



Transportation  
for America



# The Fix We're In For: The State of Our Nation's Bridges **2013**

**TRANSPORTATION FOR AMERICA**

Creative Commons photo of the I-5 Skagit River bridge by Flickr user WSDOT <http://www.flickr.com/photos/wsdot>

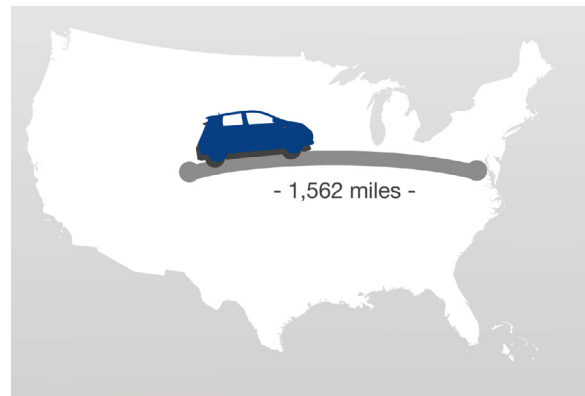
# One in nine bridges remains structurally deficient

Every day, millions of people from all walks of life in cities and towns large and small travel over one of our country's **66,405** structurally deficient bridges — more than one in nine (**11 percent**) of all bridges.

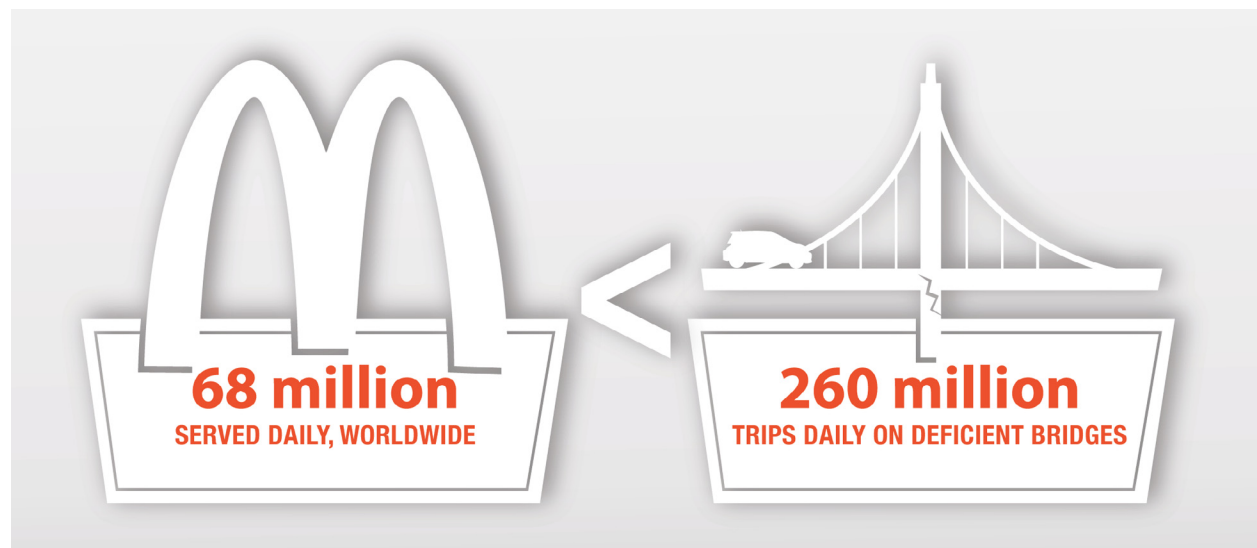
**Structurally deficient bridges are those that require significant maintenance, rehabilitation or replacement.**

We take **260 million trips** over deficient bridges each day. In our 100 largest metropolitan areas alone, there are more structurally deficient bridges than there are McDonald's restaurants in the entire country. Laid end to end, all the country's deficient bridges would span from Washington, DC to Denver, Colorado — more than **1,500 miles**. (Or farther than from Canada to Mexico.)

While most bridges are designed to last 50 years before major overhaul or replacement, the average age of an American bridge is well past middle age at **43 years**.



