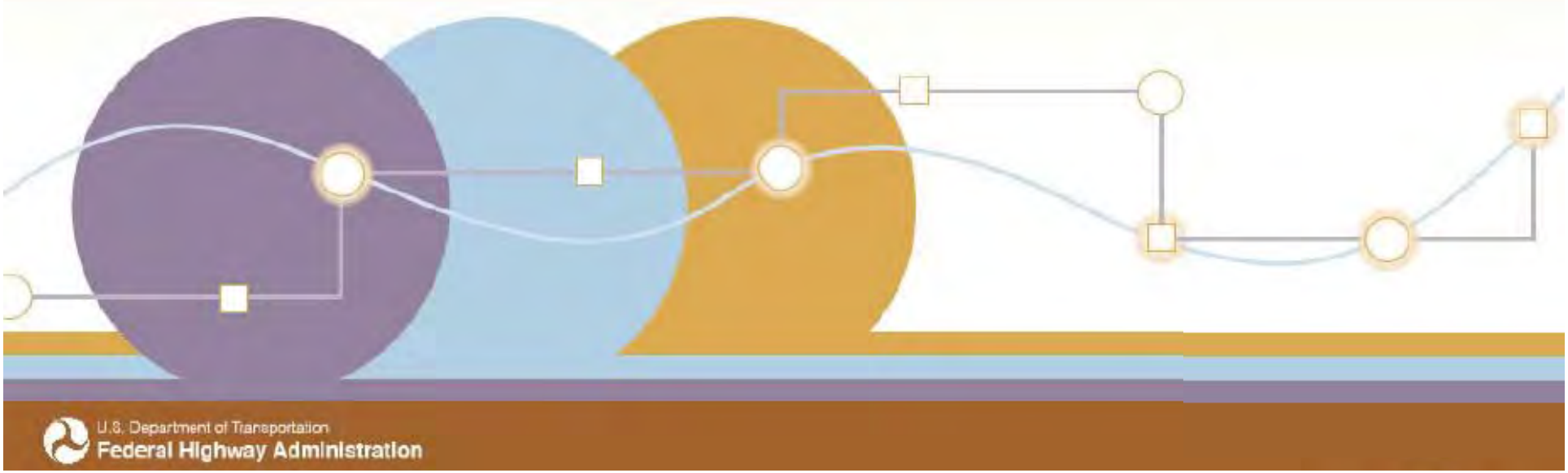
Managing Highway Performance at a National Level

Tom Maze Transportation Seminar Series

March 29, 2013

Peter Stephanos
Federal Highway Administration



What is Transportation Performance Management?

Transportation Performance Management is a strategic approach that uses system information to make investment and policy decisions to achieve a desired set of national goals

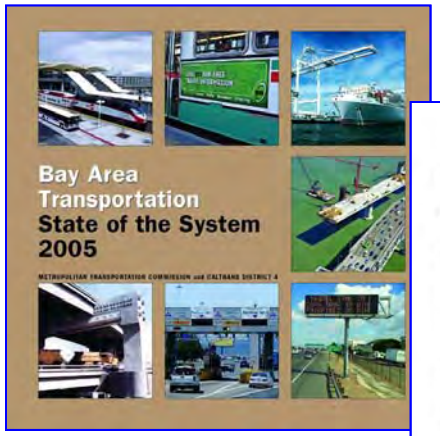
Why Is Performance Management Important?

- Help inform decisions, strengthen accountability, and allow for better understanding
- Provide more transparency and accountability
- Manage resources efficiently whether in abundance or scarce, regardless of funding

National Performance Management Desire

- ☑ Timely and reliably report on system performance
- ☐ Understand performance returns from federal investments
- ☑ Set national direction on performance expectations
- ☑ Accurately justify funding needs for performance
- ☐ Link local decision making to national/regional performance
- ☐ Track progress towards the achievement of performance

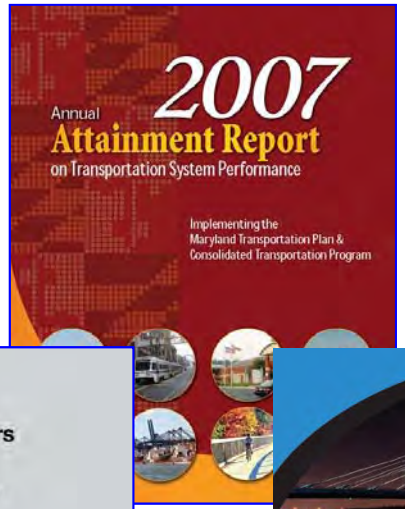
Performance Management In Action



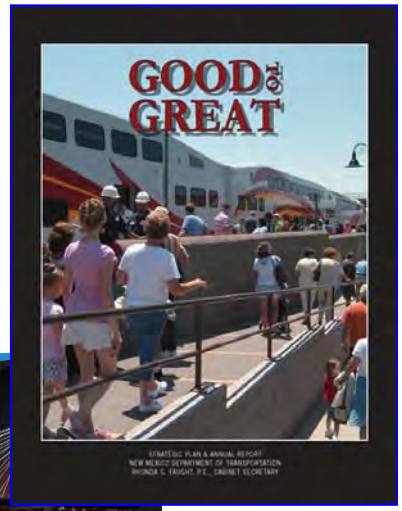
State of the System 2005
Bay Area Transportation

Business Plan 2004 & 2005
Ohio Department of Transportation

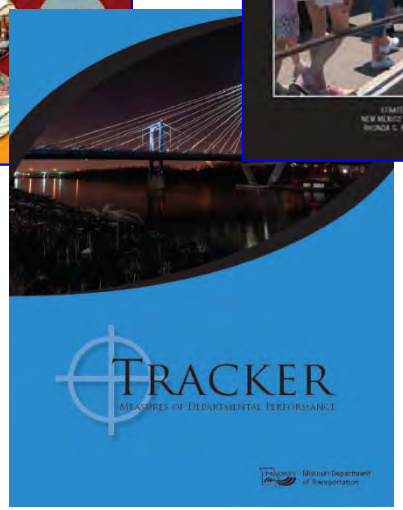
2007 Annual Attainment Report
Maryland DOT



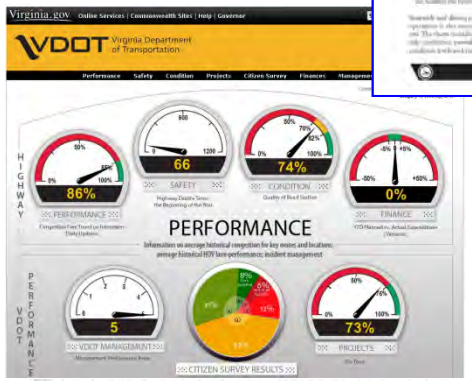
Good to Great
Strategic Plan and Annual Report
New Mexico DOT



