



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.

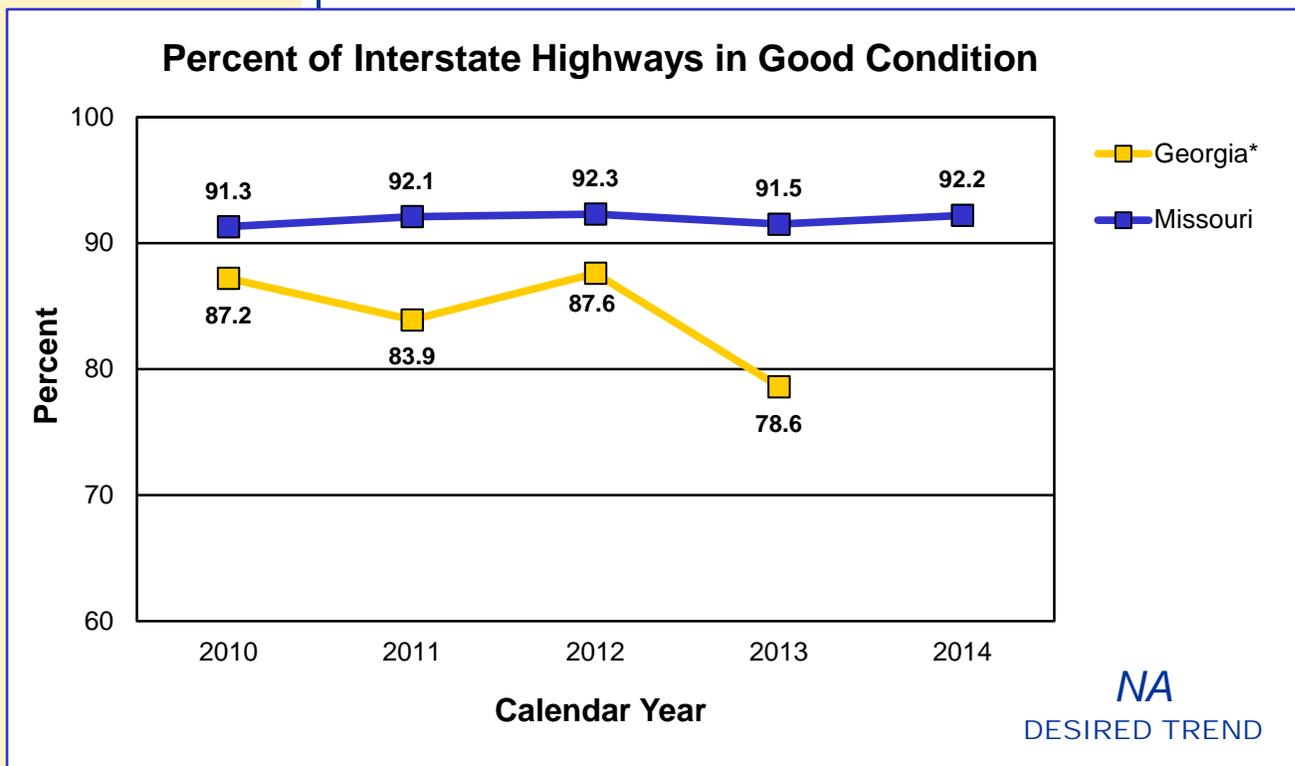
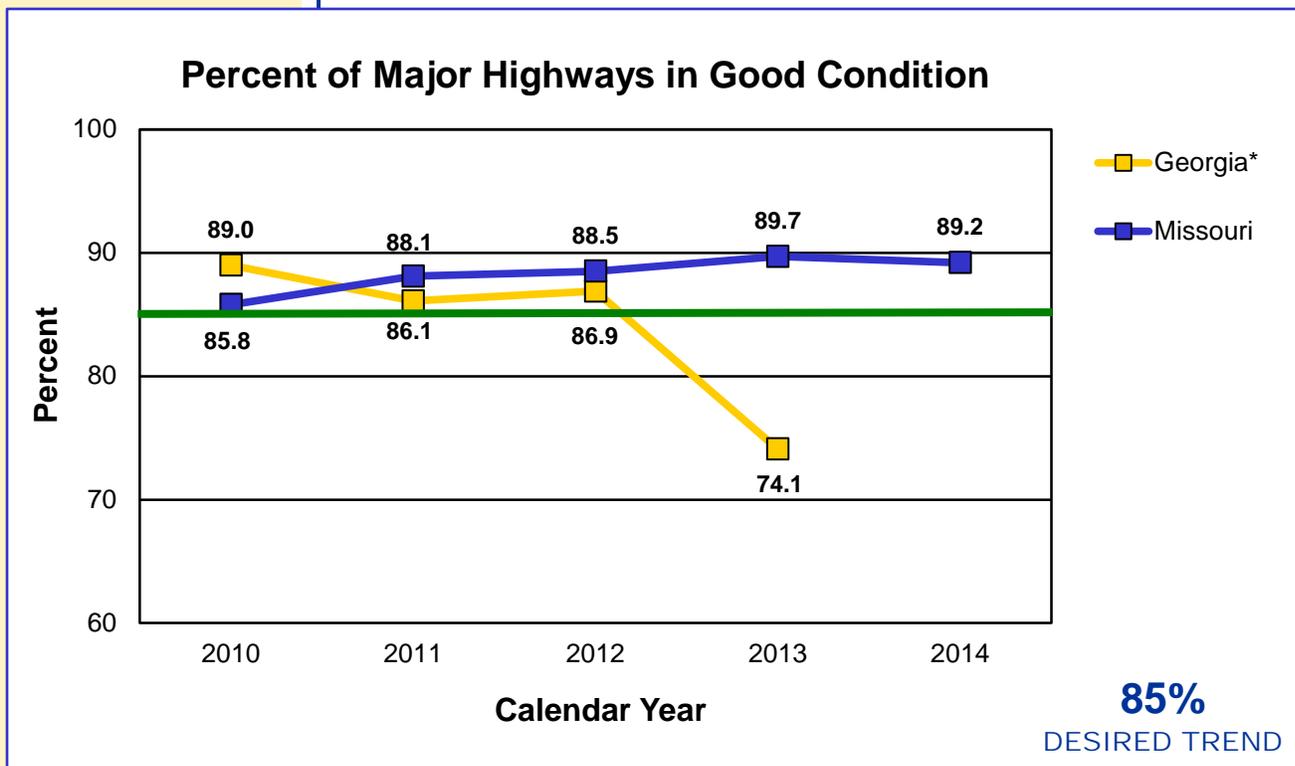
KEEP ROADS AND BRIDGES IN GOOD CONDITION

