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 33,856 miles of highway and 10,385 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:
Steve Engelbrecht
District Planning Manager

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

MEASUREMENT AND DATA COLLECTION:
Missouri's major highway system contains the state's busiest highways, including interstates and most U.S. routes. There are 5,546 total miles on the major highway system.

Missouri's minor highway system consists of its less-traveled state highways, including most lettered routes and routes that mainly serve local transportation needs. There are 17,166 miles of minor highways in Missouri.

Missouri's low volume highways are those state owned roads with less than 400 cars traveling on them per day. There are 11,147 miles of low volume roads in Missouri.

Missouri measures the condition of its roadways using smoothness as one factor but also considers physical distresses, such as cracking.

The targets for this measure are set by internal policy and will not change unless policy changes, regardless of performance.

KEEP ROADS AND BRIDGES IN GOOD CONDITION

Percent of highways in good condition – 2a

Missourians have repeatedly told MoDOT that keeping roads smooth is a top priority. Over the years, MoDOT has been able to fund pavement improvement projects on thousands of miles of state highways.

Currently, more than 91 percent of Missouri major highways are rated in good condition. The target for Missouri major highways is 90 percent. The target is based on the statewide asset management plan and represent MoDOT's goal of maintaining current conditions.

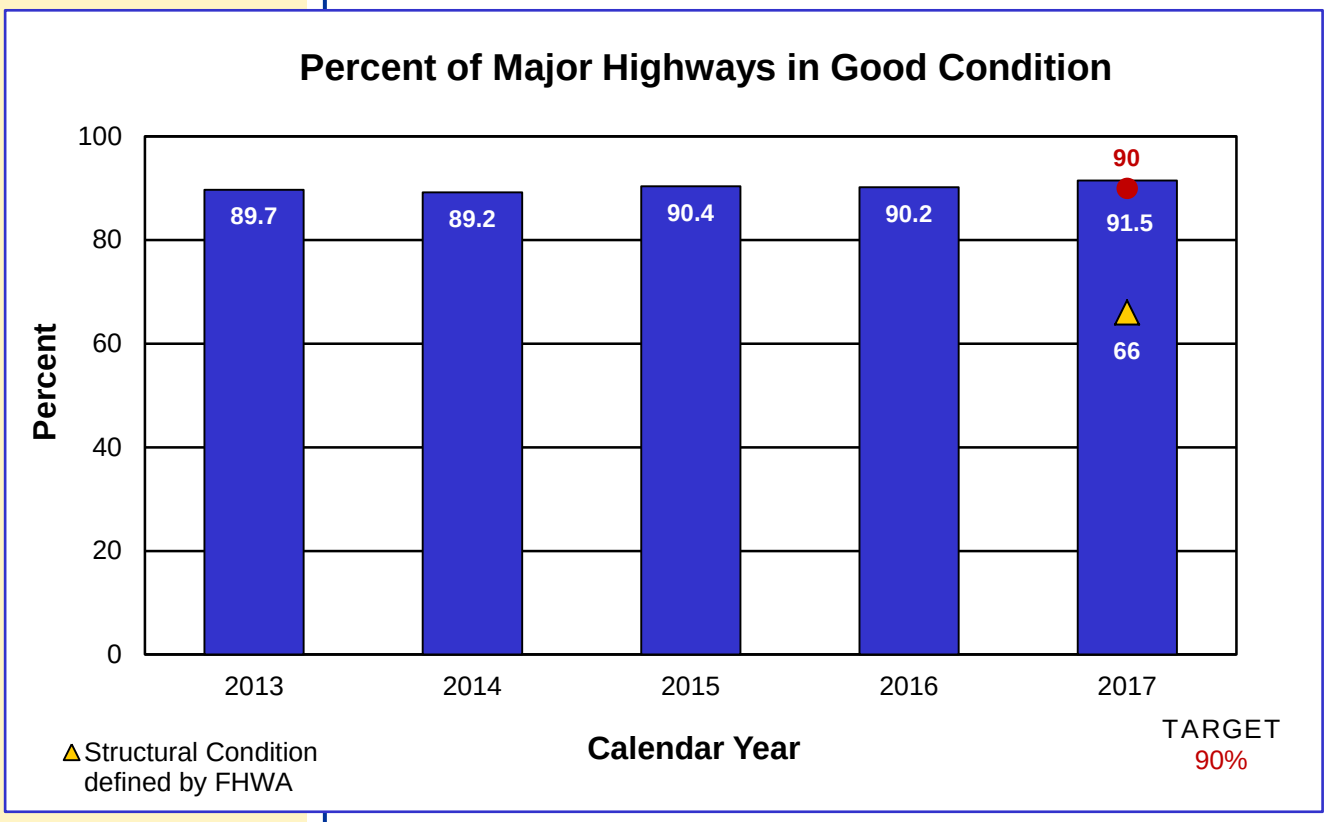
Currently, 81 percent of Missouri's minor highways are in good condition, which is slightly above the percentage for 2016. A target of 80 percent of minor highways has been established. The target is based on the statewide asset management plan and represents MoDOT's goal of maintaining current condition.

