Transportation Performance Management Webinar Series

Highlights from the Improving Safety with Performance Management Peer Exchange

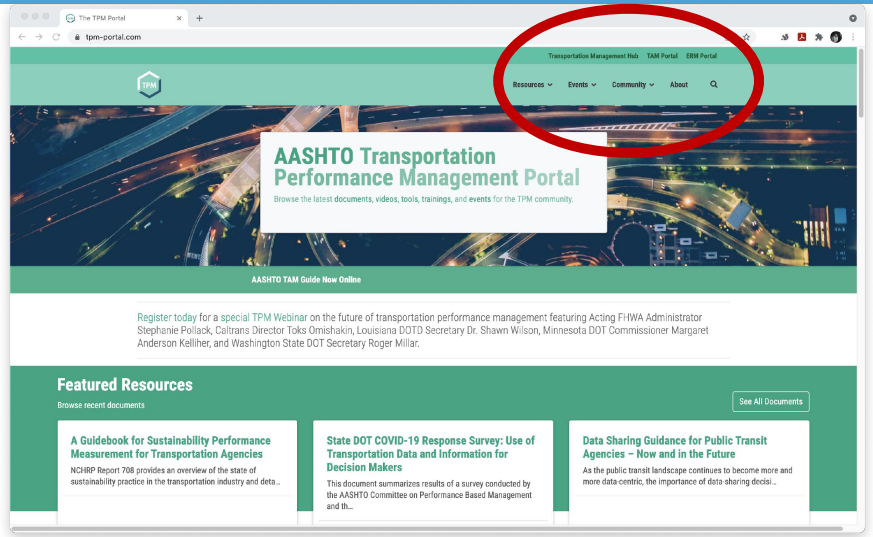
Sponsored by AASHTO and FHWA

Wednesday, November 20, 2024

TPM Webinar 24

Transportation Performance Management Webinar Series

- Our TPM webinar series is held every two months, on topics such as communications, system performance management, data sources, and many more to come!
- Today is the 24th webinar in our bi-monthly series
- We welcome ideas for future webinar topics and presentations
- Use the webinar chat panel during the webinar
  - Submit questions for today's presenters
  - Submit ideas for future webinar topics



Find us on the AASHTO TPM Portal
https://www.tpm-portal.com

AASHTO 2024 Conference on Data Management & Analytics, Planning, and Performance-Based Management

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AASHTO 2024 Conference on Data Management & Analytics, Planning, and Performance-Based Management

September 17–20, 2024

Hyatt Regency St. Louis at The Arch | St. Louis, Missouri

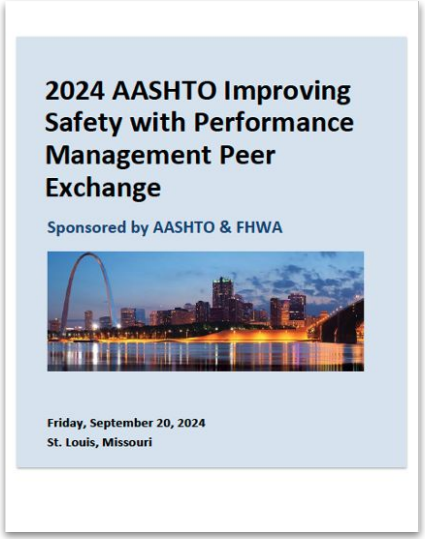
Participating AASHTO Committees:

- Committee on Data Management & Analytics
- Committee on Planning
- Committee on Performance-Based Management

Materials from the AASHTO CPBM Annual Meeting are now available on the TPM Portal: https://www.tpm-portal.com/events/2024-aashto-cpbm-annual-meeting/

