



***2015 Status of the Nation's Highways, Bridges,
and Transit: Conditions and Performance
Report to Congress***

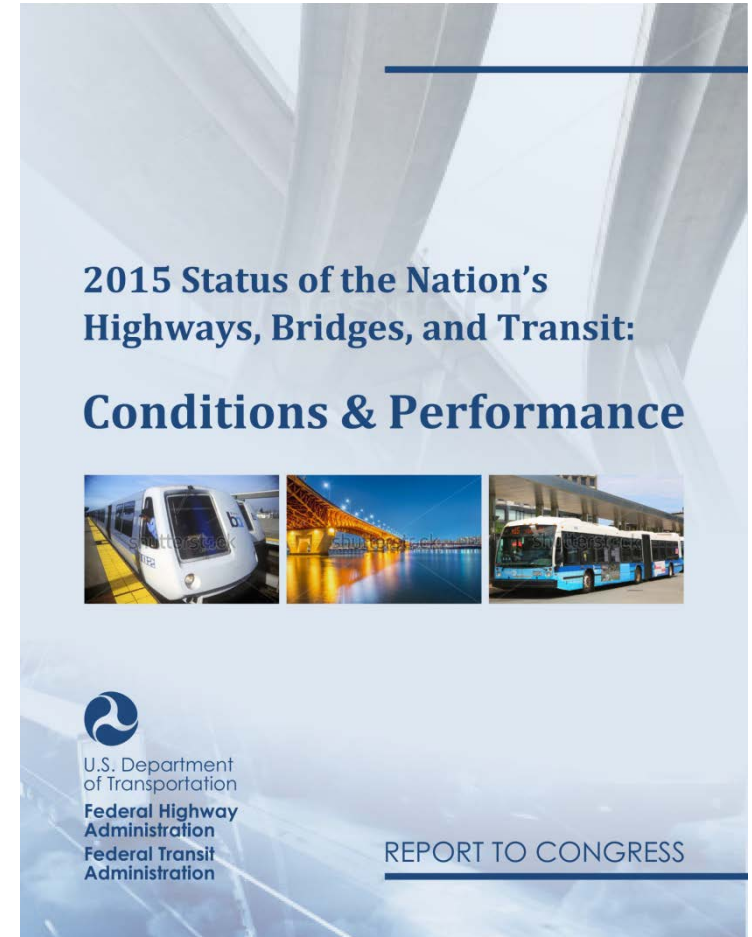
Highway Overview & Use of 500 Series Data

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C&P Report Highway Findings

- ▶ **Overview**
 - Purpose
 - Background
 - Structure
- ▶ 2015 C&P Key Retrospective Findings
- ▶ 2015 C&P Key Prospective Findings





Report Purpose

- ▶ To provide Congress and other decision makers with an objective appraisal of highway, bridge and transit physical conditions, operational performance, and financing mechanisms
 - Retrospective: current state of the system
 - Prospective: projected state of the system under alternative 20-year future capital investment scenarios
 - **Does not say how big the Federal program should be!**
- ▶ Meets Requirements of
 - 23 USC 23 U.S.C. 503(b)(8); 49 U.S.C. 308(e)



Report Background

- ▶ Biennial report series dates back to 1968
 - 11 Highway-only Reports (1968 – 1991)
 - 4 Transit-only Reports (1984 – 1990)
 - 11 Combined Reports (1993 – 2015)

- ▶ 2015 edition delivered to Congress in December 2016
 - Based primarily on 2012 data

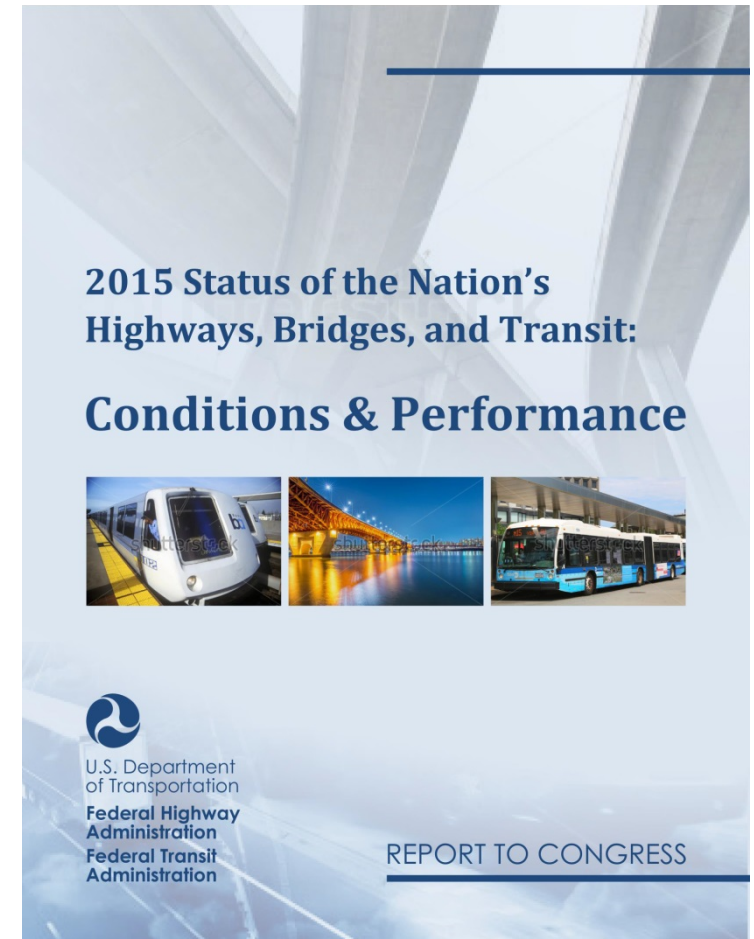
- ▶ 23rd (2017) and 24th (2019) editions underway
 - 23rd to be based primarily on 2014 data
 - 24th to be based primarily on 2016 data