Measures, Markers and Mileposts
Washington State Department of Transportation



Tracker
Missouri Department of Transportation

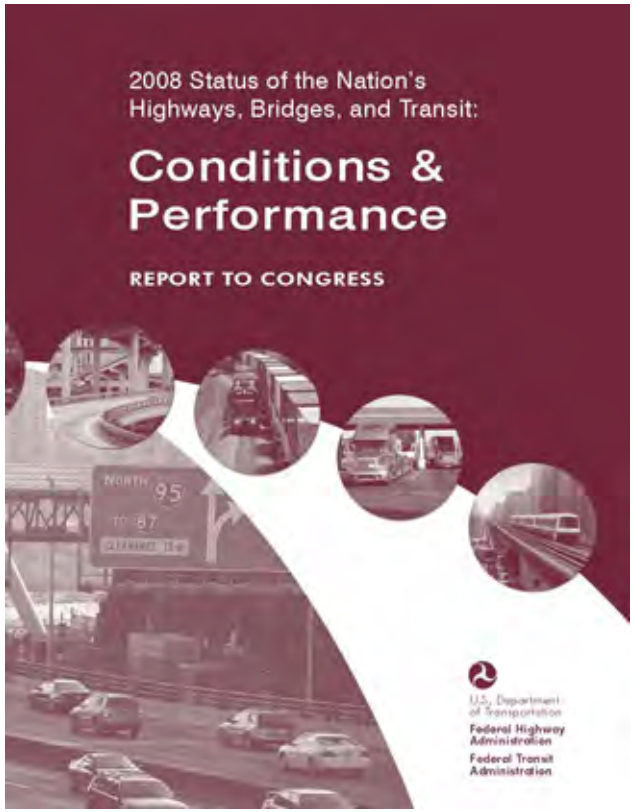


Dashboard
Virginia Department of Transportation

USDOT Performance Report

Performance Measure	2004	2005	2006	2007	2008	2009	2010 Target	2010 Actual	Met / Not Met
Percentage of travel on the National Highway System (NHS) meeting pavement performance standards for "good" rated ride.	52	52	54	57	56	57	58	58*	Met
Percentage of deck area on National Highway System (NHS) bridges rated as deficient, adjusted for average daily traffic.	32.0	29.9	29.2	29.7	29.5	29.2	28.9	28.7	Met

Condition Reporting

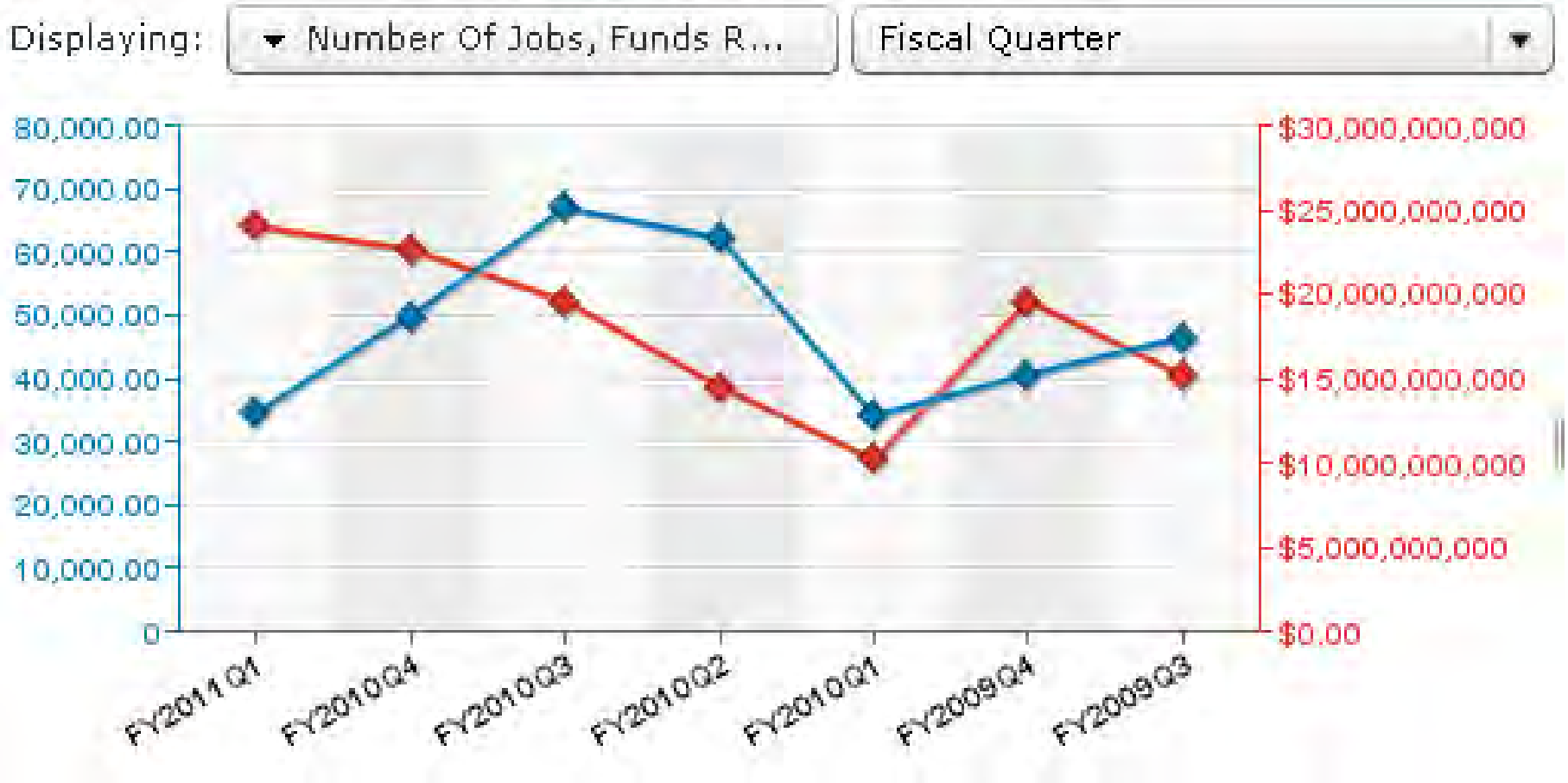


Report to Congress

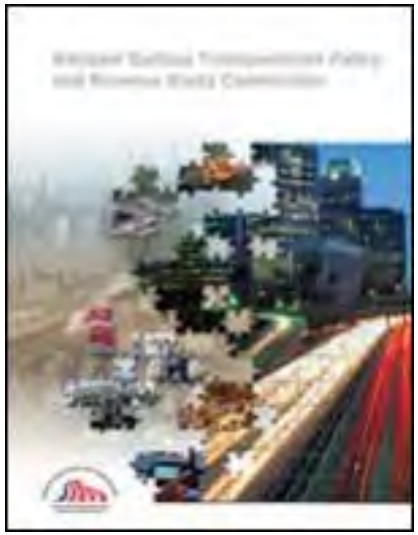
- System Conditions
- Operational Performance
- Safety
- Revenue and Expenditures
- Investment Analysis