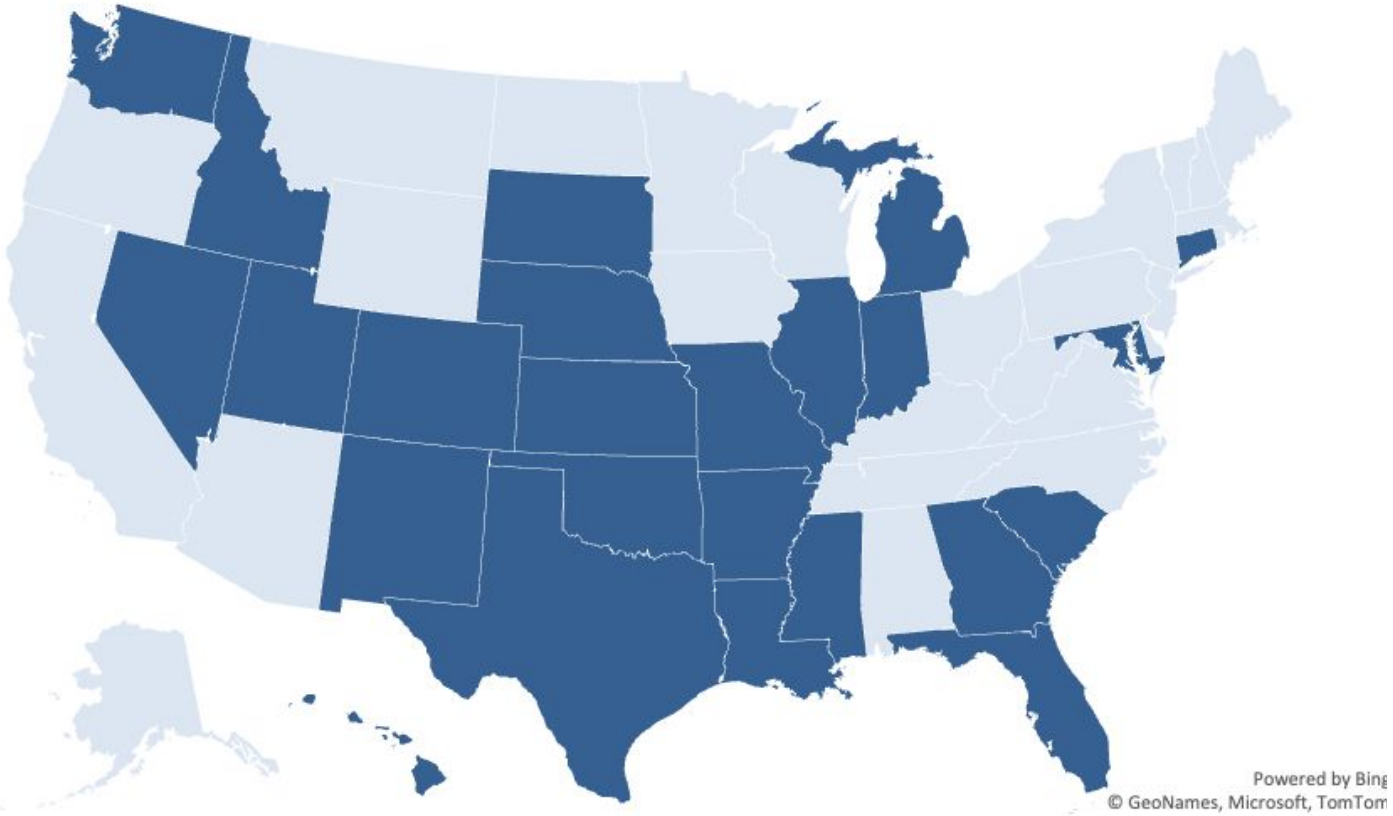
Peer Exchange Purpose & Summary

- Discuss safety countermeasures & indicators
- Examine ways to incorporate safety considerations early into project scoping & planning
- Advance state of safety performance management practices
- Gain knowledge of available resources
- Prioritize future safety performance management initiatives for AASHTO and FHWA



Peer Exchange Summary can be downloaded here: https://www.tpm-portal.com/wp-content/uploads/sites/13/2024/11/Improving-Safety-with-Performance-Management-Peer-Exchange-Summary-110124.pdf

States Attending 2024 Improving Safety with Performance Management Peer Exchange



36 State DOT Participants
24 States

Peer Exchange Participants

Name	Organization
Matthew Binaco	Connecticut DOT
Sam Coldiron	Arkansas DOT
Robert Cornelius	Washington DOT
Tara Cullum	Oklahoma DOT
Korey Donahoo	Nebraska DOT
Sammy Holcomb	Mississippi DOT
Jeremy Hunter	Indiana DOT
Robert Innis	Illinois DOT

Name	Organization
Travis Brooks	Arkansas DOT
Alexandria Collins	New Mexico DOT
Patrick Cowley	Utah DOT
Rachel Davis	Colorado DOT
Meredith Hill	Maryland DOT
Ryan Huff	Nebraska DOT
Kirk Hutchinson	Florida DOT
Valerie Jimenez	Kansas DOT

Peer Exchange Participants

Name	Organization
William Johnson	Colorado DOT
Kwanpyo Ko	South Carolina DOT
Jason Lacombe	Louisiana DOT
Mark Leiferman	South Dakota DOT
Karen Miller	Missouri DOT
Mike Moriarty	Kansas DOT
James Padilla	Texas DOT
Sutapa Samanta	Maryland DOT

Name	Organization
Lester King	Connecticut DOT
Rosa Kozub	New Mexico DOT
Jason Lange	Illinois DOT
Maaza Mekuria	Hawaii DOT
William Morgan	Illinois DOT
Alma Mujkanovic	Georgia DOT
Kevin Sablan	Idaho DOT
Joni Seymour	Oklahoma DOT

Peer Exchange Participants

Name	Organization
Brad Sharlow	Michigan DOT
Huiwei Shen	Florida DOT
Brian Sheehan	Illinois DOT
Mark Wooster	Nevada DOT

Other Attendees

Lucille Cawley	FHWA
Anna McLaughlin	AASHTO
Mshadoni Smith-Jackson	FHWA
Hyun-A Park	SPP
Ayonda Dent	FHWA
Charles Meyer	FHWA
Josh Stott	FHWA
Lori Richter	SPP

Webinar Agenda

2:00 Introduction & Agenda

- Jean Wallace, Minnesota DOT, Vice Chair, AASHTO CPBM.

2:05 FHWA Perspective

- Charles Meyer.

2:15 AASHTO Perspective

- Anna McLaughlin, AASHTO.

2:25 Summary of Safety Survey

- Lori Richter, Spy Pond Partners, LLC.

2:30 Highlights from Featured Agency Practices

- Karen Miller, Missouri DOT.

2:50 Reflections on Safety Project Prioritization Exercise

- Patrick Cowley, Utah DOT.

Webinar Agenda

3:20 Safety Summit Summary & Highlights

- Kelly Hardy, AASHTO.

3:25 Group Discussion on Priorities for Improving Safety Performance Outcomes

- Moderated by Hyun-A Park, Spy Pond Partners, LLC.

3:30 Wrap-Up.

- Hyun-A Park, Spy Pond Partners, LLC.

FHWA Perspective

Charles Meyer

FHWA

FHWA Safety Resources

- FHWA Transportation Performance Management Website: https://www.transportation.gov/grants/dot-navigator/transportation-performance-management-tpm
- FHWA Highway Safety Programs page: https://highways.dot.gov/safety
- Highway Safety Improvement Program (HSIP) page: https://highways.dot.gov/safety/hsip

AASHTO Perspective

Anna McLaughlin

AASHTO

AASHTO Safety Resources

- AASHTO Committee on Performance-Based Management Website: https://transportation.org/cpbm/
- AASHTO Committee on Safety Website: https://transportation.org/safety/
- Transportation Management Hub: https://www.transportationmanagement.us/
- TPM Portal: https://www.tpm-portal.com/
- AASHTO Safety Initiative: https://transportation.org/policy/safety-initiatives
- AASHTO State DOT Studies on Safety Advancements (AASHTO Transportation Policy Forum) – April 2024: https://transportation.org/policy/wp-content/uploads/sites/56/2024/05/AASHTO-TPF-Safety-Case-Studies-April-2024.pdf
- Online Mural Digital Resource Map: https://app.mural.co/t/safespace6165/m/safespace6165/1686239124009/683719fa4e53ff51156bea69b0e146e4033fb1d6

