



AASHTO Committee on Performance-Based Management

Transportation Performance Management

Research Symposium

Part 1: Research Needs
Wednesday, February 2, 2022
1:00 – 4:00 PM EST



Symposium Objectives

- **Generate TPM research needs**
- **Share ideas and thoughts on what is most needed by transportation agencies throughout the country**



Agenda



1:00 to 1:05 Welcome and Overview

**1:00 to 1:30 Background, History and Status of TPM
Research Projects**

**1:30 to 1:45 Sharing of Research Needs, Ideas, and
Thoughts**

1:45 to 3:15 Breakout Groups

3:15 to 3:45 Report Outs

3:45 to 4:00 Action Items and Next Steps

Research Topic Areas

01

Asset Management

Matt Haubrich

02

Risk Management

Jean Wallace

03

System Mobility and Emerging Technologies

Daniela Bremmer

04

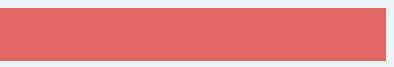
Organizational Management

Charlie Purcell & Deanna Belden

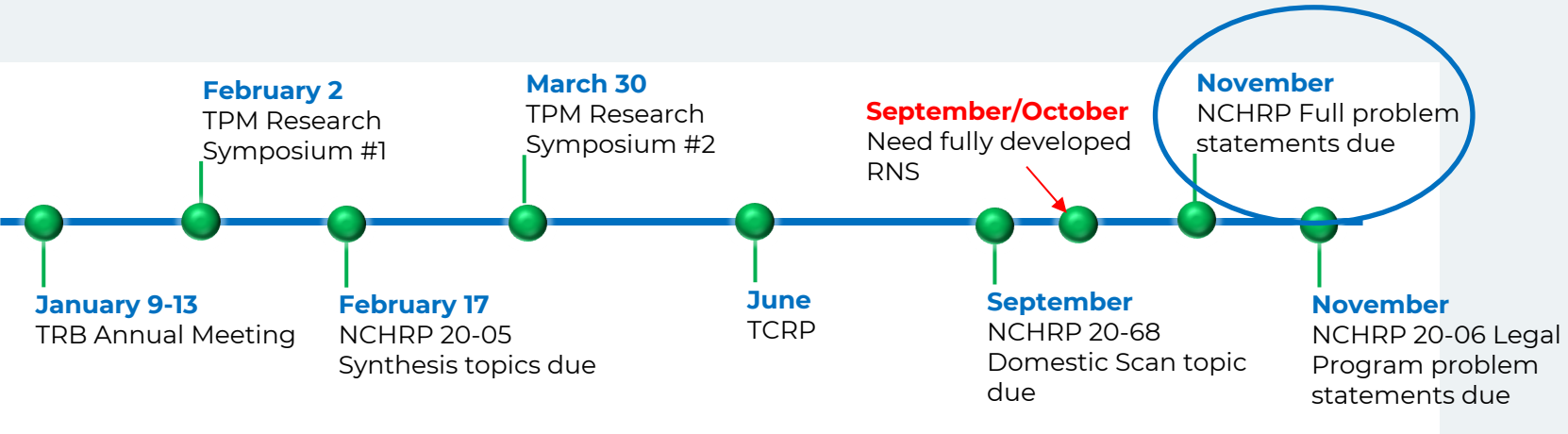




Background, History and Status of TPM Research Projects



Research Timeline



FHWA Research Projects Update

- **Steve Gaj, FHWA**
 - **William Johnson on behalf of Steve**



Research Management System

- Developed for TAM
- Transitioning to TPM

<https://www.tam-portal.com/rms-about/>



| Concepts | Candidates | Statements | Projects |
|---|--|--|---|
| 52 Research concepts in the Pool Add a new concept to the Pool | 18 Candidates considered for advancement this year | 7 Prioritized statements being developed for potential | 4 Programed projects in the pipeline View the current project pipeline |



NCHRP Projects Update

- **Aimee Flannery, AJE30 Research Coordinator, US DOT**
- **William Johnson, AJE20**
 - Recently Completed NCHRP Projects
 - Ongoing NCHRP Projects
 - FY2023 Proposed NCHRP Projects



NCHRP Projects Update

FY2019

| NCHRP Project # | Title |
|-----------------|---|
| 02-26 | Implementation of Life-Cycle Planning Analysis in a Transportation Asset Management Framework |
| 08-118 | Risk Assessment Techniques for Transportation Asset Management |
| 20-24(127) | Performance Management Implementation Concerns, Issues and Challenges |
| 20-123(01) | Transportation Asset Management Strategic Planning and Research Roadmap Development |



