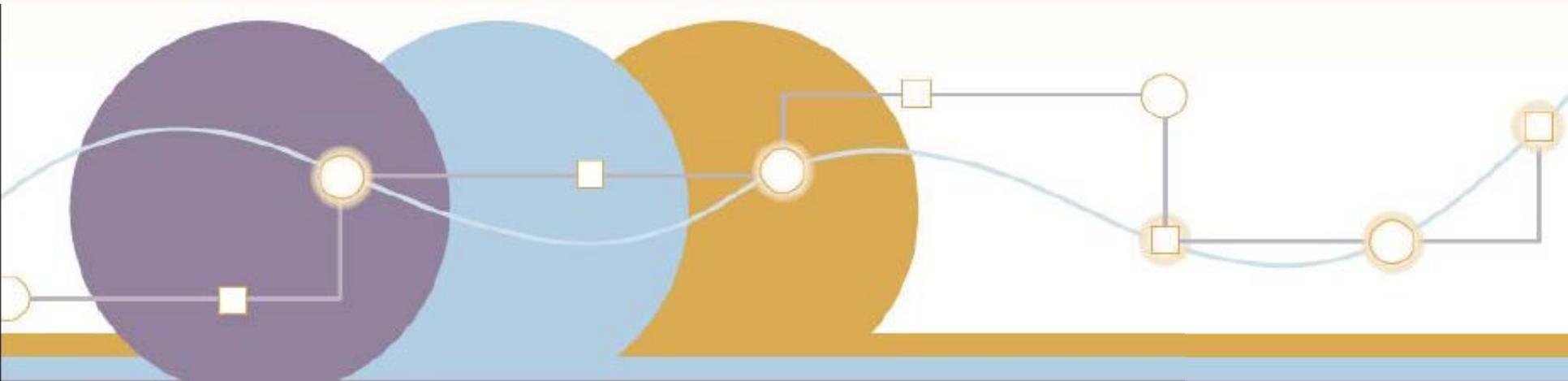


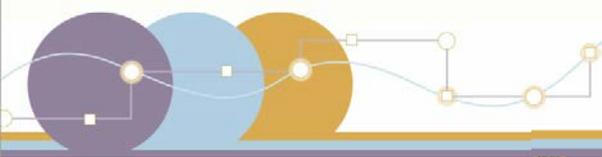
Implementation of MAP-21 Performance Provisions

A Focus on Pavement Condition and Asset Management

2014 Arizona Pavement/Materials Conference

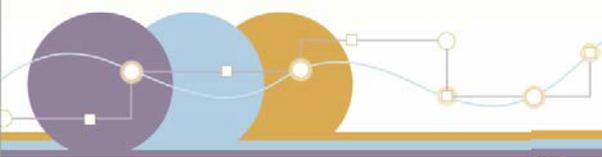
Federal Highway Administration
November 19, 2014





***How is performance
incorporated into MAP-21
and how will regulations be
implemented?***





The MAP-21 Charge (23 USC 150(a) - Declaration of Policy)

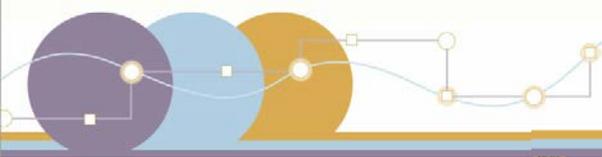
Performance Management

Will:

- transform the Federal program
- provide a means to the most efficient investment of funds

By:

- refocusing on national transportation goals,
- increasing accountability & transparency, and
- improving project decision making

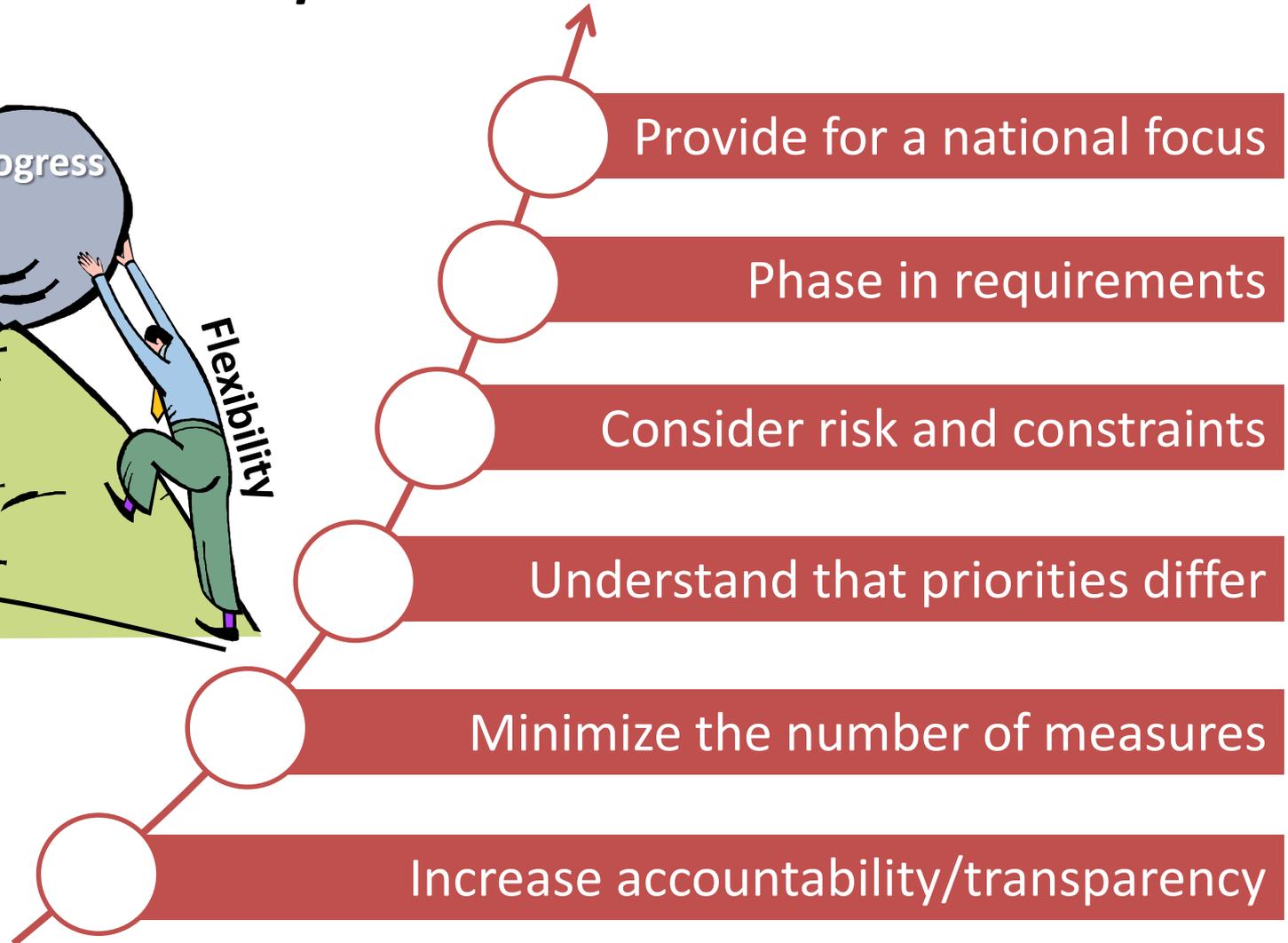


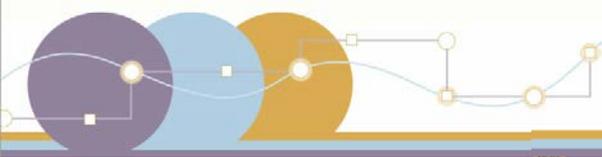
MAP-21 Background-Performance Elements

- **National Goals**
- **Measures**
- **Targets**
- **Plans**
- **Reports**
- **Accountability and Transparency**



