



CPBM/TPM Pooled Fund

Quarterly Web Call

December 3, 2020



Agenda

- 2:00 **Welcome.** Tim Henkel, Minnesota DOT
- 2:10 **FHWA Update.** Susanna Reck, FHWA
- 2:20 **AASHTO Update.** Matt Hardy, AASHTO
- 2:25 **Feature Presentation: TPM Research Implementation.** Mara Campbell, Jacobs, Anna Batista, High Street Consulting
- 3:10 **CPBM Business.**
 - **CPBM Business.** Tim Henkel, Minnesota DOT
 - **CPBM Subcommittee Updates**
 - **Asset Management.** Matt Haubrich and Anne-Marie McDonnell
 - **Organizational Management.** Charlie Purcell
 - **Risk Management.** Jean Wallace and Nathan Lee
 - **System Mobility and Emerging Technology.** Daniela Bremmer and Jay Styles
 - **Work Group Updates**
 - **Policy and Rulemaking.** Paul Degges
 - **Research.** Tammy Haas
- 3:45 **TPM Pooled Fund Business.** Matt Hardy, AASHTO
- 3:55 **Wrap-Up.** Matt Hardy, AASHTO



FHWA TPM Capacity-Building Update

- All 52 States, including PR and DC have submitted their biennial performance report. FHWA will be making formal announcements through Division Offices on significant progress determinations scheduled for mid-to-end of December to mid January 2021.
 - The TPM team kicked off several studies this past year:
 - Leading Indicators Study; to support transportation organizations in identifying, analyzing, communicating, and deploying leading and lagging indicators to monitor and adjust national transportation performance targets. Status: Technical panel organized, first of six webinars will be Dec. 9
 - MPO Study; to collect and evaluate MPO target information to learn where FHWA can better assist States and MPOs. Collecting information from our field offices early next year and coordinating with the Office of Planning on related PBPP evaluation study. Status: Survey will be finalized in Jan. with internal release following shortly



FHWA TPM edX Pilot

- **Leverages high-quality, off-the-shelf training**
 - FHWA is partnering with edX – a leader in online learning featuring content developed by global leaders in education and industry.
- **Provides cost-effective delivery**
 - Online learning reaches a wide audience without costs associated with classroom learning.
- **Builds needed skills through targeted material**
 - TPM Team selected courses relevant to TPM practitioners for this pilot.
 - Participants earn credit for courses at no cost to them.





FHWA TPM edX Courses

Analytics for Decision Making

Analyzing and Visualizing Data with Power BI

Business Communication

CitiesX: The Past, Present and Future of Urban Life

College Algebra and Problem Solving

Computing in Python I: Fundamentals and Procedural Programming

Computing in Python II: Control Structures

Computing in Python III: Data Structures

Computing in Python IV: Objects & Algorithms

Conducting an Informational Interview

Critical Thinking & Problem-Solving

Data Science: Capstone

Data Science: Inference and Modeling

Data Science: Linear Regression

Data Science: Machine Learning

Data Science: Probability

Data Science: R Basics

Data Science: Visualization

Data Science: Wrangling

Data Science: Productivity Tools

Developing Breakthrough Innovations with the Three Box Solution

Economics: Consumer Demand

Empathy and Emotional Intelligence at Work

Enterprise Software Lifecycle Management

Executing Breakthrough Innovations with the Three Box Solution

Fat Chance: Probability from the Ground Up

Financial Accounting Made Fun: Eliminating Your Fears

Financial Analysis for Decision Making

Introduction to Data Analytics for Managers

Leadership and Management for PM Practitioners in IT

Portfolio Management, Governance, & the PMO

Public Speaking

Storytelling in the Workplace

Strategic Applications of IT Project & Program Management

Teamwork & Collaboration

The Future of Work: Preparing for Disruption

The Iterative Innovation Process

Visual Presentation





FHWA TPM edX Status

Goal is to evaluate the platform for its ability to provide readily-available, quality content to supplement existing TPM regulatory training in a cost-effective manner.

▪ Phased Launch

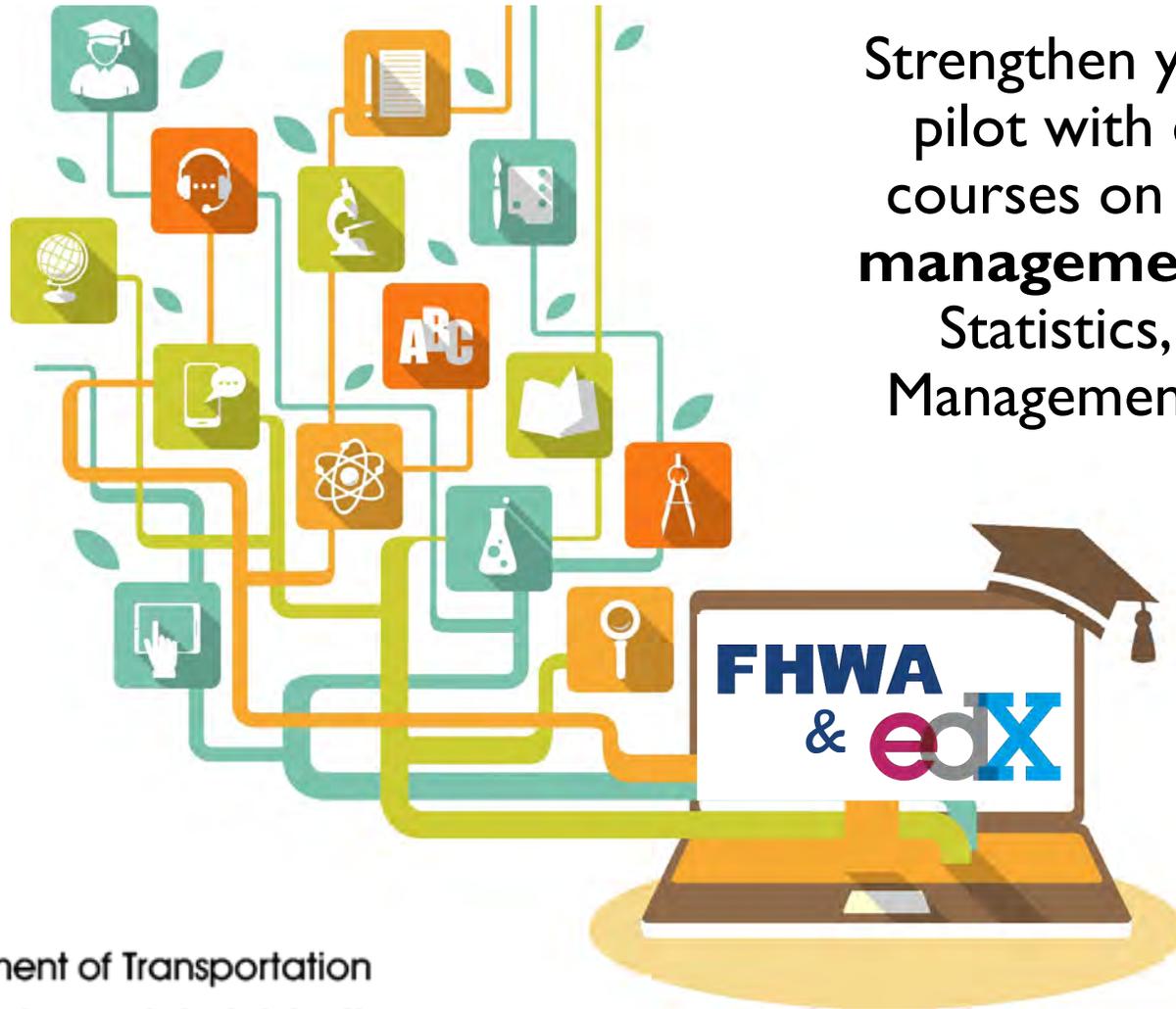
- FHWA PMA members contacted on July 24, 2020
- TPM/PCB Pooled Fund members contacted on July 27, 2020
- Planning Discipline invited on Sept 9, 2020

▪ Participation to date (11/30/2020)

- Assigned 79 codes
- 36 codes redeemed for course enrollment by 29 individuals
- 11 courses completed, with 5 resulting in a request for a new code
- 4 FHWA staff who completed courses have provided feedback through a survey



FHWA TPM edX – Contact Information



Strengthen your skills by joining a new FHWA pilot with edX. Enroll in self-paced, online courses on **transportation performance management topics** such as Data Science & Statistics, Computer Science, Business & Management, Economics, Finance, and more!

As part of this **FREE** pilot, you can **enroll in courses** verified by edX and **earn credentials**, such as a Professional Certificate. Your feedback will also help FHWA provide better training and resources for professionals like you!

Space is limited! Want to know more?
e-mail edXPilot@dot.gov today!



U.S. Department of Transportation
Federal Highway Administration



FHWA TPM Capacity-Building Update



Project Brief/ Summary

Research on the Usefulness of Text Analytics Techniques to Enhance TPM and PBPP

Using text analytics and data mining methods to gain insights from the large volume of information contained in transportation plans, studies, and reports regarding the application of TPM approaches.