Summary of Safety Survey

Lori Richter

Spy Pond Partners, LLC

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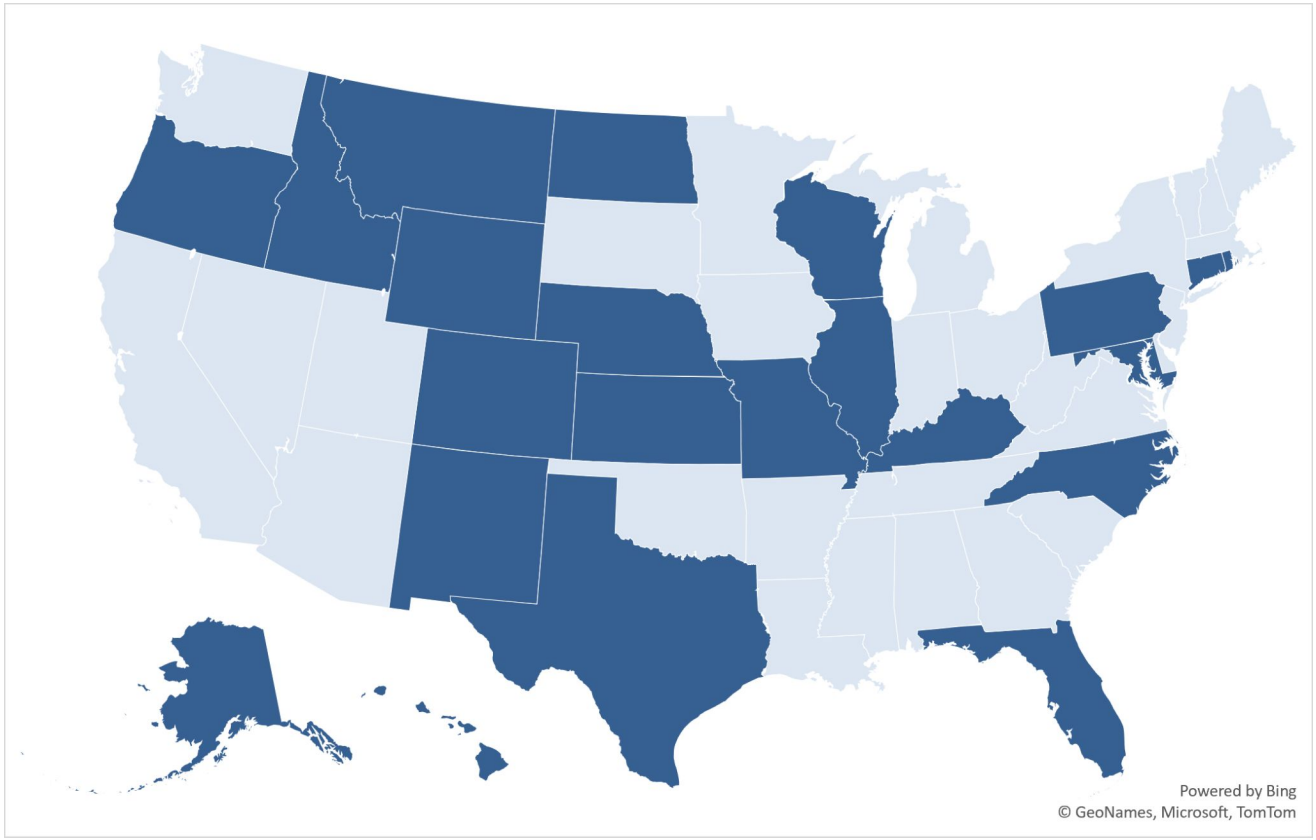
Safety Survey on Effectively Measuring Safety Performance

- Survey aimed at gathering insights into the current state of transportation safety practices, challenges, and opportunities
- Peer exchange session provided:
  - overview of findings
  - key trends
  - challenges
  - best practices
  - opportunity to learn from each other

41 Total Survey Responses

- AASHTO Region 1 - 17%
- AASHTO Region 2 - 15%
- AASHTO Region 3 - 10%
- AASHTO Region 4 - 29%
- 29% Anonymous