Implementation Principles

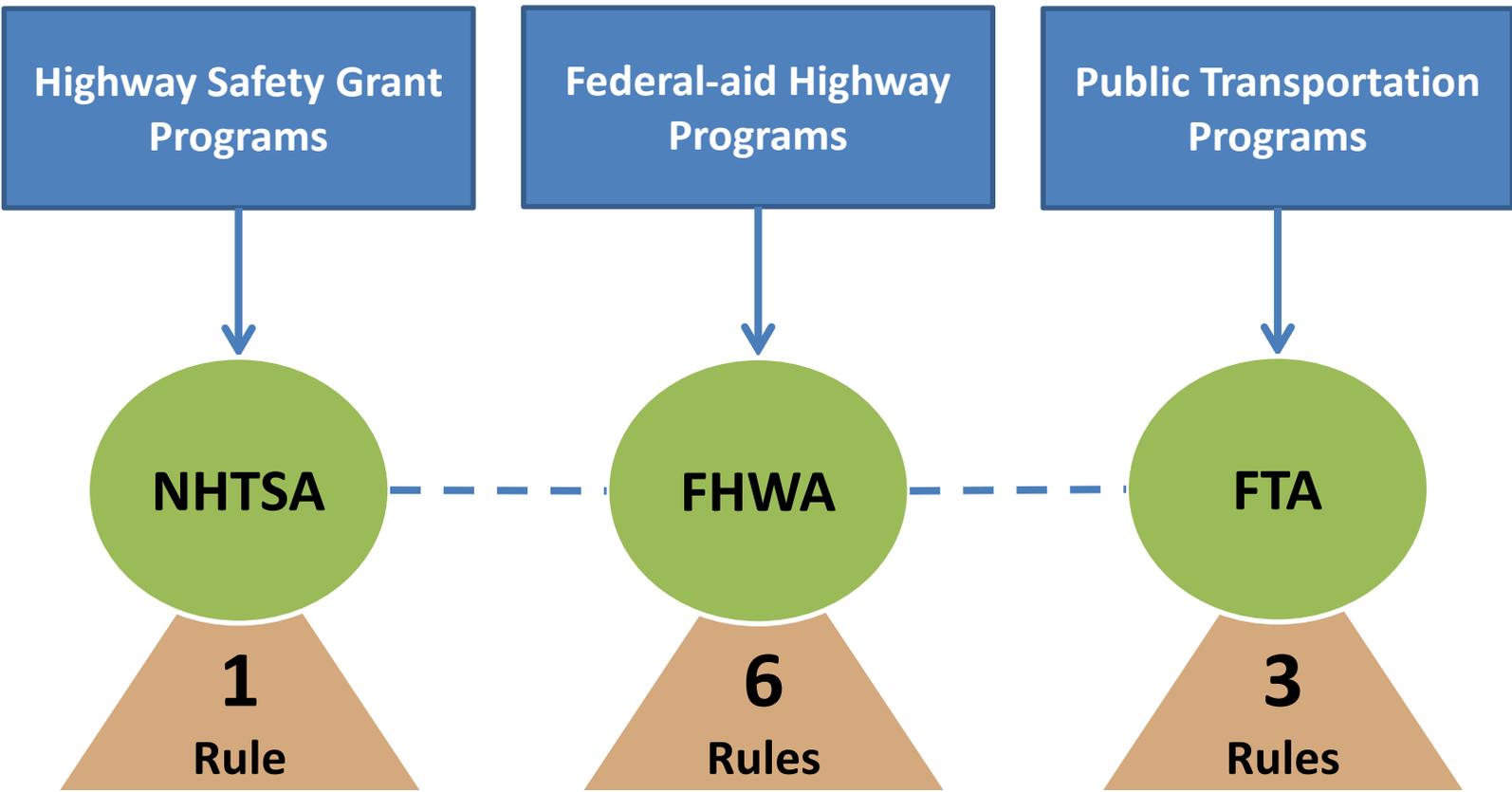


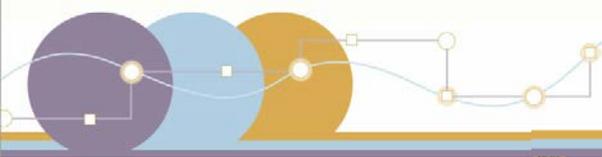


USDOT Performance Measure Areas

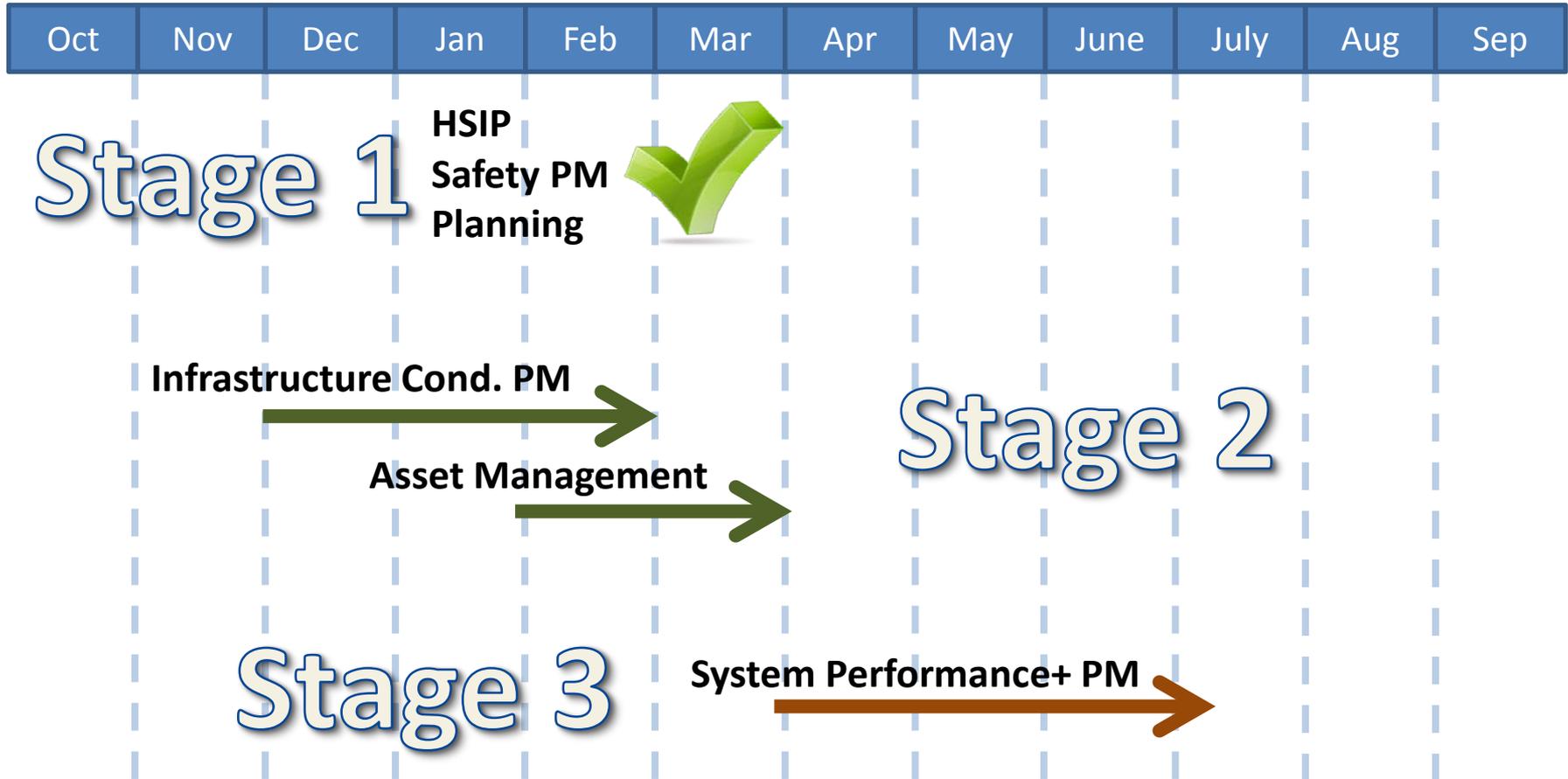
- Highway Safety
- Pavement Condition
- Bridge Condition
- System Performance
- Traffic Congestion
- On-road Mobile Source Emissions
- Freight Movement on the Interstate
- Transit State of Good Repair
- Transit Safety Criteria

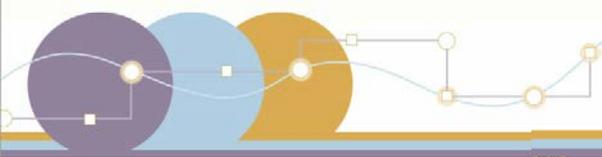
10 Inter-related Rulemakings





FHWA Proposal Comment Periods – 2014 & 2015



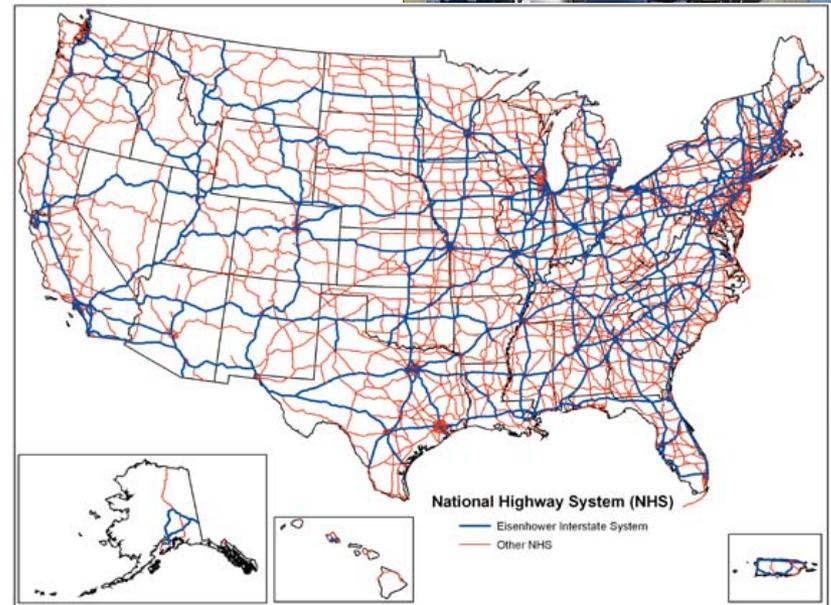


What is the current state of pavements on the National Highway System?