Objectives

- *Identify topic areas and use cases associated with applying text analytics for answering questions related to TPM,*
- *Apply the text mining and analytical techniques in a sample of nine test case studies, and*
- *Evaluate and make recommendations to FHWA on how it should use text analytics to support analysis of Federal TPM provisions, as well as other future requirements.*



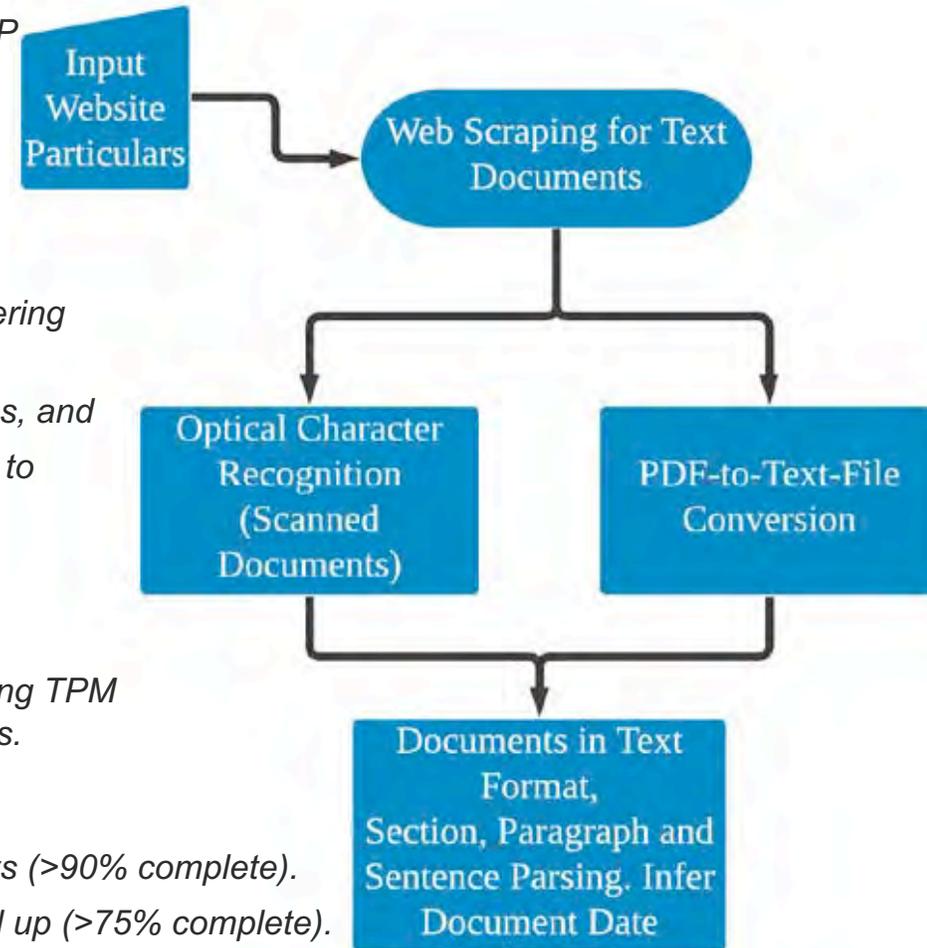
Expected Outcomes

The results of this study will provide FHWA with a strong basis for possible future implementation of the text analytics methods to assess national progress in addressing TPM requirements and assessing the patterns of impacts associated with the requirements.



Status

- *The web-scraping script has been developed and is pending only minor refinements (>90% complete).*
- *The script to convert the PDFs to text files has been developed and is being scaled up (>75% complete).*
- *The script to identify relevant PDFs based on keywords in the title pages has been developed and is being QA'd and scaled up (>75% complete)*





FHWA TPM Capacity-Building Update

FHWA has a number of activities taking place to advance asset management practices, these include:

[Case Study 1 - Asset Management Practices and Benefits](#)

[Case Study 2 - Linking Asset Management to Planning and Programming](#)

[Case Study 3 - Life Cycle Planning Practices](#)

[Case Study 5 - Financial Planning and Investment Strategies](#)

[Case Study 6 - Communicating Asset Management Strategies](#)

[Case Study 7 - Managing Assets Beyond Pavements and Bridges](#)



FHWA TPM Capacity-Building Update

- FHWA is still planning to host data equipment certification demonstration workshops in fall 2021 to assist States in improving data collection practices and quality. We are continuing to hold the popular Pavement Management quarterly webinar series. The next webinar is scheduled for December 3, 2020 at 2:00 pm Eastern. The webinar will provide an overview of NCHRP 501: Pavement Management Systems and presentations from state and local agencies on related perspectives.
- FHWA has initiated efforts to update the NHI Pavement Management course and 2010 Pavement Management Roadmap. Both efforts are scheduled to be complete in late 2021.



AASHTO Update



Feature Topic: TPM Research Implementation

NCHRP 08-113

Integrating Effective Transportation Performance, Risk and Asset Management Practices



Jacobs



Research Objectives

Provide agencies with practical guidance, recommendations and implementation practices for:

- Integrating performance, risk, and asset management into transportation agencies
- Identifying, evaluating, and selecting appropriate management frameworks
- Recruiting, training, and retaining human capital to support these integrated management functions

Where We Have Been?

A photograph of a two-lane asphalt road winding through a lush, green forested valley. The road has a double yellow line in the center and white lines on the edges. In the background, there are rolling hills and mountains under a slightly overcast sky. The overall tone is somewhat muted and atmospheric.

After Literature Review – Hosted Webinar & Confirmed:

Approaches to Integration

- Risk management tends to be the highest potential for improvement

Data Needs

- Data visualization is a common challenge

Personnel and Skills

- Serious need for personnel and skills in the areas of quantitative analyses and evaluation

After Literature Review – Hosted Webinar & Confirmed:

Policy and Agency Structure

- Significant cultural and agency barriers to advance integration

Resource Requirements

- Resources to support integration are key

Created Quick Scan Case Studies

Cross-section of a 13 agencies

- Transportation & other sectors
- US and international
- Local, regional and state-level

Created one-pagers and a noteworthy practices document

- Easy to read, draw insights
- Helped identify Deep Dive candidates

NCHRP 08-113: QUICK SCAN SUMMARY			
Agency/Organization:	Main Roads Western Australia	AMP Date:	2018
Location:	West Australia, Australia	PMP Date:	NA
Sector:	Transportation	RMP Date:	NA
Contact Name:	Brett Belstead		
Contact Title/Dept.:	Director of South West Operations		



OVERVIEW

Main Roads West Australia (MRWA) is the transportation agency of the state of Western Australia which is responsible for managing, maintaining, and improving more than 18,500 kilometers of roads, as well as implementing state policies regarding network operations and compliance. The public highways and main roads under MRWA's purview make up much of the Australian state's arterial roadway network, providing statewide connectivity. These roads complement the networks managed and maintained by local agencies throughout the state and are an essential element of Western Australia's economy.

LEVEL OF INTEGRATION	INTEGRATED PRACTICES
<input type="checkbox"/> High	<input checked="" type="checkbox"/> Asset Management
<input checked="" type="checkbox"/> Moderate	<input checked="" type="checkbox"/> Performance Mgmt.
<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> None	

APPROACHES TO INTEGRATION

MRWA has identified the integration of asset, performance, and risk management as an important objective of their agency. Though integration is still developing, they currently employ a number of practices to implement a more modern, holistic approach to managing their network. For MRWA, this is largely top-down, with a corporate risk process which reaches through each branch of the agency, across regional and divisional divides. Additionally, they have a performance management system which looks at cost-benefit of capital projects, driver exposure and safety, high-level congestion management, and more, requiring these measures to be reported up the management structure to be reviewed at the corporate level. This helps to centralize management efforts across the geographically vast jurisdiction of the agency, and relies largely on cross-coordination between branches and interactions of branch managers. However, this high-level approach can be difficult to reflect in low-level asset management decision-making.

INTEGRATION HIGHLIGHTS

- Corporate-level risk process which reaches across agency branches.
- Performance measures are reported upwards, being assessed at the corporate level; this is difficult to turn into low-level practices.
- Consider measures of economic benefits, driver exposure, congestion, and more.



DATA NEEDS

MRWA maintains a corporate database which contains geometric data on all roads as well as deterioration data, crash data, and more. Additionally, they have implemented a maintenance management system which helps prioritize maintenance projects and supports economic analyses. Additionally, traffic and similar data are collected internally by performance management staff. In recent years, MRWA has made strong pushes to verify their data, especially geometric data, which largely rely on human updates. Though this is a large effort, the data has been improving over time, with broad staff effort and understanding of the importance of data validation. The agency also maintains a risk management database which includes information which cascades throughout the enterprise.

MRWA has implemented software programs such as Microsoft Power BI and Tableau to help with data visualization and to support decision-making processes, and hope to implement more advanced data analysis techniques, such as machine learning, to bring additional efficiencies strengths to their analysis programs.



KEY DATA NEEDS

- It is vital to validate data, ensuring quality and accuracy of information on which decisions are being made.
- Data visualization using tools such as Power BI and Tableau help with decision-making.
- Modern data analysis methods such as machine learning may play a role in the future.

