



# KEEP ROADS AND BRIDGES IN GOOD CONDITION

*Dennis Heckman, State Bridge Engineer*

**Tracker**

MEASURES OF DEPARTMENTAL PERFORMANCE



MoDOT's customers have said they want good roads and bridges. If the roads are smooth and the bridges are safe and open, our customers are satisfied.

RESULT DRIVER:  
Dennis Heckman,  
State Bridge Engineer

## KEEP ROADS AND BRIDGES IN GOOD CONDITION

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, includ-  
ing interstates and most  
U.S. routes. It also includes  
busy routes in urban areas,  
particularly where vehicles  
travel between business  
districts and residential ar-  
eas. There are about 5,500  
miles total on the major  
highway system, and the  
condition of these roadways  
is determined using a vari-  
ety of measures.  
While it can be difficult  
to compare one state's  
roadways to another state's,  
MoDOT uses Georgia as  
a comparable, as it has  
almost the same amount  
of major highways on its  
system and bases its evalu-  
ation on the smoothness  
of the roadways. Missouri  
measures the condition of  
its roadways using smooth-  
ness as one factor, but also  
includes other measures,  
including physical distress.

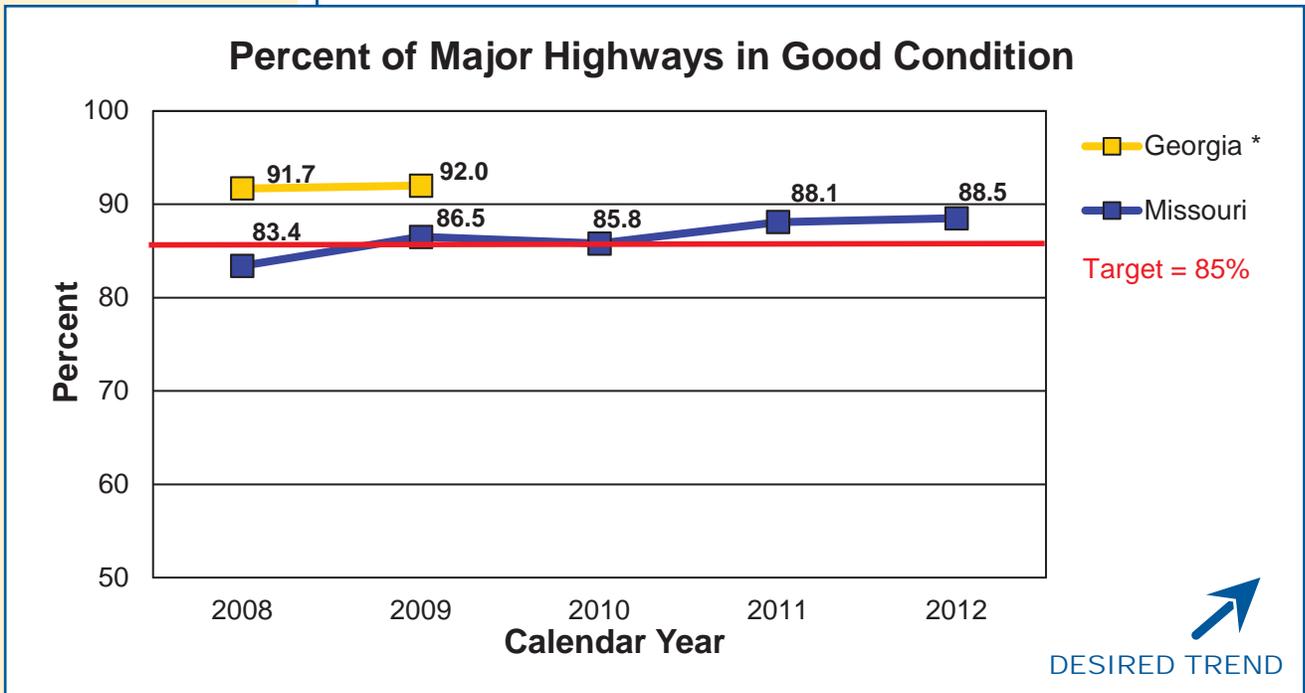
### *Percent of major highways in good condition-2a*

In 2004, MoDOT started a major road improvement program called the Smooth Roads Initiative. The program improved 2,200 miles of Missouri's major routes, bringing them from 47 percent to 74 percent in good condition. Another program in 2007 brought 85 percent of Missouri's major routes to good condition.