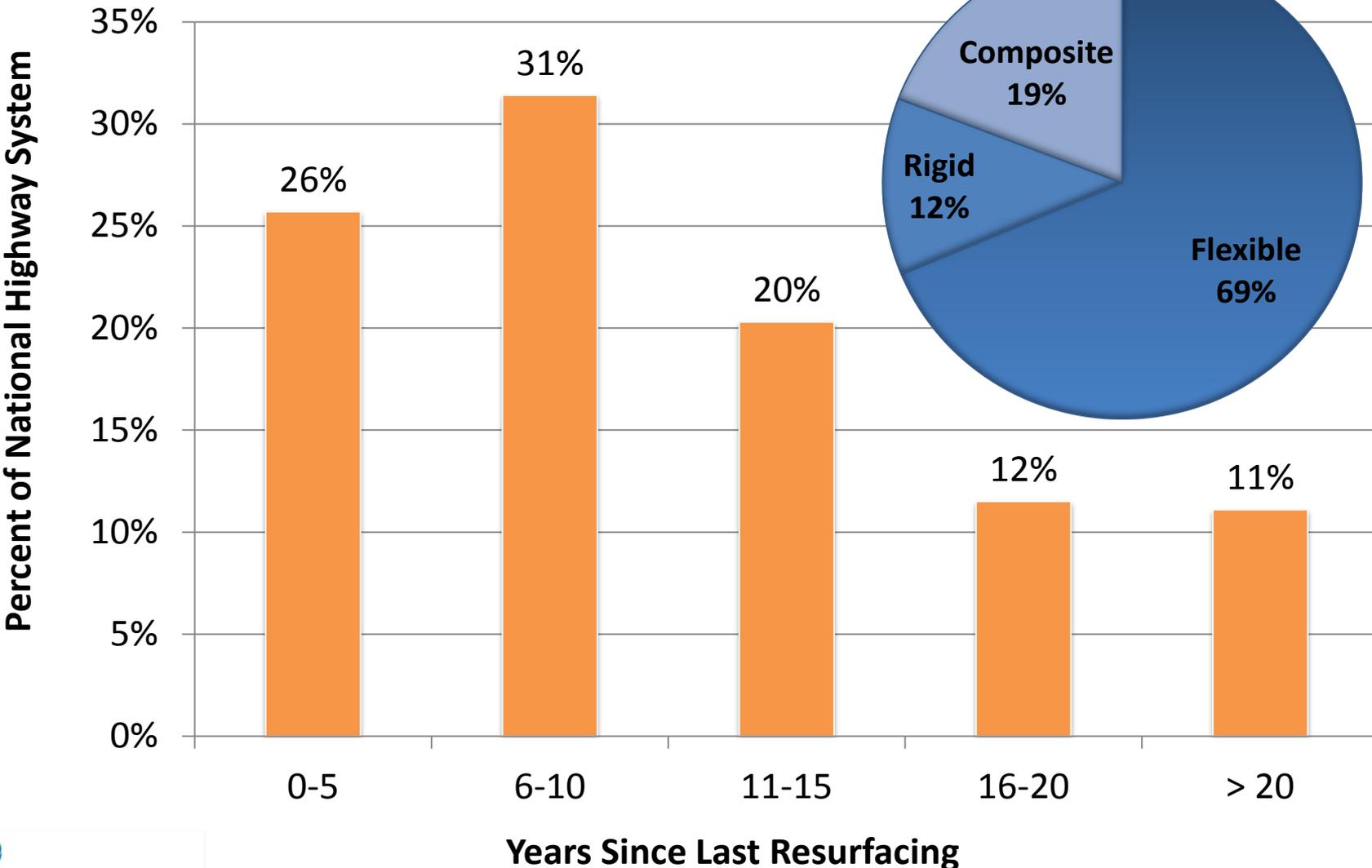


National Highway System

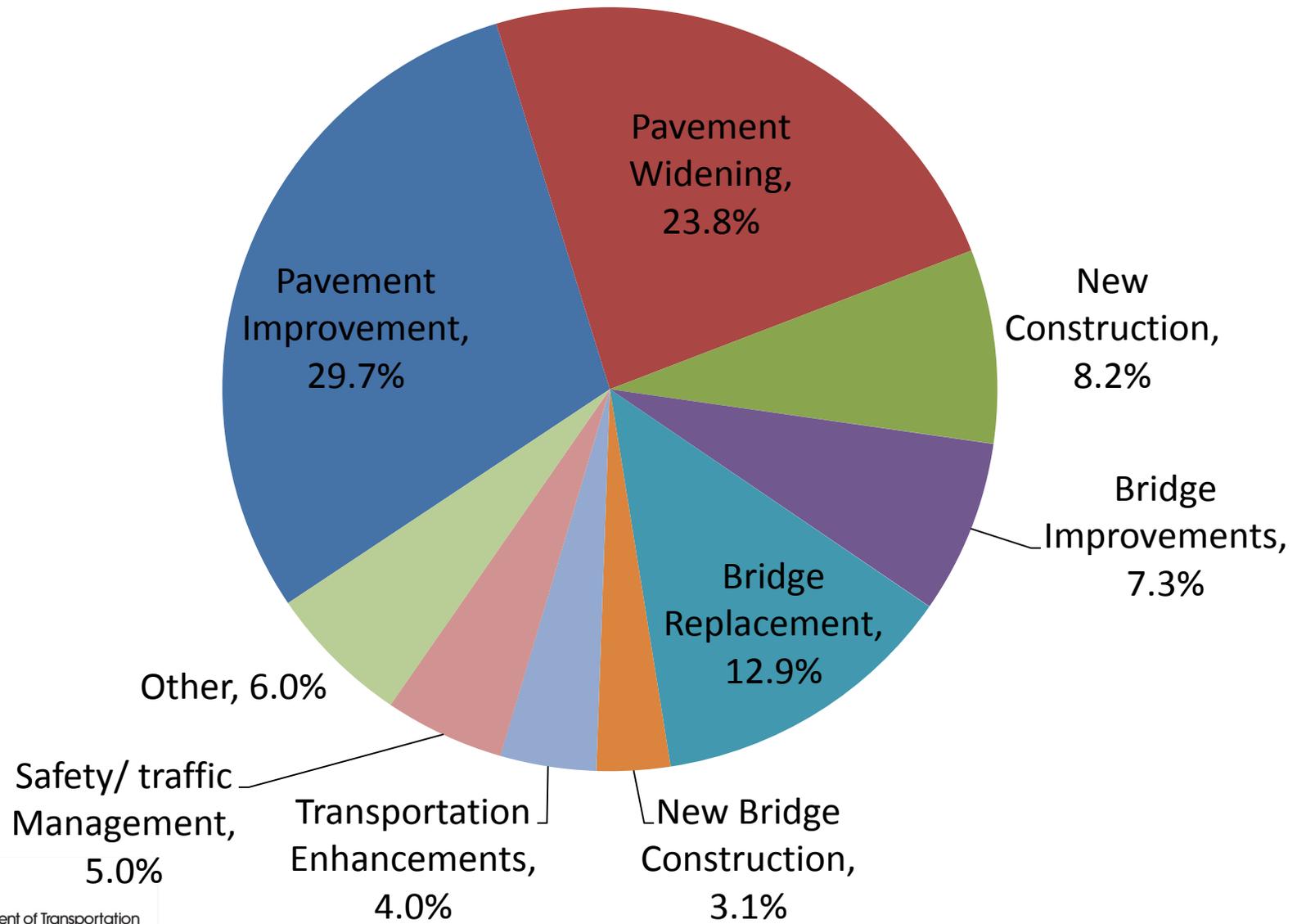
- Expanded by MAP-21
 - Interstate System and Other Principle Arterials
 - Strategic Highway Network and Major Connectors
 - Intermodal Connectors
- Facts
 - 223,000 miles
 - 771,000 lane-miles
 - 88% State owned
 - 5.4% US mileage
 - 55.0% total travel



