick Zelinski, PZelinski@aashto.org

AASHTO Liaison CPBM: Matt Hardy, mhardy@aashto.org

FHWA Liaison: Rich Taylor, Rich.Taylor@dot.gov

https://www.tpm-portal.com/community/smet/