KEEP ROADS AND BRIDGES IN GOOD CONDITION

Dennis Heckman, State Bridge Engineer

Tracker

MEASURES OF DEPARTMENTAL PERFORMANCE

Missourians have said they want MoDOT to keep roads and bridges in good condition. Customers are looking for smooth pavements and bridges that can safely handle growing traffic demands. With 33,891 miles of highway and 10,376 bridges on the state system, the challenges are great; however, we are focused on using our limited resources to keep Missouri's roads and bridges in good condition.

RESULT DRIVER:
Dennis Heckman,
State Bridge Engineer

MEASUREMENT DRIVER:
Brian Reagan,
Transportation System Analysis Engineer

PURPOSE OF THE MEASURE:
This measure tracks the condition of Missouri's major highways.

MEASUREMENT AND DATA COLLECTION:
Missouri's major highway system contains the state's busiest highways, including interstates and most U.S. routes. It also includes busy routes in urban areas, particularly where vehicles travel between business districts and residential areas. There are 5,530 total miles on the major highway system, and the condition of these roadways is determined using a variety of measures. While it can be difficult to compare one state's roadways to another's, MoDOT uses Georgia as a comparable system because it has a similar amount of major highways and also bases its evaluation on the smoothness of the roadways. Missouri measures the condition of its roadways using smoothness as one factor, but also considers physical distresses such as cracking.

