# Tracker

### **MEASURES OF DEPARTMENTAL PERFORMANCE**



MoDOT Missouri Department of Transportation

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### Greetings from MoDOT

Welcome to *Tracker*, MoDOT's performance management tool that documents our commitment to accountability, innovation, efficiency and transparency in order to deliver valuable benefits to Missouri taxpayers.

We want to build a 21<sup>st</sup> century transportation system that transforms Missouri into a national model for improving safety, serving citizens, supporting the economy and encouraging innovation.

Our commitment to transparency and accountability is reflected in "The Citizen's Guide to Transportation Funding," which was recognized nationally with the AASHTO President's Award. It was a critical document used by the 21<sup>st</sup> Century Missouri Transportation System Task Force, which concluded seven months of work with the release of its final report and recommendations earlier this month. Their work will drive the discussion and formulation of sustainable transportation policy now and into the future.

Our dedication to innovation was validated in the fall by selection of the Kansas City-to-St. Louis Corridor for possible future implementation of the cutting-edge Hyperloop technology – a key component to Missouri's quest for Amazon's second headquarters.

More good news is that our customers like what we're doing. Our bi-annual statewide survey was conducted last summer and the results show that customer satisfaction has climbed from 81 to 83 percent – an unheard of rate for a governmental agency.

We have built *Tracker* around seven tangible results. These results are outcomes that you expect to see, and they guide us in making decisions every day. The performance measures documented on the following pages are designed to help us focus on the progress we are making to achieve these results. *Tracker* is a living document that evolves and adapts to current conditions and issues with new targets, goals and benchmarks. Soon we will be adding a strategic initiative section that is being developed by senior leaders and employees.

All of the progress we make is a result of the dedicated service of the entire MoDOT team, repeatedly recognized as truly one of the best DOTs in the nation! Throughout 2018, we will continue to be a great organization by focusing all of our efforts on our core values of safety, service and stability.

With warm regards,

Patrick K. McKenna

#### Mission

Our mission is to provide a world-class transportation experience that delights our customers and promotes a prosperous Missouri.

# **TANGIBLE RESULTS**

ALUE 

SAFETY Keep Customers and Ourselves Safe Be Safe SERVICE **Provide Outstanding Customer Service Be Accountable Deliver Transportation Solutions of Great Value Be Respectful Use Resources Wisely Be Inclusive STABILITY** Keep Roads and Bridges in Good Condition **Be Bold** Operate a Reliable and Convenient **Be Better Transportation System Be One Team Advance Economic Development** 

So we can be a great organization.

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## KEEP CUSTOMERS AND OURSELVES SAFE Mark Shelton, District Engineer



MEASURES OF DEPARTMENTAL PERFORMANCE



Safety is a daily commitment for all MoDOT employees. From design and construction to operations and maintenance of the state transportation system, the safety of our customers, partners, and employees is our top priority. We work with our safety partners to promote safe behavior for all users and modes of transportation so everyone goes home safe every day.

#### **RESULT DRIVER:** Mark Shelton District Engineer

### MEASUREMENT DRIVER:

Bill Whitfield Highway Safety Director

#### PURPOSE OF THE MEASURE:

The fatal and serious injury number measure tracks quarterly, annual and five-year average trends resulting from traffic crashes on all Missouri roadways.

# MEASUREMENT AND DATA COLLECTION:

Missouri law enforcement agencies submit a vehicle accident report form to the **Missouri State Highway Patrol** to be entered into a statewide traffic crash database. The database automatically updates MoDOT's crash database system, which is part of the Transportation Management System. The rate of fatal and serious injury charts display annual and fiveyear average fatality and injury rates per 100 million vehicle miles traveled for these same crashes. In addition, the fatality rate chart includes the national average. The targets are based on a 7 percent improvement rate from the immediate prior year fatalities and a 4 percent improvement in serious injuries from the immediate prior year.



### KEEP CUSTOMERS AND OURSELVES SAFE

### Number and rate of fatalities and serious injuries – 1a

MoDOT wants everyone to reach their destinations safely, so all can go home to their families each day. *Missouri's Blueprint – A Partnership Toward Zero Deaths* is Missouri's strategic highway safety plan designed to reduce the number and severity of traffic crashes using the four key disciplines of traffic safety: engineering, enforcement, education and emergency response.