Not surprisingly, age takes a toll. Structurally deficient bridges are **65 years old** on average — more than **22 years older** than all bridges. Herein lies a glimpse of the future fix we're in for: In just 10 years, **one in four bridges (170,000) will be over 65**, an age at which it's far more likely that a bridge will be deficient.



## About this data

This report is derived from the National Bridge Inventory, a compilation of state-collected data, which is reported to and then published by the Federal Highway Administration (FHWA). This data was released in early 2013 and was reported to the FHWA at different times by states in 2012. It's perhaps most helpful to think of the NBI dataset as a summary of bridge conditions during a period of time, not a single specific moment. States report their data to FHWA at different points during 2012, and repairs may have been made in the many months between their reporting date and the release of the FHWA dataset. States have the most up-to-date bridge data, but this is the sole complete national source of bridge data.

## Our bridges aren't getting any younger.



 Average bridge age: **43 years**

 Average designed lifespan: **50 years**

 Average age of structurally deficient bridges: **65 years**

**In 10 years, 1 in 4 of our bridges will be 65 years or older.**

Bridges may be rated deficient for a range of reasons and not all of them pose an immediate threat to public safety. However, allowing bridges to remain in serious need of repair can lead to the sudden closure of a critical transportation link or, far worse, a collapse that results in lives lost and a major economic impact to the affected region.

Considering declining gas tax revenues for transportation and other budget woes, securing the money to repair or replace thousands of bridges, while fixing the other parts of our aging highway and transit networks, is a critical national issue. The maintenance backlog will only grow as bridges age and costs rise. The Federal Highway Administration estimates that repairing our deficient bridges would cost a staggering \$76 billion. This figure will likely increase as many of our most heavily traveled bridges – including those built more than 40 years ago as part of the Interstate system – near the end of their expected lifespan.

Meanwhile, Congress last year introduced a wild card into the mix by passing legislation that **eliminated a dedicated fund for bridge repair** in the renewal of the federal transportation program, known as MAP-21. Instead, states are directed to set standards that they expect to meet for repair, but with limited enforcement in case of failure. The upshot is that bridge repair now

### What does “structurally deficient” mean?

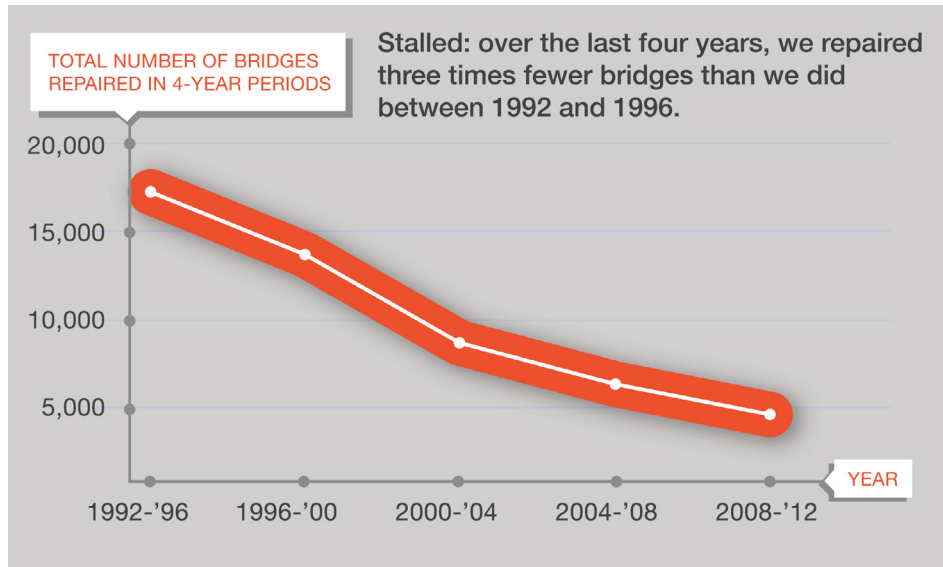
Highway bridges have three primary components: 1) **the deck**, which is the top surface of the bridge that cars, trucks and people cross; 2) **the superstructure**, which supports the deck; and 3) **the substructure**, which uses the ground to support the superstructure. Each of these bridge features is given a rating between 0 and 9 when inspected, with 9 signifying the best condition. Federal guidelines classify bridges as “structurally deficient” if one of the three key components is rated at 4 or less (poor or worse), meaning engineers have identified a major defect in its support structure or its deck. (There are a handful of other criteria that can result in a deficient grade, but for the majority of deficient bridges, one of these three primary components rates a 4 or below.) Federal law requires states to inspect all bridges 20 feet or longer at least every two years, though states typically inspect structurally deficient bridges far more often.