KEEP ROADS AND BRIDGES IN GOOD CONDITION

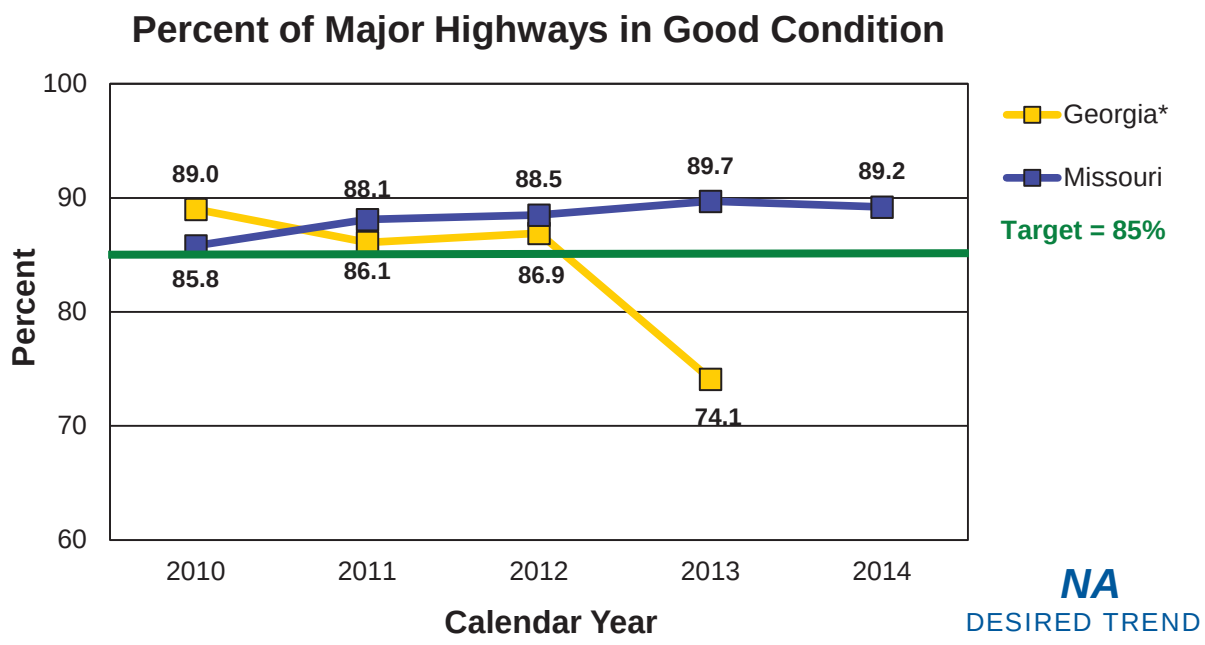
MAP-21

Percent of major highways in good condition-2a

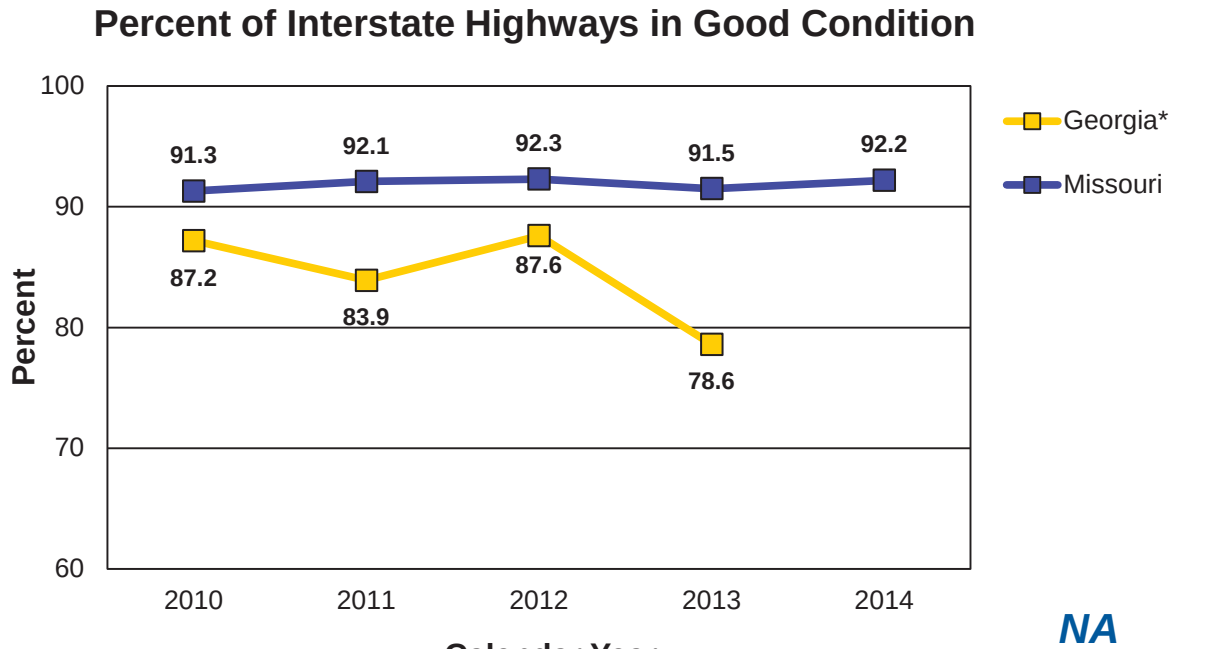
MoDOT started a major road improvement program in 2004 called the Smooth Roads Initiative. Over the next two years, the program improved 2,200 miles of Missouri's major routes, bringing them from 47 percent in good condition up to 74 percent. The Better Roads, Brighter Future program in 2007 further improved the system, increasing Missouri's major routes in good condition to 85 percent.

Currently more than 89 percent of major highways are rated in good condition. However, with contractor awards dropping from more than $700 million per year to $325 million per year beginning in 2017, it will be increasingly difficult to maintain this condition level.

KEEP ROADS AND BRIDGES IN GOOD CONDITION



NA
DESIRED TREND



NA
DESIRED TREND

***Source data for Georgia comes from FHWA highway statistics. Full data sets are collected every 2 years. The data set for 2013 is not a full data set. Georgia data is based only on pavement smoothness (IRI) submitted as part of the Highway Performance Monitoring System.**

RESULT DRIVER:
Dennis Heckman,
State Bridge Engineer

MEASUREMENT DRIVER:
Brian Reagan,
Transportation System Analysis Engineer

PURPOSE OF THE MEASURE:
This measure tracks the condition of Missouri's minor highways.

MEASUREMENT AND DATA COLLECTION:
Missouri's minor highway system consists of its less-traveled state highways, including those routes that mainly serve local transportation needs. The minor highway system includes most lettered routes. There are 28,361 miles of minor highways in Missouri. The condition of these routes is determined using a variety of measures.