Difficult to associate performance with federal investments

ARRA Reporting Outcomes

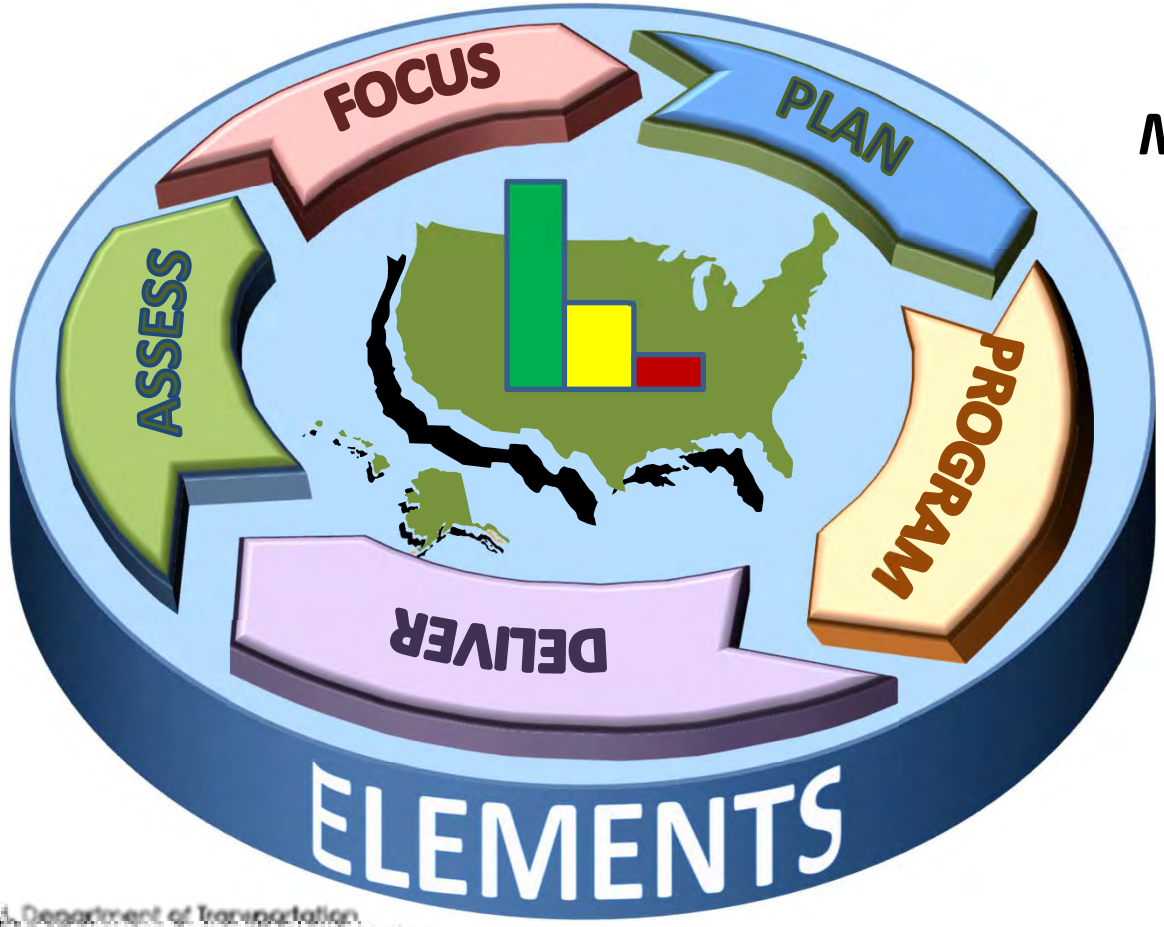


National Commission Report



- Strong Federal role focused on national goals
- Consolidated program structure
- <u>Performance management</u>
- Many groups issued reports supporting many of the Commission's recommendations, all embraced a performance-based program (U.S. DOT, AASHTO, AMPO, APTA, GAO, and more)

The TPM Framework



Measures

Targets

Investment Plans

Progress Tracking

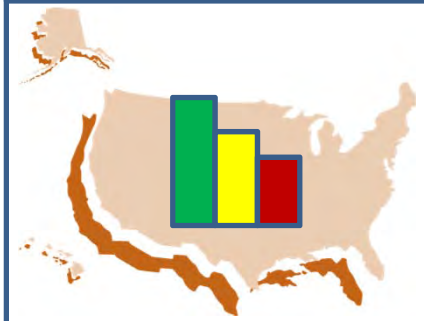
Reports

Accountability

Transportation Performance Management

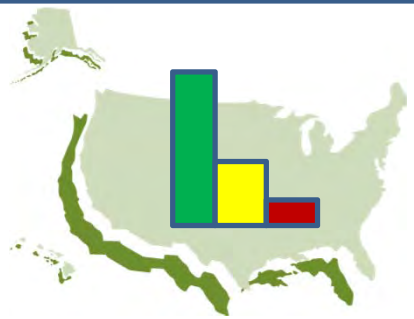
FOCUS → PLAN → PROGRAM → DELIVER → ASSESS

National Policy



Baseline Performance

Federal Highway Program



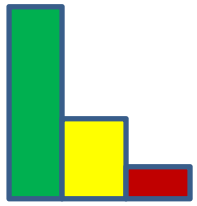
Desired Performance

State/MPO Role

PLAN
Set every 4-6 yrs

PROGRAM
Revisit annually

DELIVER
Annual Output



Outcome

ASSESS- *Annually*

Transportation Performance Management

FOCUS | PLAN | PROGRAM | DELIVER | ASSESS

Definition ***Extent of Network*** ***Measure***

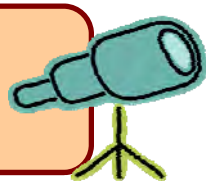
U.S. Department of Transportation
Federal Highway Administration