must compete with other transportation needs. At the same time, the new law reduced access to funds for the nearly 90 percent of structurally deficient bridges that are not part of the so-called National Highway System (the interstates plus larger state highways).

## Slow – and slowing – progress

The good news is that some states have worked hard to address the problem and have reduced the backlog of deficient bridges. Since our 2011 report, investments from the American Recovery and Reinvestment Act and ongoing transportation programs have helped bring the share of deficient bridges down slightly, from 11.5 percent to 11 percent. This is a continuation of progress made over the last 20 years in reducing the total number of deficient bridges, but the bad news is that that progress has slowed markedly. In the four-year period from 1992-1996 transportation agencies reduced the number of deficient bridges by **17,000**. But in the period from 2008-2012, the number dropped by only about **5,000** – a rate three times slower than in the early 1990s.

Among the 10 states with the largest share of deficient bridges in our 2011 report, seven managed to reduce their total number of deficient bridges (though their rank may have stayed the same). **Pennsylvania** remains number one with one in four bridges rated structurally deficient, but made one of the largest gains against its maintenance backlog, reducing the number of deficient bridges by more than **8 percent**. In terms of numbers of structurally deficient bridges, **Missouri** reduced its total by 640 in the two years since our last report, while **Pennsylvania** reduced its number by 500 and **Ohio** dropped by 327.



Year	# of bridges (last year of cycle)	# deficient (last year of cycle)	Percent improvement per 4-year period
1992	572,196	118,698	
93-96	581,862	101,518	<b>3.3%</b>
97-00	587,458	86,692	<b>2.7%</b>
01-04	593,885	77,758	<b>1.7%</b>
05-08	601,411	71,469	<b>1.2%</b>
09-12	604,995	66,405	<b>0.9%</b>

However, not all states have made progress since our last report. **15 states** have more deficient bridges today than they did in 2011. (See map on following page.)

**Arizona, Delaware and Hawaii** were the largest gainers, growing their total of deficient bridges by 5 percent or more over 2011. Roughly one in five bridges is structurally deficient in **Oklahoma, Iowa, Rhode Island, South Dakota and Nebraska**. And **Oklahoma** also led the way in real numbers, increasing their total of deficient bridges by about **77** in two years, ahead of other top worsening states New York (61), Louisiana (51), and Minnesota (40).

## May 2013: I-5 collapse and “fracture-critical” bridges

The Interstate 5 bridge that collapsed into the Skagit River in May 2013 was not structurally deficient but it was denoted to be “fracture-critical” in its design, lacking redundant supporting elements. This designation means that a failure of one of those components can lead to collapse. Scary as it sounds, fracture critical bridges are deemed perfectly safe as long as they remain structurally sound, as the I-5 bridge apparently was. There are nearly 20,000 other bridges that have “fracture critical” designs. The Skagit River bridge, though in good repair, was a strong candidate for replacement, nevertheless, because it was built before the Interstate highway system and later incorporated into it. It was not designed to carry the large loads of today's interstates. Indeed, it collapsed when an overly tall tractor-trailer - carrying a legal load for the Interstates - clipped the overhead support beams. Ideally, a robust federal program would ensure systematic replacement of such heavily traveled, outdated bridges over time.