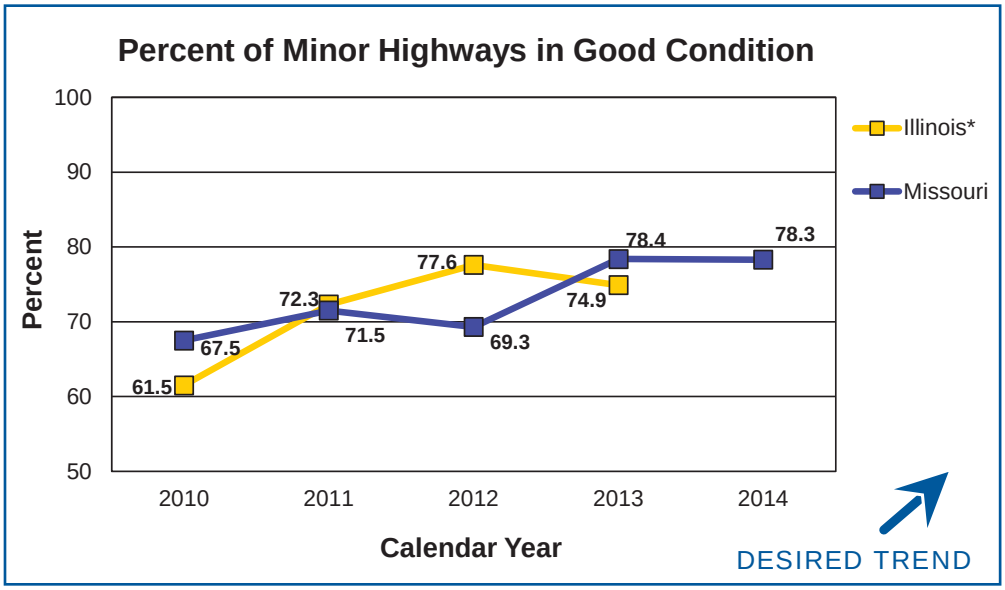
While it can be difficult to compare one state's roadways to another's, MoDOT uses Illinois as a comparable system because it has a similar number of minor highways and has the highest percentage of routes in good condition. Missouri measures the condition of its roadways using smoothness as one factor, but also considers physical distresses such as cracking.

KEEP ROADS AND BRIDGES IN GOOD CONDITION

Percent of minor highways in good condition-2b

MoDOT began an initiative in 2004 that focused on improving major highways. As a result, less time and funding were spent on minor roads and the percentage of minor roads in good condition fell from 71 percent in 2005 to 60 percent in 2009. After MoDOT made headway improving major highways, it targeted its focus on minor routes and brought 71 percent back to good condition.

Currently, 78 percent of Missouri's minor roads are in good condition, which is level from 2013. With contractor awards dropping from over $700 million per year to $325 million per year beginning in 2017, the expectation is that the condition of the minor roads will decline.



***Source data for Illinois comes from FHWA highway statistics. Data for 2014 is not available at the time of publication. Data is based on a combination of pavement condition and smoothness as submitted as part of the Highway Performance Monitoring System.**

RESULT DRIVER:
Dennis Heckman,
State Bridge Engineer

MEASUREMENT DRIVER:
David Koenig,
Bridge Management Engineer

PURPOSE OF THE MEASURE:
This measure tracks progress toward improving the condition of Missouri's bridges.

MEASUREMENT AND DATA COLLECTION:
This measure is updated in April based on MoDOT inspections conducted the prior year. Data is presented for all state bridges and major bridges. Major bridges are typically those that cross large rivers and lakes and are longer than 1,000 feet. Of the 10,376 bridges on state highways, 209 are major. Bridges are categorized as being in good, fair or poor condition. Good means no significant condition-related problems exist. Fair indicates moderate problems that may require minor rehabilitation or maintenance to return the structure to good condition. Poor indicates a structure that is deficient, requiring either replacement or a major rehabilitation.