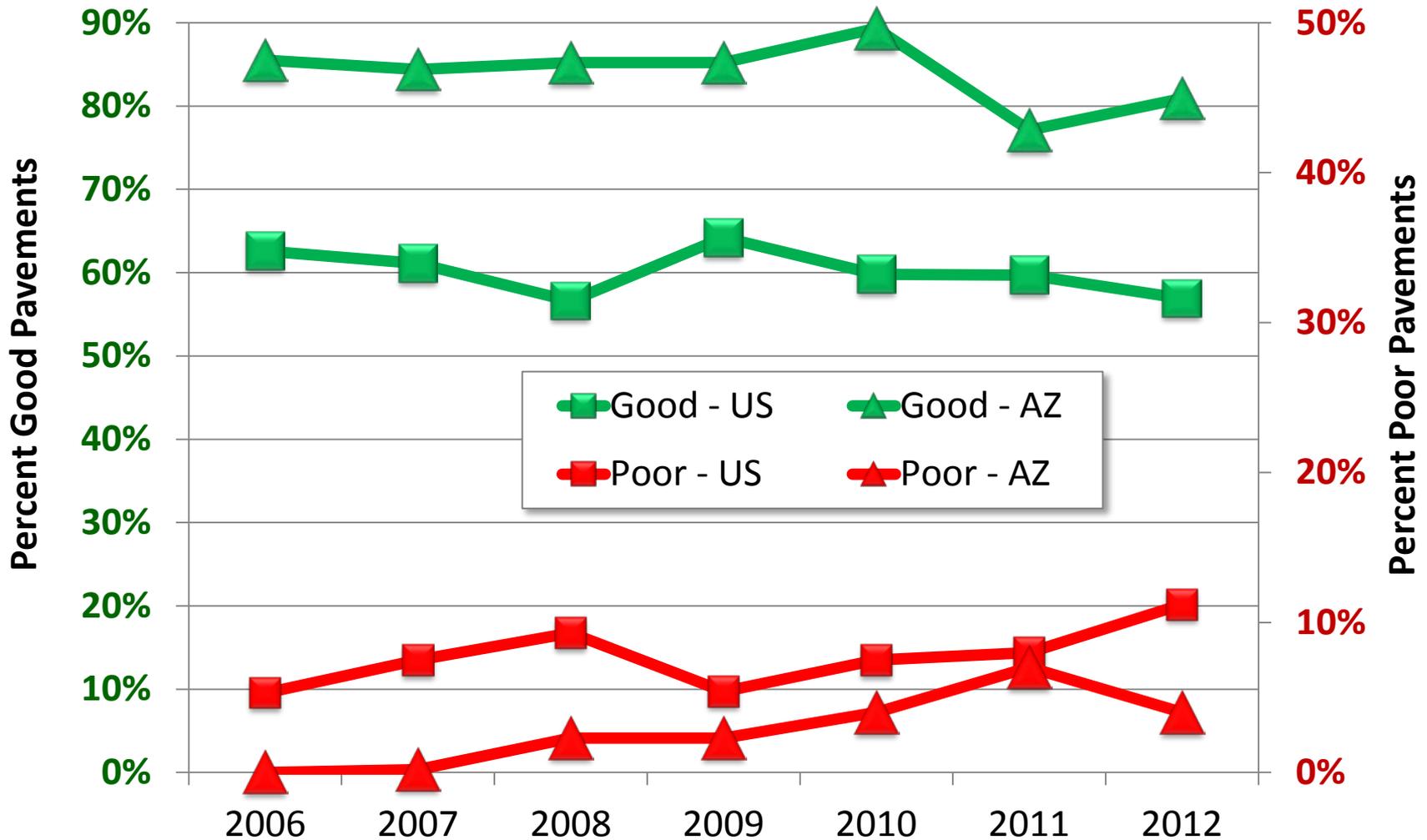
Most Recent Resurfacing



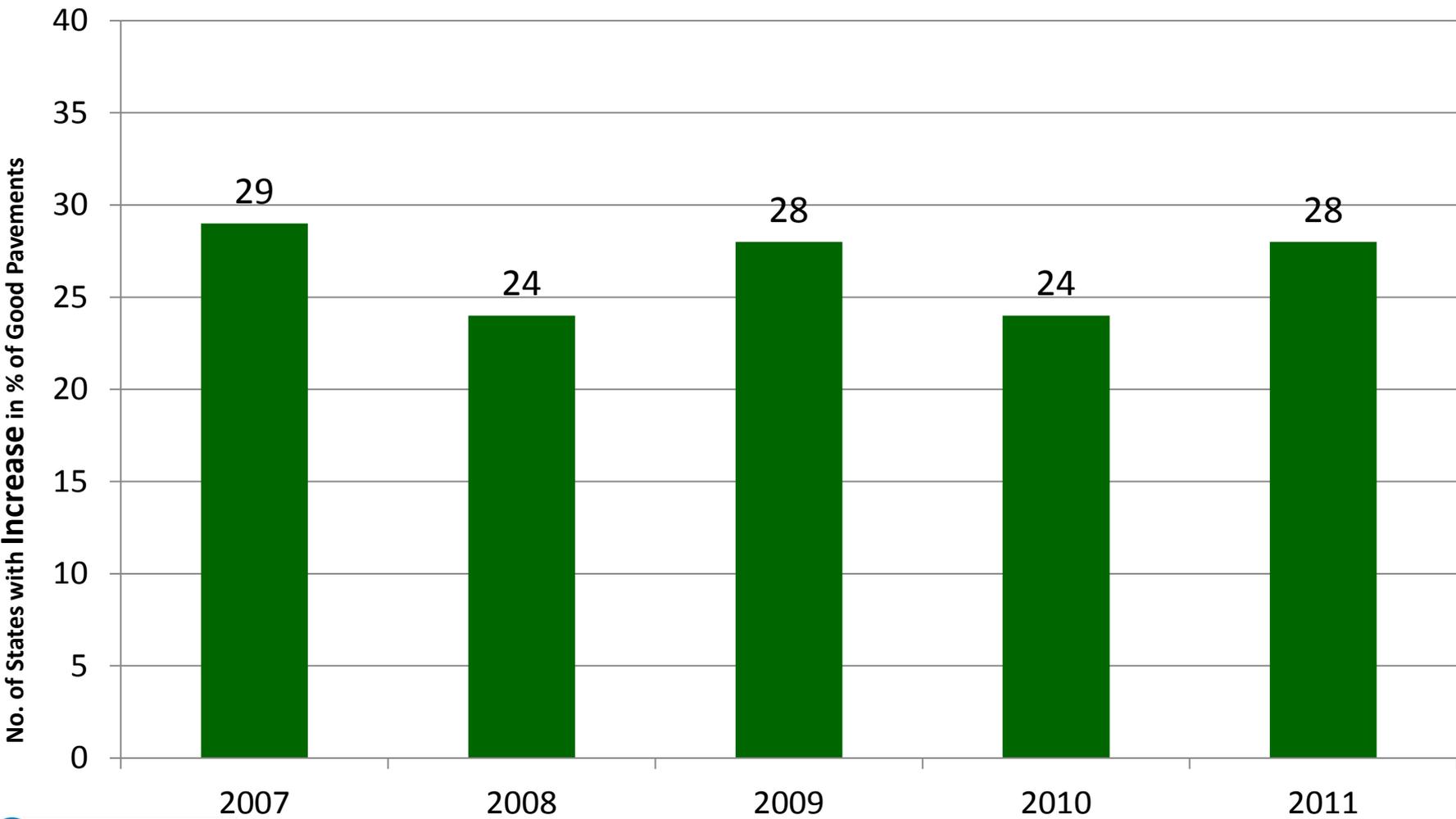
2014 NHS Improvement Types by Federal Funding