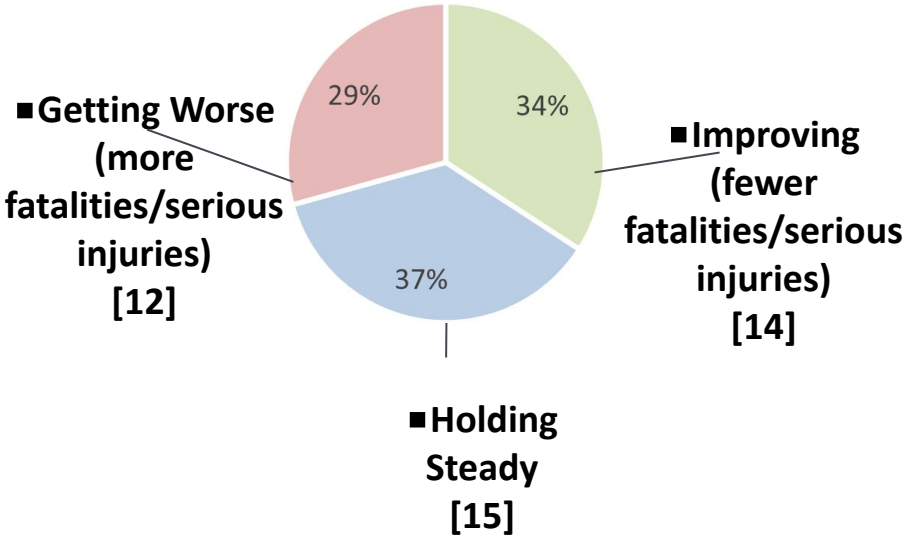
Location of State Highway Safety Office

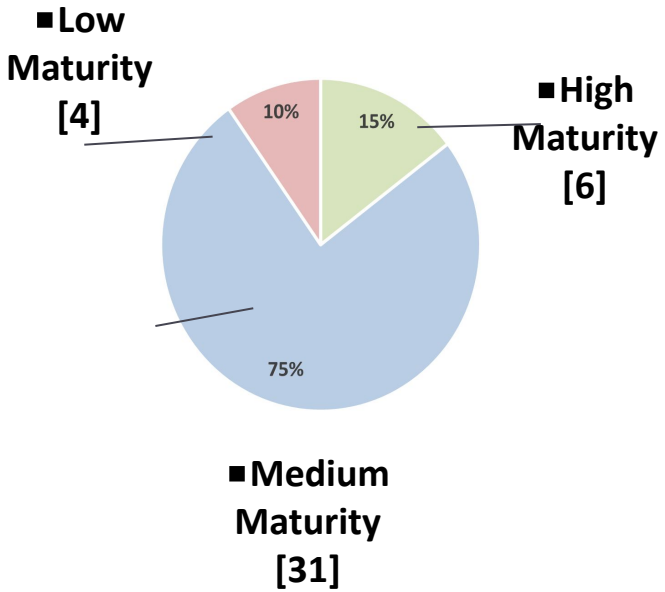


Within the State DOT

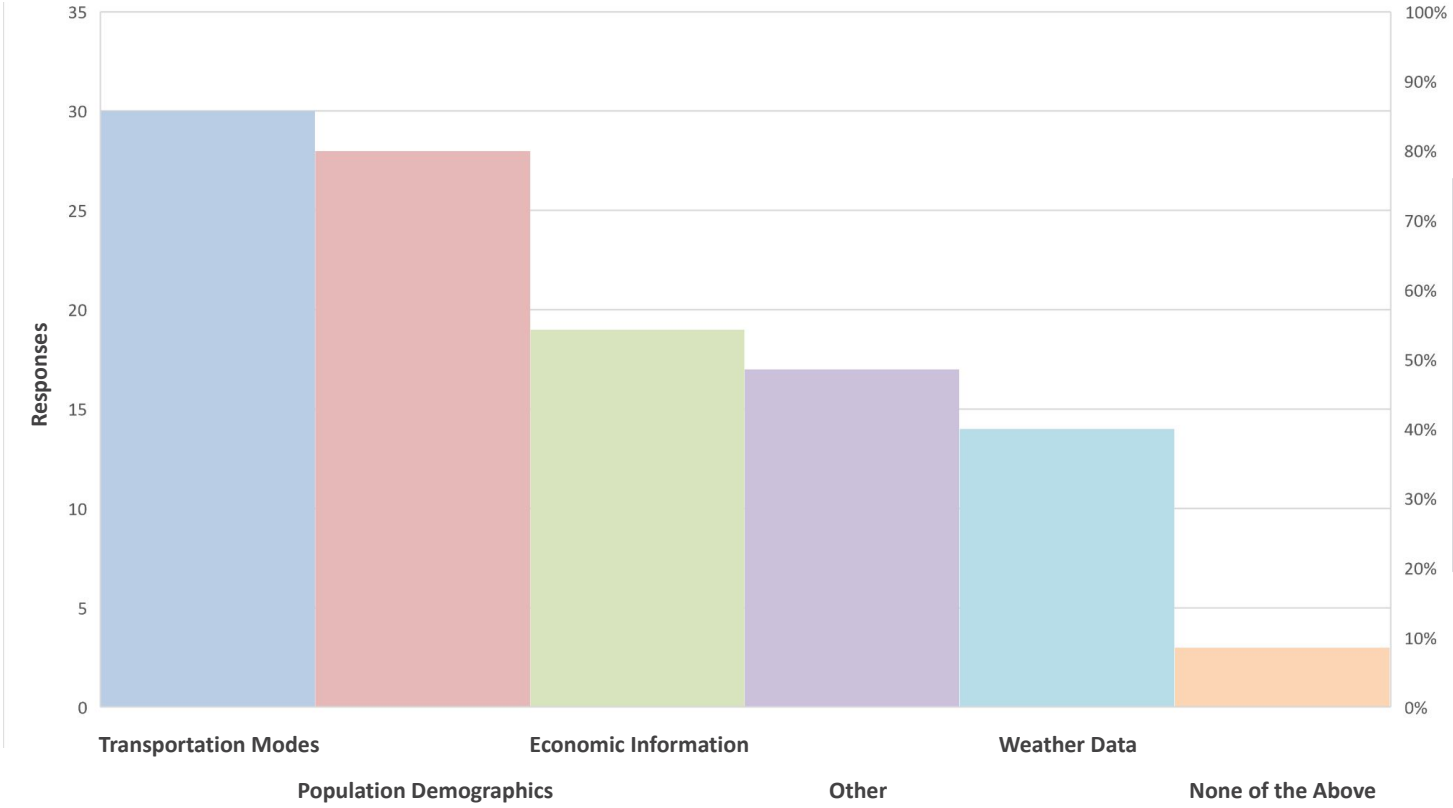
Separate from the State DOT

Safety Trends & Maturity





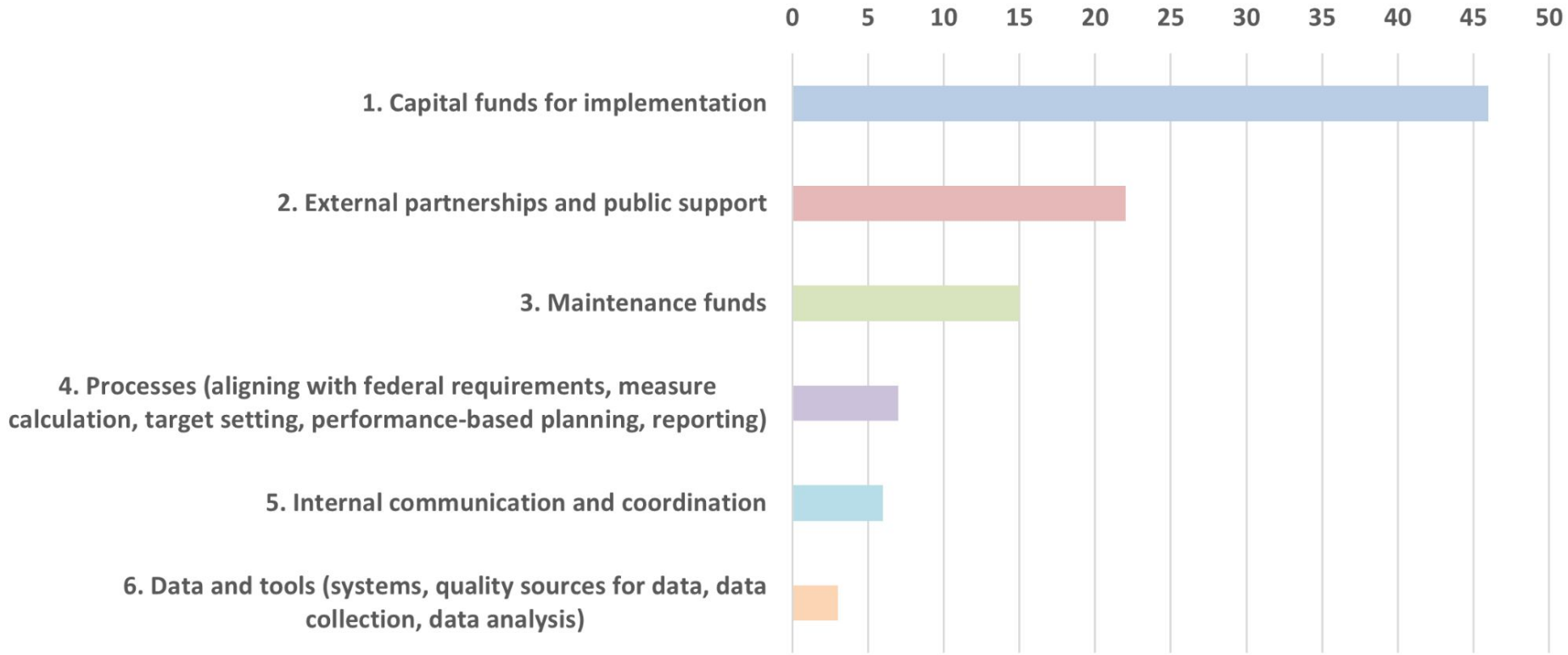
Data Sources Used (Beyond CRASH)



"Other" Sources:

- HSM Data
- Health Opportunity Index
- AADT
- Roadway Asset Data

Safety Countermeasure Implementation Challenges



Addressing Risk & Resilience with Safety Performance Management

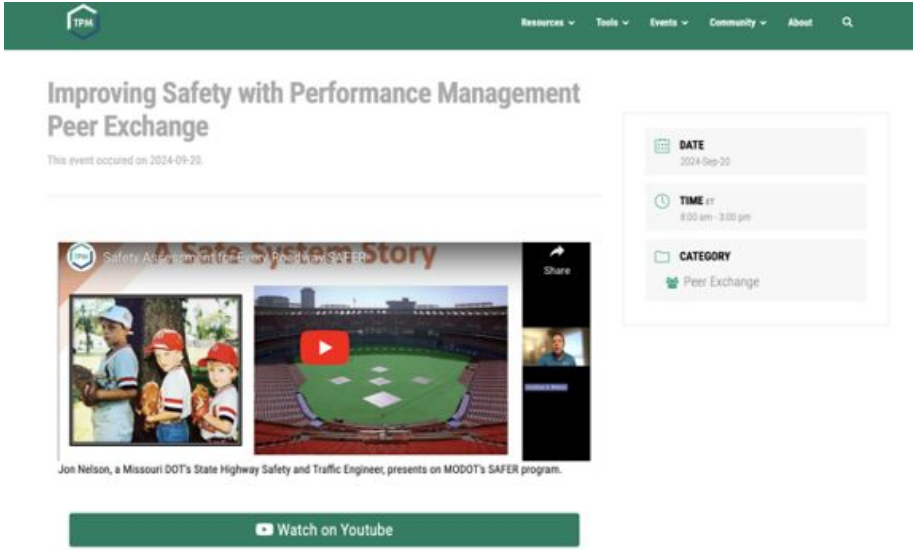
How is your Agency Addressing Risk and Resilience through Safety Performance Management?	# of Responses	% of Respondents
Including safety considerations in plans (R&R, SHSP, HSP, VRU, etc.)	36	88%
Prioritizing funding for safety solutions to reduce the likelihood and impact of serious injuries and fatalities	32	78%
Reducing risks for vulnerable users	30	73%
Identifying critical infrastructure for safety improvements	24	59%
None of the above	3	7%

Other Methods for Reducing Risk
• Systematic safety improvements to intersections and segments (statewide horizontal Curves)
• Updating the Strategic Highway Safety Plan (SHSP) to include more risk factors

Overview of Agency Practices

Karen Miller

Missouri DOT



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State DOT Practitioner Videos