Report Structure

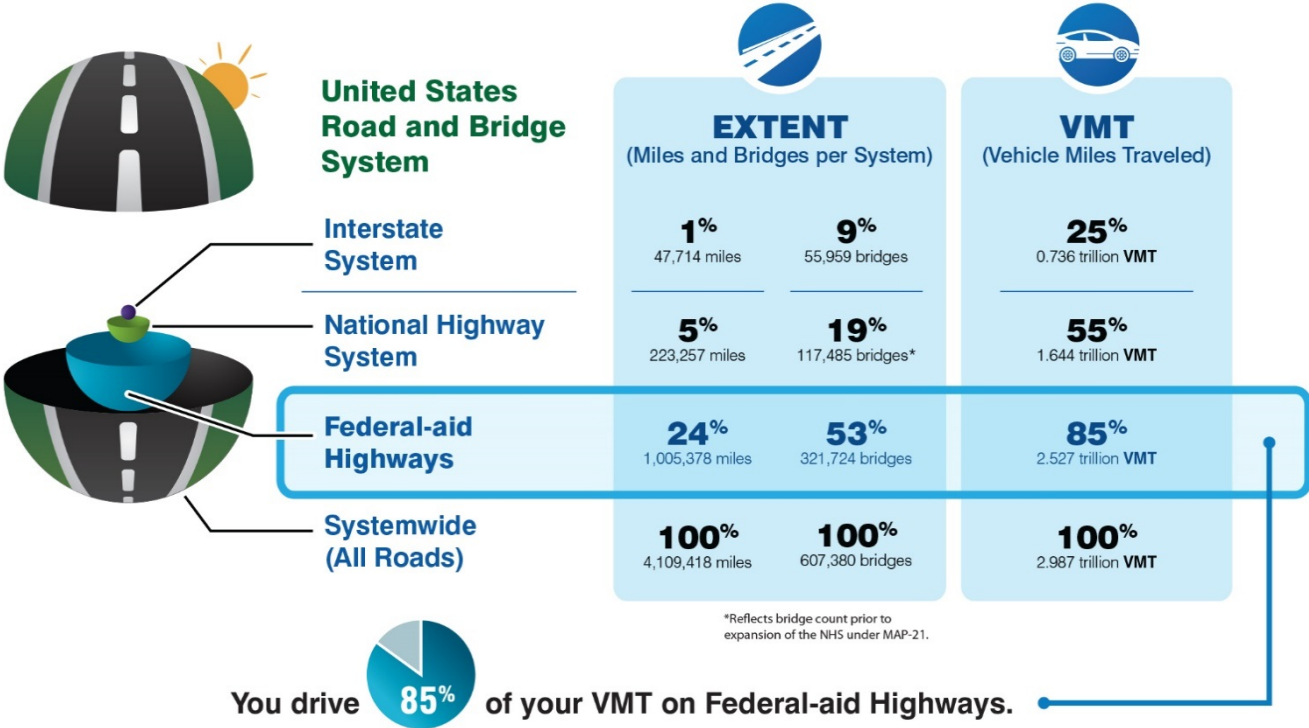
- ▶ Introduction, Highlights, Executive Summary
- ▶ Part I: Description of Current System
- ▶ Part II: Investment/Performance Analysis
- ▶ Part III: Special Topics
 - 11-Pedestrian and Bicycle Transportation
 - 12-Transportation Serving Federal and Tribal Lands
- ▶ Part IV: Recommendations for the HPMS
- ▶ Part V: Appendices (Analysis Methodology)