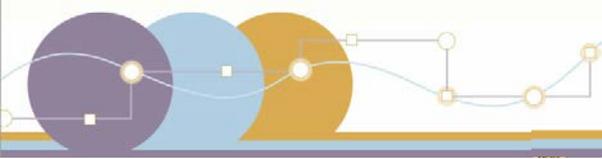


NHS Pavement Performance Trends

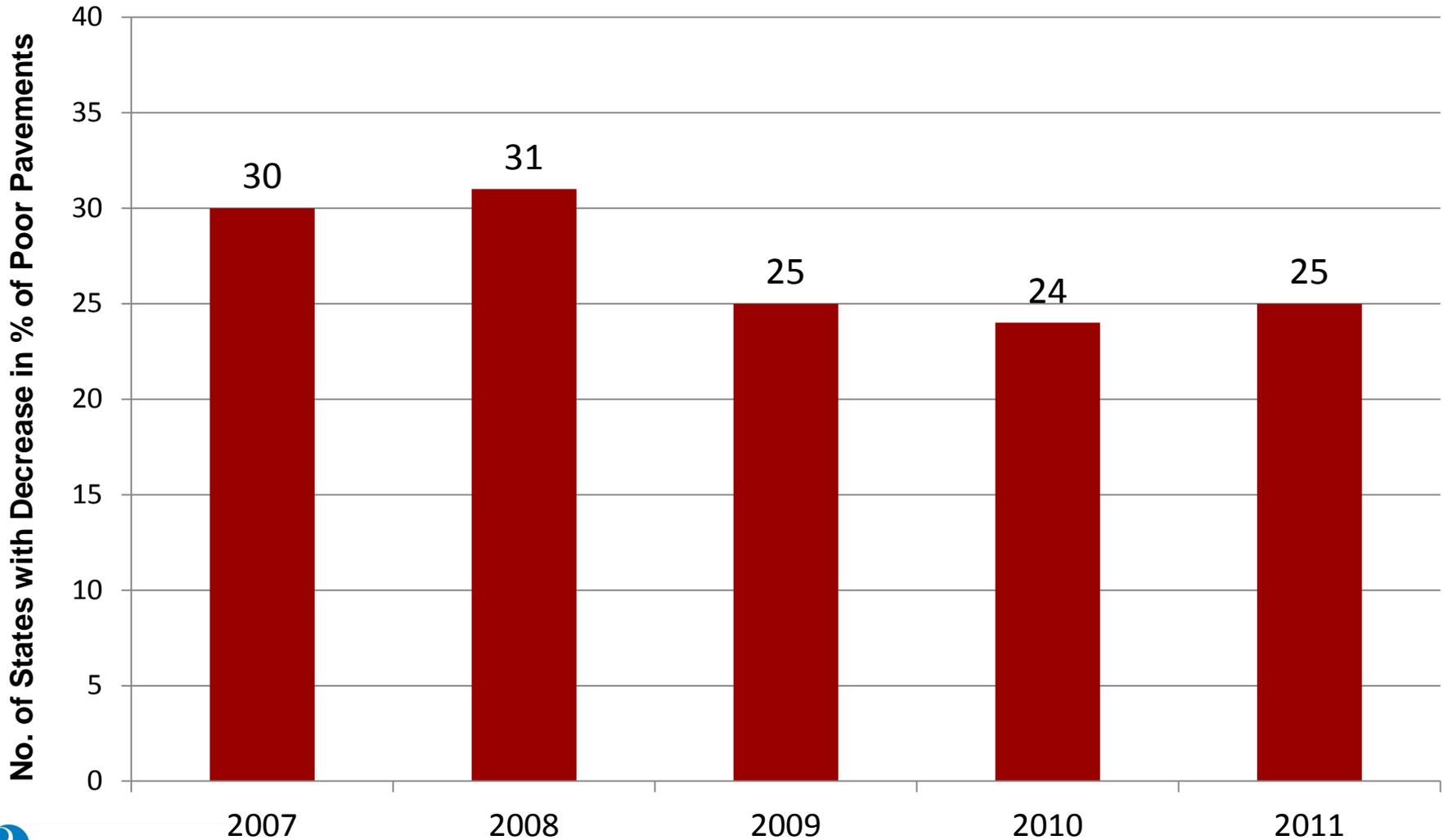


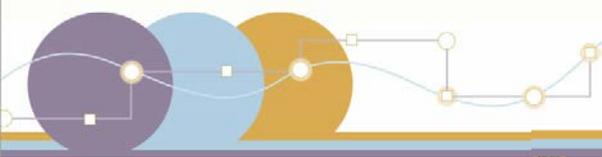
Annual Improvement – Good Pavements





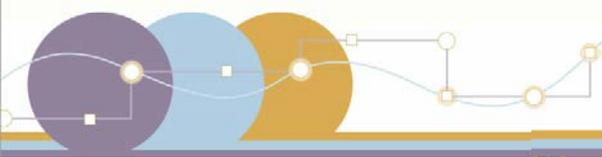
Annual Decrease in Poor Condition





How are we addressing the challenges in establishing a national pavement measure?





Pavement/Bridge Performance Elements

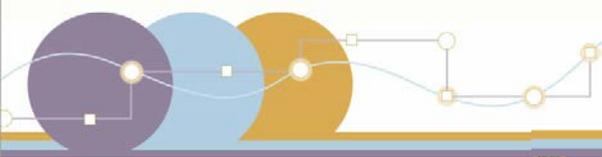
Interstate and NHS

Focus on Condition

State and MPO Targets

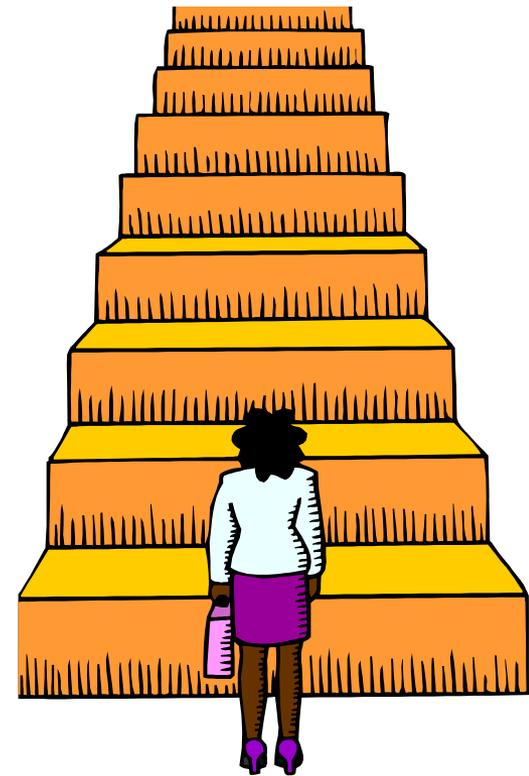
NHS Asset Management Plan

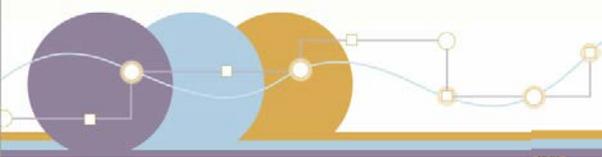
Target Achievement and Minimum Condition Req,



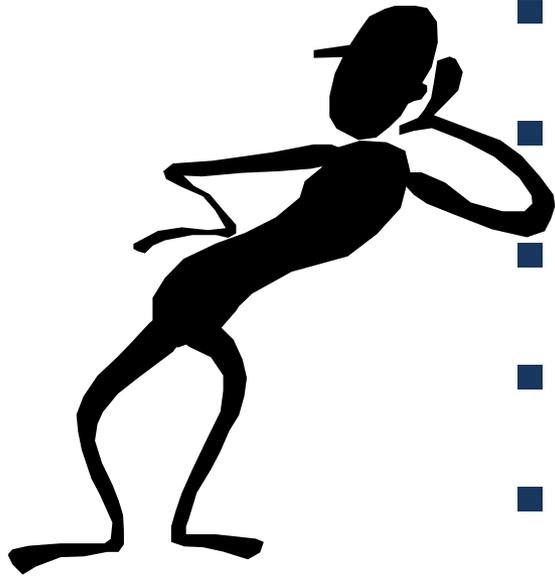
Challenges and Considerations

- National Data Source
- Consistency in Collection
- Link to Decisions
- Element Level Data
- Advancing Technologies
- Target Setting

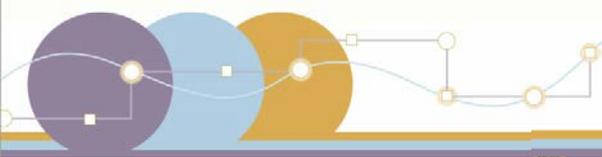




What Did We Hear?