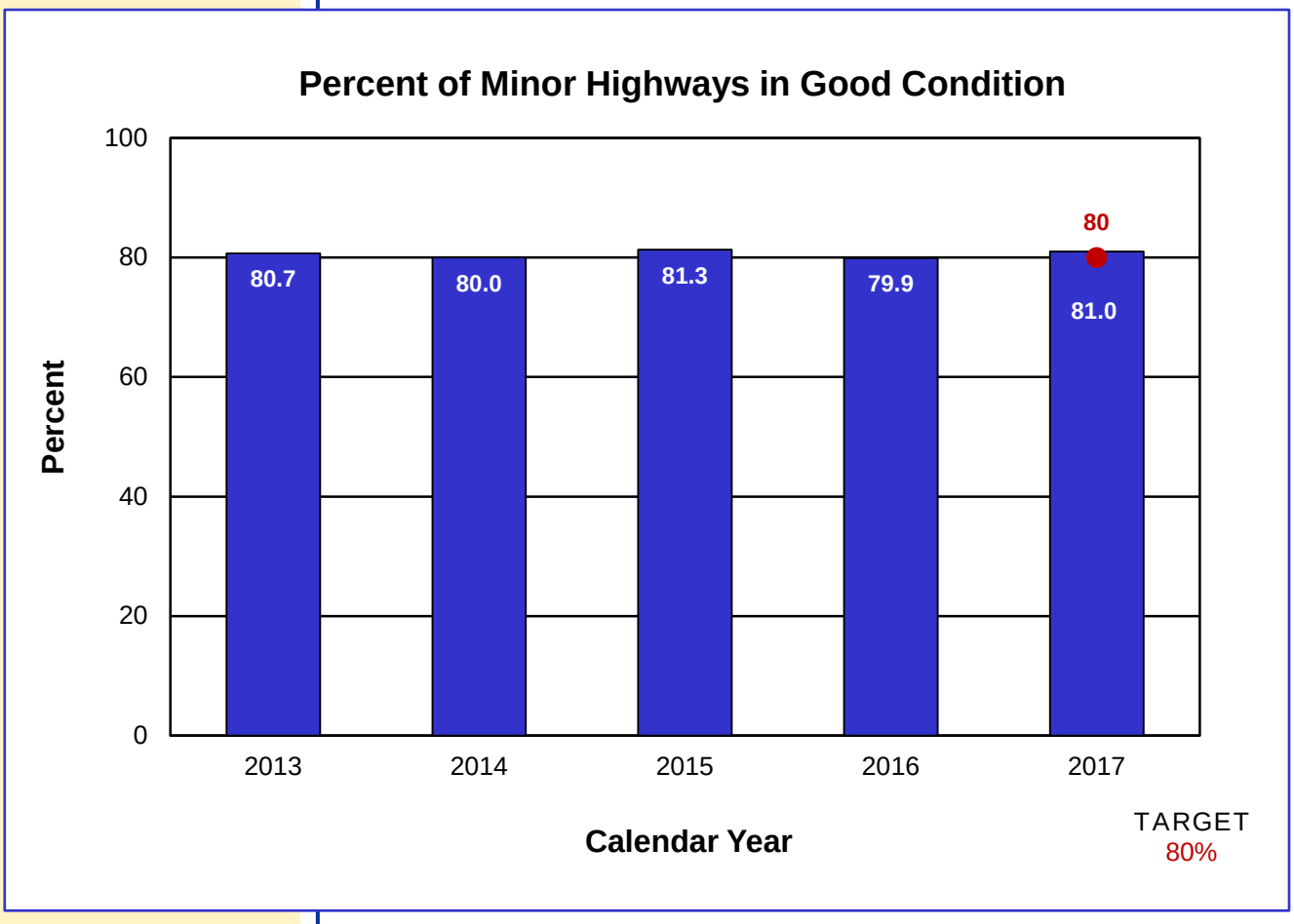
Currently, just over 73 percent of Missouri's low volume highways are in good condition which is almost 3 percent higher than 2016. A target of 70 percent of low volume roads has been established. The target is based on the statewide asset management plan and represents MoDOT's goal of maintaining current condition.