C&P Report Highway Findings

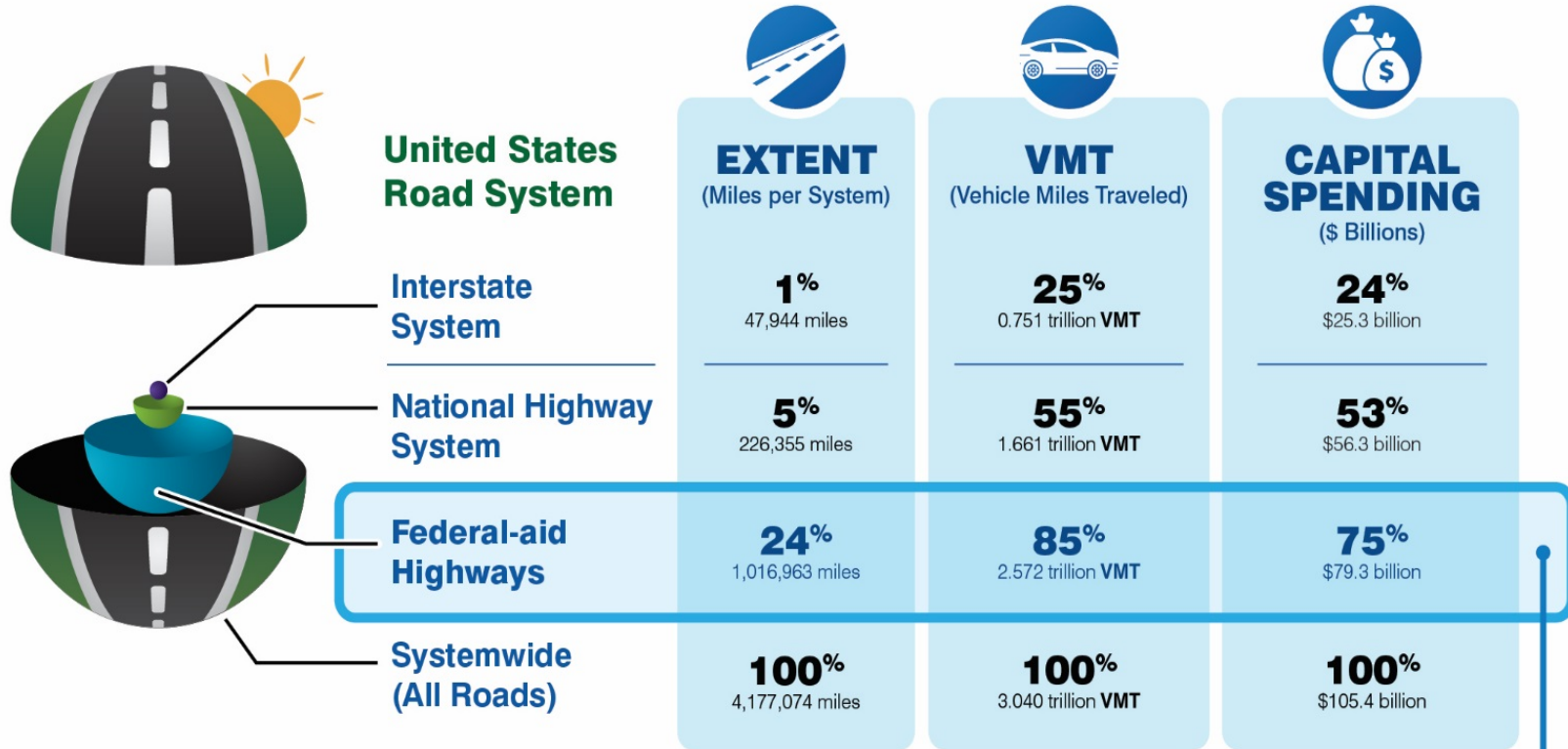
- ▶ Overview
- ▶ **2015 C&P Key Retrospective Findings**
(Part I: Description of Current System)
 - Introduction
 - 1-Household Travel and Freight Movement
 - 2-System Characteristics
 - 3-System Conditions
 - 4-Safety
 - 5-System Performance
 - 6-Finance
- ▶ 2015 C&P Key Prospective Findings