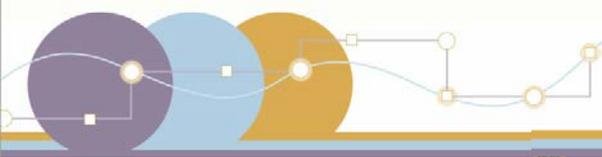


- Burden on States and MPOs
- Avoid a “Worst-First” Approach
- Consistency and Flexibility
- Pavement Condition Suggestions
- Bridge Condition Suggestions
- NHS Expansion
- Existing Data Sources



Pilot Studies Conducted

- **1st Pilot Study - 2010**
 - Objective – Evaluate how 3 states report pavement and bridge performance for the same corridor
 - Corridor – I-95 in DE, MD, and VA
- **2nd Pilot Study - 2011**
 - Objective – Test out Tier 1 and 2 approaches to report pavement and bridge condition for the same corridor
 - Corridor – I-90 in WI, MN, and SD



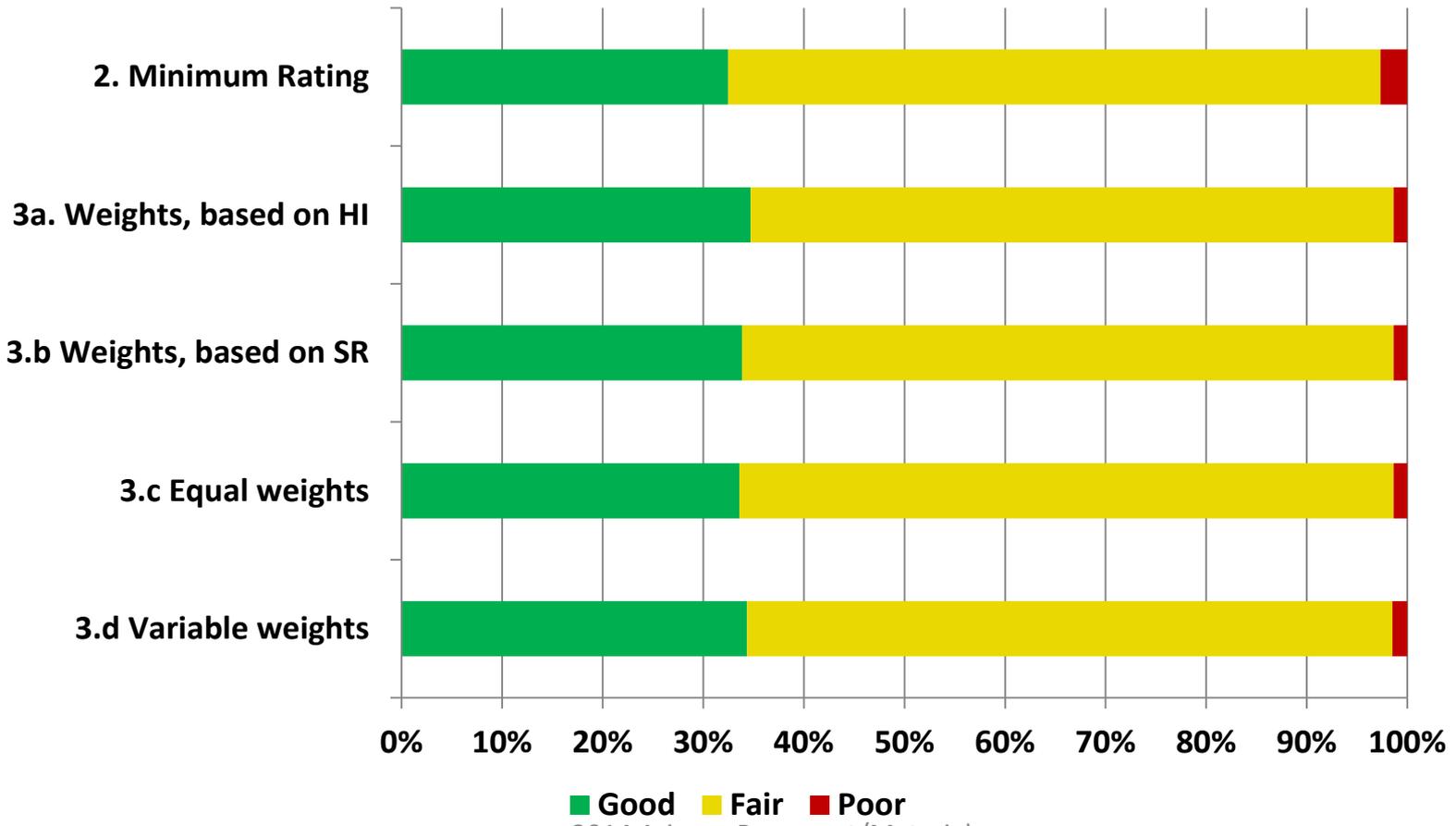
I-90 Study - Approach

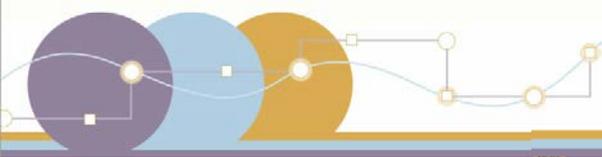
- Select a three-state pilot corridor
- Collect data sets
 - Federal data for pavements and bridges
 - State pavement data
 - Field collection for pavement data
- Compare data and measures
- Identify issues and recommend improvements



I-90 Bridge Conditions - Metrics

- Structurally deficient – 3%

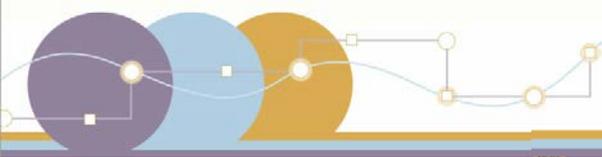




Pavement Measure Evaluation

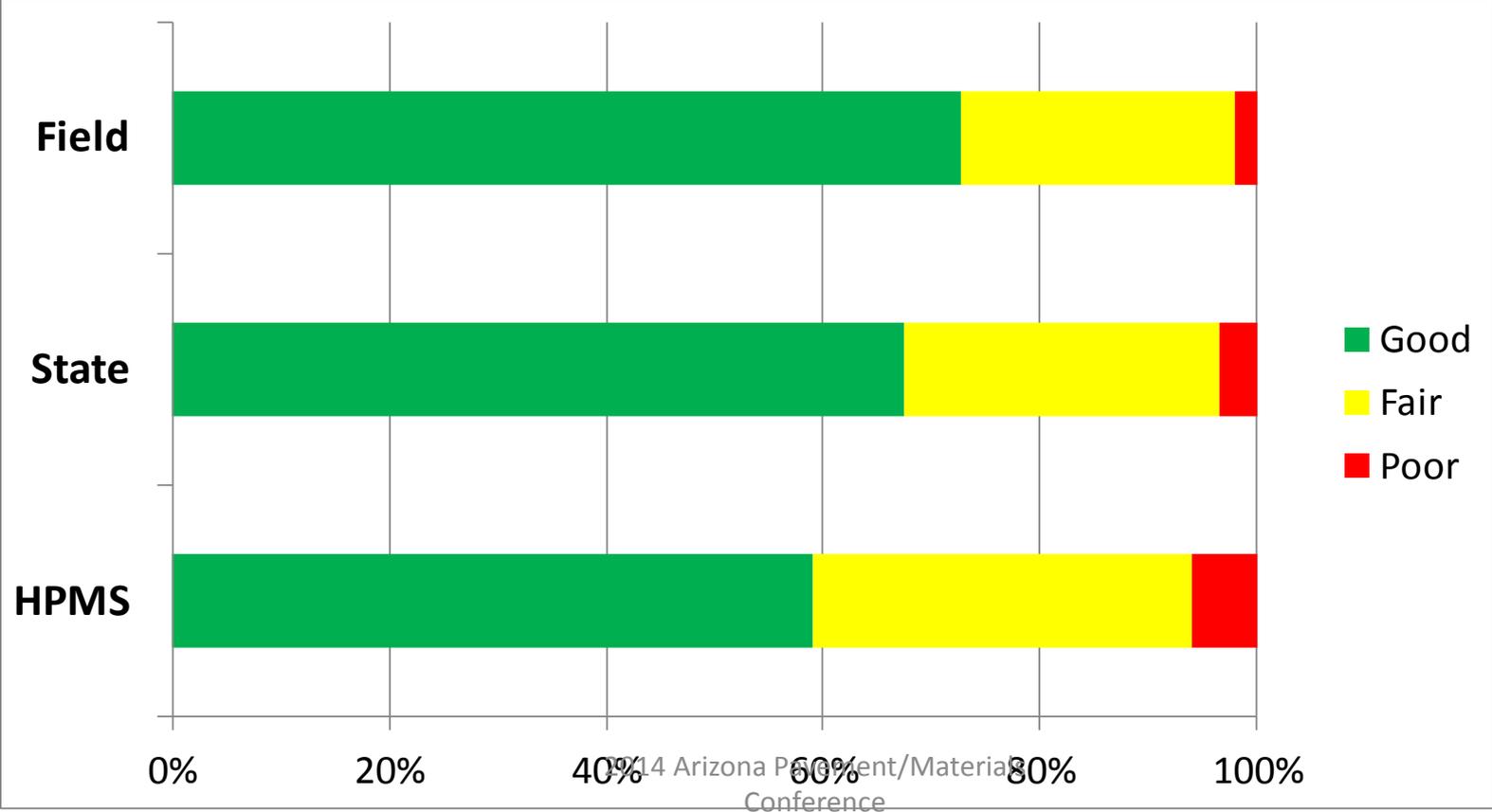
- Evaluate Different Data Sources
 - State Database
 - HPMS Database
 - Field Collected Data
- Evaluate Different Methods
 - Tier 1 – IRI based approach
 - Tier 2 – Composite Condition approach
 - Tier 3 – Structural Measurement approach