State/MPO Plan to Address National Expectations

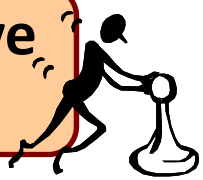
Transportation Plans

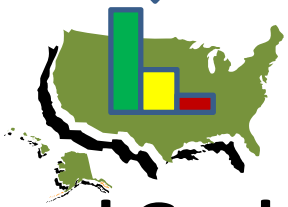
- Coordinated & Collaborated
- Strategies and Policies
- Investment Needs

Shared Vision



Collaborative Strategies





National Goal Areas

Programming Investments to Achieve Targets

Transportation Plans

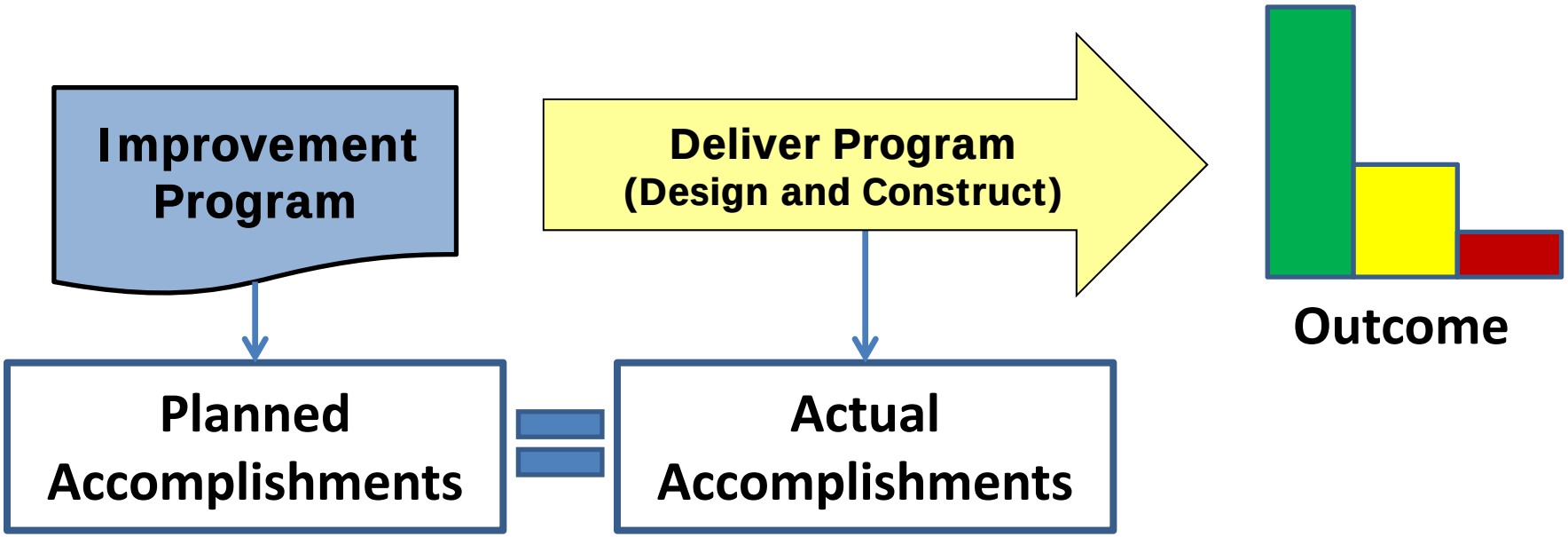
Improvement Program

- Fiscally Constrained
- Address all Goal Areas
- Statewide
- Short Term

Bound Target

Investment Plan

Tracking Progress Towards Targeted Outcome



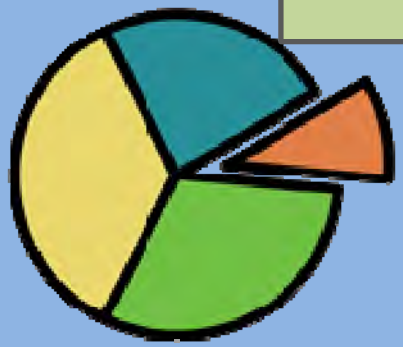
- ❑ *Is Program Delivered as Planned?*
- ❑ *Is Delivery On Time – On Budget Delivery?*
- ❑ *Is Delivery Meeting Quality Construction Expectations?*

Transportation Performance Management

FOCUS → PLAN → PROGRAM → DELIVER → ASSESS

Was Outcome Performance Achieved?

State and National Annual Performance Reporting



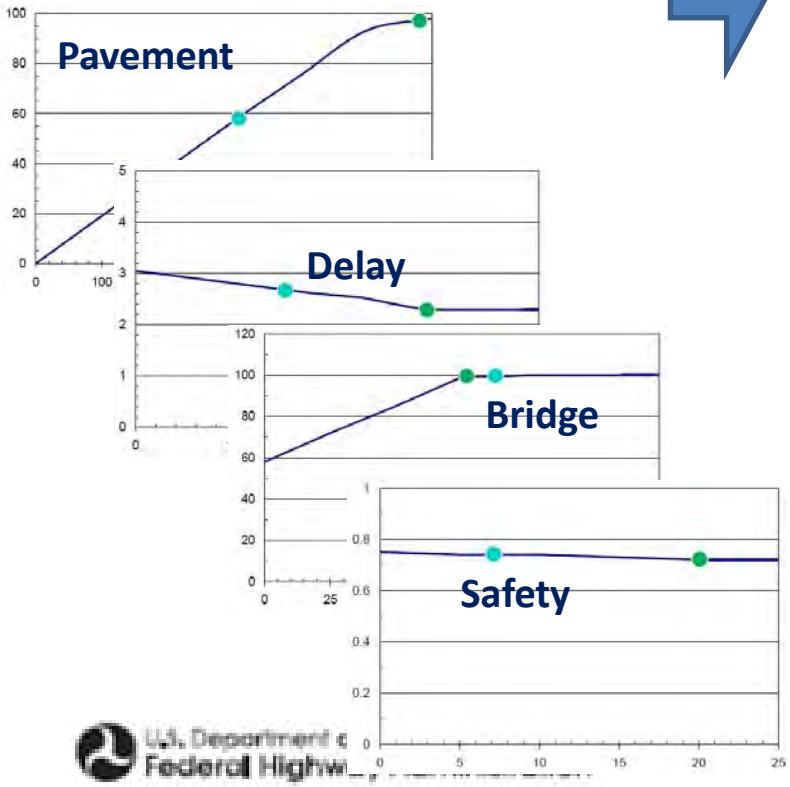
Increase Funding Flexibility

Develop Improvement Plan

- Identify best practices to manage performance
- Evaluate how investments have impacted performance
- Identify opportunities to improve process and plan