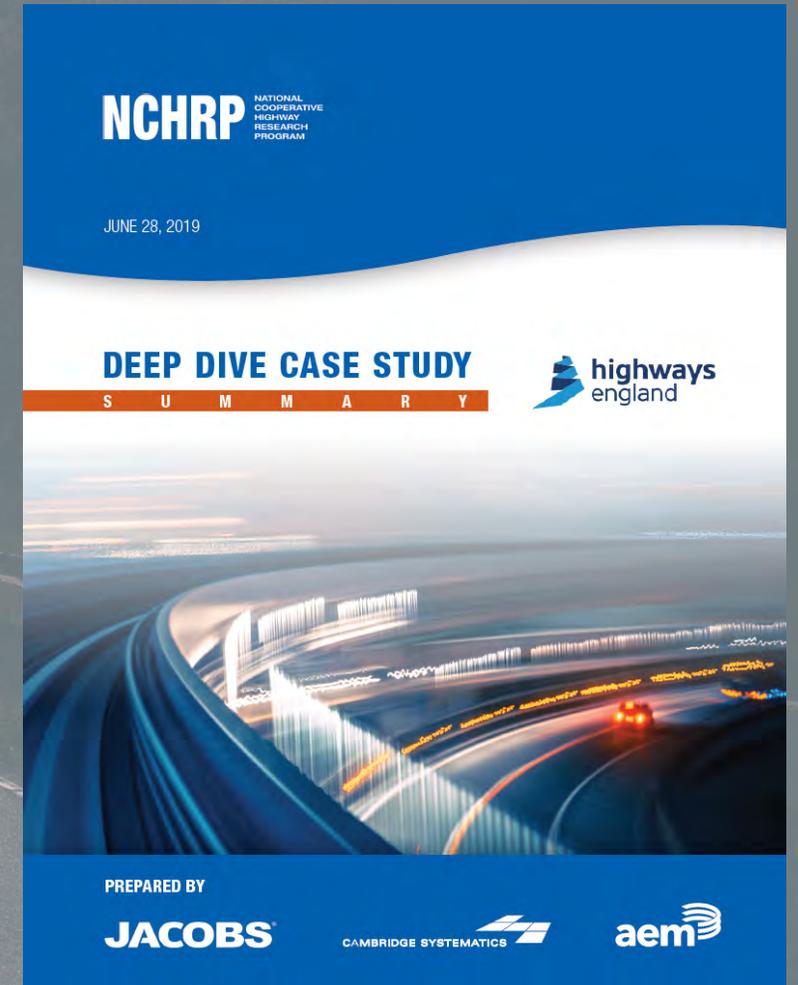
Deep Dive Case Studies

Interviewed 4 agencies

- Atlanta Airlines Terminal Company
- Caltrans (California DOT)
- VTrans (Vermont DOT)
- Highways England

In-depth summaries

- Based on extensive in-person and phone interviews
- Provide comprehensive assessment of each agency's history and approach to integration



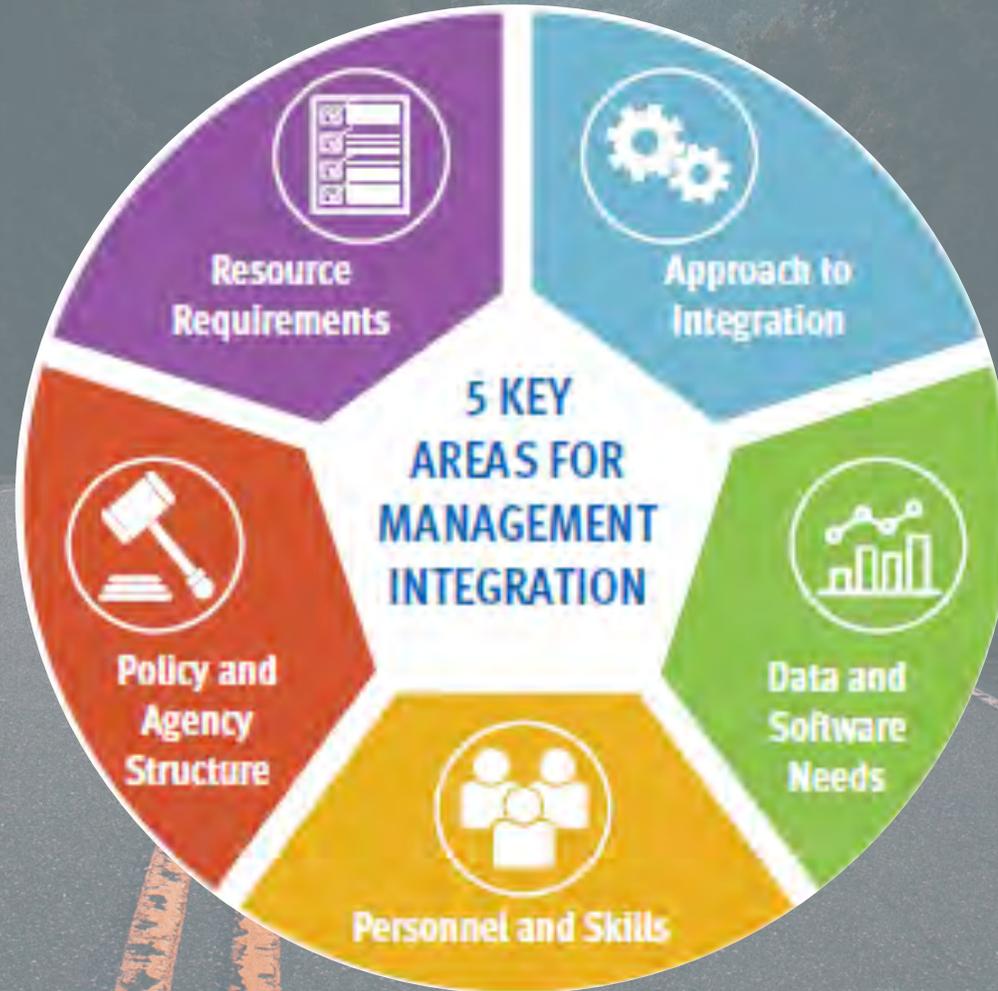
Prepared A Guidance

- Highly valuable reference document
- Agencies can understand what they can do (regardless of progress) and the “Value Add”
- Agencies will understand the “how” of integration
 - Frameworks for effective integration
 - Strategies to promote organizational and workforce readiness
 - Benefits of integration and common mistakes when attempting to integration
 - Checklist to assess level of maturity variations based on maturity of existing practices

Five Agency Workshops & Implementation Roadmaps

- All-day workshops with Vermont DOT, Utah DOT, Minnesota DOT, Caltrans and TriMet
- “Test drove” the Guidance to confirm usefulness and enhance
- Provided a “Agency Specific Roadmap” to enable next steps towards integration for each participating agency

Key Areas for Management Integration



Integration Maturity

- Necessity of executive-level buy-in
- Data governance
- Importance of enterprise standards
- Agency culture
- Policy frameworks
- Value of long-term investment planning



Key Findings

Benefits from Management Integration – “Value Add”

- More comprehensive and trustworthy decision-making process
- Advance capital improvement planning by using more robust data to improve project selection and development
- Improve system performance by identifying and incorporating risks and improving system resiliency
- Enhance agency structure and management by cross-referencing agency assets and enabling managers to access the right data
- Reduce duplication of effort and help make better decisions that optimize the position of the entire agency

Key Observations

- Necessity of executive-level buy-in and a supportive organizational structure for integration management
- The need to modify or change agency culture to support a more inclusive working process and enable integration efforts
- Data governance can play a pivotal role in identifying integration strengths and barriers
- The impact of an ongoing discussion of data needs and sharing support the evolution of an agency's integrated framework

Key Observations

- The important role of enterprise standards or data glossaries to lay the foundation for integrated processes, communications, data and resource sharing and other central tenants to help create a successfully integrated management program
- Identifying and building policy frameworks for management area integration that are most effective for transportation agencies

Key Observations

- Understanding the value of long-term investment planning and how to support it through milestone development, agency policy, standards, progress tracking and partnerships
- The need to motivate agencies to integrate performance, asset, and risk management while recognizing the need for standardized methods of modeling how threats may undermine performance goals or accelerate asset deterioration

What Happens Next?

- Need to obtain Panel Approval
- Once approved, NCHRP will make available
- Also link materials to TPM Portal
- Identify some possible next steps and additional research for consideration

Questions?

Thank you!

Mara Campbell

Mara.Campbell@jacobs.com * 573-353-0253



Feature Presentation: Research Implementation

Making Targets Matter

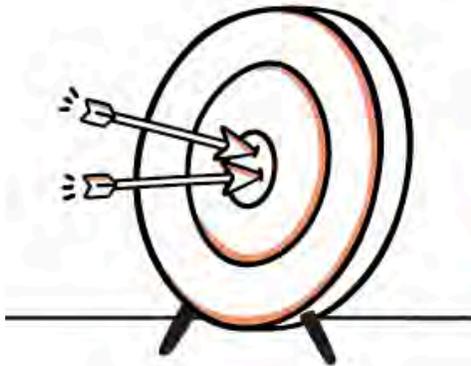
NCHRP 02-27

Anna Batista, High Street Consulting

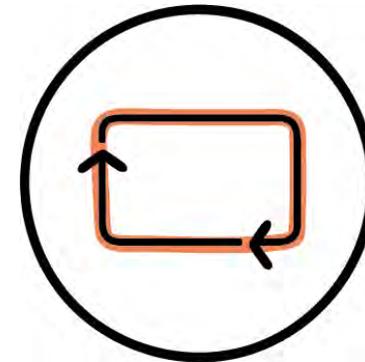


Making Targets Matter

Targets matter when target levels drive agency decisions.



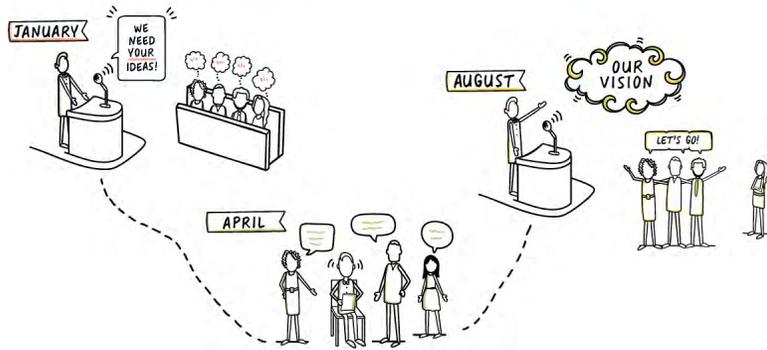
The way to get targets to drive decisions is more and better feedback.





