

Best Practices in Highway Maintenance Performance Measuring

9th National Conference on TAM: Making Asset Management Work in Your Organization

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providing engineering solutions to improve pavement performance

Presentation Topics

- Domestic scan overview
- Scan findings
 - Monitoring conditions
 - Influencing decisions
 - Improving accountability
- Recommendations and next steps



Scan Team Members

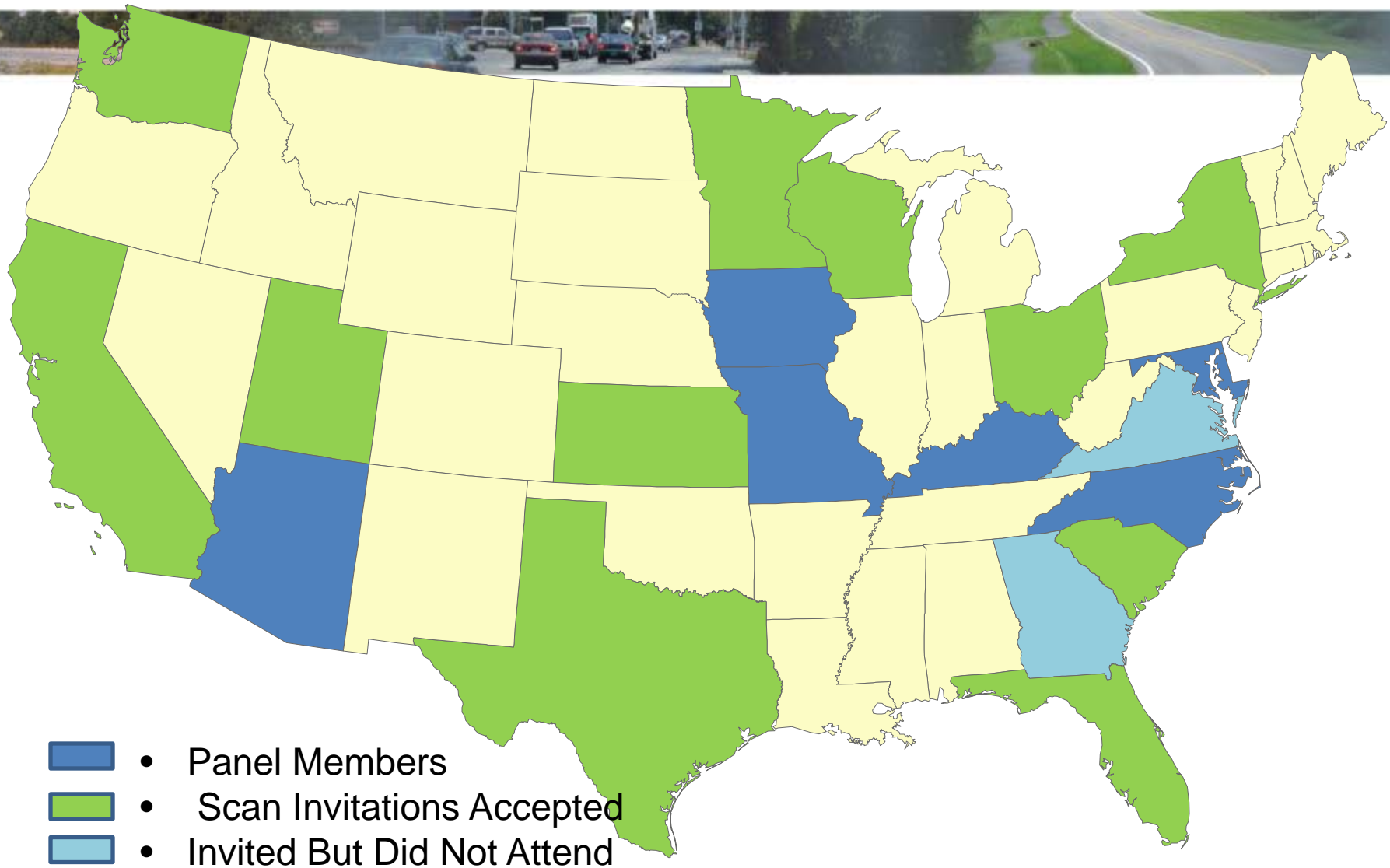
- Russ Yurek (Chair) (MDSHA)
- Jennifer Brandenburg (NCDOT)
- Lonnie Hendrix (AZDOT)
- Matt Haubrich (Iowa DOT)
- Nancy Albright (KTC)
- Don Hillis (MoDOT)
- Louis Rodriguez (FHWA)
- Katie Zimmerman (SME) (APTech)