SEMCOG Example – Pulling it Together

1 Examine the relationship between program-level investment and performance



2 Examine scenarios that vary funding by program area; adopt a preferred scenario

- Preservation focused
- Transit focused
- Public preference driven

3 Track performance over time; track investments against the adopted scenario

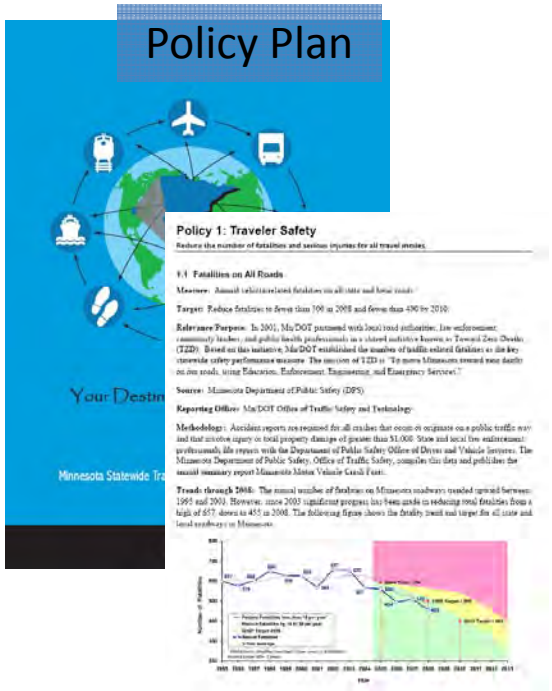
Project Type	Planned Funding	Actual Funding
Bridge	5%	5.2%
Nonmotorized	1%	1.1%
Pavement	24%	14.5%
Road Expansion	8%	3.5%
Safety	1%	0.6%
Transit Capital	8%	7.0%
Operating	53%	68.1%
Total	100.0%	100.0%

Transportation Performance Management

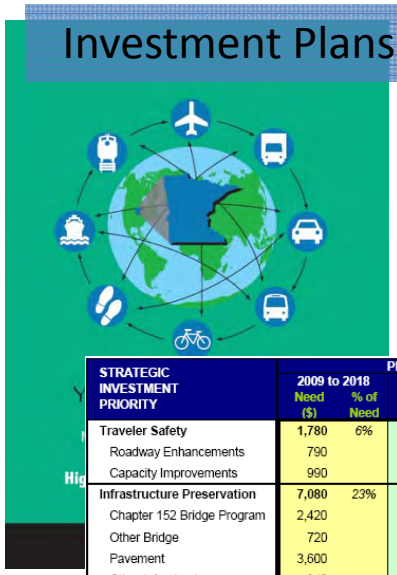
FOCUS → PLAN → PROGRAM → DELIVER → ASSESS

Example Application – Mn/DOT

Policy Plan



Investment Plans



STRATEGIC INVESTMENT PRIORITY	PLANNING PERIOD 2009 to 2018 Need ($)	% of Need	2019 to 2028 Need ($)	% of Need	2009 to 2028 TOTAL ($)	% of Total
Traveler Safety	**1,780**	*6%*	**1,360**	*4%*	**3,140**	*5%*
Roadway Enhancements	790		800		1,590	
Capacity Improvements	990		560		1,550	
Infrastructure Preservation	**7,080**	*23%*	**9,240**	*29%*	**16,320**	*26%*
Chapter 152 Bridge Program	2,420		100		2,520	
Other Bridge	720		2,000		2,720	
Pavement	3,600		6,480		10,080	
Other Infrastructure	340		660		1,000	
Mobility	**21,760**	*71%*	**20,840**	*66%*	**42,600**	*69%*
Interregional Corridors	1,740		1,840		3,580	
Greater MN Trade Centers	130		120		250	
Twin Cities Metro Area	19,890		18,880		38,770	
Total Investment	**$30,620 M**		**$31,440 M**		**$62,060 M**	

Performance Monitoring

Overarching goals, policies, and performance measures that guide investment

Detailed analysis of investments, including expected performanc impacts, legislative guidance, and stakeholder input

Regular review of performance in each policy area

Transportation Performance Management

How will Risk be Incorporated into the Highway Investment Planning Process?

MinnesotaGO — 20-Year State Highway Investment Plan

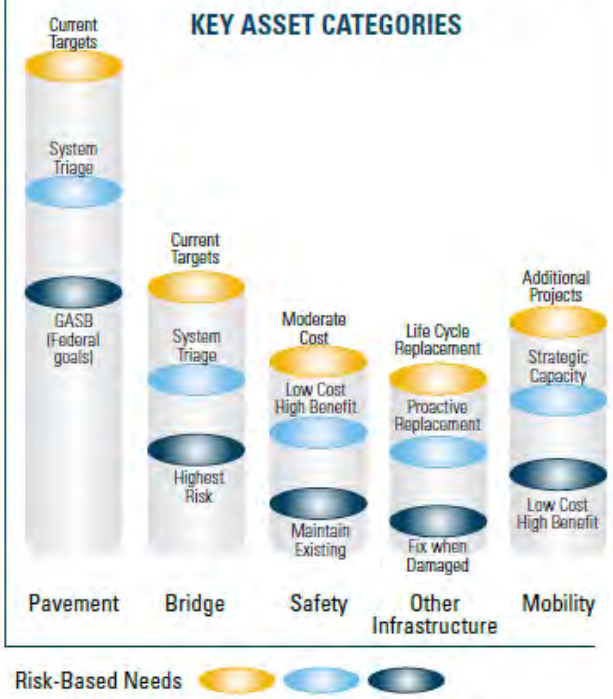
STEP 1 — Determine needs and strategies to address risks in each asset categories

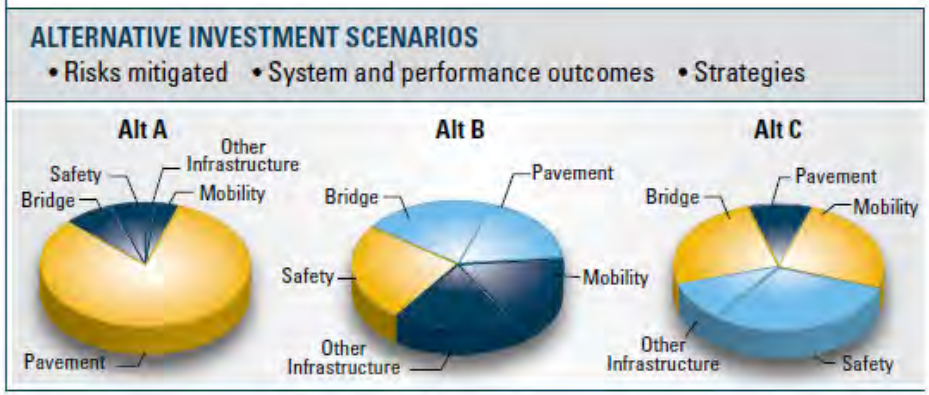
STEP 2 — Assess risk to revenue projections