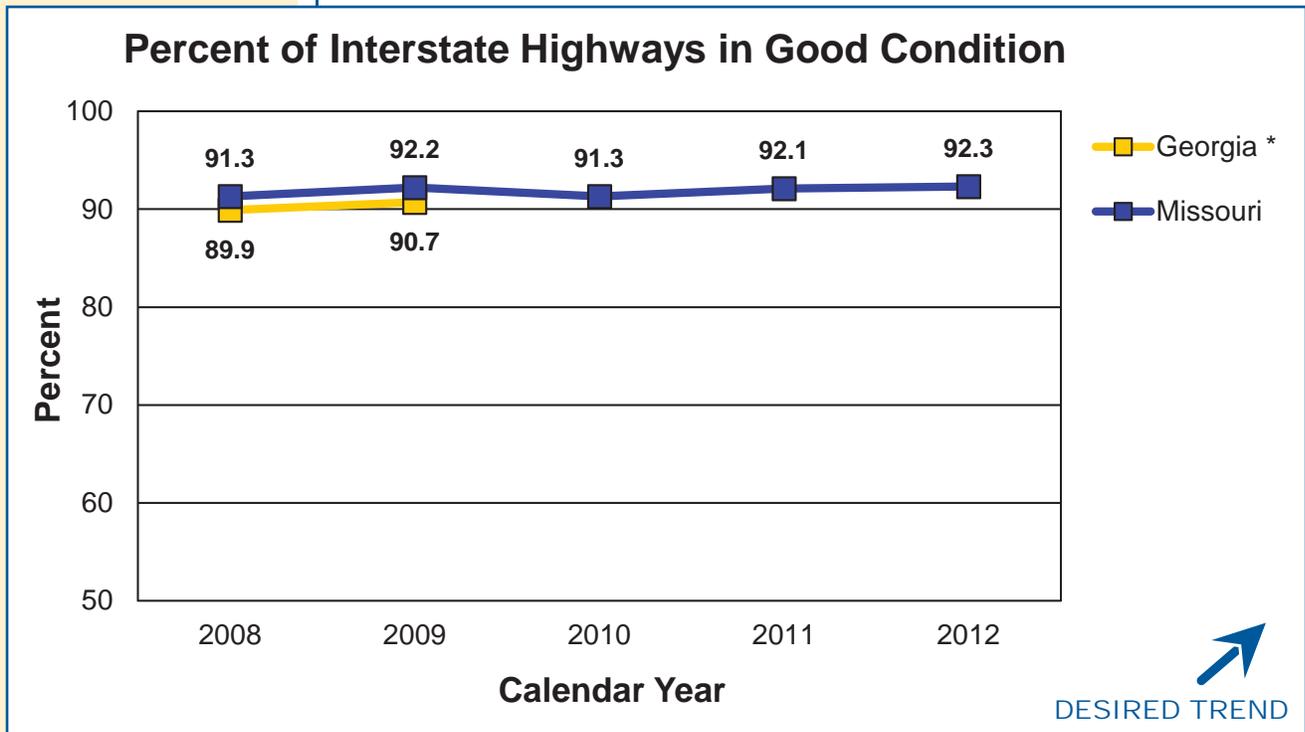
Currently more than 88 percent of major highways are rated in good condition, and over time, all 5,500 miles will benefit from improved safety features such as shoulders, wider stripes, and brighter signing.



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\*Source data for Georgia comes from FHWA highway statistics. Data for 2010 is not available at the time of publication. Georgia data is based only on pavement smoothness (IRI) submitted as part of the Highway Performance Monitoring System.