## An uncertain future for bridge repair and safety

For the last 30-plus years, the federal transportation program maintained a dedicated fund for repairing structurally deficient bridges. The program began in 1978, when Congress dedicated funding to help improve the nation's bridges, and was given new emphasis in the 1991 law known as ISTEA. For the 20 years after 1991 more than 50,000 deficient bridges were repaired. But the lion's share came in the first 10 years, and since then progress had slowed significantly, as noted above. The exact reasons why are a subject for further study. It's possible that states fixed the bridges with the lowest cost first, or that they shifted their priorities to other areas, perhaps due to the increasingly constrained funding of recent years.

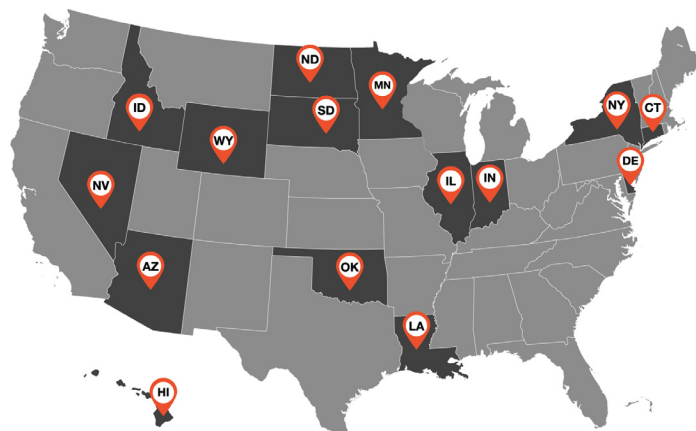
Congress took a new approach – and something of a gamble – with the 2012 renewal of the transportation program, MAP-21. For one, the new law eliminated the dedicated bridge fund, allowing states to program money as they see fit. In principle, states will be required to meet maintenance standards set under a new system of performance measures. However, that system has yet to be established, and the mechanisms for enforcement are limited.

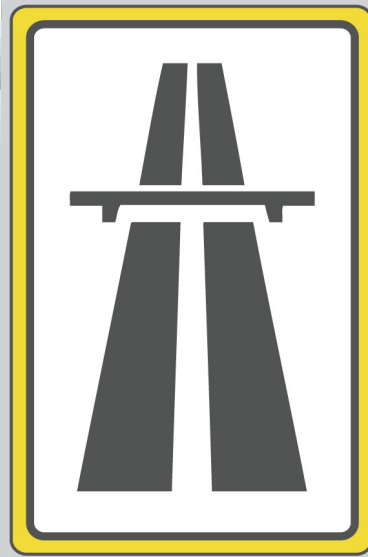
The change was also made with little transition to allow for Congress and the public to see how this new system will work.

The new performance measures system will take several years to set up – but the dedicated bridge fund was eliminated starting in 2013 before the new system is in place. These changes come as progress on bridge repairs has slowed in the face of a rapidly aging system, and as states and localities grapple with competing priorities after years of depressed revenues.

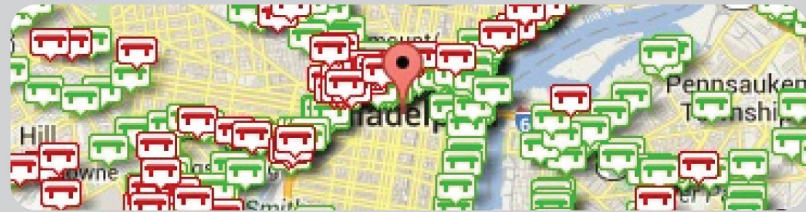
Congress also reduced access to funding for the repair of most locally owned bridges, which are twice as likely to be structurally deficient as those on the state and

### 15 states have had their number of structurally deficient bridges **increase** since 2011.





**DO YOU DRIVE ON DEFICIENT BRIDGES?**  
Find the structurally deficient bridges  
in your area with our interactive map:



[t4america.org/resources/bridges](http://t4america.org/resources/bridges)

federal systems, as well as state-owned bridges that are not designated as part of the National Highway System (NHS). Although these bridges account for nearly 90 percent of all deficient bridges, MAP-21 now focuses all funding from the former bridge repair program on the ten percent of deficient bridges on the NHS, which includes the interstates and most larger state highways.