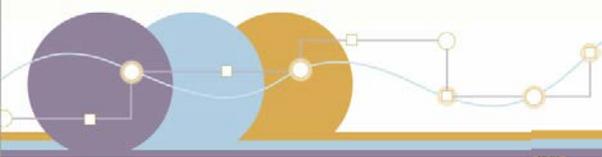




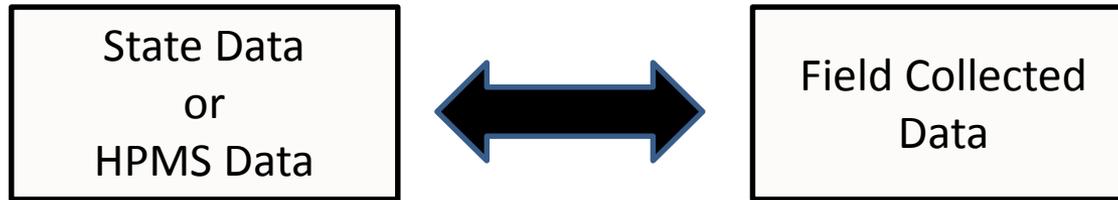
IRI Comparison – Summary

Do HPMS, state, and field data collection methods tell us the same thing?

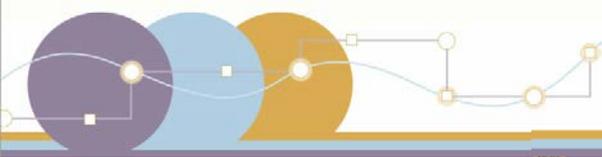




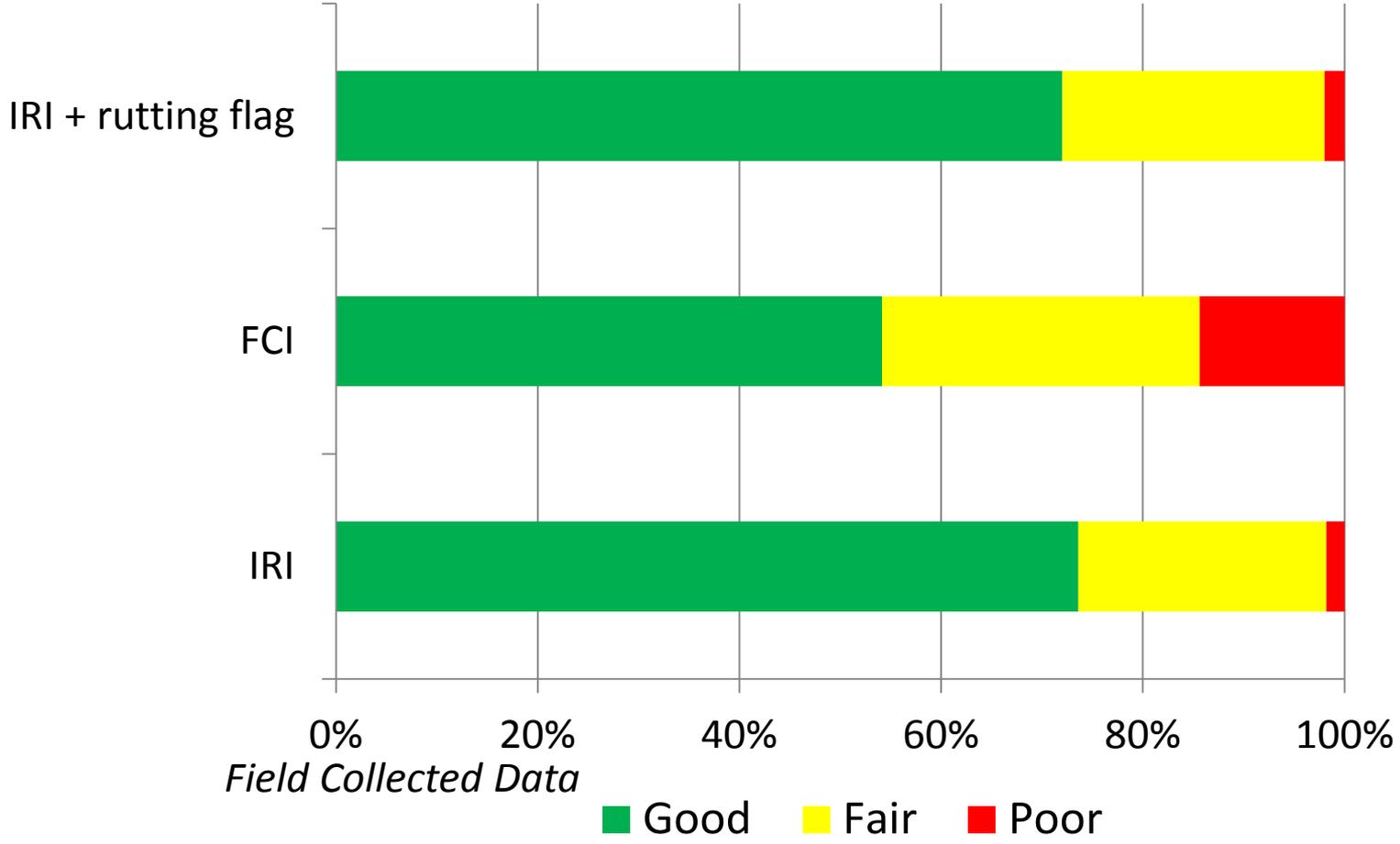
Composite Data Element Comparison

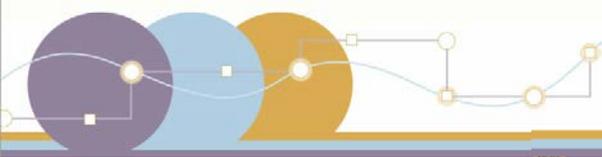


Element	Confidence in Data
IRI	High
Cracking %	Low/Med
Cracking Length	Low
Rutting	High
Faulting	Low



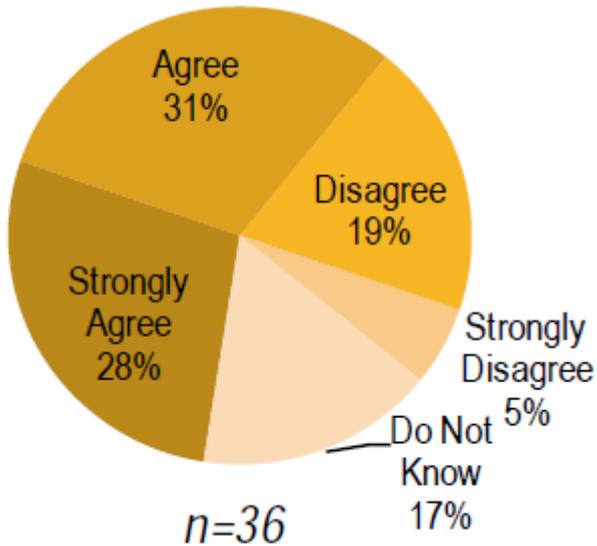
Comparing Good/Fair/Poor Options



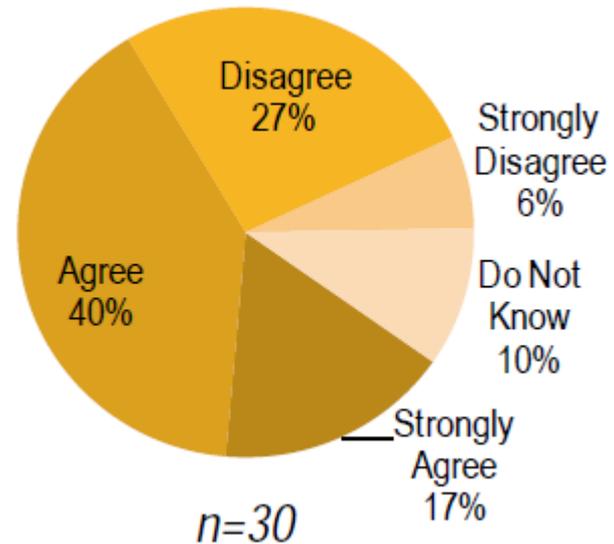


NCHRP 20-24(82)