Six “Strategies” for Better Feedback

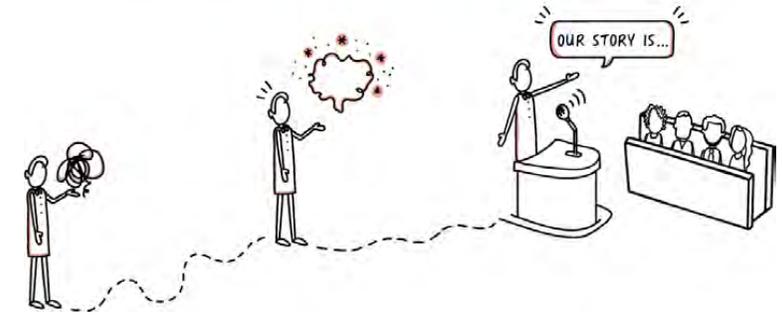
BUILD BUY-IN FOR THE LONG TERM



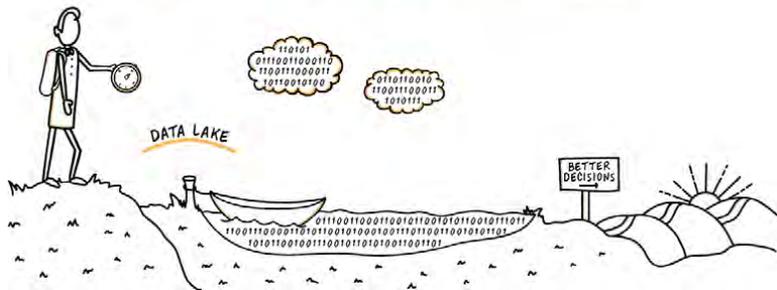
CONVENE ACROSS BOUNDARIES



TELL YOUR PERFORMANCE STORY



NAVIGATE YOUR DATA ECOSYSTEM



FORMALIZE ASSESSMENT OF WHAT WORKS



ADJUST YOUR ACTIONS





Six “Strategies” for Better Feedback

BUILD BUY-IN FOR THE LONG TERM

- Make connections early.
- Allow for a sense of ownership.
- Maintain transparency and neutrality.
- Listen, and show you are listening.

CONVENE ACROSS BOUNDARIES

- Build a habit of short, frequent dialogue.
- Gather the right people. (*Up and down the agency, across boundaries.*)
- Let discussion flourish.
- Time strategically.

TELL YOUR PERFORMANCE STORY

- Tell performance truths.
- Simplify, but not too much.
- Blend data and storytelling.
- Evolve your story.

NAVIGATE YOUR DATA ECOSYSTEM

- Create a data map and wishlist.
- Automate where possible.
- Have early conversations with data owners.
- Invite data owners to participate in performance.
- Ask for data elements.

FORMALIZE ASSESSMENT OF WHAT WORKS

- Know your analytical options.
- Align technical and planning conversations.
- Understand the mechanics of your metrics.
- Set assessment points.

ADJUST YOUR ACTIONS

- Start where you are.
- Embrace incrementalism.
- Institutionalize feedback.
- Seize opportunities as they arise.
- Just try something!



Six Case Studies of Strategies in Action

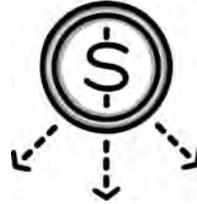


TPM Six Case Studies of Strategies in Action

Long-Term Strategy



Medium-Term Programming



Day-to-Day Operations



Shared Regional Vision



Needs Assessment Data Tool

Washington Metro Area Transit Authority (WMATA)
STAT Meetings for Operational Problem Solving



Iowa DOT
Strategic Alignment of Performance Measures



Virginia DOT/ OIPI
Safety Investment Policy Analysis



Lean DOTs
Implementation of Lean at DOTs for continuous improvement





Implementation Ideas



Webinars, Videos, and Online Content

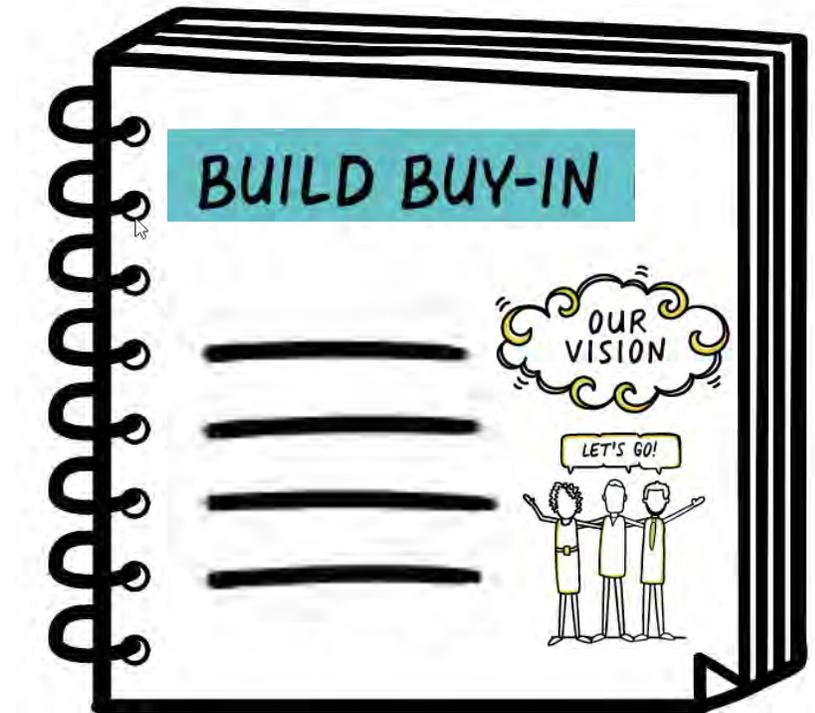
TRB
Transportation Research Board
WEBINAR





Feedback Strategy Handbook

- Condensed, colorful, visual handbook of just the six “Strategies”
- Different from an executive summary
- On the desk of every performance management professional!





Implementation “Networks”

Existing Concept: Benchmarking Network

A benchmarking network facilitates peer-to-peer discussions about how to achieve better performance, usually with shared, pre-defined metrics.

Revised Concept: TPM Implementation Network

Peer-to-peer discussions about implementing strategies that integrate feedback into the TPM process.

NCHRP
RESEARCH REPORT 902

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

**Benchmarking and Comparative
Measurement for Effective
Performance Management
by Transportation Agencies**

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
TRANSPORTATION RESEARCH BOARD



Implementation “Networks”

Strategy-Based

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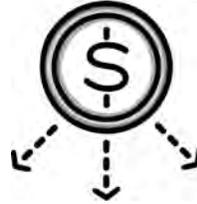
Implementation “Networks”

Context-Based

Long-Term Strategy



Medium-Term Programming



Day-to-Day Operations



Shared Regional Vision



Needs Assessment Data Tool

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Strategic Alignment of Performance Measures



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Safety Investment Policy Analysis



Lean DOTs
Implementation of Lean at DOTs for continuous improvement





Your Ideas

- Different Ideas?
- Reaction to a short, colorful, visual standalone handbook?
- Reactions to an “Implementation Network”? Strategies-based vs. context-based?
- Which strategies or contexts are of most interest or relevance to you?

Strategies

BUILD BUY-IN FOR THE LONG TERM

NAVIGATE YOUR DATA ECOSYSTEM

CONVENE ACROSS BOUNDARIES

FORMALIZE ASSESSMENT OF WHAT WORKS

ADJUST YOUR ACTIONS

TELL YOUR PERFORMANCE STORY

Contexts

- Planning Vision Development
- Strategic Alignment
- Data-based Needs Exploration
- Investment Policy
- “STAT” Meetings
- Lean



CPBM Business Meeting



Asset Management

Focused on supporting State DOT needs related to Asset Management.

- **Implementation activities**
- **Research**
- **Federal requirements**
- **Peer community & information sharing**

Leadership

- **Chair: Matt Haubrich, Iowa DOT**
- **Vice-chair: Anne-Marie McDonnell, Connecticut DOT**
- **Membership Coordinator: Louis Feagans, Indiana DOT**

Monthly joint meetings with TRB Asset Management Cmte, second Wednesday of each month (<https://www.tam-portal.com/event/>)



Asset Management

Recent significant milestones

- Approval of the 3rd edition of the AASHTO TAM Guide
 - Web-based version available! (<https://www.tamguide.com/>)
- Completion of NCHRP Report 921: Case Studies in Cross-Asset, Multi Objective Resource Allocation
 - MODAT tool for trade-off analysis (<https://multiobjective.org/>)
- NCHRP Synthesis 556: *Asset Management Approaches to Identifying and Evaluating Assets Damaged Due to Emergency Events*
- NCHRP Report 898: *Guide for Financial Planning and Management in Support of Transportation Asset Management*



Asset Management

Get involved!

- TRB Annual Meeting: Jan 5th – 8th
- Bi-monthly TAM Webinar Series (in cooperation with FHWA)
 - Next will be Dec 16th (TAM Webinar 47: Re-Evaluating TAM Targets)
 - Mini-series on Improving Your TAMP coming in early 2021
 - <https://www.tam-portal.com/event/>
- 13th National TAM Conference
 - Boston, MA – August 2021 (rescheduled)
 - <https://trb.secure-platform.com/a/page/assetmanagement2021>



Organizational Management

Mission

- Help agencies achieve organizational excellence and advance the practice of performance excellence by identifying, analyzing and sharing information to improve organizational performance at the strategic, tactical and operational levels of the organization.