Primary Focus: System Performance

- Improve highway management effectiveness
- Demonstrate accountability
- Understand maintenance conditions and needs
- Set priorities
- Document the relationship between dollars expended with outcomes achieved

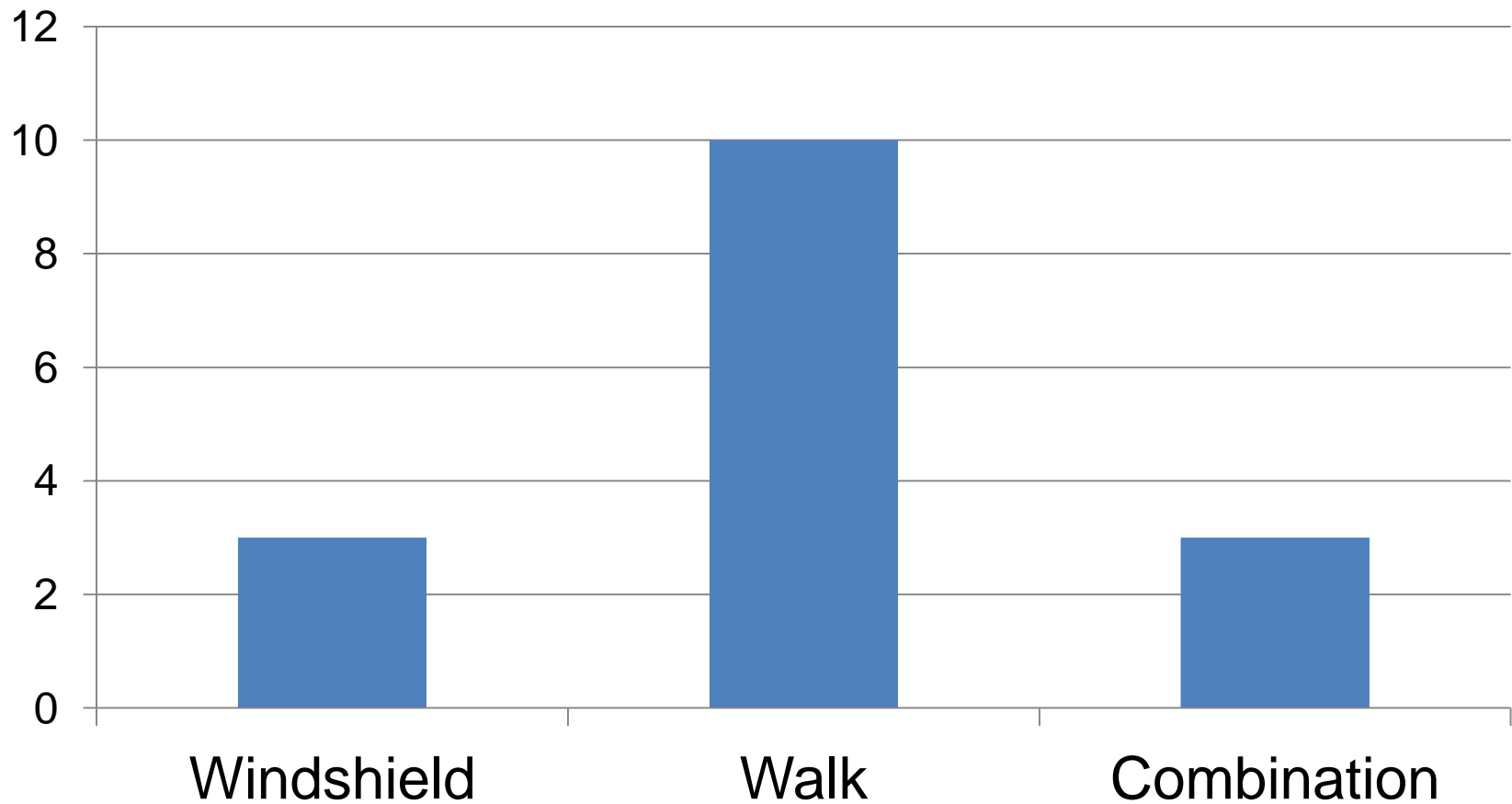
Scan Participants



Scan Topics

Day	Morning	Afternoon
1	<ul style="list-style-type: none">•Opening Session•Advantages & Disadvantages to Pass/Fail & LOS Approaches	<ul style="list-style-type: none">•Impact of Agency Approach to Sampling on Quality, Cost, and Use of Data•Use of Innovations in Data Collection
2	<ul style="list-style-type: none">•Use of MQA Data for Maintenance Budgeting & Resource Allocations	<ul style="list-style-type: none">•Linking Customer Expectations With Performance Targets•Strategies for Building Buy-In & Accountability Among Field Personnel
3	<ul style="list-style-type: none">•Presenting & Selling Results	<ul style="list-style-type: none">•Open Session•Wrap-Up & Closing Session

Scan Findings – Monitoring Conditions



Scan Findings – Monitoring Conditions



Pass/Fail Approach	Graded LOS Approach	Hybrid Approach
Caltrans Florida DOT Iowa DOT Kansas DOT Maryland SHA	New York State DOT North Carolina DOT South Carolina DOT Texas DOT Washington State DOT	Arizona DOT Kentucky DOT Missouri DOT Ohio DOT Utah DOT Wisconsin DOT



Scan Findings – Monitoring Condition



Agency	Number of Samples	Sampling Percentage	Agency	Number of Samples	Sampling Percentage