2012 Extent of the Highway System

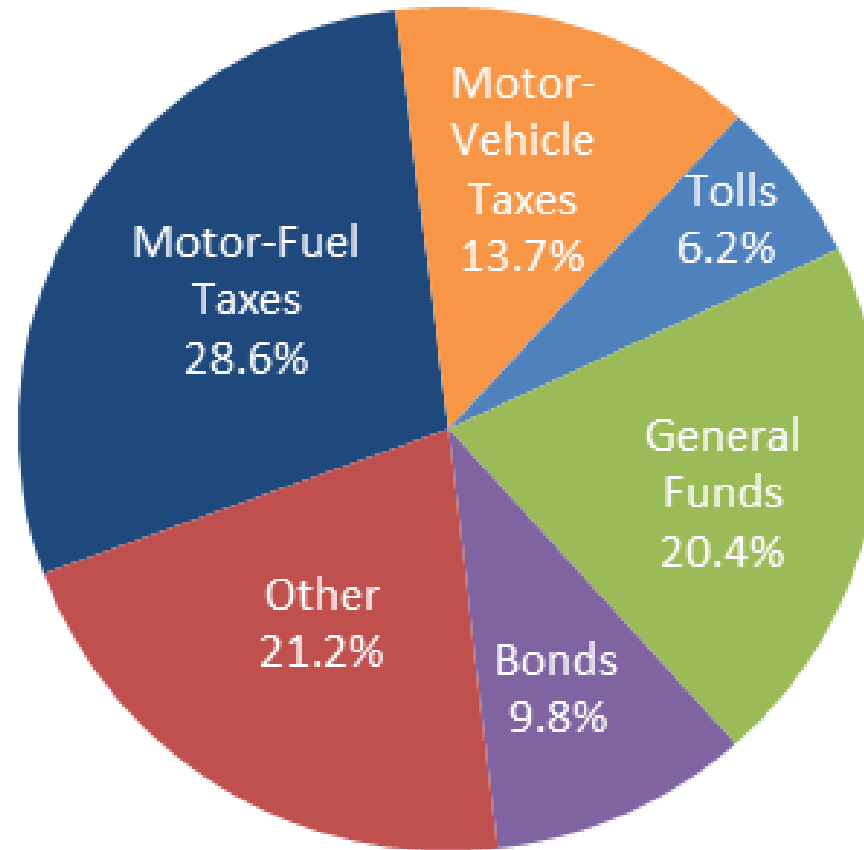


2014 Extent of the Highway System



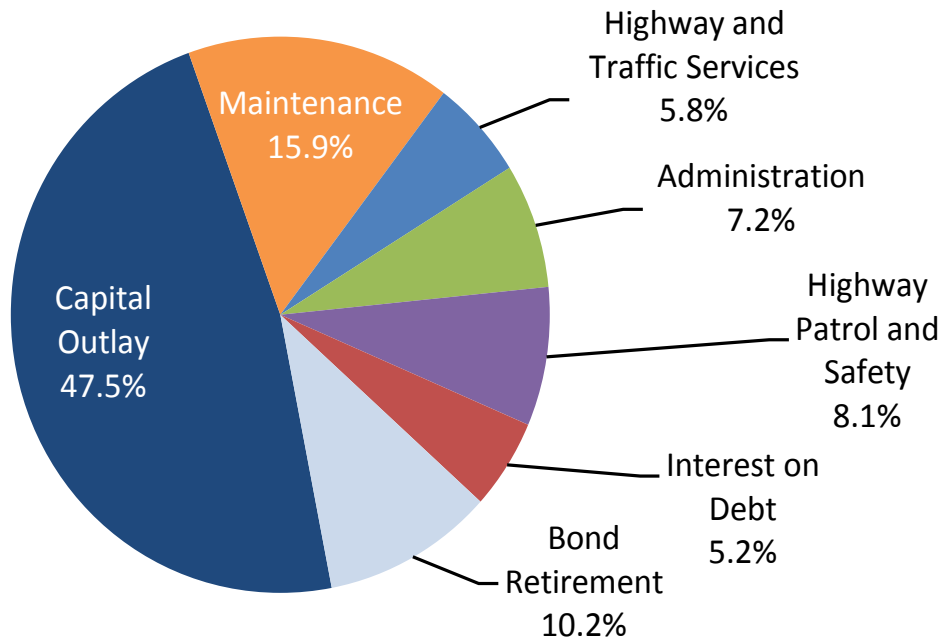
You drive **85%** of your VMT on Federal-aid Highways.