STEP 3 — Group individual risk-based performance levels into alternative scenarios

STEP 4 — Select alternative to direct development of State Highway Investment Plan

STEP 5 — Identify risk-based priorities if additional funding is allocated





MAP-21 Performance Elements

- National Goals
- Performance Measures
- Performance Targets
- Performance Plans
- Performance Reports
- Performance Accountability

Performance Measures

Highways

- Safety (4)
- Infrastructure Cond. (3)
- System Performance (2)
- Freight Movement (1)
- Traffic Congestion (1)
- On-Road Mobile Source Emissions (1)

Public Transportation

- State of Good Repair (1+)
- Safety Performance Criteria (1+)

Highway Safety Programs

- 14 Measures
- "Traffic Safety Performance Measures for States and Federal Agencies" 2008

Performance Targets

- States, MPOs, and public transit providers set targets for each of the measures
- Coordination between States, MPOs and public transit providers to ensure for consistent targets
- Option to set different targets for urbanized and rural locations
- Identified through planning process with reference to individual performance plans

Performance Plans

- Safety
- Asset Management
- Metro System Performance

- Congestion & Air Quality
- Freight

- Transportation Improvement Programs

Performance Reports

- Transit Performance
- Highway Performance
- Safety Performance
- Congestion & Air Quality
- Metro System Performance

- 5 Yr Report to Congress
- Conditions and Performance

Performance Accountability

- Target Achievement Requirements
  - National Highway Performance Program
  - Highway Safety Improvement Program
- NHPP and HSIP Standards
- Metro Planning Certification Review
- Statewide Performance-Based Planning Process Evaluation
- 5 Year Progress Evaluation of each State and each MPO

Rulemaking Process/Timeline

- Required to promulgate rulemaking to establish measures.
- Rulemaking activities currently underway and include:
  - Consultation with stakeholders
  - Drafting of the Notice of Proposed Rulemaking (NPRM)
  - Completion of an Economic Assessment that looks at the impact of the proposed rule on States, MPOs and other stakeholders.
  - Coordination with other rulemakings, i.e. Planning, Asset Management Plan, FTA
- 90 day minimum comment period required after NPRM is published (highways).
- Publication of final rule in Federal Register with effective date.

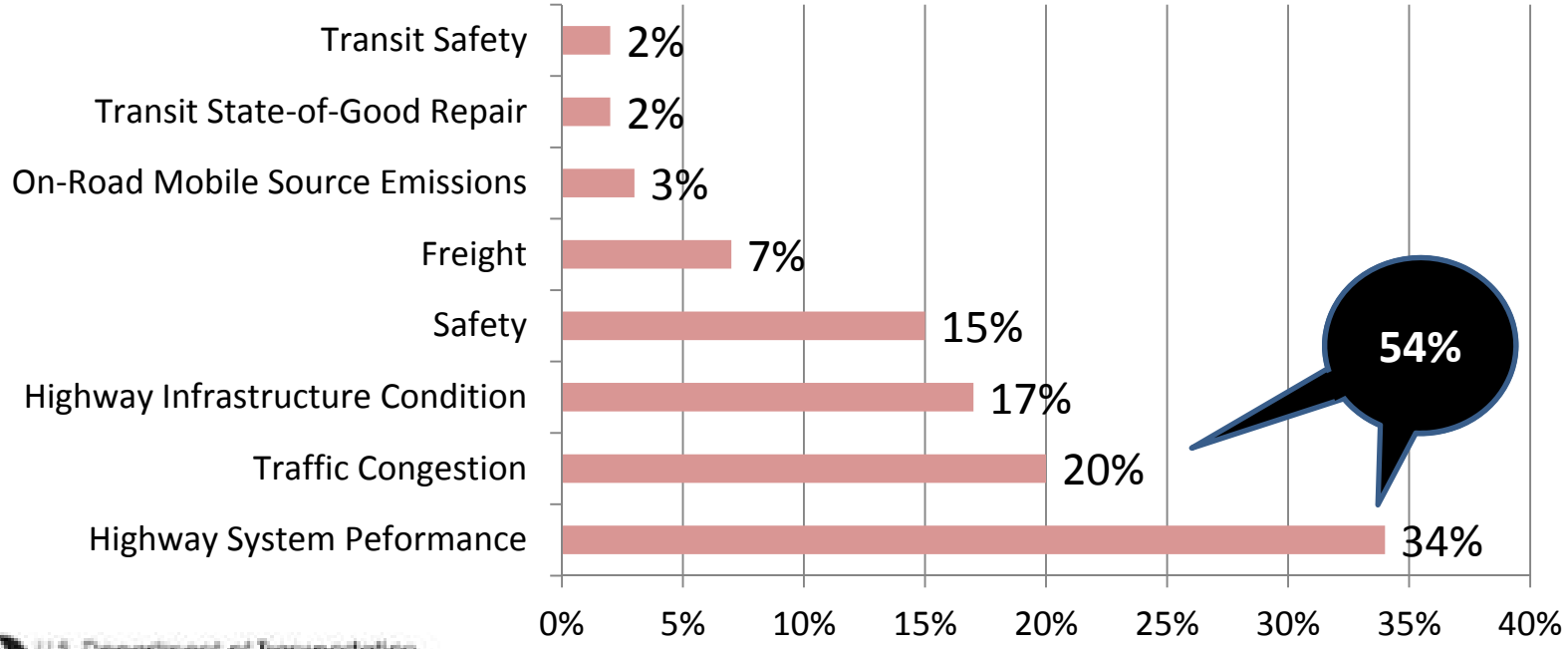
Stakeholder Outreach

- Methods of Outreach
  - Webinars
  - National Online Dialogues
  - Virtual Town Hall Meetings
  - Subject Matter Meetings
  - Direct Contact to FHWA : PerformanceMeasuresRulemaking@dot.gov
- Focused Areas for Outreach
  - Performance Measures
  - Target Setting Listening Session
  - Reporting and Assessment

Online Dialogue Summary

FTA has completed an online dialogue on asset management and is planning one for transit safety

- Visited 8,165 times
- 228 ideas, 293 comments, 3,695 votes
- 8 Campaigns



Coordinating Implementation

Measure Rules

- Define Measure
  - Data Elements
  - Data Source
- Interstate Pavement Condition
- Target Setting Requirements
- Define Significant Progress
- State Performance Reporting
- Establish Timing

Planning Rule

- Performance-based Planning Process
- Target Setting Coordination
- MPO Performance Reporting
- STIP/TIP Discussion
- Transition Period

Program R/G

- Plan Requirements
- Special Rules
- Integrating Performance
- Transition Period

STAGED RULE SCHEDULE

Measures / Fiscal Year		Safety Measures	Pavement & Bridge Measures	CMAQ, Performance, and Freight Measures
FY / QUARTER		Status I	Status II	Status III
FY13 (Year 1 of MAP-21)	Q1	Consultation/ NPRM	Consultation/ NPRM	Consultation/ NPRM
	Q2			
	Q3			
	Q4			
FY14 (Year 2 of MAP-21)	Q1	Comments		
	Q2	Final Rule	Comments	
	Q3		Final Rule	Comments
	Q4			
FY15	Q1			Final Rule
	Q2			

Single Effective Date: **Spring 2015**

Evaluation of Candidate Measures

Is it Appropriate?
Will the measure support national programs?