Arizona DOT		2.5%	Missouri DOT		10%
Caltrans		20%	New York State DOT		4%
Florida DOT		9%	North Carolina DOT	23,000	
Iowa DOT		5%	South Carolina DOT	1,440	
Kansas DOT		3%	Texas DOT		5%
Kentucky DOT		2%	Washington State DOT		3%
Maryland SHA		30%	Wisconsin DOT		1.5%



Scan Findings – Influencing Decisions

- Budgeting approaches
 - Needs-based budgeting (Texas DOT)
 - Formula- or history-based budgeting (KTC & Kansas DOT)
 - Zero-based budgeting (Florida & Utah DOTs)
- Customer surveys influence targeted LOS



Scan Findings – Influencing Decisions

The screenshot shows the 'Show Me Your Buzz' app interface. At the top, it displays 'Carrier', signal strength, Wi-Fi, and the time '3:29 PM'. Below this is a table with columns for 'Weight (lb)', 'Hours', 'Beer (12 oz)', 'Wine (5 oz)', and 'Liquor (1.5 oz)'. The table contains five rows of data. Below the table, a yellow banner displays '0.076%' and 'You're buzzed!' with icons for a woman and a man. Below the banner, a white box contains the text: 'You're buzzed! You could be arrested for drunk driving. Designate a sober driver.' At the bottom, there is a 'Disclaimer' section with the MoDOT logo on the left and a 'CALL A CAB TAXI' button on the right.

Weight (lb)	Hours	Beer (12 oz)	Wine (5 oz)	Liquor (1.5 oz)
145	1	1		
150	1.5	2		0
155	2	3	0	1
160	2.5	4	1	2
165	3	5	2	3

0.076%
You're buzzed!

You're buzzed! You could be arrested for drunk driving. Designate a sober driver.