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State Bridge Engineer

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MEASUREMENT  
DRIVER:  
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Transportation System  
Analysis Engineer

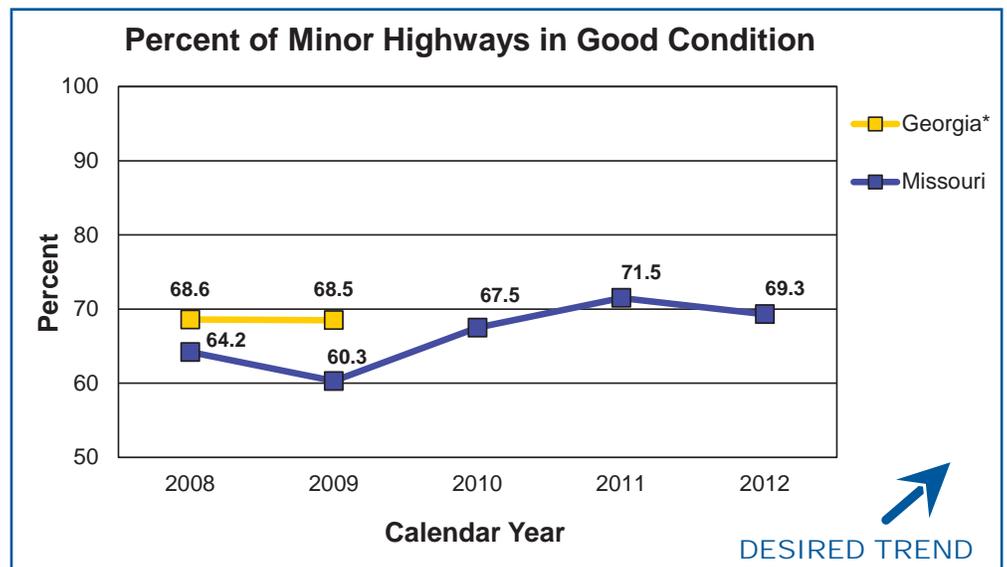
PURPOSE OF  
THE MEASURE:  
This measure tracks the  
condition of Missouri's  
minor highways.

MEASUREMENT  
AND DATA  
COLLECTION:  
Missouri's minor highway  
system consists of its less-  
traveled state highways,  
including those routes that  
mainly serve local transpor-  
tation needs. They include  
most lettered routes. There  
are approximately 28,200  
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 state's,  
MoDOT uses Georgia as a  
comparable, as it has a  
similar number of minor  
highways on its system and  
has the highest percentage  
of routes in good condi-  
tion. Missouri measures the  
condition of its roadways  
using smoothness as one  
factor, but also includes  
other measures, including  
physical and visual distress.  
This is an annual measure  
updated in April.

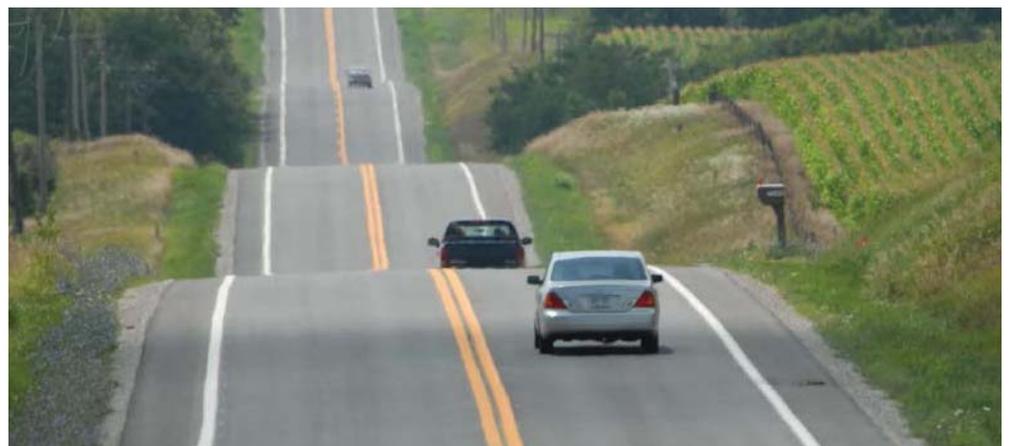
### Percent of minor highways in good condition-2b

In 2004, MoDOT began an initiative that focused on improving major high-ways. 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, 69 percent of Missouri's minor roads are in good condition, which is a slight decrease from 2011.