Goals

- Assist agencies to achieve strategic goals and improve performance in the most effective and efficient way.
- Examine and share effective organizational models, leadership structures and competencies used to monitor, respond to and implement organizational improvement.
- Provide agencies with best practices in the application of process/quality improvement tools and methodologies



Organizational Management

Meetings: 3rd Tuesday monthly, 11am – 12:30 pm Central

Co-Chairs: Deanna Belden, MnDOT; Charlie Purcell, Iowa DOT

Secretary: Stacey Houston, Iowa DOT

AASHTO Liaison: Matt Hardy

FHWA Liaison: Jennifer Brown

Strategic partnership with TRB AJE15 Workforce Development & Organizational Excellence Committee

Chair: Victoria Beale, Ohio DOT



Organizational Management

Activity 1 – Process Improvement, Gary Vansuch, Colorado DOT

- The Transportation Lean Forum (TLF) is entering its ninth year and continues to have webinars and host the "Lean Interchange" website
- Next TLF webinar will be held as part of the TRB Annual Meeting
 - Lectern Session 1088 – Transportation Lean Forum (TLF) Community of Practice
 - Monday, January 25, 2021, 1:00 PM- 2:30 PM ET
 - Gary Vansuch, Colorado Department of Transportation, presiding



Organizational Management

Activity 2 – Non-system Performance Measures, Deanna Belden, Minnesota DOT

- Supporting TRB workshop planning on advancing organizational excellence with AJE15 Workforce Development & Organizational Excellence Committee “Advancing Organizational Excellence: Putting the Blocks together!”
- Proposing NCHRP synthesis study on program and project delivery performance measures used for decision making in State DOTs



Organizational Management

Activity 3 - Support the Agency Capability Building (ACB) Portal, Charlie Purcell, Iowa DOT

- Implementation project for NCHRP 20-24(95)A, Ensuring Essential Capability for the Future Transportation Agency
 - Develop and conduct a series webinars to introduce transportation agency users with the resources the ACB Portal provides
 - Conduct pilot projects with up to three State DOTs to demonstrate how the ACB Portal can be used to assist with real-world agency initiatives
- Next step: draft and vet the implementation project application



Organizational Management

How can you get involved?

- Participate in our monthly subcommittee web conferences. Join in the conversation. Offer your insight and perspectives. Learn from others.
- Attend our annual or mid-year subcommittee meetings, usually held in conjunction with an AAHSTO or TRB conference.
- Assist with or lead one of the subcommittee activities
- E-mail deanna.belden@state.mn.us or charlie.purcell@iowadot.us

Next meeting

- Dec 14, 2020, 11:00-12:30 Central Time



Risk Management

Mission

The focus of this subcommittee is on the development, implementation, and use of tools, methods, and strategies by a state transportation agency in order to take advantage of opportunities and mitigate potential threats.

Goals

1. Serve as the forum to engage subcommittee members on the sharing of ideas and examples of how state transportation agencies are implementing risk management within their organizations.
2. Develop needed guidelines, guidance, training, and educational resources to facilitate the implementation of risk management approaches within a state transportation agency.
3. Research, develop, and disseminate tools and techniques associated with risk management such as risk analysis, vulnerability assessments, etc.

SRM meetings: 2nd Monday of even-numbered months, 1-2 p.m. Eastern

Chair, Jean Wallace, MnDOT;
AASHTO Liaison, Matt Hardy;

Vice-Chair, Nathan Lee, Utah DOT
FHWA Liaison, Daniel Fodera



Risk Management

SRM-sponsored research projects:

- NCHRP 20-123(04), [Strategic Planning Session and Development of a Risk-Management Research Roadmap](#). Status: Literature review drafted.
- NCHRP 23-09, [Scoping Study to Develop the Basis for a Highway Standard to Conduct an All-Hazards Risk and Resilience Analysis](#). Status: contract has been executed and initial kickoff meeting held on 11/18/20.

Ongoing projects:

- NCHRP 20-44(02), [Implementation of the AASHTO Guide for Enterprise Risk Management](#). Status: CoP members have been formally invited to join the SRM as the NCHRP. Project completion is expected by end of 2020.



Risk Management

FY21 NCHRP Problem Statements Selected for Funding:

- NCHRP 23-15, [Prioritization of Risks Related to Connected and Automated Vehicles and Emerging Technologies](#) - Status: selection of panel members is underway. Kickoff scheduled.

FY22 NCHRP Research Needs Statements Submitted:

- Develop Methods to Allow Agencies to Incorporate Quantitative Risk Assessment at Project and Network Level (developed with the Subcommittee on Asset Management)
- Building Risk-Management Momentum in Agencies

Upcoming Events

- SRM Bi-monthly meeting – Monday, Dec. 12, 1-2 pm Eastern
- TPM Webinar Series – TPM and Risk, Jan. 20, 2021
- FHWA/AASHTO TAM Webinar – Improving Your TAMP Miniseries: Improving Risk Management and Resilience (Date TBD)

AASHTO ERM Portal, www.erm-portal.com



Joint Subcommittee on System Mobility and Emerging Technologies (SMET)

Committee on Performance-Based Management (CPBM)

Leadership Group

Policy & Rulemaking

Research

Professional Development

Work Groups

Asset Management
Chair: Matt Haubrich
Vice: Anne-Marie McDonnell

Risk Management
Chair: Jean Wallace
Vice: Nathan Lee

Organizational Management
Co-Chair: Charlie Purcell
Co-Chair: Deana Belden

System Mobility and Emerging Technologies
Chair: Daniela Bremmer
Vice: Jay Styles

Technical Subcommittees

Committee on Transportation System Operations (CTSO)

Subcommittee on Operations

Subcommittee on Technology

Joint Subcommittee on Emerging Technology and System Mobility

Research Development and Implementation Coordinators

Community of Practice on Road Weather Management

Working Group on Operations Strategies

Working Group on Operations Implementation

Working Group on Freight Operations

Working Group on Communications Technology

Working Group on Cooperative Automated Transportation (CAT)

Working Group on Intelligent Transportation Systems

System Mobility and Emerging Technologies (SMET) Overview

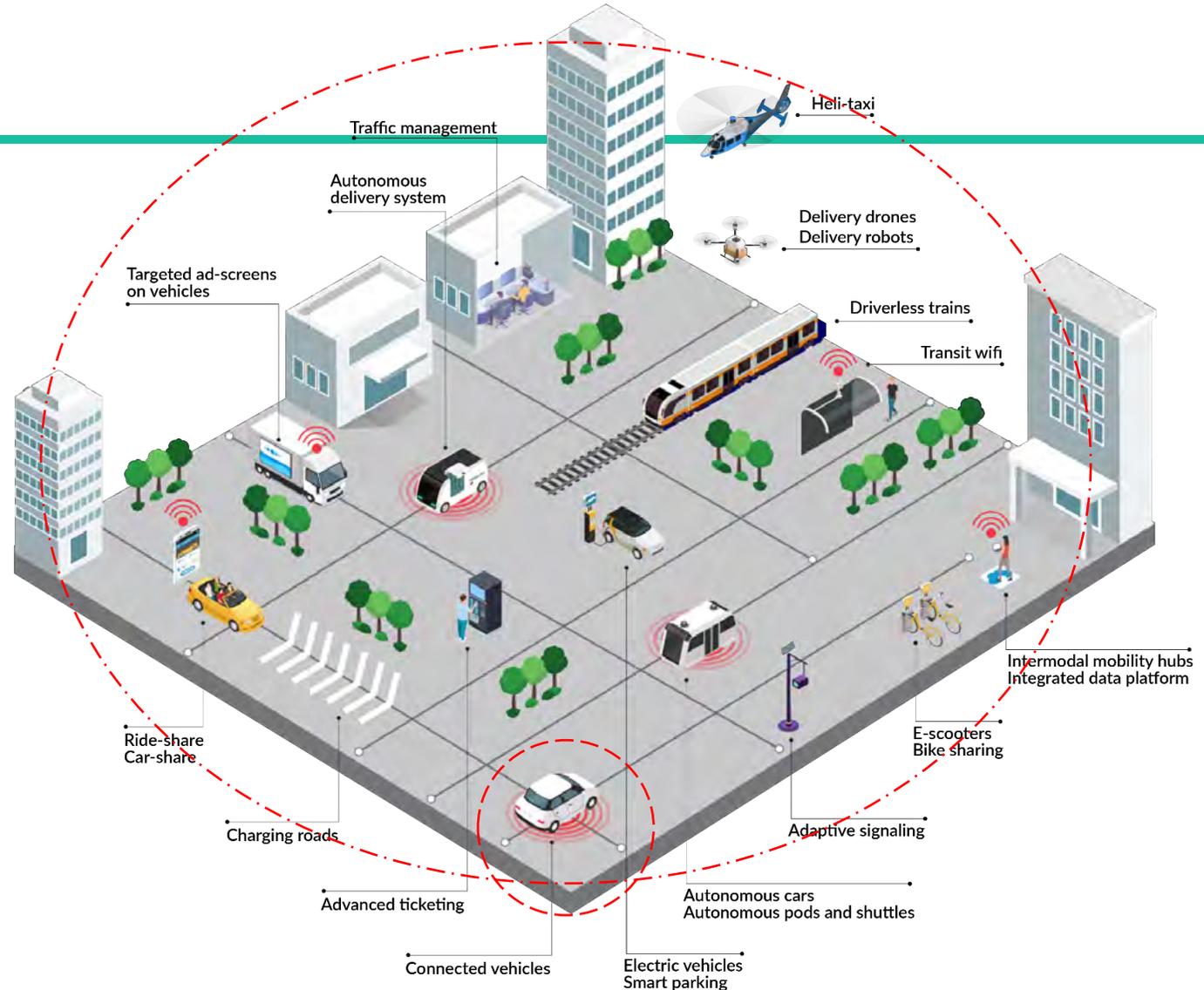


- Joint subcommittee formally fuses the related work of the Committee on Transportation System Operations (CTSO) and Committee on Performance-Based Management (CPBM). With an informal, collaborative relationship with the Committee on Data Management and Analytics (CDMA)
- Serves as forum to share how state DOTs are managing system operation and system mobility and how performance is impacted due to current and emerging transportation technologies, operational strategies and connected environments
- Explores 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.