Disclaimer

MoDOT

CALL A CAB
TAXI

**Missouri DOT –
*Show Me Your
Buzz* App**



Scan Findings – Influencing Decisions

- MQA results are not commonly used to manage maintenance funds across Districts. Instead, they are used to help Districts make better use of available funds
- Use of performance data for needs-based budgeting helps agencies communicate impacts
- Only allocate part of the budget based on needs
- Results are used to a varying degree to hold field personnel accountable
- Customer feedback must be used carefully



Scan Findings – Improving Accountability Internally

- Some agencies use performance data in evaluations (NCDOT) but it depends on the amount of data collected
- Holding people accountable helped change the culture (MoDOT and NCDOT)
- Need sufficient data to report performance by subsets or MQA is considered to be a central office activity with no impact on field personnel








Scan Findings – Improving Accountability Externally

- Wisconsin DOT, Highway Operations Report

Traffic Control and Operations

Visible signs, strong guardrails, well-timed signals and other traffic control features help drivers safely get where they're going.

<p>C</p> 	<p>Night reflectivity is diminished. Some signals and other systems experience moderate outages. Guardrail is functionally sound, but has some structural deterioration.</p>
<p>A</p> 	<p>Stripes, signs and delineators are highly visible at night. Traffic signals, lighting, and other traffic operations systems are fully functional. Guardrail is sound and functional.</p>
<p>D</p> 	<p>Night reflectivity is greatly diminished. Some signals and other systems must be turned off. Guardrail is beginning to fail.</p>
<p>B</p> 	<p>Night reflectivity is slightly diminished. Some signals and other systems experience minimal outages.</p>
<p>F</p> 	<p>Night reflectivity is significantly compromised. Many signals and other systems must be turned off. Guardrail is failing.</p>



Scan Findings – Improving Accountability Externally

- Washington State DOT MAP Summary

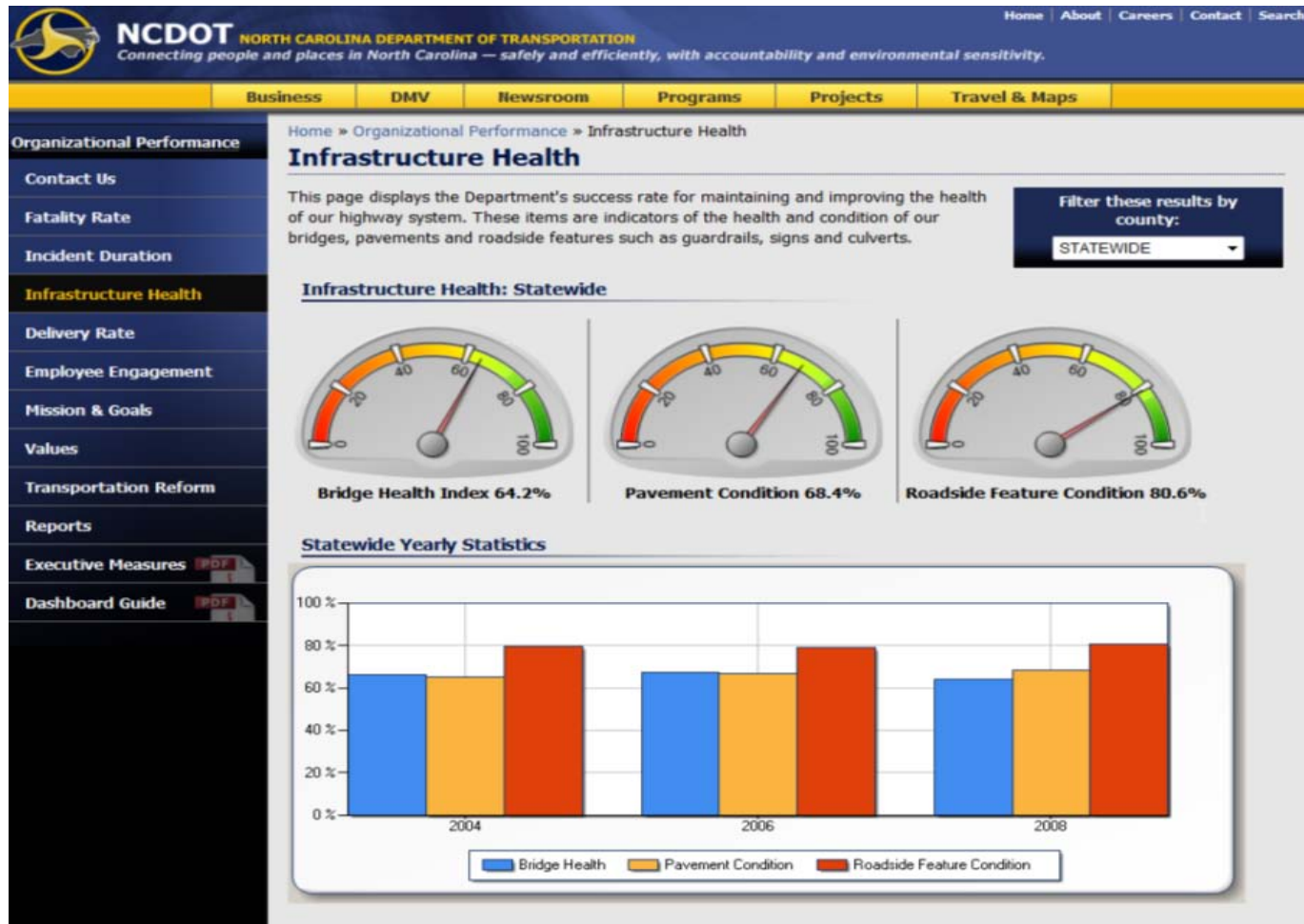
Maintenance Accountability Process Activity Service Level Targets and Service Levels Delivered CY 2010 - Statewide