- Utah DOT: Performance Metrics in UDOT's Highway Safety Improvement Program (HSIP) – video features Jeff Lewis with an executive overview presented by Patrick Cowley
- Oklahoma DOT: Mechanisms, Methods, & Measures to Support Safety – video and executive overview presented by Tara Cullum
- Indiana DOT: Indiana Safety Performance Management – video and executive overview presented by Jeremy Hunter
- Kansas DOT: Noteworthy Safety Practices Driving to Zero – video features Vanessa Spartan with an executive overview presented by Mike Moriarty
- Missouri DOT: Safety Assessment for Every Roadway (SAFER) – video features Jon Nelson with an executive overview presented by Karen Miller

State DOT Practitioner Videos

- Georgia DOT: Systemic Safety Countermeasures & Collaborative Approaches to Improve Safety Outcomes – video features Kelli Roberts and Ron Knezevich
- Michigan DOT: Incorporating Safe System Approach Into Project Planning & Programming – video features Garrett Dawe with an executive overview presented by Brad Sharlow
- Texas DOT: Leveraging Data in Risk and Performance Management for Better Employee Safety Outcomes – video features Monica Aleman-Smoot and Jim Padilla with an executive overview presented by Jim Padilla
- Arizona DOT: Drones Technology in the Arizona Road Safety Assessments Program – video features David Oldham