System Mobility and Emerging Technologies (SMET)

Our Focus:
Understanding
Emerging
Technologies and
System Impacts



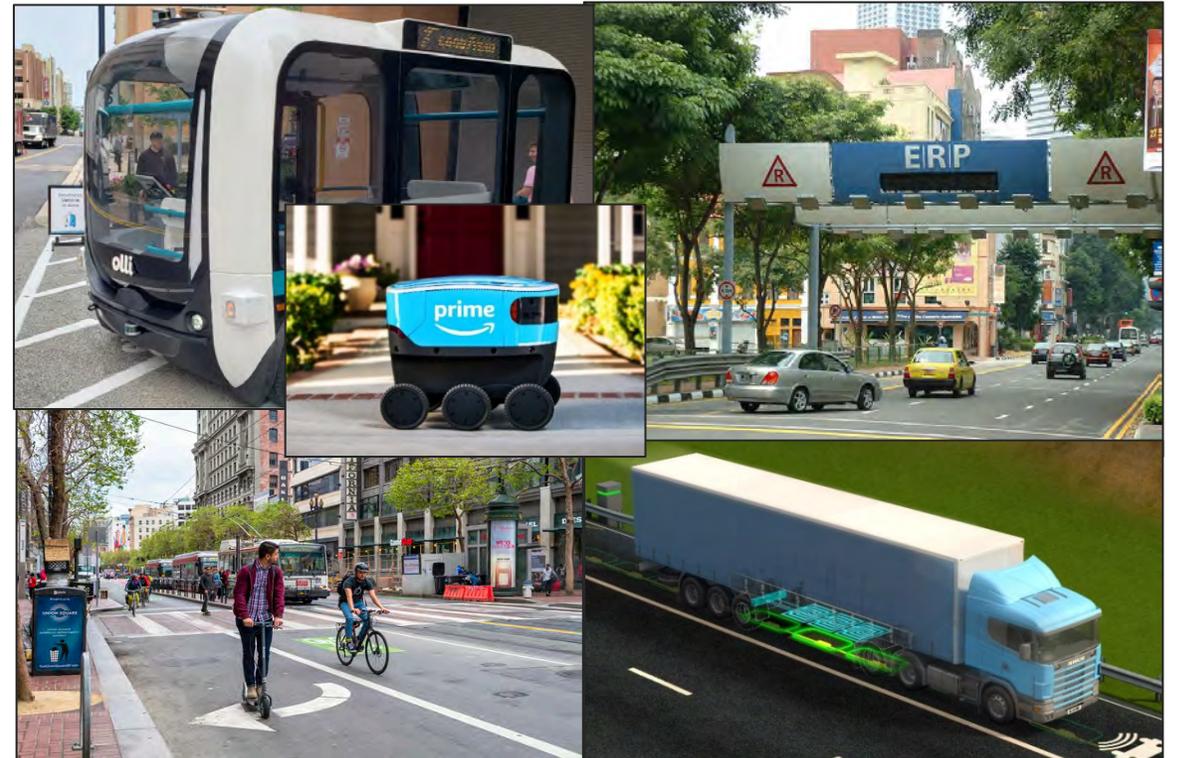


Joint Subcommittee on System Mobility and Emerging Technologies (SMET)

New joint subcommittee –

- five meetings thus far
- key accomplishments

We are making a difference and gaining traction!





System Mobility and Emerging Technologies (SMET): 2020 Accomplishments-Brief Overview

New joint subcommittee-making a difference-gaining traction

Covid-19 Related System Impact/Data Projects:

- Survey: State DOT COVID-19 Response: Use of Transportation Data and Information for Decision Makers (<https://www.tpm-portal.com/resource/dot-covid19-data-survey/>)
- Special Webinar Covid-19 Data Accessibility and Free Data Sources <https://attendee.gotowebinar.com/recording/2019291993716040707>

Four webinars and Best Practice Sharing

New website: <https://www.tpm-portal.com/community/cpbm/sm/>

Proposal development: NCHRP Project 20-123 Research Proposal:
Strategic Planning and Research Roadmap Development



System Mobility and Emerging Technologies (SMET) Accomplishments 2020

Covid-19 Related Activities #1: AASHTO Survey on System Data for Covid-19

Survey requested feedback from each state agency on mobility performance data requests received to help answer “social distancing” and “shelter in place” policy effectiveness questions, including the following:

- Social Distance Responses and Traffic Patterns
- Shelter-in-place / Stay-at-home orders
- Educational facilities being closed /Non-essential business being closed
- Travel restrictions /Restaurant/Bar shutdowns
- Number of people congregating
- Fines/Enforcement
- How do DOTs provide this data: use of dash boards or special reports? Has your agency begun to think about this type of analysis? What data would be required to do this analysis (count, employment, demographic)?

**State DOT COVID-19
Response:
Use of
Transportation Data
and Information for
Decision Makers**

<https://www.tpm-portal.com/resource/dot-covid19-data-survey/>



System Mobility and Emerging Technologies (SMET) Accomplishments: 2020

Covid-19 Related Activities #2 : Special Webinar Covid-19 Data Accessibility - Free Data Sources

The April 2020 webinar featured INRIX, University of Maryland, and Google and provided the following information on free data sources related to Covid19 analysis.

- **Webinar Recording:** <https://attendee.gotowebinar.com/recording/2019291993716040707>
- **INRIX, Rick Schuman at rick@inrix.com**
 - Blog posts: <https://inrix.com/blog/>
 - Volume Trends Dashboard information: <https://inrix.com/covid-19-transportation-trends/>
- **University of Maryland, Lei Zhang at lei@umd.edu**
 - <https://data.covid.umd.edu/>
- **Google, Monali Shah at shahmonali@google.com**
 - COVID-19 Community Mobility Reports: <https://www.google.com/covid19/mobility/>
 - COVID-19 public dataset program: Making data freely accessible for better public outcomes: <https://cloud.google.com/blog/products/data-analytics/free-public-datasets-for-covid19>



System Mobility and Emerging Technologies (SMET) Accomplishments: 2020

Other Partnerships Include:

AASHTO State AV Task Force Community of Practice

Identified 46 national CAV-AV-CAT Related Committees and Working Groups

Goal: how can the subcommittee fill gaps in our area of work and support related efforts, leveraging resources

National, CAV-AV-CAT Related Committees and Working Groups – Inventory



System Mobility and Emerging Technologies (SMET) Accomplishments: 2020

Website and Other Tools:

<https://www.tpm-portal.com/community/cpbm/sm/>

Joint Subcommittee on System Mobility and Emerging Technologies
(Formerly "System Performance Subcommittee" under CPBM –
"Performance Measurement and Data Subcommittee" under CTSO)
September 2019

Why the new focus?

Mobility is transforming as new technologies disrupt traditional ways people and goods move throughout our transportation systems. While the many new technologies and modes bring more convenience and efficiency to the users and to local and national economies, they also create new problems, needs, and challenges that state DOTs as Infrastructure Owners and Operators (IOOs) must address. One of the original subcommittee work plan goals was to develop approaches and opportunities for system analysis, system operation and technology applications beyond MAP-21. This update will align with the initial scope and expand on it to meet emerging analysis needs that impact roadway system mobility performance.

<https://www.tpm-portal.com/wp-content/uploads/2020/10/Flyer-Joint-SC-on-System-Mobility-and-Emerging-Technologies.pdf>

Welcome to the Joint Subcommittee on System Mobility and Emerging Technologies (SMET)

The joint subcommittee serves as the central forum to share information and best practices on how state DOTs are managing system operation and system mobility and how performance is impacted due to current and emerging transportation technologies, programs, operational strategies and connected environments. This may include examining the impacts of programs such Connected and Automated Vehicle (CAV) technology, Cooperative Automated Transportation (CAT) and Mobility on Demand (MOD).

Download a calendar invite for the subcommittee meetings [here](#).

Download more information on all subcommittee meetings [here](#). Additionally, for those that missed the September 3rd Joint AASHTO CPBM/TPM Pooled Fund Quarterly Meeting, [click here](#) to download video and slides of the meeting.

Mission & Vision

How Do I Participate?