MAP-21

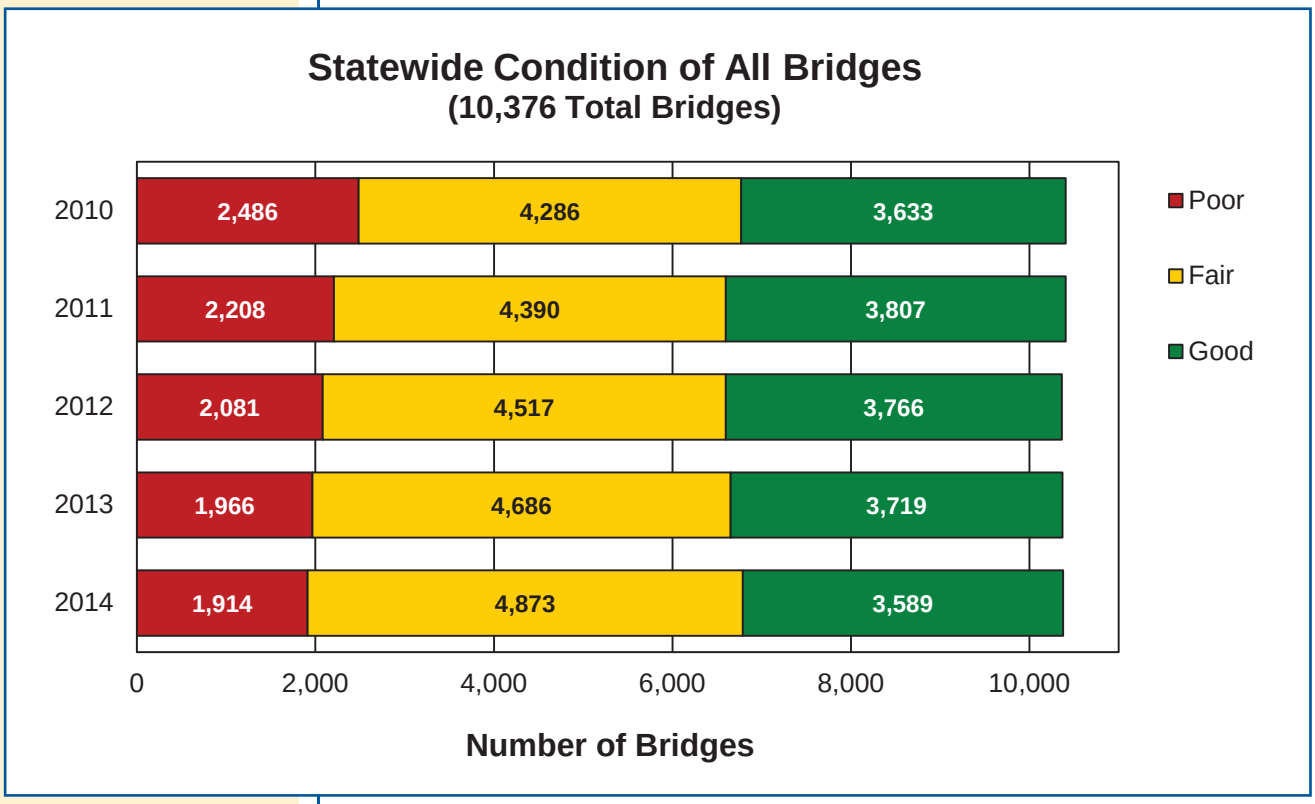
Condition of state bridges-2c

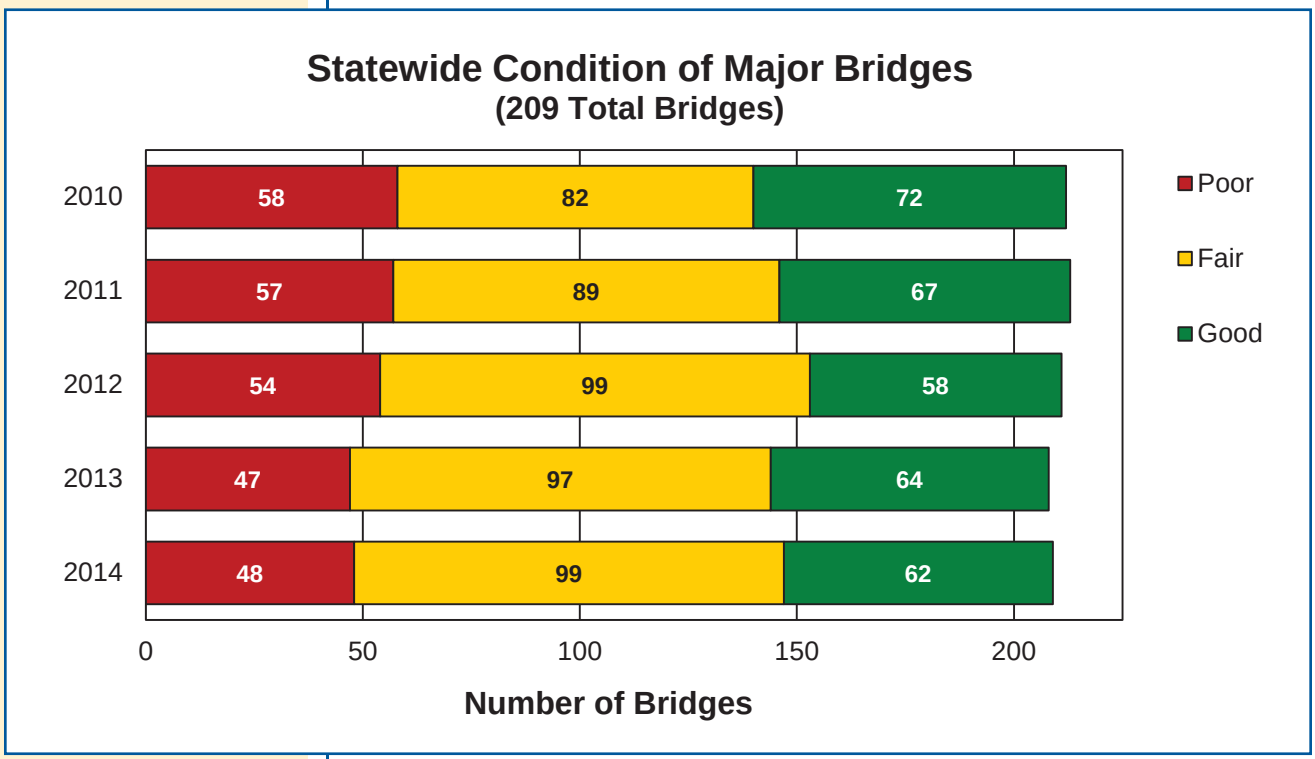
The public has indicated the condition of Missouri's existing roadway system should be one of the state's highest priorities. Currently, 1,914 (48 major) structures are in poor condition, 4,873 (99 major) structures are in fair condition and 3,589 (62 major) structures are in good condition.