Composition of Highway Revenues - 2012

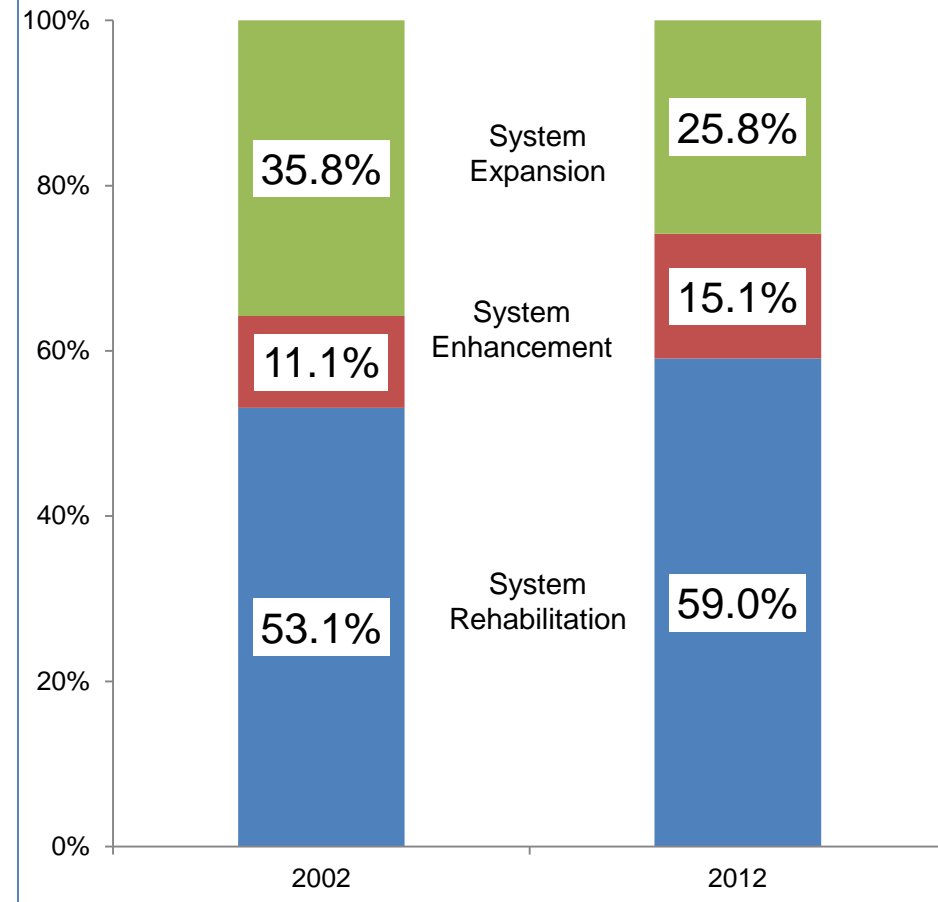


Composition of Highway Spending

Highway Expenditure by Type, 2012



Highway Capital Spending

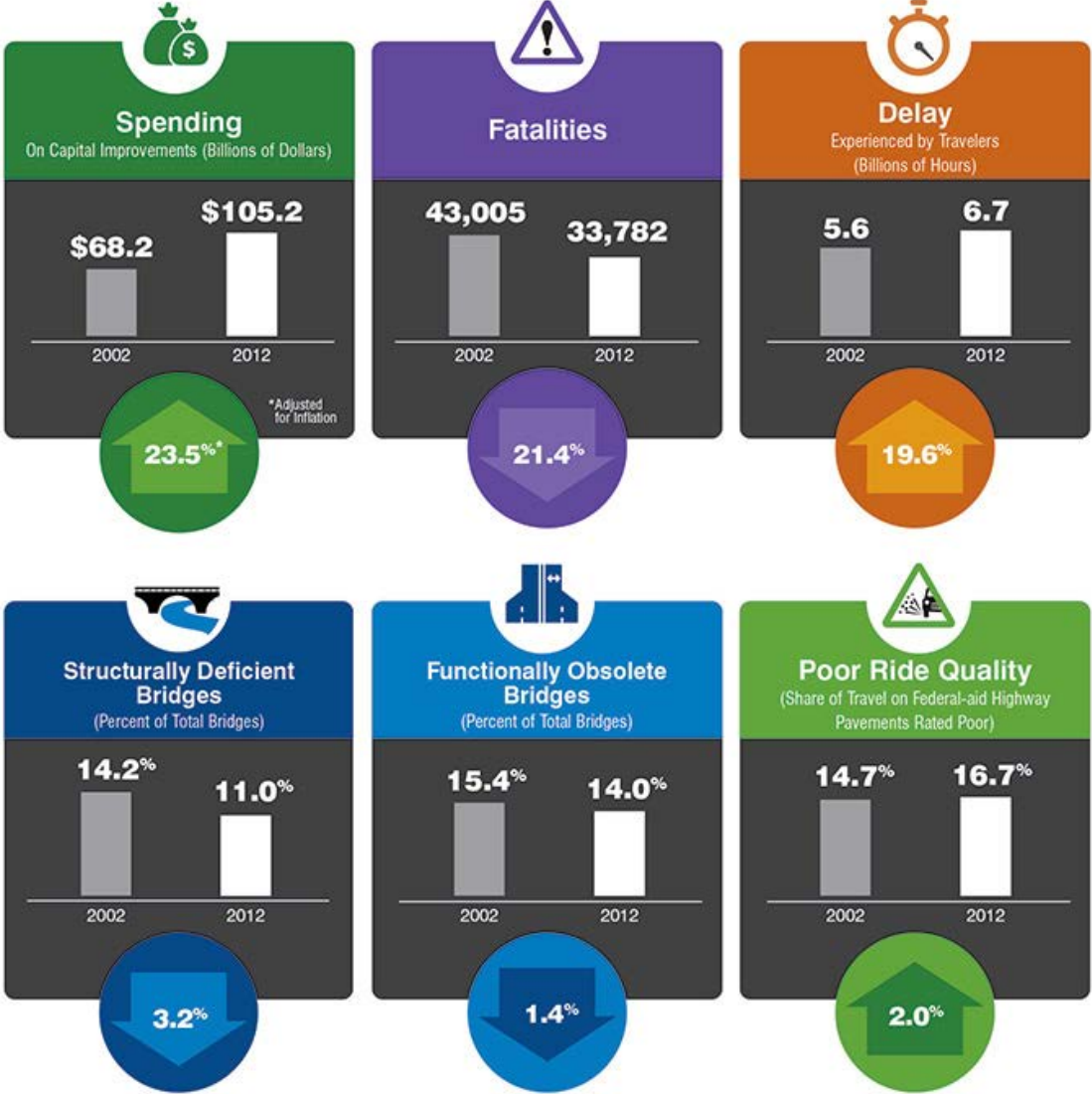


Highway Spending Trends, 2002 to 2012

	2012	Annual % Change 2002-2012
Total Highway Spending	\$221.3B	5.0% (2.6% Constant \$)
Highway Capital Spending	\$105.2B	4.4% (2.1% Constant \$)
Federally-Funded Highway Capital Spending		3.7%
Capital Spending Funded By State & Local		5.0%

Federally-Funded Share of Highway Capital Spending Decreased from 46.1% in 2002 to 43.1% in 2012.

2002–2012 Highway System Trends



Highway Safety Has Improved Overall, but Nonmotorist Fatalities Are on the Rise

	2002	2012	Change	2002 Rate*	2012 Rate*
Fatalities	43,005	33,782	-21%	1.51	1.14
Injuries	2.9M	2.4M	-19%	102	80

*Rate per 100 Million VMT

	2002-2012 Change	2012 Share of Total
Roadway departure fatalities	-31.0%	52.2%
Intersection-related fatalities	-21.5%	21.7%
Non-motorist fatalities**	+1.1%	14.1%