Beginning in 2018, the Federal Highway Administration required all DOTs to report pavement data related to the structural integrity of the pavement, which may not impact current pavement smoothness but may cause future pavement issues. The current percent of major highway pavements in good structural condition is 66 percent.

MoDOT has implemented asset management practices statewide to invest in transportation projects that will keep good roads in good condition.

KEEP ROADS AND BRIDGES IN GOOD CONDITION





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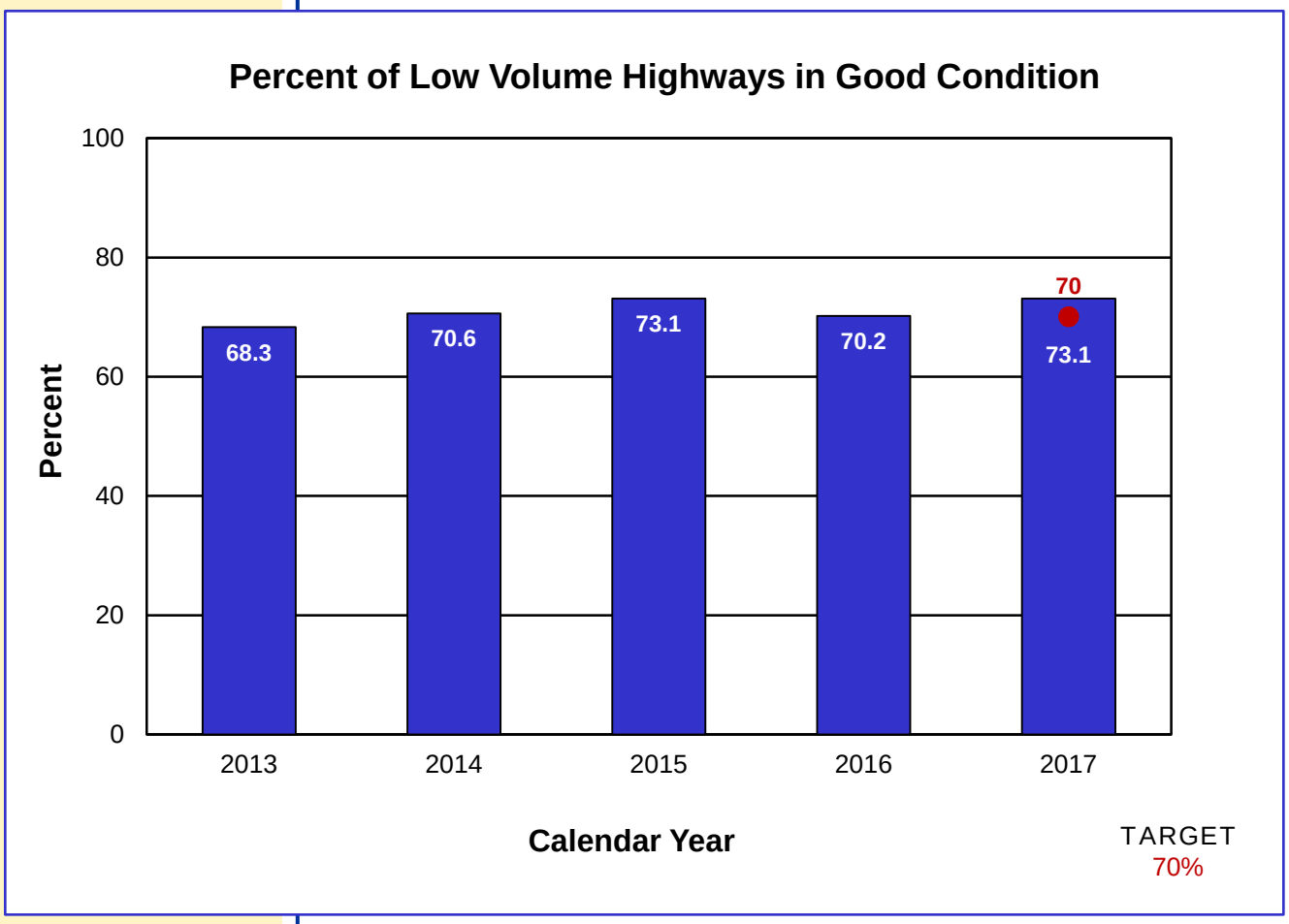