Activity	1.0 +	1.9 A -	2.0 +	2.9 B -	3.0 +	3.9 C -	4.0 +	4.9 D -	5.0 +	5.9 F -
Group - 1 Roadway Maintenance and Operations										
1A1 Pavement Patching, Repair & Crack Sealing						⊙	✓			
1A3 Shoulder Maintenance					⊙	✓				
1A4 Sweeping and Cleaning		✓	⊙							
Group - 2 Drainage Maintenance and Slope Repair										
2A1 Maintain Ditches			✓	⊙						
2A2 Maintain Culverts							⊙	✓		
2A3 Maintain Catch Basins and Inlets					✓		⊙			
2A4 Maintain Detention/Retention Basins						✓	⊙			
2A5 Slope Repair				✓	⊙					



Scan Findings – Improving Accountability Externally

- North Carolina DOT Performance Dashboard



Scan Findings – Improving Accountability Externally

- Minnesota DOT Online Community

Reports | Admin | Your time zone: (GMT-05:00) Eastern Time (US / Canada) | Welcome, Karla | Sign Out

 Minnesota Department of Transportation
Your Destination... Our Priority

Mn/DOT Talk

HOME ACTIVITIES PEOPLE RESOURCES

 Welcome to the Community

What's Happening This Week

Welcome back to Mn/DOT Talk

We hope you had a great 4th of July! This week in Mn/DOT Talk we have a new survey on logo signs posted along the interstates. Check out **Hungry yet?** to give us your thoughts on the topic. And if you didn't have a chance to log in last week, please take a moment to complete our other signs-themed activity, **What's Up?** and give your opinion about criteria being considered for alternative uses of our electronic overhead signs. Every member who completes both of these activities will be entered into a raffle to win **one of five \$15 Amazon e-gift certificates!**

Then, in our latest discussion, **What Do You Listen To?**, let us know what radio stations you listen to while you're in your car.

We'd also like to thank Lori T. for posting this delightful photo of a little visitor to her farm this spring. Feel free to add your favorite local photos in the **Minnesota Treasures** gallery so that we can feature more of what makes Minnesota special in our weekly homepage announcements.

 Little Visitor - Lori T.

Since You've Been Gone

Your last visit was on 8-Jul-2010 3:14 PM

WHAT IS NEW

Some of the new activities since your last visit.