**Pedestrian/Pedacyclist Fatalities Up 15.6% Since 2009

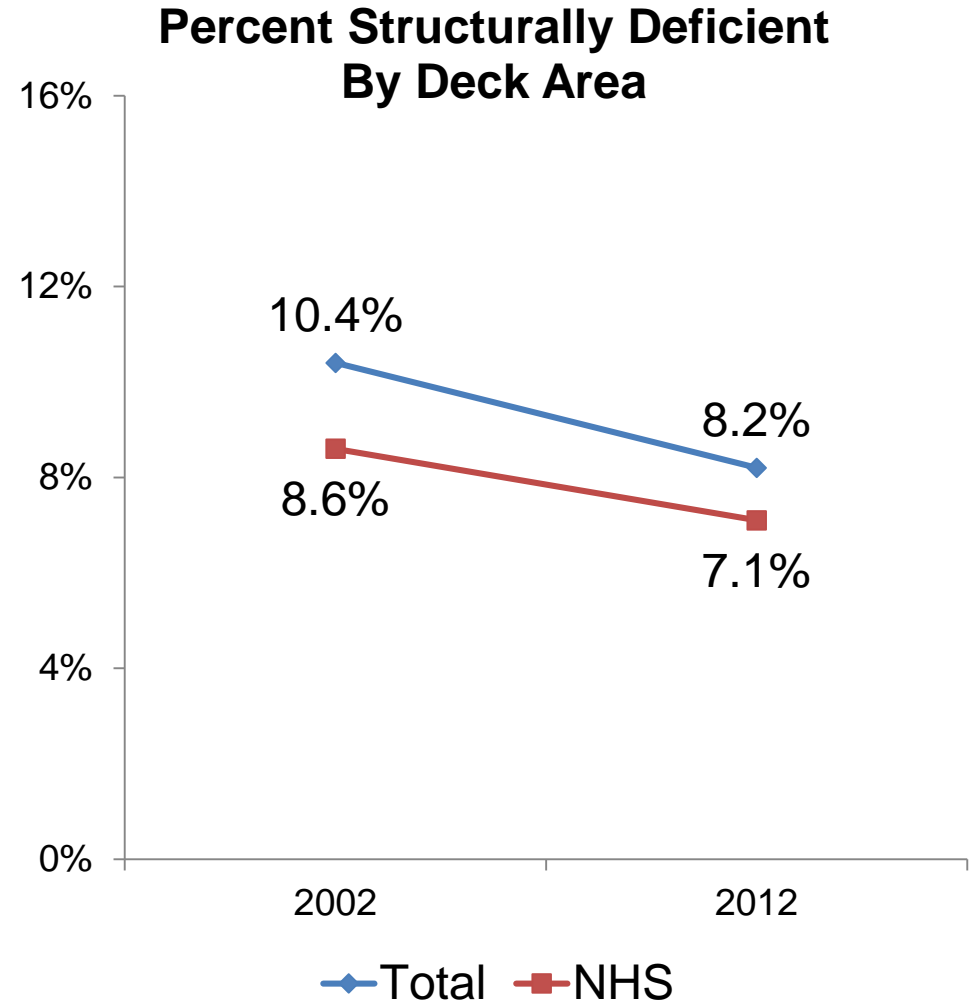
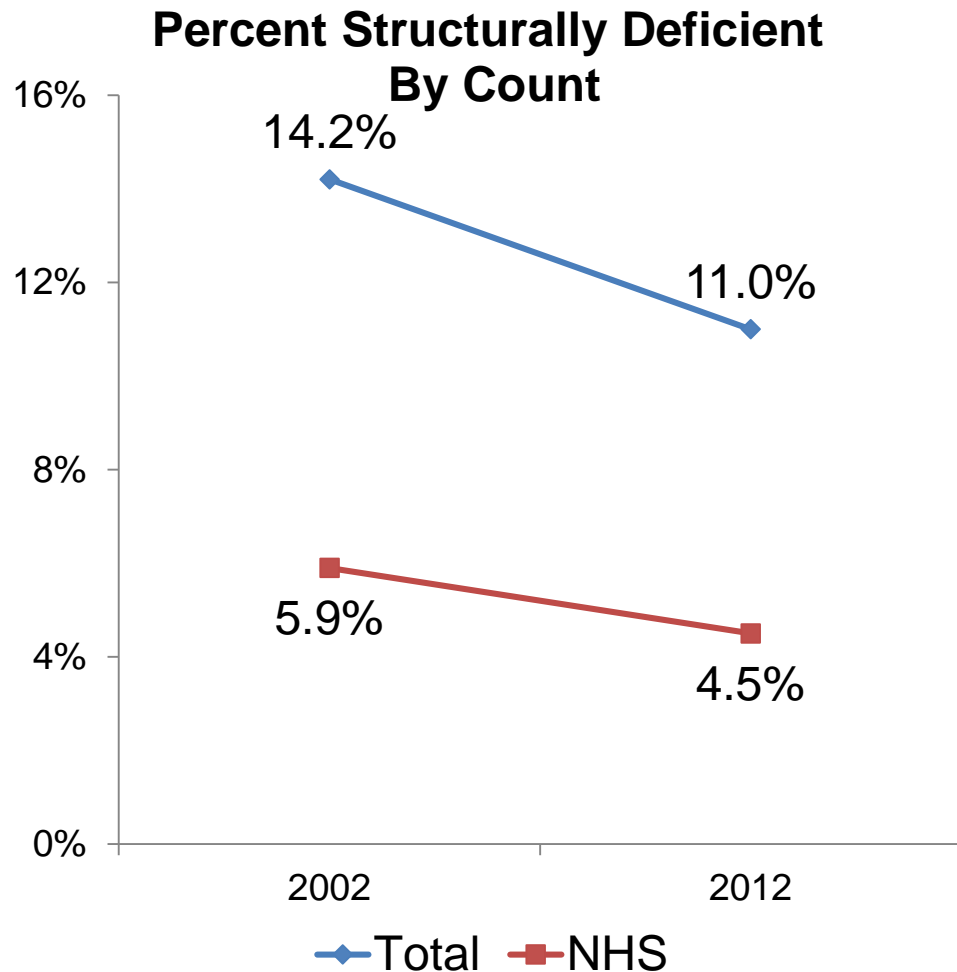