6 Factors

Are We Ready?
Can data be in place to support the desired measure?

6 Factors

Is The Measure Appropriate?

Focused	• Is the measure focused on an area of national interest?
Collaborated	• Has the measure been developed in partnership with stakeholders?
Maintainable	• Is the measure maintainable to accommodate changes?
Impactful	• Can the measure be used to support investment decisions, policy making and target setting?
Track-able	• Can the measure be used to analyze performance trends?
Feasible	• Has the feasibility & practicality to collect, store, & report data for the measure been considered?

Are We Ready to Use the Measure?

Who Provides the Data?

- Federal Agency
- State/Local Agency
- Third Party

  - Collection
  - Storage
  - Access

Data Quality

- Timeliness
- Consistency
- Completeness
- Accuracy
- Accessibility
- Data Integration

Safety Measures

- Considerations
  - Defining serious injuries
  - Time lag associated with national data
  - Coordination with Highway Safety Plan
  - Target setting
- Current Efforts
  - Highway Safety Plan Interim Final Rule
  - Target setting best practices
  - Highway Safety Improvement Program guidance

Infrastructure Condition Measures

- Considerations
  - Data sources, availability, coverage
  - Measures linked to decision making
  - NBI element level data requirements
  - Advancing technologies
  - Target setting
- Current Efforts
  - Evaluating data (HPMS 2010+)
  - Exploring measure alternatives
  - Evaluating feasibility for implementation (pilot studies)

Traffic Congestion and NHS Performance

- Considerations
  - Data sources, availability, coverage
  - Trip information, movement of people
  - Modes of transportation
  - Scalability
  - Target setting
- Current Efforts
  - Acquiring data
  - Exploring measure alternatives
  - Evaluating feasibility for implementation

Implementation Challenges

- Does “One Size Fit All”
- Setting Challenging Targets
- Trade-Off Decisions
- Predicting Outcomes
- Integrating into an Existing Process
- Multiple Performance Areas
- Managing Uncertainty/Risk
- Program Transparency

What Are We Doing Now?

Building Our Strength

- Awareness
- Capacity Building Plan
- Information Access
- Tools

The Performance Story

- Workshops
- Benchmark Studies
- Pilots
- Case Studies

Designing a Program

- New Measures
- Framework Elements
- Guidance
- Coordinating Efforts

Transportation Performance

Our system at work

HOME | About Transportation Performance | Our Transportation Investment | Our Economic Well-Being | Our Mobile Lifestyle | Performance Measures

Our Mobile Lifestyle

No matter where you live or what your age, your lifestyle depends on transportation

>>read more

BORING BUT IMPORTANT

- Bridges in the U.S.: 599,766
- Bridges requiring repairs: 152,324
- Cost to repair them: $140 billion
- What Americans spend each year on soft drinks: $65 billion
- What the US spent in 2008 repairing bridges: $12.8 billion

Source: AASHTO, ASCE, National Soft Drink Association

In the Spotlight

SEARCH

Mobile Moments: Bicycle Safety Infographic

630 cyclists died on U.S. highways in 2009.

Performance Report Showcase: Maryland's Annual Attainment Report.

This report gives Maryland residents a transparent assessment of the performance of their transportation system.

Infographic: How Long is It Taking Americans to Get to Work?

New York and Chicago have the longest commutes. What about your city?

By AutoInsuranceCenter and posted at Visual.ly (http://visual.ly/how-long-it-taking-americans-get-work)

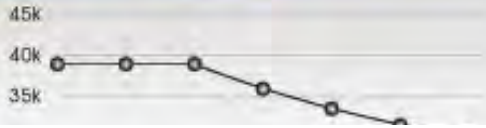
HOW ARE WE MEASURING UP?

HIGHLIGHTED MEASURE

LOWERING FATAL CRASHES

snapshot

end



Transportation Performance

Our system at work

If averaged out, every **man**, woman and child in **America** invests about **$1.55** a day in streets, roads and highways. About **$1.16** of that investment keeps roads smooth (though we all know some are smoother than others), *extends their life*, and ADDS NEW ROADS AND LANES to get you where you want to go faster. You see and appreciate seasonal maintenance like SNOW PLOWING, **mowing** and pot hole patching. That takes about **9 CENTS** a day. **THIRTEEN CENTS** are spent to make our roads safer and **2 CENTS** goes to research to find innovations that help **our investments last longer** and **work better**. See below for more information.

(U.S. DOT Highway Statistics 2010)

Transportation Performance
Learn More About Our System at Work

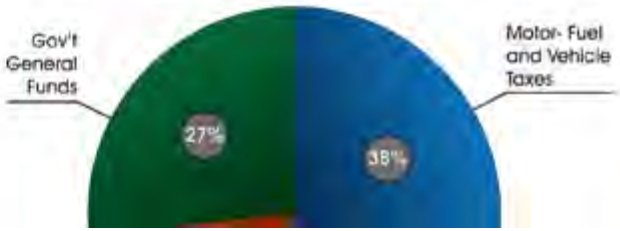
FOR DEMONSTRATION ONLY

Keeping Us Moving

Where does highway funding come from?

The funding dedicated to our highway system is used to preserve and maintain our roadways and bridges, reduce congestion, improve safety, and invest in research that will lead to innovations and improvements in the future.

Combined Highway Funding Sources
(National, State, and Local)



Our Transportation Investment – Related Stories

Conditions & Performance of America's Transportation System

What is the state of our highways, bridges, and transit systems and how will their condition change under different investment scenarios?

The High Cost of Congestion

A Texas Transportation Institute study finds that Americans spend an extra 34 hours a year in their cars because of traffic, costing Americans $101 billion a year--$713 per urban commuter--in extra fuel and wasted time.