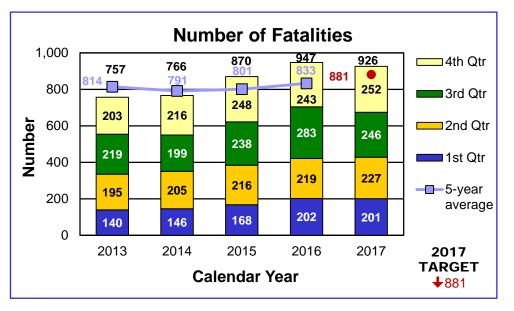
From 2014-2016, substance-impaired drivers contributed to 24 percent of Missouri's traffic crash fatalities. Alcohol remains the primary contributor to these crash types. Male drivers were more likely than females to be involved in substance-impaired driving crashes contributing to 80 percent of substance-impaired fatalities. Ten percent of the children less than 15 years of age killed in motor vehicle crashes were riding with a substance-impaired driver.

Overall, driver error contributes to 94 percent of traffic crashes nationwide. Missouri's top crash types are:

- Run-off-road and curves
- Head-on collisions
- Collision with trees and poles
- Intersection collisions
- Aggressive driving
- Unrestrained occupants

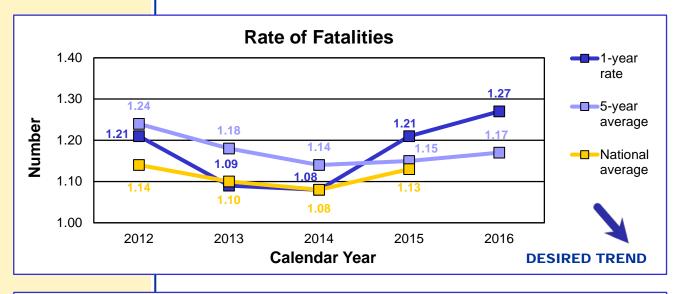
- Substance-impaired driving
- Distracted and inattentive driving
- Younger and older drivers
- Motorcyclists
- Pedestrians
- Commercial motor vehicle crashes

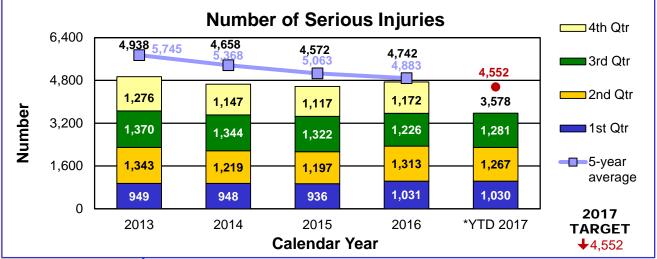
MoDOT's goal is to reduce fatalities by 7 percent from 947 in 2016 to 881 in 2017 and reduce serious injuries by 4 percent from 4,742 in 2016 to 4,552 in 2017. Compared to 2016, fatalities are down 2 percent, but 5 percent over the 2017 target. Through third quarter 2017, there has been an increase of eight serious injuries as compared to 2016.



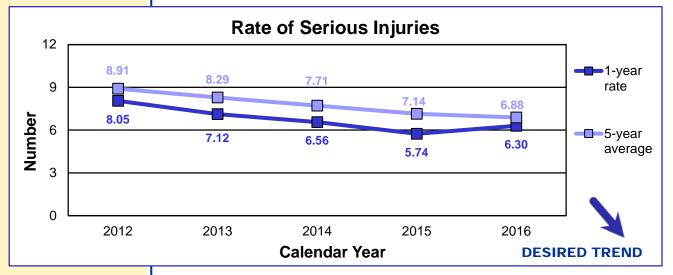
2017 - Fourth quarter fatalities were derived from MSHP radio reports.

### **KEEP CUSTOMERS AND OURSELVES SAFE**





YTD 2017 – Due to a backlog of crash reports into STARS, the serious-injury measure only includes data derived from TMS. Fourth quarter 2017 data is not available on the MSHP radio reports and is incomplete in TMS.



#### Missouri Department of Transportation 1a2

### **RESULT DRIVER:**

Mark Shelton District Engineer

### MEASUREMENT DRIVER:

Bill Whitfield Highway Safety Director

#### PURPOSE OF THE MEASURE:

The vulnerable roadway user measure tracks annual trends in fatalities and serious injuries of motorcyclists, pedestrians and bicyclists. These roadway users are at risk for death or serious injury when involved in a motor-vehicle-relate crash.

# MEASUREMENT AND DATA COLLECTION:

Missouri law enforcement agencies submit a vehicle accident report form to the Missouri State Highway Patrol to be entered into a statewide traffic crash database. The database automatically updates MoDOT's crash database system, which is part of the Transportation Management System.