\*Source data for Georgia is from the FHWA highway statistics. Georgia data for 2010 was not available at time of publication. Data is based on a combination of pavement 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

MEASUREMENT  
DRIVER:  
David Koenig, Structural  
Services Engineer

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

MEASUREMENT  
AND DATA  
COLLECTION:  
This annual measure is  
updated each April based  
on MoDOT inspections con-  
ducted the prior year. Data  
is presented for all state  
bridges and major bridges.  
Major bridges are typi-  
cally those that cross large  
rivers and lakes and are  
longer than 1,000 feet. Of  
the 10,364 bridges on state  
highways, 211 are major.  
Bridges are categorized as  
being in good, fair or poor  
condition. Good means no  
significant condition-related  
problems exist. Fair indi-  
cates moderate problems  
that may require minor re-  
habilitation or maintenance  
to return the structure to  
good condition. Poor brid-  
ges are either "structurally  
deficient" or "functionally  
obsolete" as defined using  
Federal Highway Adminis-  
tration criteria. An SD bridge  
is in poor condition or has  
insufficient load capacity  
when compared to modern  
design standards. An FO  
bridge has poor roadway  
alignment or has clearance  
or width restrictions that no  
longer meet the usual crite-  
ria for the system it serves.

### *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. Statewide, bridge conditions have been steadily improving over the last five years with a significant drop in the number of structures in the poor category. At the same time, the number of structures in the fair and good categories has been increasing. The improvement in this measure has been heavily impacted by the Safe & Sound program but has also been significantly impacted by other bridge work that was in the Statewide Transportation Improvement Plan.

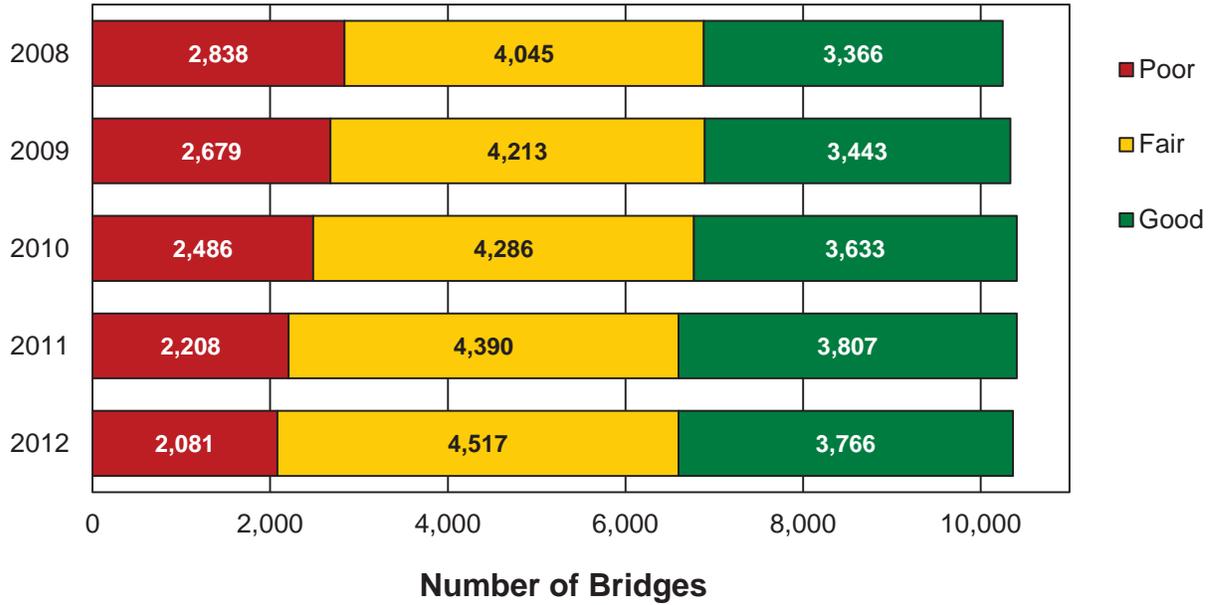
For major bridges, the number of structures in the poor category has been dropping over the last five years because of a significant focus on these structures in the STIP. At the same time, the number of structures in the good category has also been going down, resulting in an increasing number of major bridges rated in fair condition.