Discussion Contributions

What Do You Listen To?: 5
Bike riding and helmets!!: 1

Survey Respondents

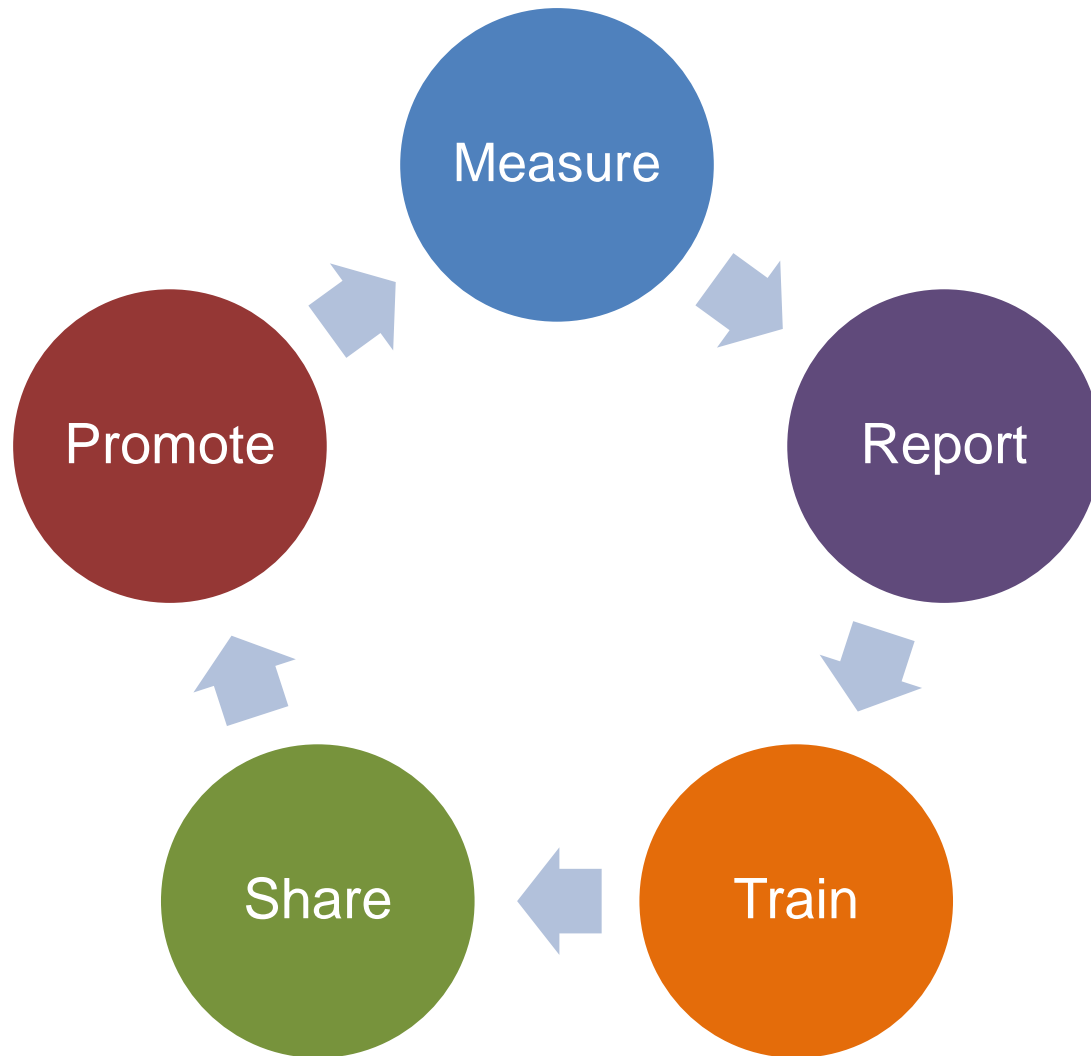
What's Up?: 2
Hungry yet?: 9

Who's Online



Internet 100%

Recommendations



Next Steps

- Advance findings & best practices
- Support the implementation of recommendations through AASHTO & FHWA
 - Develop plans for a technology exchange
 - Investigate the development of common performance measures for preservation, environment, mobility, & safety
 - Develop training





Thank you!

For more information, contact:

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