### KEEP CUSTOMERS AND OURSELVES SAFE

# Number of vulnerable roadway user fatalities and serious injuries – 1b

In 2016, vulnerable roadway users were 24 percent of the total number of fatalities. Pedestrian fatalities decreased in 2016 by 5 percent. Motorcycle fatalities increased by 34 percent and bicycle fatalities increased by 11 percent.

Pedestrian and bicycle serious injuries increased in 2016, meanwhile motorcyclist injuries decreased. Serious injury data for 2016 is incomplete.

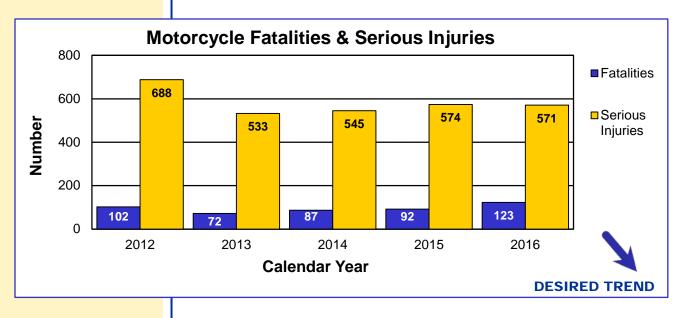
A closer look at these vulnerable roadway users shows that, between 2014 and 2016, there were 151 motorcycle operators who were aggressively driving, which resulted in a fatality. Of those fatalities, 96 percent were male.

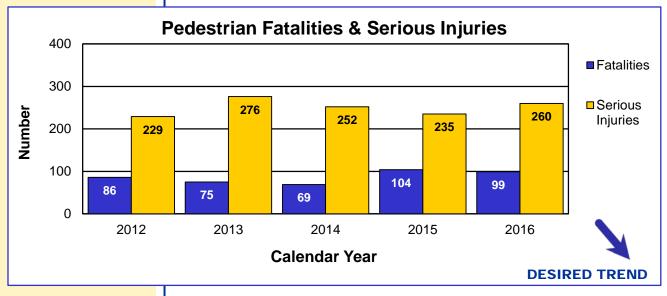
Walking is an essential form of transportation for many Missourians. Between 2014 and 2016, 65 percent of pedestrian fatalities were NOT crossing the roadway at a designated crosswalk.

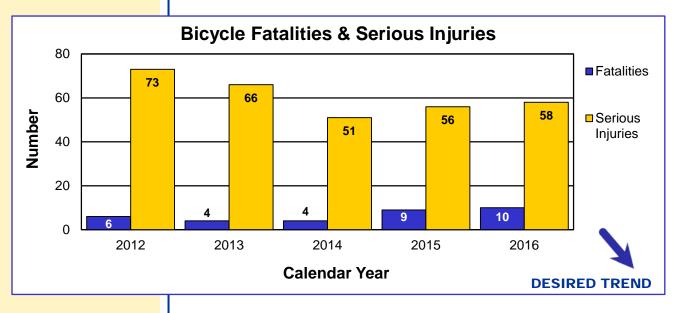
Lastly, of the 23 bicycle fatalities between 2014 and 2016, the highest percentage, 43 percent, occurred on city streets.



### KEEP CUSTOMERS AND OURSELVES SAFE







Missouri Department of Transportation 1b2

### **RESULT DRIVER:**

Mark Shelton District Engineer

#### MEASUREMENT DRIVER:

John Miller Traffic Liaison Engineer

#### PURPOSE OF THE MEASURE:

The measure tracks annual trends in motor-vehicle-related fatal and serious injuries resulting from the most common contributing factors or highway features. This data represents six of the top focus areas presented in Missouri's Blueprint to Save More Lives.

# MEASUREMENT AND DATA COLLECTION:

Missouri law enforcement agencies submit a vehicle accident report form to the Missouri State Highway Patrol to be entered into a statewide traffic crash database, which is part of the Transportation Management System. MoDOT staff query and analyze this data to determine the number of unrestrained occupants in crashes, how often aggressive driving, alcohol and other drugs contribute to crashes, and whether or not the vehicles ran off the road, the crash occurred in a curve, or the crash occurred at an intersection.

The Highway Patrol experiences a lag in data entry each year which prohibits MoDOT from using current complete crash data. This lag is being reduced through a combination of efforts involving not only manual data entry, but also an increased emphasis in electronic data entry.