Operational Performance Has Slowly Worsened

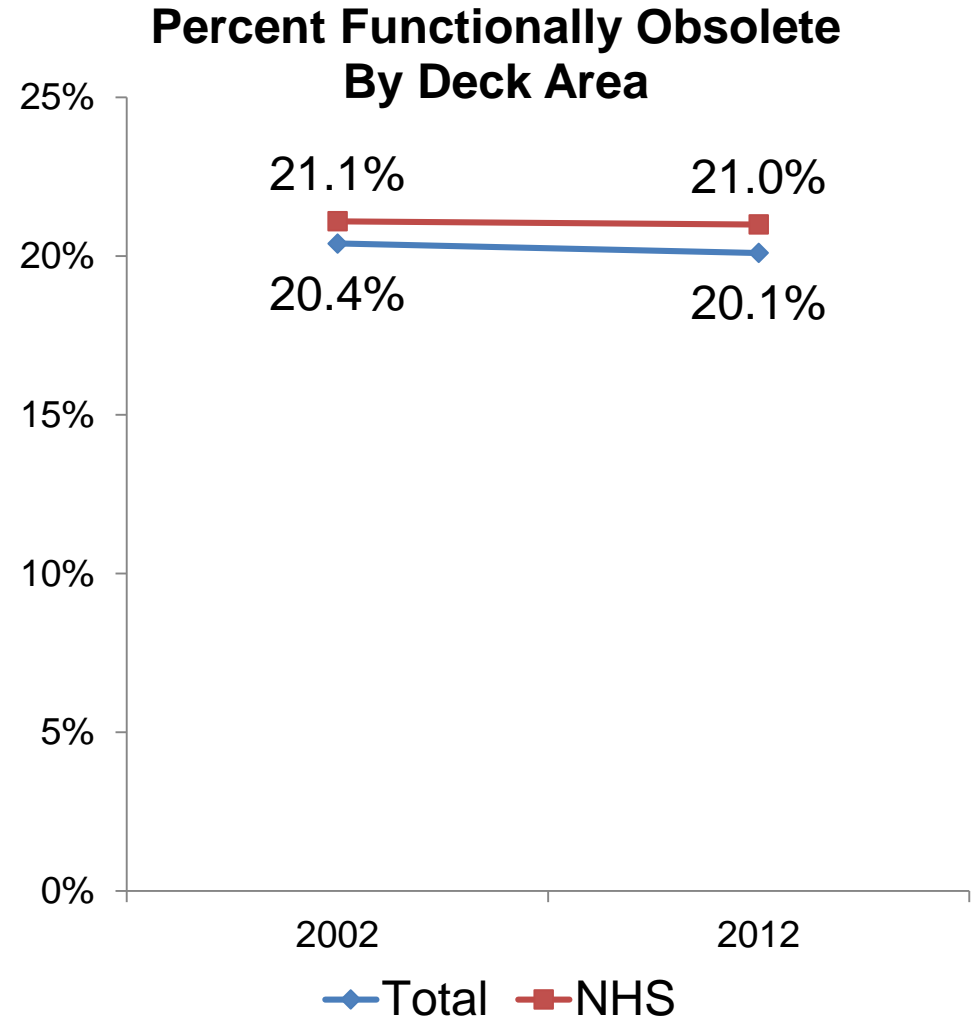
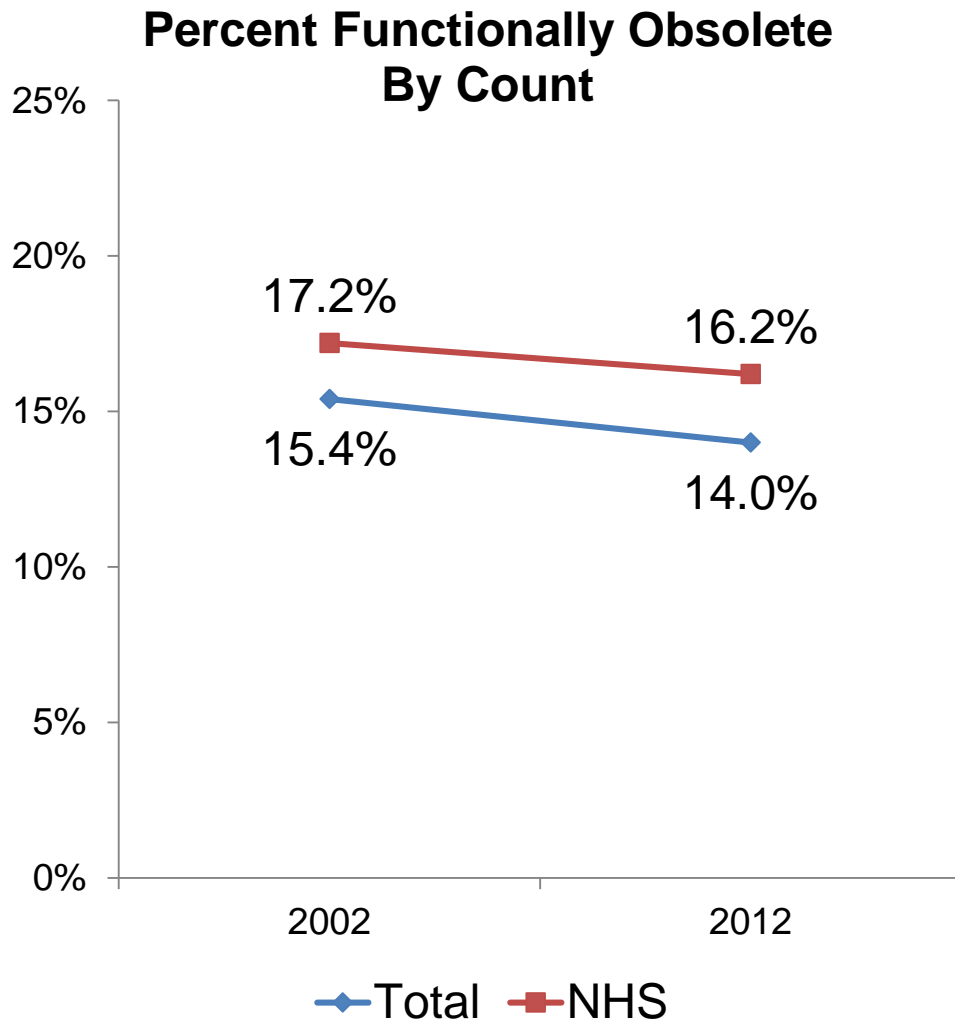
	2002	2012
Average commuter delay (hours)	39	41
Total delay (Billions of hours)	5.6	6.7
Total cost of time and fuel (\$B)	\$124	\$154

- ▶ Transitioning to measures based on NPMRDS but rely on Texas Transportation Institute data for time series
- ▶ Progress is being made on measuring other aspects of system performance relating to quality of life and sustainability.