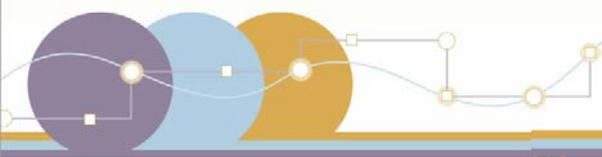
HPMS represents data used to make project selection decisions



HPMS Staff

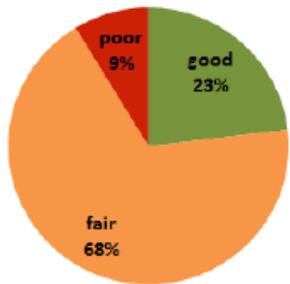


PMS Staff

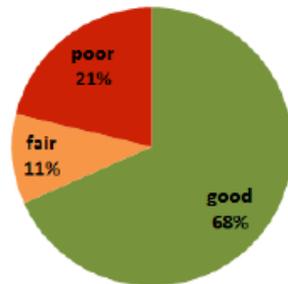


NCHRP 20-24(82) Comparison of Metrics

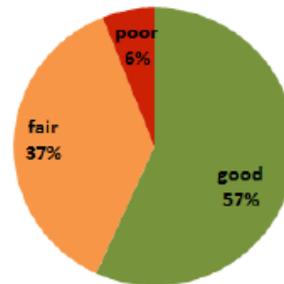
IRI-1



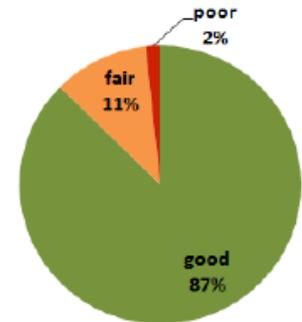
PMS-1



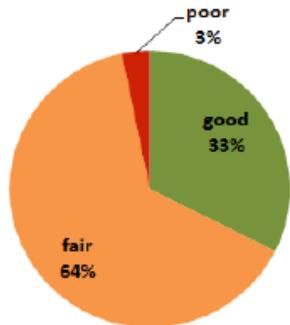
IRI-2



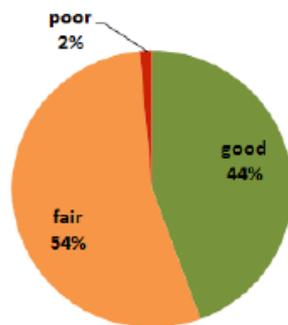
PMS-2



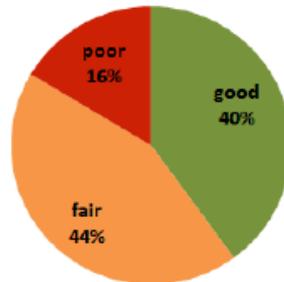
IRI-3



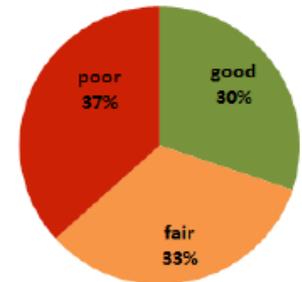
PMS-3

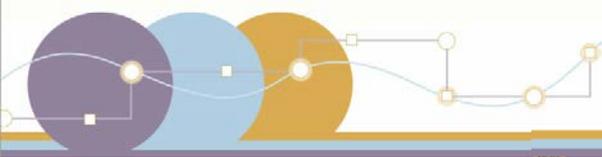


IRI-4



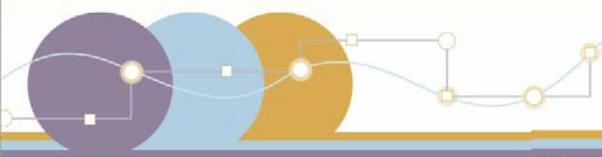
PMS-4





***How are we addressing the
Asset Management
requirements in MAP-21?***



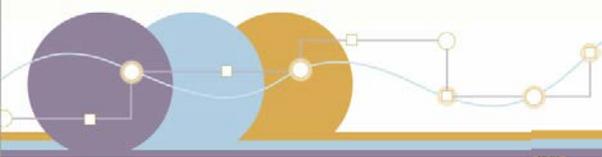


What Is Asset Management?

Asset management is a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information.... (23 U.S.C. 101(a)(2), MAP-21 § 1103)

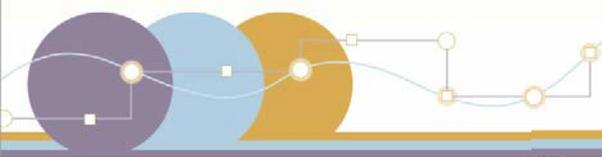
NHS Plan

- Inventory, condition, risk, financial plan, investment strategies
- Leads to a program of projects
- Process certified every 4 years



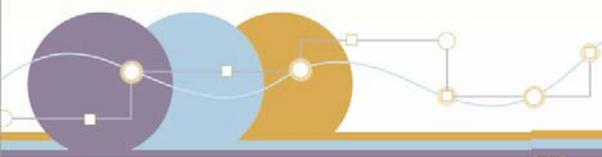
FHWA Initiatives

- Pilot Project: Development of Risk-based Transportation Asset Management Plans
 - Louisiana, Minnesota, New York State DOTs
- Transportation Asset Management Expert Task Group
 - a forum to discuss changes in the way highway agencies are managing assets



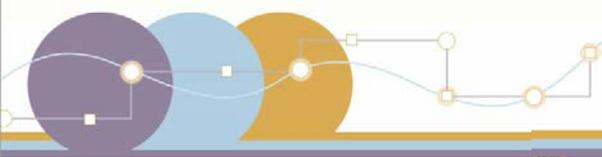
Resources Are Available

- FHWA Asset Management Website
<http://www.fhwa.dot.gov/asset/index.cfm>
- NHI Transportation Asset Management Training Course
- AASHTO Asset Management Guide – A Focus on Implementation
- AASHTO Asset Management Subcommittee
- TRB Asset Management Committee



What other resources are available now?





TPM Related Initiatives

- Surface Distress & Pavement Profiler Pooled Funds
- Pavement Data Quality Project
- Let's Talk Performance Webinars
- Performance-based Planning Workshops/Guides
- Travel Time Dataset
- Safety Target Setting
- Improving Transportation Operations
- Technical Assistance Program and Training

www.fhwa.dot.gov/tpm

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TPM and MAP-21 Engagement Resources Events

Transportation Performance Management

FHWA > Transportation Performance Management

Delaware Valley Regional Planning Commission: *Utilizing Investment Scenarios to Enhance Transportation Performance*

DVRPC Utilizing Investment Scenarios
The DVRPC has found that tracking their performance progress is vital to maintaining a strong transportation system. (.pdf, 0.5 mb)

- MAP-21 Putting Performance into Action
- Notice of Proposed Rulemaking (NPRM)
- DVRPC Utilizing Investment Scenarios
- TPM Digest

TPM and MAP-21

- [What is TPM?](#)
- [National Goals](#)
- [MAP-21 Performance Requirements Summary](#)
- [MAP-21 Putting Performance into Action \(.pdf, 1.3 mb\)](#)
- [Implementation Schedule](#)
- [Notices of Proposed Rulemaking](#)

Engagement

- [Rulemaking Stakeholder Engagement](#)
- [Readiness Stakeholder Engagement](#)
- [Reporting](#)
- [TPM Community of Practice](#)

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- [Data Palooza Session Recordings \(May 9, 2013\)](#)
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FHWA-2013-0020

<http://www.regulations.gov/#!docketDetail;D=FHWA-2013-0020>

HSIP Docket Number:

FHWA-2013-0019

<http://www.regulations.gov/#!docketDetail;D=FHWA-2013-0019>

Planning Docket Number:

FHWA-2013-0037

<http://www.regulations.gov/#!docketDetail;D=FHWA-2013-0037>