Past Meetings

Membership

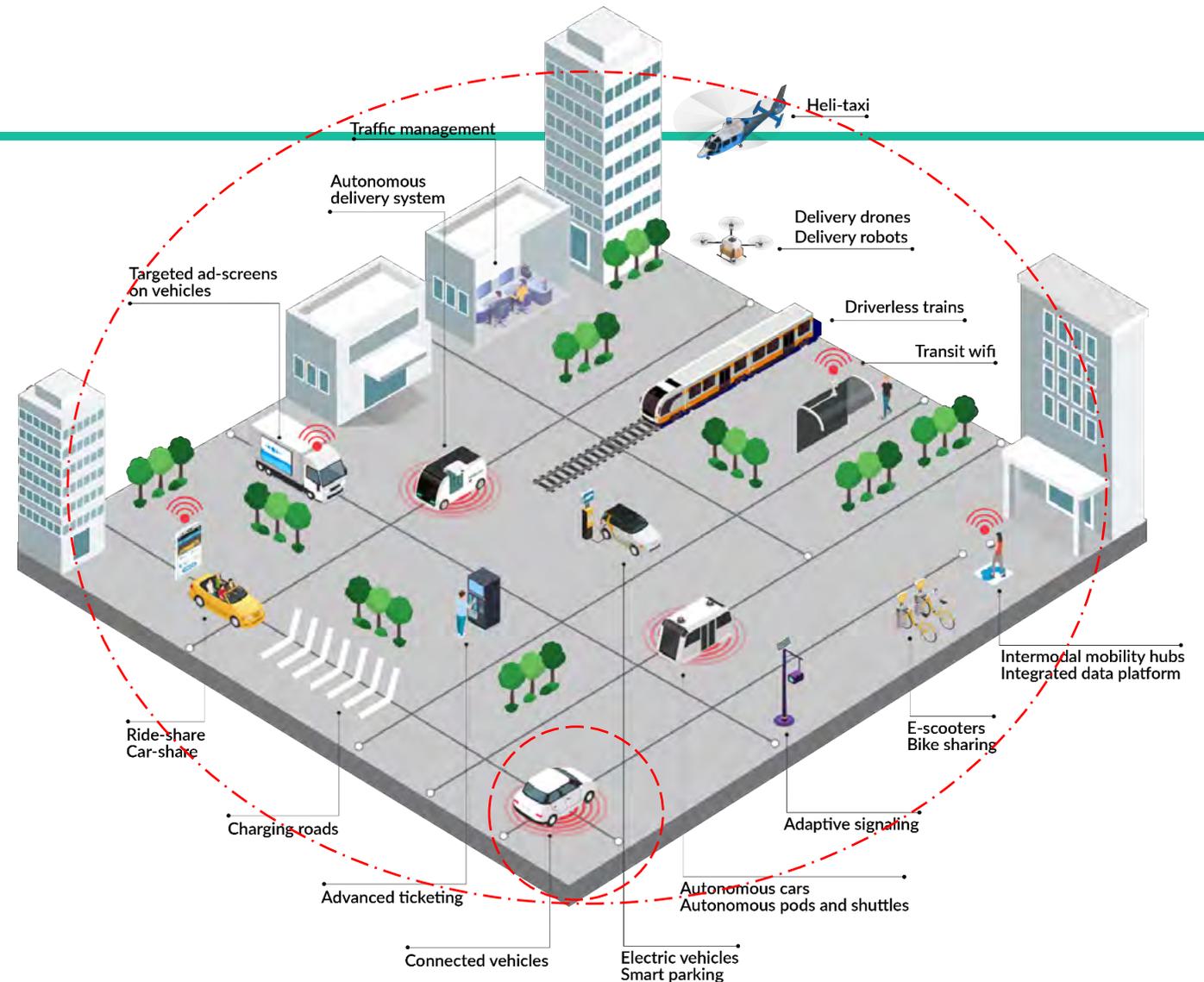
Documents



System Mobility and Emerging Technologies (SMET) : 2020-2021 Potential Action Plan Highlights

Understanding Emerging Technologies and System Impacts

- Developing a NCHRP 20-123 proposal to develop a strategic action plan and work plan that serves as a roadmap for the joint subcommittee's work





Joint Subcommittee on System Mobility and Emerging Technologies (SMET): Discussion

NCHRP Project 20-123 Research Proposal Discussion:

Joint Subcommittee on System Mobility and Emerging Technologies (SMET) Strategic Planning and Research Roadmap Development

Funding Program: NCHRP 20-123 (AASHTO Committee Support)

Project Purpose:

Develop a comprehensive strategic approach and action plan to coordinate the activities of the joint subcommittee on system mobility and emerging technologies activities that AASHTO, TRB and FHWA can use to guide their future activities.

Develop a longer-term research strategy to continue to advance the state of practice in system mobility and emerging technologies

Funding Amount: \$225,000

Project Scope:

In light of the AASHTO CPBM and CTSO Strategic and Action Plan it is important that leadership of these two groups come together to conduct a strategic planning session where specific needs (and related strategies and actions) can be discussed and a path forward is developed that identifies needed resources, support, meetings, conferences, and research. The need to do this now is urgent as an overall direction for the joint subcommittee is needed.

The task is more complex due to the nature of joint subcommittees and involves aligning two standing committees and their respective strategic plans and research agendas. In addition, SMET seeks to be a clearing house for similar topics for AASHTO groups and committees to further leverage resources and effort. The results from the strategic planning session will also be used to develop a research roadmap that will identify needed research projects and integrate these research needs into existing research roadmaps already developed by CPBM and CTSO



System Mobility and Emerging Technologies (SMET) : 2020-2021 Potential Action Plan Highlights (cont.)

- Considering to revisit the COVID-19 data survey – to include impacts on system analysis and technology budgets due to COVID-19 funding shortfalls
- Engage with AASHTO Inter-Committee working groups for Emerging Technologies to support cross committee research and work alignments
 - Connected and Automated Vehicles (CAV) ←
 - Shared Mobility/ Mobility as a Service
 - Drones
 - Electric Vehicles



System Mobility and Emerging Technologies (SMET) : 2020-2021 Potential Action Plan Highlights (cont.)

Best Practices

- Collaborate with National Operations center of Excellence (NOCoE) and TPM Pooled Fund on developing case studies that exemplify the importance and use of system data for decision making beyond the traditional applications
- Continue to hold bi-monthly subcommittee meetings that promote partnering sessions and the exchange of best practices
- Reach out to the subcommittee and working groups of both standing committees to identify work plan priorities and opportunities for collaboration and identify partner TRB committees

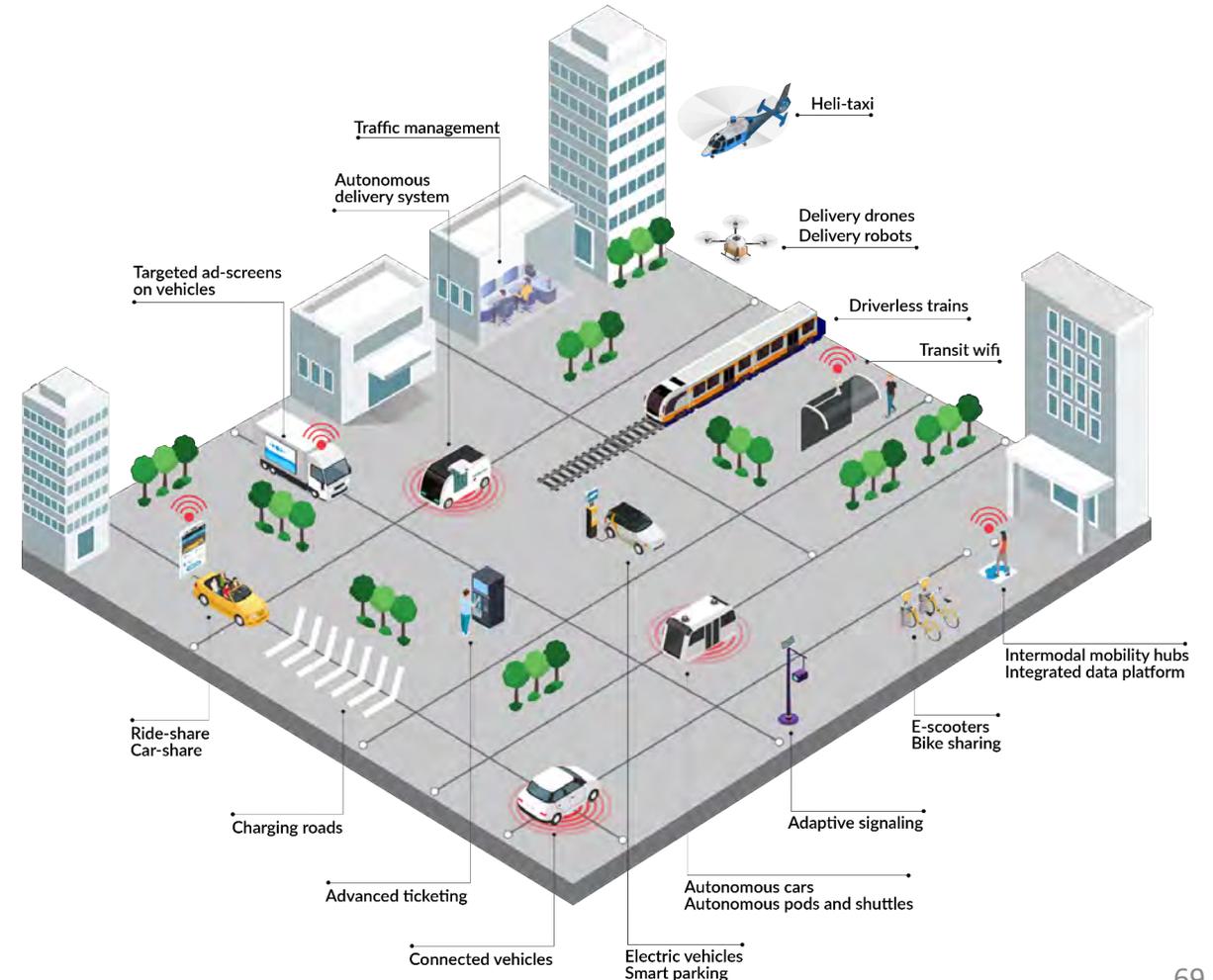


Joint Subcommittee on System Mobility and Emerging Technologies (SMET): Discussion