RESULT DRIVER:
Dennis Heckman
State Bridge Engineer

MEASUREMENT DRIVER:
Jerad Noland
District Design 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 July based on MoDOT inspections conducted the prior year. Data is presented for all state bridges and major bridges. Major bridges are those that are longer than 1,000 feet and typically cross the larger rivers and major lakes within the state. Of the 10,385 bridges on state highways, 208 are considered major bridges. Bridges are categorized as being in good, fair or poor condition in accordance with criteria established by FHWA. Good means no significant condition-related problems exist. Fair indicates that moderate problems exist that may require minor rehabilitation or maintenance to return the structure to good condition. Poor indicates that more significant problems exist which will require either a major rehabilitation or replacement of the structure.

The target for this measure is set internally and reflects the department's goal of "holding its own" in terms of bridge condition.

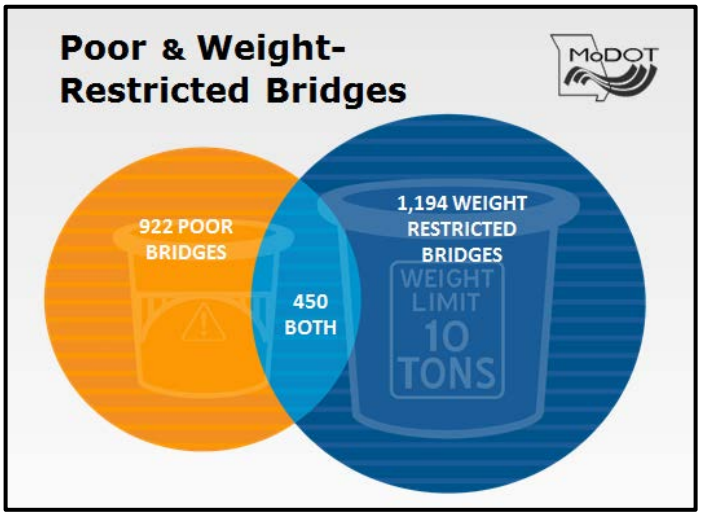
KEEP ROADS AND BRIDGES IN GOOD CONDITION

Condition of state bridges – 2b

The public has indicated the condition of Missouri's existing roadway system should be one of the state's highest priorities. Currently, 922 (22 major) structures are in poor condition, 6,084 (133 major) structures are in fair condition and 3,379 (53 major) structures are in good condition.

Statewide, the number of structures in poor condition has been slowly increasing over the last five years. The number of structures in good condition peaked in 2012 and has been steadily declining since then, while the number of structures in fair condition has significantly increased. The data on poor condition structures reflects that even with the significant STIP investments on bridges in recent years, the number is slowly increasing. The decline in good structures, as well as the increase in fair condition structures, is reflective of MoDOT's aging bridge inventory with many structures at the point where they need minor maintenance or rehabilitation.

For major bridges, the number of structures in the poor category has generally been steady over the last five years. This is reflective of the significant focus on these structures in the STIP. Even with the significant investment in the STIP, the number of structures in good condition has been generally dropping over the five-year period while the number in fair condition has generally been increasing. Work on major bridges is expensive with rehabilitations costing $10 to $20 million and replacements ranging from $20 million to $200 million. Ohio has been selected for comparison as its total of 10,402 (129 major) state highway bridges is only 17 more than Missouri, as well as having similar demographics, geography and weather conditions.