Certainly, bridges on the NHS roadways are critical, and carry vast numbers of people and goods, but these other bridges also provide essential links, and those who use them also deserve to be safe. Given the budget woes of so many local governments, there is little prospect of reducing the repair backlog absent federal assistance. As it stands now, however, these bridges are forced to compete with all other local transportation projects for funding from a single pot of transportation dollars that did not grow to meet these new responsibilities.

## Recommendations

The current surface transportation authorization will expire on September 30, 2014. Transportation for America recommends that the next authorization take the following steps to reduce the maintenance backlog, bring our bridges to a state of good repair and keep users safe.

**Increase investment:** MAP-21 is a short-term bill that relies on about \$19 billion in transfers of general revenues from the Treasury Department to keep the Highway Trust Fund solvent through September 30, 2014, when the bill expires. In FY2015 alone, the Trust Fund will need an additional \$14 billion in transfers to remain solvent. Current spending levels are precarious and inadequate. This situation cannot continue. In order to bring our rapidly aging infrastructure up to a state of good repair, Congress should raise new dedicated revenues for surface transportation programs, including bridge repair.

**Make all 180,000-plus federal-aid bridges eligible for National Highway Performance Program funds:**

Under MAP-21, all of the money previously set aside for bridge repair was rolled into the new National Highway Performance Program, which represents 60 percent of all federal highway funding. National Highway Performance Program (NHPP) funds may only be spent on a limited subset of highways known as the National Highway System, representing only 23 percent of all highway bridges, and only ten percent of all deficient bridges. That is in contrast to the former bridge program, for which 600,000-plus bridges were eligible for federal support. Given that nearly nine in ten deteriorating bridges are located off of the National Highway System, the next federal authorization should allow the repair of these 180,000 “federal-aid” bridges

to be funded by the National Highway Performance Program, as they were eligible for repair dollars under the previous Highway Bridge Program.

### Prioritize Repair

The next federal transportation bill should make the repair of highways and bridges a national priority. Specifically, Congress should require states to set aside a share of their NHPP funds for bridge repair unless the state's bridges are certified as being in a state of good repair.

## National Rankings and State Data

Note: full state and county level summary statistics are available online at [t4america.org/resources/bridges](http://t4america.org/resources/bridges)

State	Rank	2013 % deficient	Total bridges	Deficient bridges 2013	Deficient Bridges 2011 (FHWA)	Change in deficient bridges over 2011	Percent change in deficient bridge total	Average daily traffic on deficient bridges
Pennsylvania	1	24.5	22,667	5,543	6,043	-500	-8.3% better	18,994,224
Oklahoma	2	22.6	23,778	5,382	5,305	+77	1.5% worse	7,236,161
Iowa	3	21.2	24,465	5,191	5,440	-249	-4.6% better	1,728,828
Rhode Island	4	20.7	754	156	163	-7	-4.3% better	2,598,405
South Dakota	5	20.6	5,869	1,208	1,198	+10	0.8% worse	354,303
Nebraska	6	18	15,391	2,778	2,820	-42	-1.5% better	724,206
North Dakota	7	16.8	4,445	746	727	+19	2.6% worse	95,368
New Hampshire*	8	14.9	2,429	362	383	-21	-5.5% better	1,796,425
Maine	9	14.8	2,408	356	389	-33	-8.5% better	924,423
Missouri	10	14.5	24,072	3,502	4,142	-640	-15.5% better	5,156,617
Mississippi	11	14.2	17,053	2,414	2,713	-299	-11.0% better	1,401,786
Wyoming	12	13.7	3,101	426	407	+19	4.7% worse	871,031
Louisiana	13	13.6	13,258	1,798	1,747	+51	2.9% worse	4,588,616
West Virginia	14	13.4	7,089	952	1,025	-73	-7.1% better	2,325,812
Hawaii	15	13.3	1,146	152	144	+8	5.6% worse	1,862,562
D.C.	16	12.8	242	31	31	0	no change	915,533
New York	17	12.5	17,420	2,170	2,109	+61	2.9% worse	17,374,731
Michigan	18	12.3	11,000	1,354	1,539	-185	-12.0% better	7,542,647
South Carolina	19	12.2	9,252	1,127	1,232	-105	-8.5% better	3,397,465
California	20	12	24,797	2,978	3,256	-278	-8.5% better	67,603,788
North Carolina	21	12	18,280	2,195	2,362	-167	-7.1% better	7,850,103
Alaska	22	10.9	1,173	128	146	-18	-12.3% better	178,675
Indiana	23	10.8	18,753	2,030	1,995	+35	1.8% worse	7,199,952
Vermont	24	10.6	2,726	288	344	-56	-16.3% better	426,822
Kansas	25	10.5	25,206	2,657	2,833	-176	-6.2% better	812,743
New Jersey	26	9.9	6,557	651	682	-31	-4.5% better	11,285,681
Connecticut	27	9.7	4,196	406	390	+16	4.1% worse	5,274,701