NCHRP Projects Update

FY2020

| NCHRP Project # | Title |
|-----------------|--|
| 23-09 | Scoping Study to Develop the Basis for a Highway Standard to Conduct an All-Hazards Risk and Resilience Analysis |
| 20-05/51-05 | Synthesis: State DOT and MPO Coordination on Performance Management |
| 08-127 | Emerging Issues: Impact of New Disruptive Technologies on the Performance of DOTs |
| 23-07 | Guidebook for Identifying and Implementing Forecasting Techniques for Effective Target Setting |
| 23-08 | Guidelines for Incorporating Maintenance Costs into a Transportation Asset Management Plan |
| 20-123(04) | Risk Management Strategic Planning and Research Roadmap Development |



NCHRP Projects Update

FY2021

| NCHRP Project # | Title |
|-----------------|---|
| 08-113 | Integrating Effective Transportation Performance, Risk, and Asset Management Practices (continuation) |
| 08-138 | Connecting Transportation Asset Management (TAM) and Transportation System and Management Operations (TSMO) |
| 08-136 | Guidance on Using Performance-Based Management Approaches for Maintenance |
| 08-137 | Further Enhancements and Content for the AASHTO Transportation Asset Management Guide—A Focus on Implementation (TAM Guide III) |
| 23-15 | Prioritization of Risks Related to Connected and Automated Vehicles and Emerging Technologies |
| 23-16 | Implementing and leveraging Artificial Intelligence and Machine Learning at Departments of Transportation |
| 08-146 | Integrating Resiliency into Transportation System Operations |
| 08-143 | Impact of Spatial Segmentation on Travel Time Reliability Performance Measures |



NCHRP Projects Update

- **FY2022**

- Building Risk-Management Momentum in Transportation Agencies (NCHRP)
- Develop Methods to Allow Agencies to Incorporate Quantitative Risk Assessment at Project and Network Level (NCHRP) ✕
- Joint Subcommittee on System Mobility and Emerging Technologies (SMET): Strategic Planning Session and Research Roadmap Development (NCHRP 20-123) ✕

NCHRP Projects Update

Recently Submitted

- **Synthesis**
 - Best Practices of Linking Required Planning/Performance Documents/Processes
 - Program and Project Delivery Measures
 - Advancing Technology in Asset Data Collection
- **Implementation**
 - Implementation of NCHRP 23-06: A Guide to Computation and Use of System Level Valuation of Transportation Assets
- **Committee Support**
 - Application and Use of BIM to Support Data Governance Procedures for Transportation Agencies
 - Developing a Robust Education, Training and Workforce Development Program for TAM and TPM
- **Full NCHRP**
 - Establish an All-Hazards Risk and Resilience Analysis Research Program to Develop a National Standard
 - Keeping Inventory and Condition Data Up to Date
 - Analysis and Assessment of Federal Performance Management Data
 - EDI (Equity, Diversity, and Inclusion) and Other Indicators to Improve TAM Impact and Outcomes
 - A Guide for Creating Effective Visualizations



Sharing of Research Needs, Ideas, and Thoughts



Cross Cutting Topics



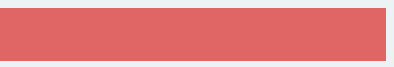
- **Performance Measures**
- **Information and Systems**
- **Monitoring and Adjustment**

- **Organization and People**
- **Resource Allocation**
- **Strategy and Planning**





Breakout Groups



Instructions

Move to Breakout Groups

1. There will be two rounds of breakouts
2. Choose the two groups you would like to join
3. Go to your first round breakout room
4. After the first round, choose your second round breakout room
5. You will be given a warning when each breakout will end and you return to the main group

Instructions

Your Assignment

1. Discuss what are the most pressing research needs in the topic area
2. Is there a project that is already in the pipeline that is related to the topic? (recently completed, active, or in the process of being initiated)
3. What is most important to achieve for the research need?
4. Use the Word template to enter research needs



Breakout Groups Report Outs



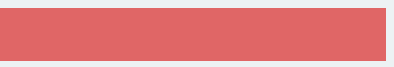
Group Reports

- **Asset Management**
- **Risk Management**
- **System Mobility and Emerging Technologies**
- **Organizational Management**





Action Items and Next Steps





Thanks

Do you have any questions?

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