Understanding Emerging Technologies and System Impacts

Near Term Needs

- **Priorities?**
- **Focus areas?**
- **Emerging issues?**
- **Work plan needs?**





Joint Subcommittee on System Mobility and Emerging Technologies (SMET)

Reach out and join us:

- Chair, Daniela Bremmer (WSDOT) - bremmed@wsdot.wa.gov;
- Vice-chair, Jay Styles (VDOT), jay.styles@vdot.virginia.gov;
- Patrick Zelinski, (AASHTO - CTSO - staff lead), PZelinski@ashto.org;
- Matt Hardy (AASHTO – CPBM - staff lead), mhardy@ashto.org
- **Bi-Monthly Webinars/Virtual Meetings :**
 - Even Months, third Tuesday at 11:30 am Pacific (joint with AASHTO-CTSO)
 - **Next meeting: Tuesday , December 15th, 11:30 pst**
- **Website:**
 - <https://www.tpm-portal.com/community/cpbm/sm/>



Joint Subcommittee on System Mobility and Emerging Technologies (SMET): Roundtable

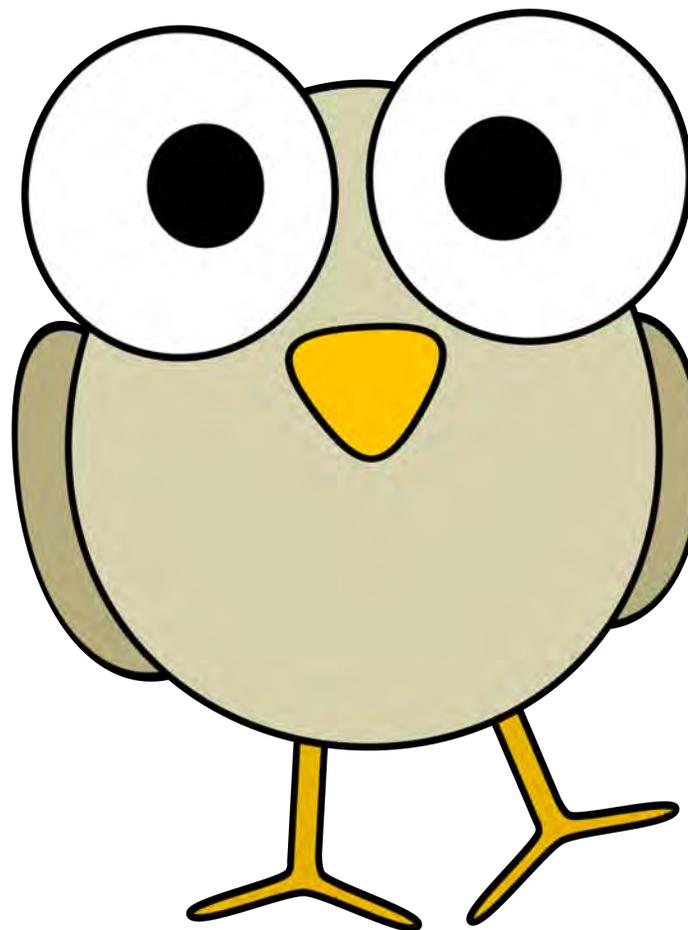
Roundtable: Member Updates & Highlights





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

- **Questions**
- **Suggestions**
- **Comments**





Policy and Rulemaking



Research

Mission: Work with membership to identify Research needs, provide updates on ongoing research and identify ways to implement research

- **Chair: Tamara P. Haas (tamarap.haas@state.nm.us) Co Chair: Vacant**
- **Meeting Cycle: 2nd Friday, 10 am ET**
- **Need assistance with tracking ongoing research in order to provide updates as well as ideas on how to better implement research. ny other background information about the subcommittee. Research is funding via NCHRP Programs for Problem Statements, Domestic Scans, Synthesis and Implementation.**



Research

Initiatives: Research into Practice, ideas on how to implement NCHRP Research (Research Implementation Roundtable)

Projects: Create webpage for Research Work Group

Updates to ongoing CPBM related NCHRP projects, and NCHRP projects nearing completion

News: Submitted 2 Problem Statements for FY22 NCHRP Funding

- 1) Building Risk-Management Momentum in Transportation Agencies**
- 2) Develop Methods to Allow Agencies to Incorporate Quantitative Risk Assessment at Project and Network Level**



Research

Call to action: Need a CPBM point of contact for each ongoing NCHRP project.

NCHRP Synthesis deadline is February 2021



TPM Pooled Fund Business – 2020 Accomplishments



TPM Portal

One-Stop Location for the TPM Community:

- TPM Library
- News and Announcements
- Events
- Training Hub
- Best Practices
- Tools
- Videos
- Community

TPM Portal:

<https://www.tpm-portal.com/>

TPM Portal Orientation Videos:

<https://www.tpm-portal.com/tpm-orientation-videos/>



TPM Pooled Fund Communications

- **NEW Publication** – *Fall 2020 TPM Newsletter* – Featuring COVID-19 and TPM Impacts - <https://www.tpm-portal.com/resource/tpm-newsletter-fall-2020/>
- TPM Now! Video Series – 7 videos published
- **NEW Videos** – *COVID-19 and TPM Impacts Video Series*
- Quarterly Web Calls - <https://www.tpm-portal.com/event-directory/>
 - January 2020 – Results of Fall 2019 TPM Peer Exchange
 - March 2020 – TPM Visualization
 - June 2020 – MODA Training and TPM Training Hub
 - September – TPM Training Roadmap
 - December 3, 2020 – Research Implementation



Capacity-Building – Training

Performance-Based Prioritization Using Multi-Objective Decision Analysis (MODA)



New!!
MODA
Training

Summary

This AASHTO training course was developed to educate and expose transportation practitioners to Multi-Objective Decision Analysis (MODA). Transportation agency decision-making today is quite complex; agencies must weigh investment decisions across numerous transportation performance management areas. This course describes in detail how an agency might implement MODA as an approach to help tackle those kinds of important decisions.

This course offers professional development hours (PDHs). To register for the course or to find more details about its curriculum, please click on the **External Link** listed below. This page will take you directly to the course's location in the online AASHTO store.

[Click here](#) to see the promotional flyer for the course.

Training and Informational Resource Hub

Filters

TPM Categories

- Communication
- Data
- Decision Making
- Measure
- Method

TPM Areas

- Air Quality
- Asset Management
- Bridge
- Pavement
- Freight
- Safety
- System Performance

Training Format

- Instructor-Led Training (ILT)
- Web-Based Training (WBT)
- Video

Cost

See All (43)

Posted On

Select a filter option

Sponsor

Select a filter option

Search by keyword:

Search

Reset

Show key

Sort by: Newest first

Performance-Based
Prioritization Using
MODA

Sponsored By: AASHTO

Asset Management for
Transportation

Sponsored By: AASHTO

Transportation Planning
Process

Sponsored By: FHWA

Transportation
Performance
Management for Safety -
Essentials

Sponsored By: FHWA

Register for MODA Training:

<https://store.transportation.org/Item/TrainingDetail?ID=4506>

TPM Training Hub:

<https://www.tpm-portal.com/training-hub/>



TPM Webinar Series

- **Bi-monthly Webinar Series - <https://www.tpm-portal.com/tpm-webinars/>**
 - TPM Webinar 1 – TPM Best Practices
 - TPM Webinar 2 – TPM and Target Setting Overview
 - TPM Webinar 3 – TPM Communications
 - TPM Webinar 4 – System Performance Management – Focus on Accessibility
- **Five-part Target Setting Miniseries (Summer 2020)**
 - Recorded sessions available for viewing on the TPM Portal: <https://www.tpm-portal.com/tpmmini/>



Other New Tools and Resources

- State Long-Range Plans: <https://www.tpm-portal.com/long-range-plans/>
- New CPBM Subcommittee Pages: (for example) <https://www.tpm-portal.com/community/cpbm/om/>
- MODAT Updates: <https://multiobjective.org>

The screenshot shows a webpage for the Subcommittee on Organizational Management. The page has a green sidebar on the left with the TPM logo and navigation links: HOME, RESOURCES, EVENTS, TOOLS, COMMUNITY, and ABOUT. The main content area has a blue header with the title "Subcommittee on Organizational Management". Below the header, there is a paragraph describing the subcommittee's role under the AASHTO Committee on Performance-Based Management (CPBM). A navigation bar contains links for "Mission & Vision", "How Do I Participate?", "Past Meetings", "Membership", and "Documents". The "Mission & Vision" link is active. The page content includes a section titled "Understanding Organizational Management" with a brief definition and a "Leadership" section listing key roles and names: Co-chair: Deanna Belden, Co-chair: Charlie Purcell, Secretary: Stacey Huston, AASHTO Liaison: Matt Hardy, and FHWA Liaison: Nelson Hoffman. A "Mission" section is also visible at the bottom.



Review Action Items



Wrap Up

- We hope you will join us for our next joint CPBM/TPM Pooled Fund Quarterly web call on Thursday, March 4, 2021 at 2:00 PM Eastern Time.
- Notes and materials from this meeting will be sent to all invitees. They will also be posted on the CPBM landing page and TPM Pooled Fund Members Only page on the TPM Portal.
- Visit the TPM Portal for tools and resources, including links to the TPM Training Hub, TPM Webinar Series slides and recorded session, videos, state performance-based plans, and much more content for the TPM Community!