Links to State DOT Practitioner Videos

- YouTube Channel for practitioner videos: https://www.youtube.com/watch?v=juzLw4Q7KX0&list=PLhb6y-OCjQyQ7YP8qEUy4q9xtWIK89PW4
- Improving Safety with Performance Management video collection page: https://tpm-portal.com/collections/2024-safety-improvement-peer-exchange

- TPM Portal Video Library: https://www.tpm-portal.com/video-library/

Key Components of Safety Practices

- Incorporate a systemwide approach
- Coordination and collaboration across the agency
- Partnerships with a variety of stakeholders
- Safety culture
- Proactive data analysis
- Focus on things that you can control, influence, and measure
- Ask “Why” to find solutions
- Think about safety improvements when scoping all projects

Key Components of Safety Practices

- Use benefit-cost analysis to assist with prioritization
- Understand and address vulnerable road users (VRUs)
- Consider implementing multiple countermeasures
- Tell a compelling story
- Share data and information with the public via dashboards

Highlight video:
https://www.youtube.com/watch?v=mUQX0_e4_kc

Reflections on Breakout Session

Patrick Cowley

Utah DOT

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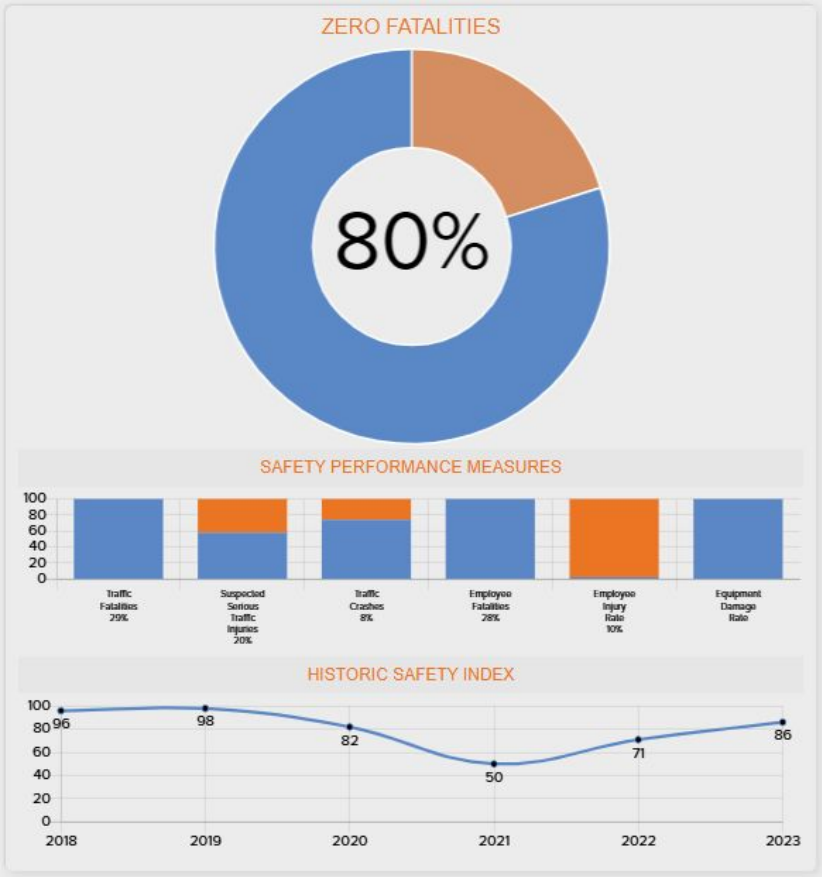
Applying Safety Performance Measures to Prioritizing Safety Projects

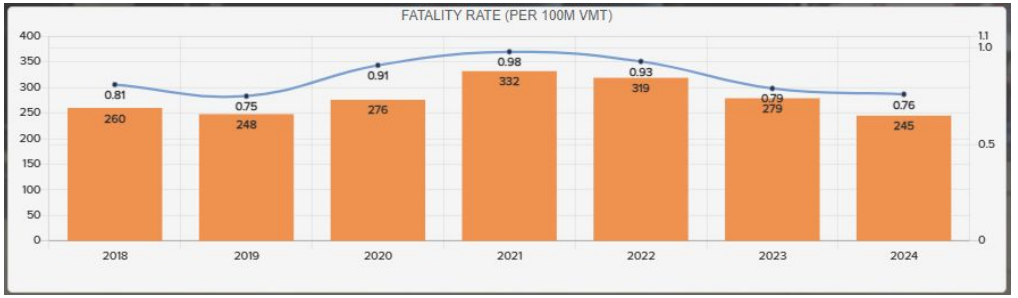
- Agencies are routinely faced with tradeoffs in programming safety projects.
- During this session, participants prioritized safety projects based on their potential to improve safety outcomes, up to the budgeted amount.
- As part of the session each table was assigned a set of 8 potential safety projects.
- Using the information and data provided for each project, tables ranked projects from one (1) - highest priority to eight (8) - lowest priority.
- Groups then reported back on their summary observations and results.

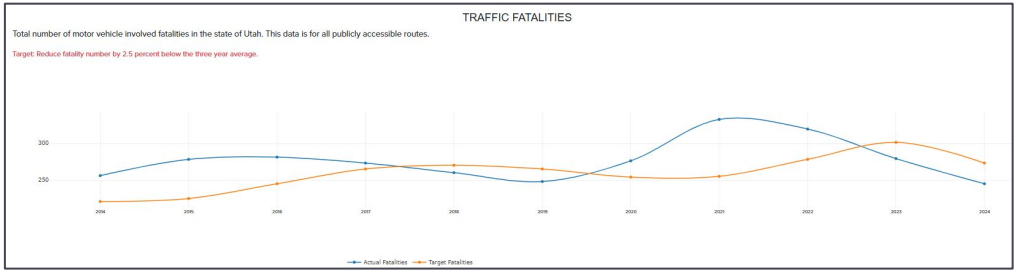
Interaction Between Safety & Other Performance Objectives