Currently, 2,081 (54 major) structures are in poor condition, 4,517 (99 major) structures are fair and 3,766 (58 major) structures are good. With static transportation funding and increasing costs, MoDOT's ability to improve the condition of bridges in Missouri is unlikely.

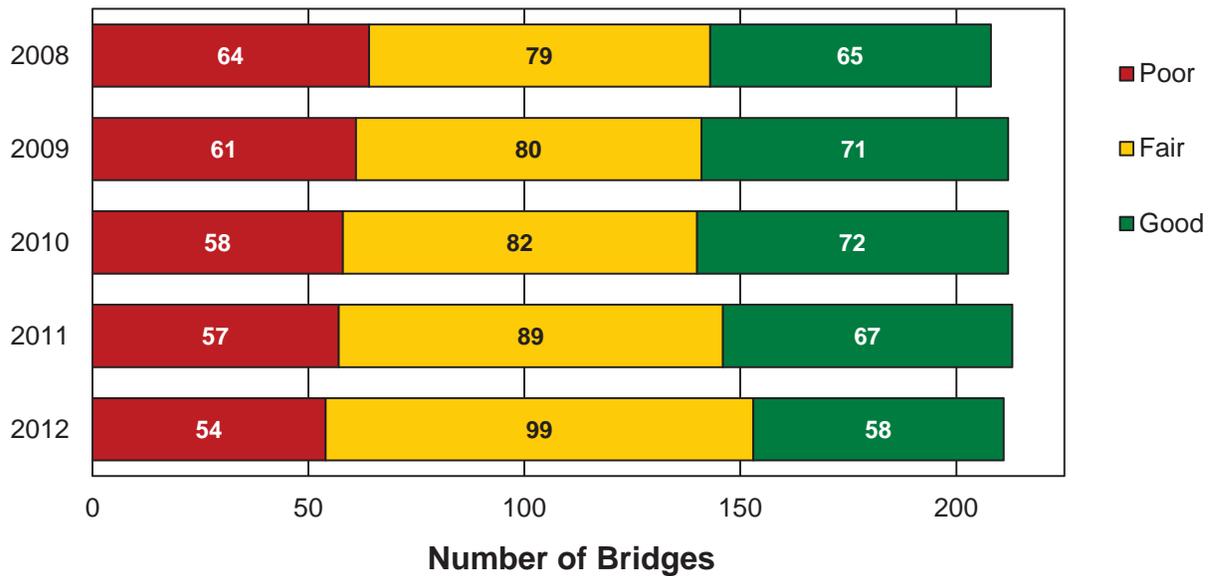


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## Statewide Condition of All Bridges (10,364 Total Bridges)



## Statewide Condition of Major Bridges (211 Total Bridges)



**RESULT DRIVER:**  
Dennis Heckman,  
State Bridge Engineer

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**MEASUREMENT  
DRIVER:**  
David Koenig,  
Structural Services  
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 SD deck area with a national performance goal of this being less than 10 percent.

**MEASUREMENT  
AND DATA  
COLLECTION:**  
The NHS is defined by federal law and was greatly expanded with MAP-21. From a general standpoint, the NHS now consists of all roadways functionally classified as principal arterials as well as some additional lower functionally classified routes that serve as major connections to multimodal freight type facilities. With the MAP-21 provisions, the NHS now includes 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.

## 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 144 structures on the NHS with 5 being SD. The MoDOT system has 3,591 NHS structures, 153 of which are SD. MoDOT currently meets the national performance goal with the total at 6.7 percent. This measure will be highly sensitive to major bridges with one structure having the ability to impact this measure +/-0.5 percent. With static transportation funding and increasing costs, MoDOT's ability to adequately maintain bridges in good condition in the long term is unlikely.