Percent of major highways in good condition – 2a

Missourians have repeatedly told MoDOT keeping roads smooth is a top priority. Over the years, MoDOT has been able to fund pavement improvement programs greatly improving pavement conditions on the thousands of miles of state highways. Currently, more than 89 percent of major highways are rated in good condition. However, with annual contractor awards dropping to their lowest level since 1997 in 2017, it will be increasingly difficult to maintain this condition level.



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*Source data for Georgia comes from FHWA highway statistics. Full data sets are collected every two 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.

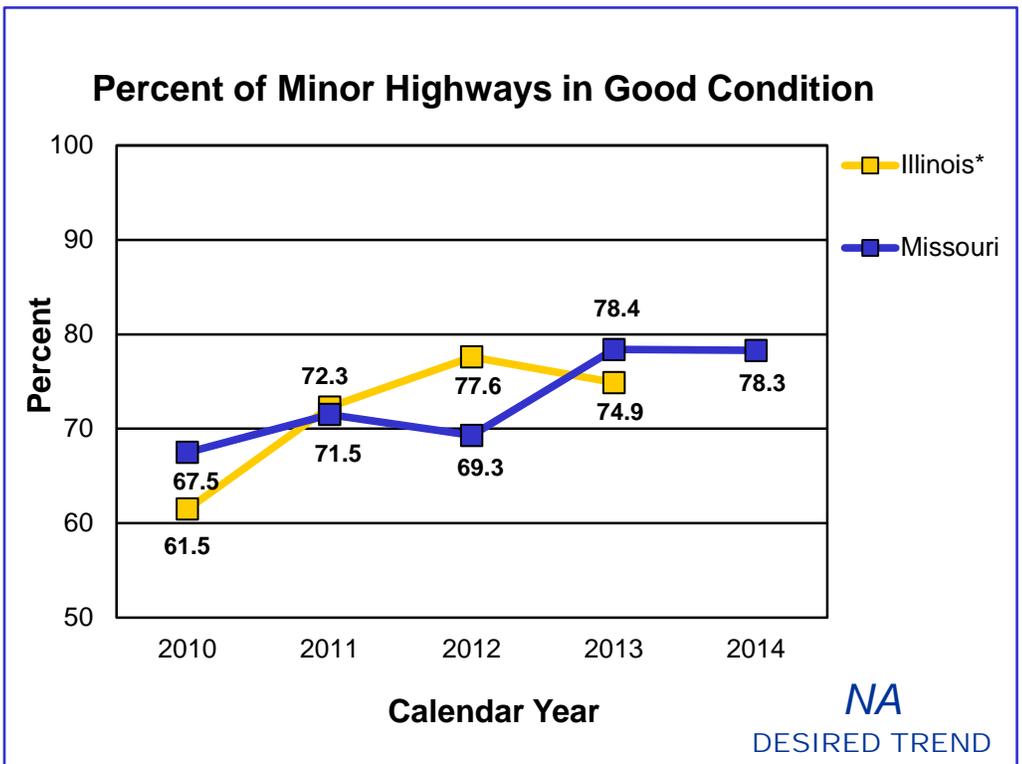
While it can be difficult to compare one state's roadways to another's, MoDOT uses Illinois as a comparable system because it has a similar number of minor highways and has the highest percentage of routes in good condition. Missouri measures the condition of its roadways using smoothness as one factor,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