Bridge Conditions Have Improved



Bridge Geometry Has Slightly Improved



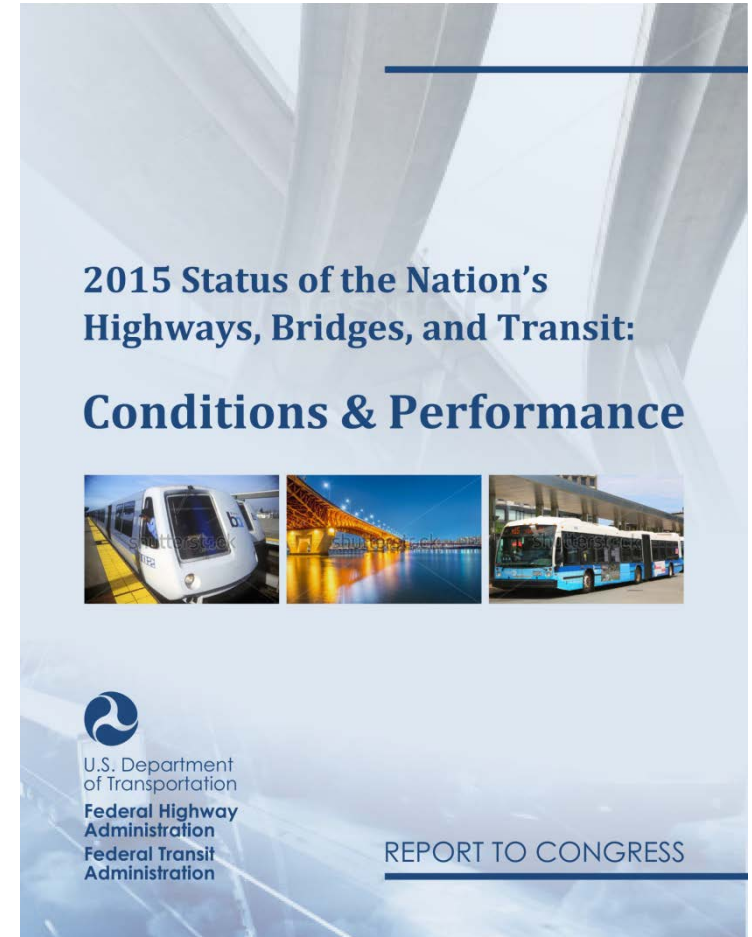
Pavement Condition Trends Mixed

	2002	2012	Change
<i>Federal-aid Highways –Mixed results</i>			
VMT on pavement w/ good ride quality	43.8%	44.9%	+
Mileage w/ good ride quality	46.6%	36.4%	-
VMT w/ poor ride quality	14.7%	16.7%	-
Mileage w/ poor ride quality	12.6%	19.7%	-
<i>NHS – Improved despite MAP-21 Expansion</i>			
VMT on pavement w/ good ride quality*	50.0%	57.1%	+

*Rose from 50% in 2002 to 60% in 2010 based on the pre-expansion NHS, and from 54.7% (estimated) in 2010 to 57.1% in 2012 based on the post-expansion NHS.

C&P Report Highway Findings

- ▶ Overview
- ▶ 2015 C&P Key Retrospective Findings
- ▶ **2015 C&P Key Prospective Findings**
(Part II: Investment/Performance Analysis)
 - Introduction
 - 7-Potential Capital Investment Impacts
 - 8-Selected Capital Investment Scenarios
 - 9-Supplemental Scenario Analysis
 - 10-Sensitivity Analysis



Investment/Performance Models

- ▶ **Highway Economic Requirements System**
 - Investment in highway widening and preservation on Federal-Aid highways
 - Including bridge widening as part of highway widening projects
- ▶ **National Bridge Investment Analysis System**
 - Investment in bridge rehabilitation on all highway classes.
- ▶ **HERS and NBIAS evaluate investment needs using a combination of:**
 - Technical adequacy (engineering) criteria
 - Benefit-cost (economic) criteria
- ▶ **Scenarios adjusted to account for other types of capital spending**

Highway Economic Requirements System

- ▶ Utilizes HPMS sample section data (100,000+ samples)
 - Identifies deficient sections based on engineering criteria
 - Evaluates potential improvements to deficient sections on the basis of economic benefits and project costs
 - Considers impacts of deployments of operations strategies and ITS
 - Consider travel demand elasticity (impact of user costs on future VMT)
- ▶ Benefits estimated by HERS are based on reductions in
 - User costs (travel time costs, vehicle operating costs, and crash costs)
 - Agency costs (maintenance costs)
 - Emissions costs (includes greenhouse gas impacts)






Investment/Performance Analysis

- ▶ Simulate impact of investment by all levels of government combined for the 20 years from 2012 to 2032.
 - Funding levels stated in constant 2012 dollars.
 - Analyses assume spending grows/shrinks by a uniform rate of increase in constant dollar terms using 2012 spending level as starting point.
- ▶ Report explores multiple funding levels, and presents more detail for selected illustrative scenarios
- ▶ Report focusses on results for the overall road system,
 - Separate results shown for Federal-aid highways, NHS, and Interstate

2012–2032 Future Highway Capital Investment Scenarios



	 SPENDING NEEDED (Billions of Dollars)	 AVERAGE ROUGHNESS	 AVERAGE DELAYS
Maintain Conditions and Performance at 2012 Levels	\$89.9	NO CHANGE 0.0%	IMPROVE 12.2%
Sustain Spending at 2012 Level by All Levels of Government, Adjusted for Inflation	\$105.2	IMPROVE 4.5%	IMPROVE 13.4%
Improve Conditions and Performance (BCR 1.0 or Higher)	\$142.5	IMPROVE 14.0%	IMPROVE 16.5%



Improve C&P Scenario (\$142.5B/Year)

- ▶ Requires highway spending to grow by 2.81% annually above the rate of inflation.
- ▶ Eliminates the \$836 billion estimated backlog of unmet capital investment needs for highways and bridges as of 2012.
- ▶ Includes \$85.3 Billion devoted to the physical condition of existing assets (the State of Good Repair Benchmark)
 - Only improves pavements and bridges when cost-beneficial to do so.

Questions?

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