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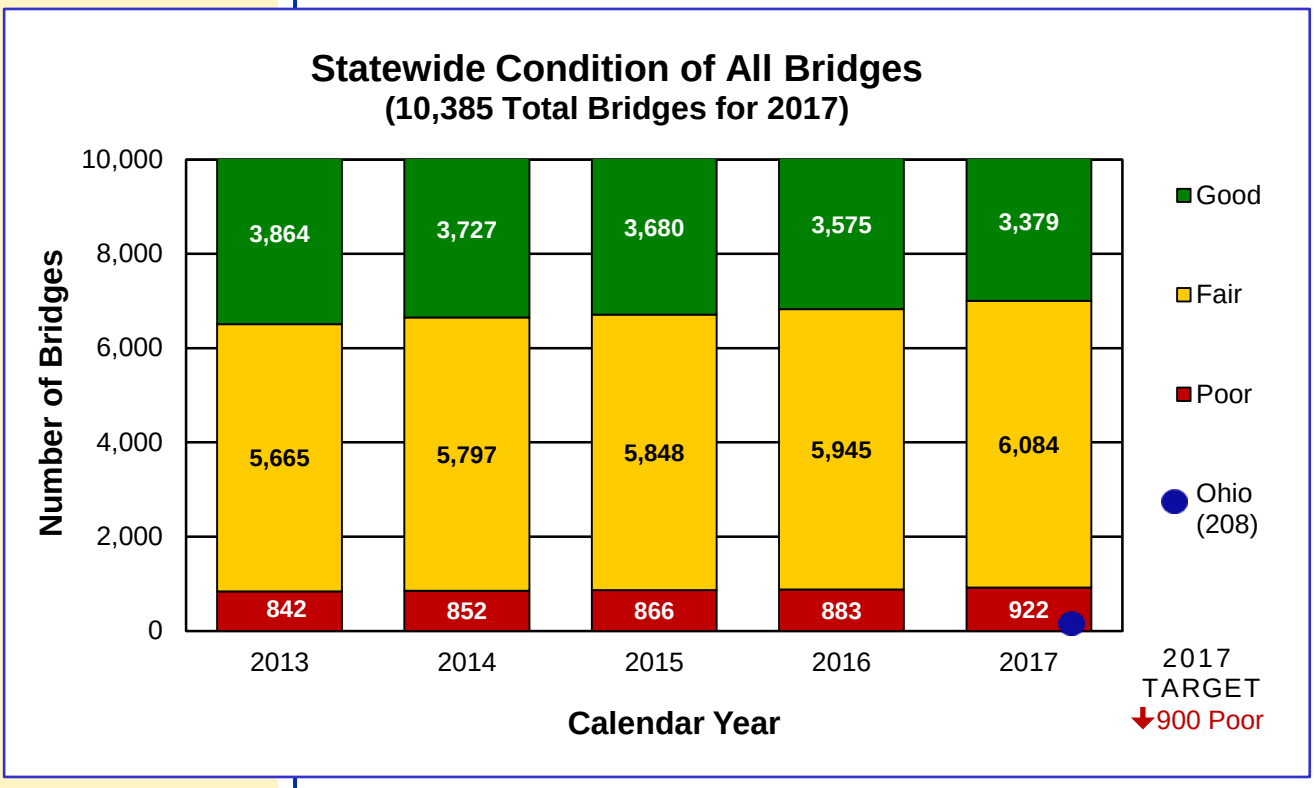