Statewide, the number of structures in poor condition has dramatically decreased over the last five years, but the rate of decline is slowing down. The number of structures in good condition moderately improved through 2011 but has started to decline over the last two years. Improvements in these numbers were heavily impacted by the Safe and Sound Bridge Improvement Program that was completed in 2012, and by the increased construction program that resulted from the passage of Amendment 3 in 2004. The recent decline in good bridges can be attributed to MoDOT's reduced construction program as the result of funding constraints. It should be noted that while the number of poor-condition bridges dropped by 572 over this five-year period, the number in good condition has only decreased by 44. The number in fair condition has significantly increased by 587 over this period which is reflective of MoDOT's aging bridge population with many structures at the point where they need minor maintenance or rehabilitation. With the decrease in funds available for the construction program, continued improvements in the number of structures in poor condition is very unlikely.

For major bridges, the number of structures in the poor category has generally been dropping over the last five years because of an aggressive focus on these structures in the STIP, but despite a significant investment in major bridges, the number of structures in good condition generally dropped over the five-year period while the number in fair condition significantly increased. Work on major bridges is very expensive with rehabilitations costing $10 to $20 million and replacements ranging from $20 million to $200 million. With a greatly reduced construction program and the inability to fully match federal funds in 2017, significant future improvements in the condition of major bridges are very unlikely.

KEEP ROADS AND BRIDGES IN GOOD CONDITION





RESULT DRIVER:
Dennis Heckman,
State Bridge Engineer

MEASUREMENT DRIVER:
David Koenig,
Bridge Management Engineer

PURPOSE OF THE MEASURE:
This measure tracks the percent of structurally deficient deck area for bridges that are part of the National Highway System. Moving Ahead for Progress in the 21st Century, the federal surface transportation act, requires states to track the Structurally Deficient deck area with a national performance goal of it being less than 10 percent.

MEASUREMENT AND DATA COLLECTION:
The NHS is defined by federal law and consists of all roadways functionally classified as principal arterials as well as some routes that serve as major connections to multimodal freight type facilities and some locally owned roadways. Historically, SD consists of bridges that are in bad condition or have insufficient load capacity when compared to modern design standards. With MAP-21, there are some proposed adjustments in how SD is determined and this measure has been created based on these proposed adjustments.

KEEP ROADS AND BRIDGES IN GOOD CONDITION

MAP-21

Percent of structurally deficient deck area on National Highway System-2d

The public has indicated keeping Missouri's existing roads and bridges in good condition should be one of the state's highest priorities. MAP-21 set a national performance goal to have the SD deck area of NHS bridges be less than 10 percent. The local system has 84 NHS structures (two SD) and the MoDOT system has 3,600 NHS structures (145 SD). MoDOT currently meets the national performance goal with the total at 7.2 percent, which is attributable to aggressive efforts undertaken with construction on major bridges over the last 10 years, as well as other accelerated construction from MoDOT's bonding program. The ability to continue to meet this goal will become more difficult with a reduced construction program. Additionally, the potential inability for MoDOT to fully match available federal funds in 2017 could have a severe impact on this measure. This measure is also heavily influenced by major bridges because one structure has the ability to impact this measure +/-0.5 percent. The majority of the change from 2013 to 2014 is attributable to the addition of two major bridges and the removal of one major bridge from the SD category. Additionally, on the local system there was a significant reduction in the number of NHS structures as the result of functional class changes on roadways across the state, with the majority of these changes happening in the Kansas City district. Both of the local system structures that are currently SD are in St. Louis, with a replacement project for one of them scheduled to start in 2015. Since many major bridges are part of the NHS, any reduction in funding available for the construction program will limit MoDOT's ability to keep up with the replacement/rehabilitation needs on major bridges.