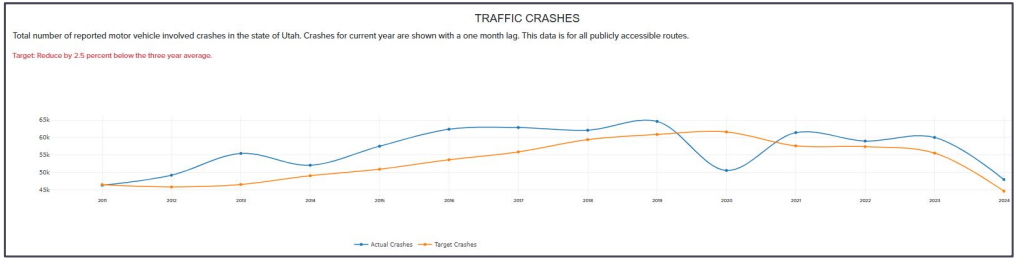
- Safety is primary because it directly affects the traveling public
- Asset management ensures reliable infrastructure and safe traveling conditions
- Mobility impacts risk of accidents and potentially air quality

Utah's Highway Safety Context

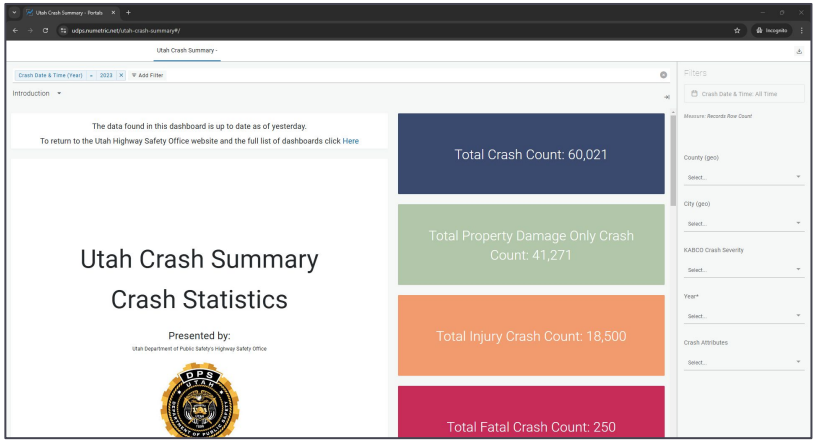


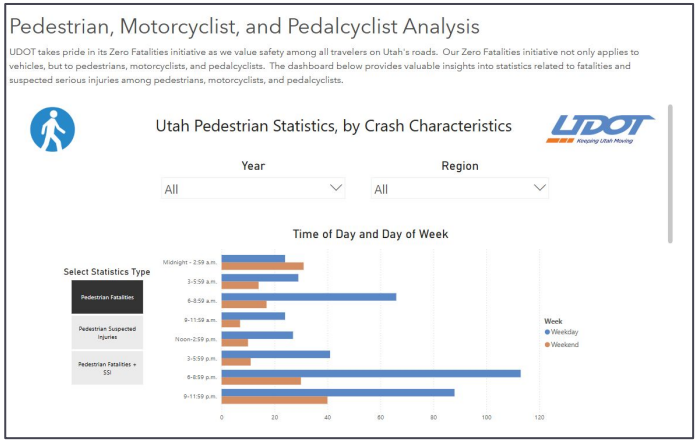


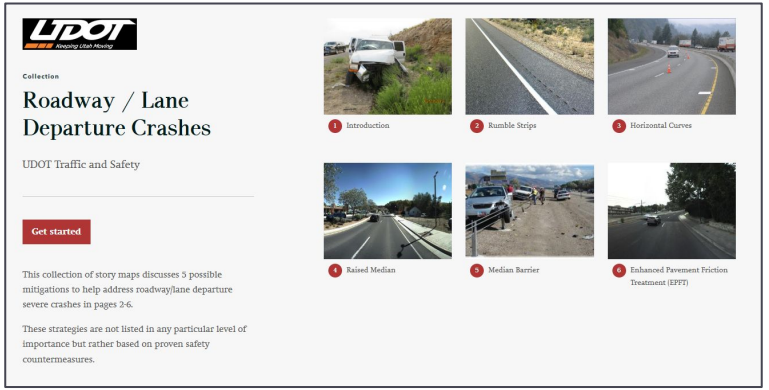




Utah's Highway Safety Context







Utah's HSIP List Prioritization Workshop

Group 1

Rank	Project	Description	VRU Notes	Region	Cost	Performance Outcomes	Budget (up to $8M)	Notes
	A	Install raised median along a 0.22 mile stretch of urban highway.		1	$680,000	Mitigate run-off road to the left and midblock angle crashes with anticipated reduction of fatal crashes expected to be 0.06 per year and reduction of serious injury crashes by 0.15 per year. Anticipated reduction of 6.79 total crashes per year.		SR-26 (Riverdale Road) in Riverdale. Milepoint 1.08 to 1.3.
	B	Upgrade signing and pavement messages on hundreds of miles of rural and urban highway (mostly interstate freeway)		4	$850,000	Signing and messages will be upgraded to the current standards to mitigate for Wrong Way Drivers (mostly on rural interstates). Estimated annual reduction of 0.64 fatal crashes per year and 2.94 total crashes.		I-15 from the Arizona border to Scipio (Milepoint 0 to 189) I-70 from I-15 to the Colorado border (Milepoint 0 to 231)
	C	Improve corridor lighting along 0.72 mile stretch of urban arterial	4 of 5 severe crashes were pedestrian-involved	1	$1,001,000	0.72 miles of lighting will be upgraded with anticipated reduction in nighttime fatal crashes by 0.13 per year and reduction of total crashes by 2.46 per year		SR-126 from Milepoint 3.32 to 3.64, and from Milepoint 5.7 to 6.1
	D	Enhance curve warning signs and curve delineation along an 36 mile stretch of mountainous, rural two-lane highway		1	$650,000	36 miles of enhanced curve delineation with anticipated reduction of crashes on curves of 0.1 fatal crashes per year and 8.45 total crashes per year.		US-89 from Milepoint 460.9 to 497.6, from Logan City to Bear Lake
	E	Enhanced curve delineation, dynamic curve warning systems, radar feedback signs along 9.5 miles or rural, mountainous highway		1	$2,637,000	9.5 miles of enhanced curve delineation, curve warning systems, and radar feedback signs, with anticipated reduction of crashes on curves of 0.5 fatal crashes per year and 7.44 total crashes per year.		SR-167 from Milepoint 1.6 to 11.12
	F	Overlay roadway and install shoulder and centerline rumble strips along 1.2 miles of rural highway		1	$946,000	Mitigate run-off road left and run-off road right crashes with anticipated reduction of fatal crashes by 0.04 per year.		SR-165 from Milepoint 8.5 to 9.7, south of Logan, UT
	G	Reconstruct southbound I-15 off ramp at Provo Center Street (urban area)		3	$3,000,000	Reduction in front-rear and single vehicle crashes expected to be 8.96 per year		I-15 Southbound off ramp at Provo Center St (I-15 MP 266.2). Ramp Milepoint 0.0 to 0.37
	H	Provide or improve street lighting to provide better visibility for pedestrians and bicyclists along 2 mile stretch of urban highway	Single fatality in 2023 was pedestrian-involved	1	$1,149,000	Project will enhance lighting over 2 mile stretch and is anticipated to reduce 0.29 fatal crashes per year		SR-273 from Milepoint 0.1 to 2.1