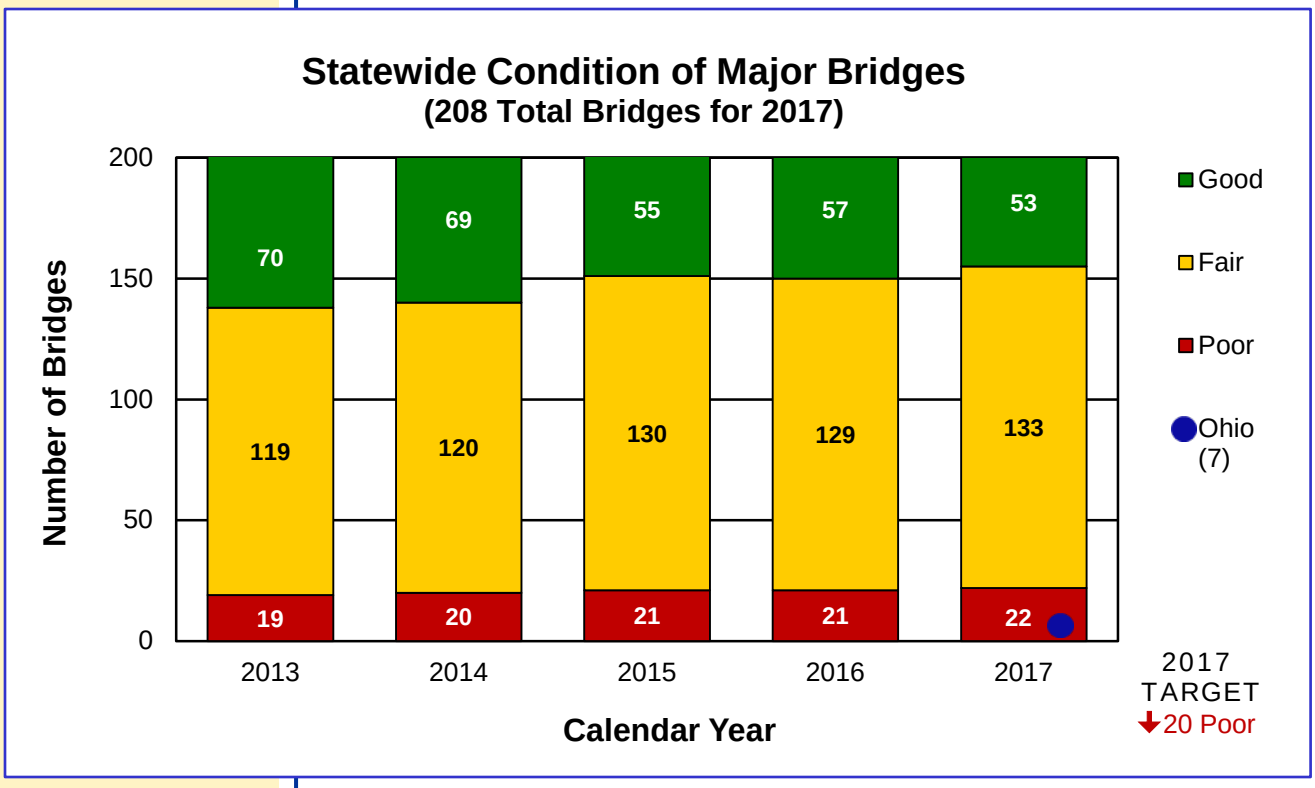

RESULT DRIVER:
Dennis Heckman
State Bridge Engineer

MEASUREMENT DRIVER:
Dave Wyman
Area 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. Fixing Americas Surface Transportation Act requires states to track the structurally deficient deck area on the NHS. Historically, structurally deficient consisted of bridges that were in bad condition or had insufficient load capacity when compared to modern design standards. With the implementation of the FAST Act, this definition has changed and this measure reflects those changes. The FAST Act has a penalty threshold that requires a state to take certain actions whenever the percentage of structurally deficient deck area within a state exceeds 10 percent. The chart reflects keeping the percentage below 10 percent as the target.

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Percent of structurally deficient deck area on National Highway System – 2c

The public has indicated that keeping Missouri's existing roads and bridges in good condition should be one of the state's highest priorities. The FAST Act established a 10 percent penalty threshold for states that, when exceeded, requires a state to focus money on bridges until they are back under 10 percent. The local system has 86 National Highway System structures (three structurally deficient) and the MoDOT system has 3,552 NHS structures (155 SD). Missouri currently falls below the penalty threshold with the statewide SD deck area at 7.1 percent. This is attributable to the continued effort to focus on major bridges when funding is available as well as the increased focus on dealing with the poor condition bridges in the STIP.

Statewide, this measure is also heavily influenced by major bridges with one structure having the ability to impact this measure +/-0.5 percent. From 2016 to 2017, there was a slight drop in the statewide percentage of structurally deficient deck area on the NHS. The number of bridges on the NHS has stabilized with very small changes from year to year. Ohio has been selected for comparison because it has similar demographics, geography and weather conditions. There are 10,402 total state highway bridges in Ohio with 5,067 structures on the NHS.