Massachusetts	28	9.6	5,132	495	565	-70	-12.4% better	9,151,876
Idaho	29	9.4	4,213	397	384	+13	3.4% worse	565,589
Ohio	30	9.1	27,002	2,462	2,789	-327	-11.7% better	9,223,025
Virginia	31	9.1	13,769	1,251	1,272	-21	-1.7% better	7,393,364
Minnesota	32	9.1	13,109	1,191	1,151	+40	3.5% worse	2,342,495
Alabama	33	9	16,071	1,448	1,608	-160	-10.0% better	2,368,186
Kentucky	34	8.9	14,028	1,247	1,319	-72	-5.5% better	4,416,436
Illinois	35	8.7	26,514	2,311	2,289	+22	1.0% worse	8,035,705
Wisconsin	36	8.2	14,094	1,151	1,153	-2	-0.2% better	2,923,488
New Mexico	37	7.8	3,924	307	332	-25	-7.5% better	719,135
Montana	38	7.8	5,120	399	407	-8	-2.0% better	503,175
Arkansas	39	7.1	12,648	899	949	-50	-5.3% better	1,526,375
Maryland	40	6.9	5,286	364	367	-3	-0.8% better	5,344,961
Colorado	41	6.6	8,578	566	584	-18	-3.1% better	4,711,767
Delaware	42	6.1	862	53	50	+3	6.0% worse	323,720
Georgia	43	6	14,730	878	953	-75	-7.9% better	2,319,651
Tennessee*	44	5.9	20,268	1,195	1,236	-41	-3.3% better	4,885,931
Oregon	45	5.7	7,631	433	463	-30	-6.5% better	1,484,388
Washington	46	4.6	7,806	362	400	-38	-9.5% better	2,925,184
Utah	47	4.3	2,941	126	133	-7	-5.3% better	880,780
Arizona	48	3.2	7,830	247	233	+14	6.0% worse	1,837,167
Texas	49	2.6	52,128	1,337	1,662	-325	-19.6% better	3,068,190
Nevada	50	2.2	1,797	40	39	+1	2.6% worse	146,557
Florida	51	2.2	11,987	265	300	-35	-11.7% better	1,583,178
<b>National Totals</b>		<b>11%</b>	<b>604,995</b>	<b>66.405</b>				

\* 2012 FHWA summary statistics are used for New Hampshire and Tennessee's deficient bridge totals due to significant discrepancies between FHWA summary statistics and the data in the NBI.

This report was written by Stephen Lee Davis and David Goldberg, based on an analysis of the National Bridge Inventory by Kevin DeGood, with additional contributions from Nick Donohue and James Corless of Transportation for America. Layout and design by Stephen Lee Davis, with graphics by [Anagram](#). Released June 19, 2013. More information about the data and report can be found at [t4america.org/resources/bridges](http://t4america.org/resources/bridges)

**About Transportation for America** — Transportation for America (T4 America) is the largest, most diverse coalition working on transportation reform today. We believe it is time for a bold new vision — transportation that guarantees our freedom to move however we choose and leads to a stronger economy, greater energy security, cleaner environment and healthier America for all of us. We're calling for more responsible investment of our federal tax dollars to create a safer, cleaner, smarter transportation system that works for everyone.

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