TIGER 2012 Projects Keep Freight, Economy Moving

Transportation Performance

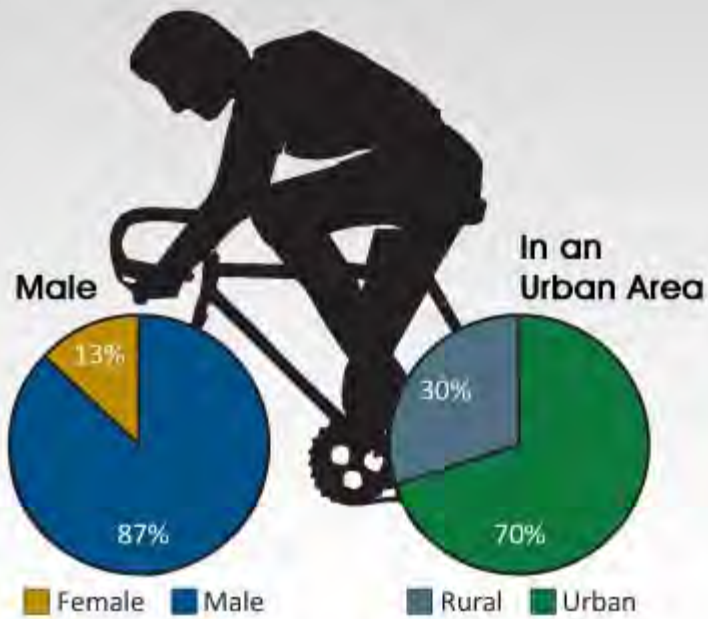
Our system at work

Mobile Moments: Bicycle Safety Infographic

FOR DEMONSTRATION ONLY

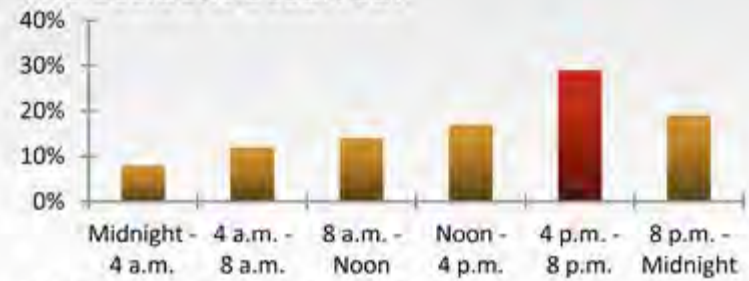
630 cyclists died on U.S. highways in 2009.

The typical bicycle fatality victim was:

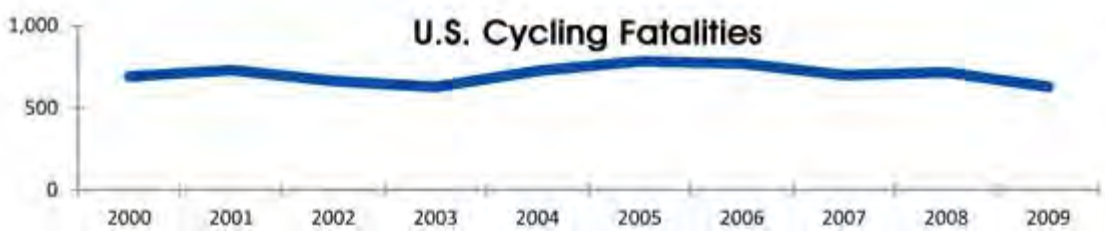


Between 45 and 54 Years Old

The accident occurred:



Between 4 p.m. and 8 p.m.



The number of trips by bicycle was up 25% between 2001 and 2009.

Source: National Household Travel Survey (2009).

>>Transportation Performance: Learn More About Our System at Work

Transportation Performance

Our system at work

HOME | About Transportation Performance | Our Transportation Investment | Our Economic Well-Being | Our Mobile Lifestyle | Performance Measures

Select the Report Type and Measures You Would Like to See

REPORT TYPE

- >> NATIONAL
- >> STATE
- >> LOCAL

MEASURES

- >> ALL
- >> SAFETY
- >> PAVEMENT CONDITION
- >> BRIDGE CONDITION
- >> CONGESTION
- >> RELIABILITY
- >> FREIGHT
- >> ENVIRONMENT
- >> PROJECT DELIVERY

Transportation Performance
Learn More About Our System at Work

FOR DEMONSTRATION ONLY

Transportation Performance Report

This report summarizes transportation performance measures at the NATIONAL level.

HIGHLIGHTED MEASURES — These measures are recommended as a National Priority.

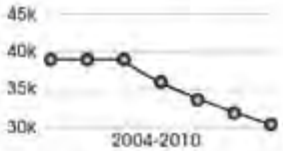
Are We Reducing Fatalities on our Roads? YES

EXPLANATION

THE NUMBER OF FATAL CRASHES IS DOWN.
The past five years have shown a steady decline in fatal crashes, but certain driver behaviors and crash types have remained a persistent threat to the safety of our roadways. There was a 19% reduction in fatal crashes in 2010 (versus the five-year average).

SNAPSHOT

TREND



Data Sources: Annual Fatal Crashes from FARS

THE FACTS

- Fatal crashes in 2010 were at a 15-year low.
- Approximately 40,000 people are killed on the road every year.
- Seatbelt usage has shown an increasing trend since 1994. In 1994 usage was at 58%. In 2011 usage was 84%.[1] Studies have found seatbelts to be 56% effective at reducing fatalities.[2]
- Road departure crashes account for over 50% of fatal highway crashes.

ACTIONS

- FHWA and state DOT's have developed a focused approach to safety through the adoption of State Highway Safety Plans which establish strategic goals and include evaluation processes.
- Since the 1990's states have enacted graduated drivers licensing laws for teen drivers.
- Forty-eight states and D.C. have restricted nighttime driving and 45 states and D.C. have passenger restrictions.[3]
- Click it or Ticket mobilizations have been effective at increasing seatbelt usage.[4]

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Transportation Performance Management

FHWA > Transportation Performance Management

NC Refining a Performance Management System

NCDOT recognized they needed to refine their performance management system and therefore began a transformation process. (.pdf, 0.6 mb)

What is TPM?

NC Refining a Performance Management System

WSDOT's Effective Communication of Performance Drives Results

Transportation Data Palooza

TPM and MAP-21

- What is TPM?
- National Goals
- MAP-21 Performance Requirements Summary
- Implementation Schedule

Engagement

- Rulemaking Stakeholder Engagement
- Readiness Stakeholder Engagement

Resources

- Tools
- Noteworthy Practices
- Presentations

News and Events

- FHWA Webinar Series: Asset Management Book Club Webinar
  March 27, 2013, 2:00 PM EST
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