KEEP ROADS AND BRIDGES IN GOOD CONDITION

Percent of minor highways in good condition – 2b

Although minor roads are less traveled, Missourians still say keeping them in good condition is a priority. During the early 2000s, MoDOT's focus was on improving major highways. This resulted in less work being done on minor roads and lower condition ratings. Over the past few years, success on major highways has allowed the department to focus more time and funding on improving minor highways.

Currently, 78 percent of Missouri's minor roads are in good condition, which is level from 2013. However, with annual contractor awards dropping to their lowest level since 1997 in 2017, it will be increasingly difficult to maintain this condition level.



*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

KEEP ROADS AND BRIDGES IN GOOD CONDITION

Condition of state bridges – 2c

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:

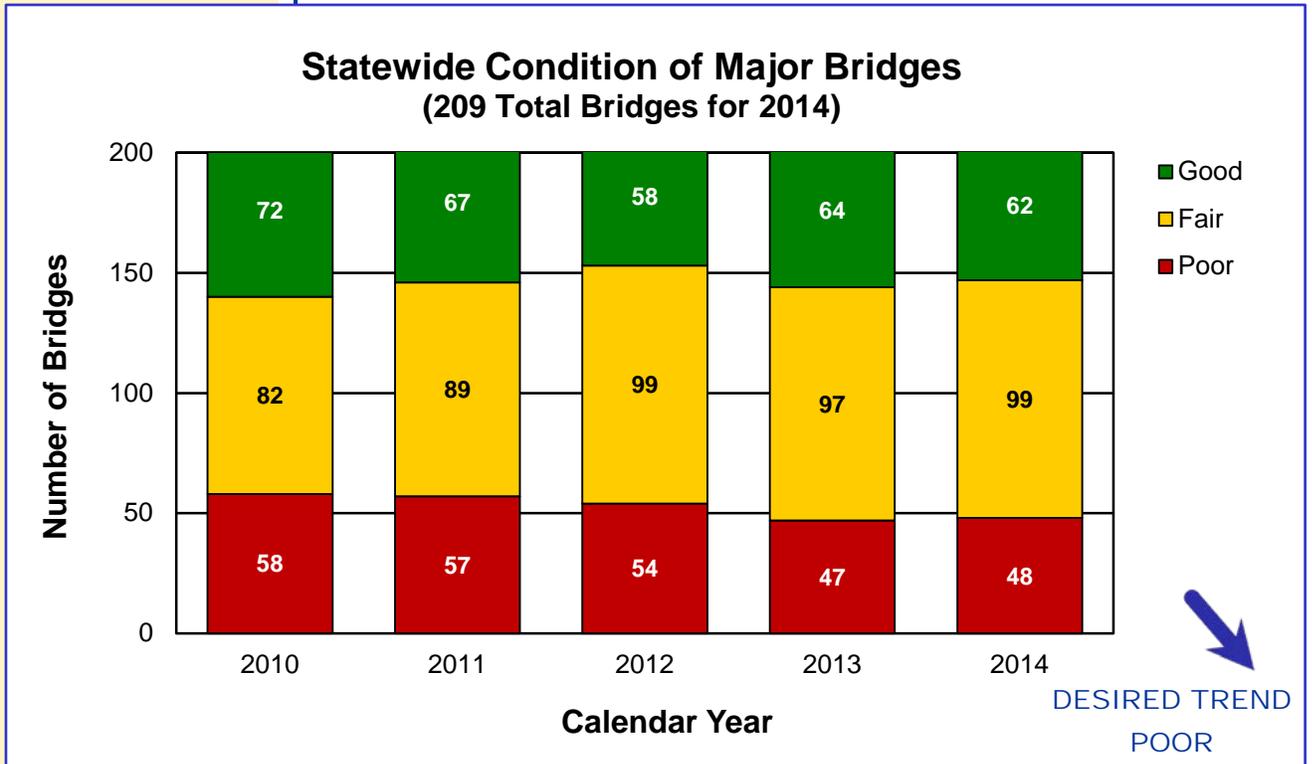
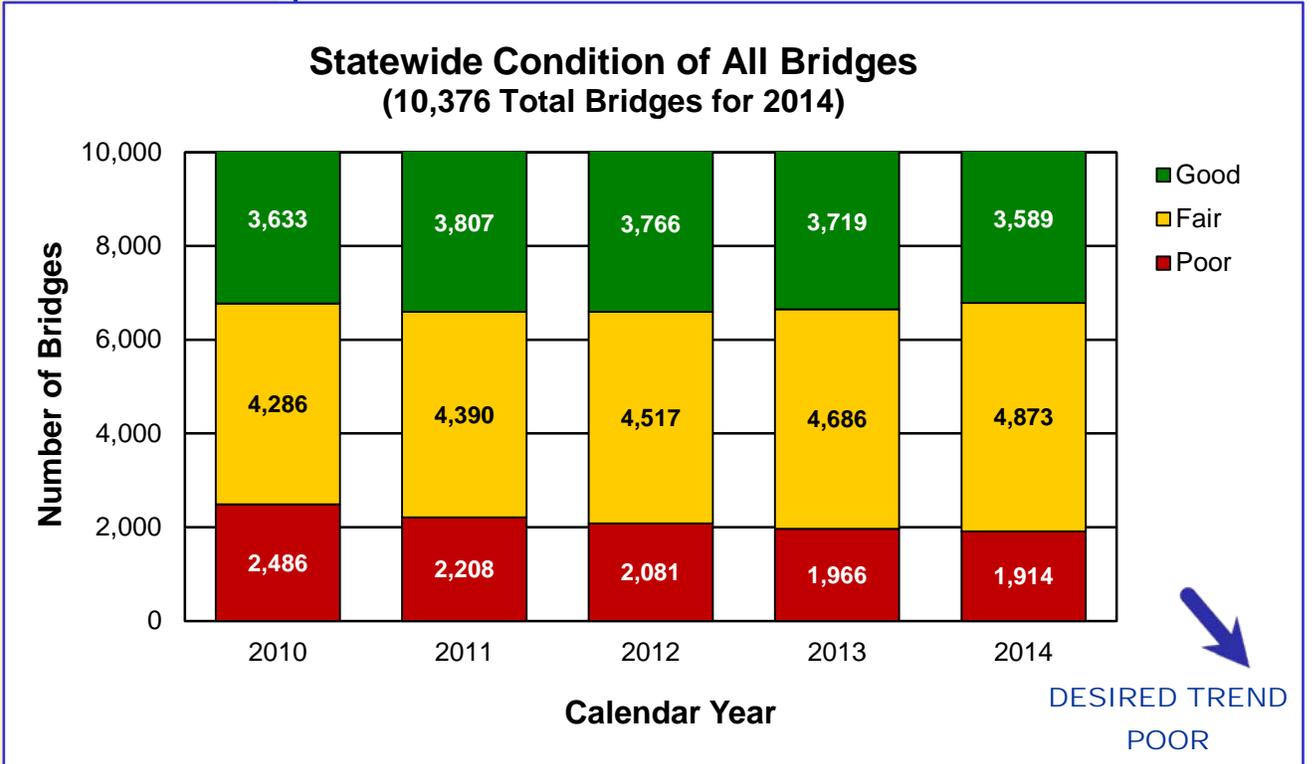
This measure is updated in April based on MoDOT inspections conducted the prior year. Data is presented for all state bridges and major bridges. Major bridges are typically those that cross large rivers and lakes and are longer than 1,000 feet. Of the 10,376 bridges on state highways, 209 are major. 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.

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 & 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 reducing the number of structures in poor condition will be difficult.

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 annual contractor awards dropping to their lowest level since 1997 in 2017, it will be increasingly difficult to make significant improvements in the condition of major bridges.

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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 on the National Highway System.

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, structurally deficient 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 structurally deficiency is determined and this measure has been created based on these proposed adjustments. 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 less than 10 percent.

KEEP ROADS AND BRIDGES IN GOOD CONDITION

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 structurally deficient deck areas of National Highway System 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. The ability to continue to meet this goal will become more difficult with a reduced construction program.

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. The majority of these changes happened 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. With annual contractor awards dropping to their lowest level since 1997 in 2017, MoDOT's ability to keep up with the replacement and rehabilitation needs of major bridges will be limited.