Utah HSIP Award Logic & Process

Application Generation

Application Processing

Exercise Rankings vs. Utah DOT's Project Rankings

Exercise Letter	Description	Ave. Peer Exchange Table Rank	BCR	UDOT Rank
B	Upgrade signing and pavement messages on hundreds of miles of rural and urban highway (mostly interstate freeway).	4.4	20.18	1
C	Improve corridor lighting along 0.72 mile stretch of urban arterial.	2.2	20.18	1*
D	Enhance curve warning signs and curve delineation along an 36 mile stretch of mountainous, rural two-lane highway.	3.2	18.89	3
H	Provide or improve street lighting to provide better visibility for pedestrians and bicyclists along 2 mile stretch of urban highway.	3.4	14.83	4

* Only a portion is HSIP-eligible; BCR is based on HSIP portion

Utah DOT Actual Project Rankings

Exercise Letter	Description	Ave. Peer Exchange Table Rank	BCR	UDOT Rank
A	Install raised median along a 0.22 mile stretch of urban highway.	5.4	10.70	5
E	Enhanced curve delineation, dynamic curve warning systems, radar feedback signs along 9.5 miles or rural, mountainous highway.	3.4	8.24	6
G	Reconstruct southbound I-15 off ramp at Provo Center Street (urban area).	8	7.52	7
F	Overlay roadway and install shoulder and centerline rumble strips along 1.2 miles of rural highway.	6	1.58	21

Peer Exchange Insights

- Some groups estimated BCR by comparing project cost to impact
  - Vulnerable Road Users
  - Departures
- Others prioritized fatal and serious accidents mitigated
- Other factors considered
  - Budget optimization
  - Project scope (length, district)
- Additional data that would have been helpful
  - Actual BCR
  - AADT
  - VMT

AASHTO Safety Summit Summary & Insights

Kelly Hardy

AASHTO

Group Discussion on Priorities for Improving Safety Performance Outcomes

Hyun-A Park

Spy Pond Partners, LLC

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Safety Recommendations & Priorities

Category	List of Proposed Improvements	Urgent	Biggest Positive Impact	Regular	Total Votes
Mode Shift	Events - targeted peer-to-peer exchanges - Focus on changing culture of safety	0	0	12	**12**
KM Around Safety	After action assessments - guidance tools	0	5	2	**7**
Research	Artificial Intelligence (AI) - use for targeted searches of safety guidelines	0	0	7	**7**

Safety Recommendations & Priorities

Category	List of Proposed Improvements	Urgent	Biggest Positive Impact	Regular	Total Votes
Policy/ Legislation	Enhance federal safety legislation on “Big 3” - Impaired driving - Safety belts - Distracted driving	1	0	2	**3**
System Prioritization	Use of telematics data (readily available on smart phones/watches	0	2	1	**3**
System Prioritization	Automated incident detection	0	3	0	**3**

Safety Recommendations & Priorities

Category	List of Proposed Improvements	Urgent	Biggest Positive Impact	Regular	Total Votes
System Prioritization	Automated incident detection	0	3	0	**3**
Technology & Proven Safety Counter-measures	Active transportation data (near misses, etc.)	0	1	1	**2**
Research	Evaluate safety tools & initiatives	1	0	0	**1**

Safety Recommendations & Priorities

Category	List of Proposed Improvements	Urgent	Biggest Positive Impact	Regular	Total Votes
System Prioritization	Emphasize PBPP communication, changing culture	1	0	0	**1**
System Prioritization	Automated speed enforcement	0	0	1	**1**
Research	Better leverage and index existing safety data	0	0	0	**0**

Safety Recommendations & Priorities

Category	List of Proposed Improvements	Urgent	Biggest Positive Impact	Regular	Total Votes
Research	Pictorial relationships (include org/responsibilities)	0	0	0	**0**
Mode shift	Non-traditional measures (roadway characteristics) & prediction	0	0	0	**0**
Mode shift	Freight safety measures	0	0	0	**0**
System Prioritization	Driver refresher training + first aid	0	0	0	**0**

- **All TPM Webinars:**
  https://www.tpm-portal.com/event-directory/tpm-webinars/

Save the Dates!

AASHTO CPBM/TPM TSP Quarterly Meeting (virtual), CEO Panel: Critical Issues in Transportation, December 5, 2024, featuring:

- Current AASHTO President, Commissioner Garrett Eucalitto from Connecticut DOT
- Executive Director Carlos Braceras from Utah DOT
- Commissioner Marie Therese Dominguez from New York State DOT

Join us in 2025 for TPM Webinars!

Watch your inbox for the Fall 2024 TPM Newsletter, which continues the theme of Improving Safety with Performance Management!

Webinars Typically Begin at 2:00 PM Eastern Time

information or to register:
TPM-Portal.com