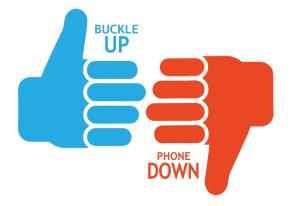
### KEEP CUSTOMERS AND OURSELVES SAFE

### Number of fatalities and serious injuries resulting from the most frequent crash causes – 1c

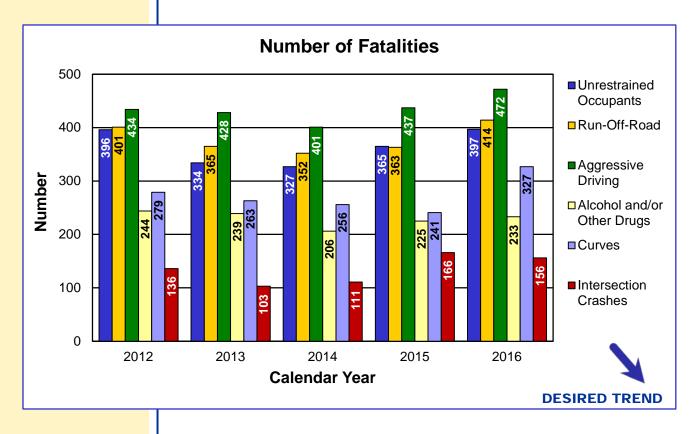
Recording and monitoring crash data is an important part of improving safety for Missouri drivers. But without looking at the causes of these incidents, the data is nothing but numbers. Looking for the reasons why an incident occurs is MoDOT's best approach to address the problem. With that approach, the department finds the most frequent causes continue to be a mix of engineering and behavioral issues.

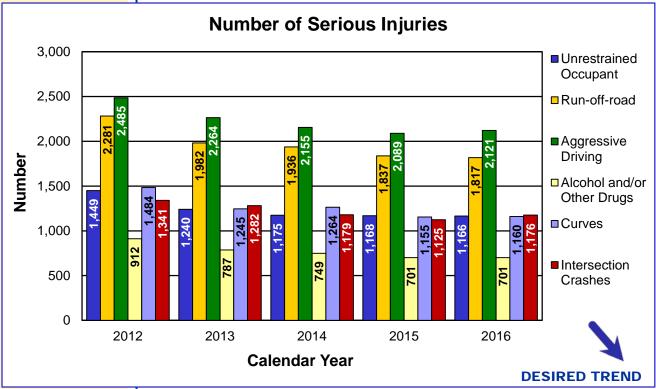
The general trend for fatalities is no longer declining in Missouri, but instead has increased for two consecutive years. Serious injuries increased in 2016, revealing a change in the downward trend for the first time in over a decade. Comparing the number of fatalities in 2015 to 2016 shows a large increase in curve-related fatalities (36 percent) and run-off-road fatalities (14 percent). Unrestrained occupants, aggressive driving and alcohol and/or other drugs also had increases in fatalities (9 percent, 8 percent and 4 percent respectively) while intersection-related fatalities decreased by 6 percent. Comparing the number of serious injuries in 2015 to 2016 shows minimal change for all areas with the exception of intersection-related which had more than a 4 percent increase.

As traffic on Missouri roadways continues to increase, MoDOT efforts will be instrumental in changing the current trends for each of these causes. The primary current initiatives include adding shoulders and rumble strips to minor roads, installing high-friction surface treatments on curves and improving intersection safety. MoDOT continues to target locations and behaviors based on crash data analysis. Another troubling behavior is distracted driving as it may significantly magnify all six of the top crash factors. Mobile devices magnify the fatalities and serious injuries in the categories of unrestrained occupants, run-off-road, aggressive driving, alcohol and/or other drugs, curves and intersection-related crashes as drivers will be less likely to safely navigate roadways, especially in curves and at intersections.



### KEEP CUSTOMERS AND OURSELVES SAFE





#### **RESULT DRIVER:** Mark Shelton

District Engineer

#### MEASUREMENT DRIVER:

Julie Stotlemeyer Assistant State Design Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the number of traffic-related and non-traffic-related fatalities, injuries and overall crashes occurring in work zones on state-owned roadways.

# MEASUREMENT AND DATA COLLECTION:

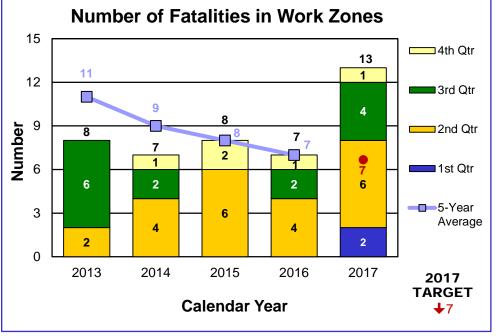
Missouri law enforcement agencies submit a vehicle accident report form to the Missouri State Highway Patrol to be entered into a statewide traffic crash database. The database automatically updates MoDOT's crash database system, which is part of the Transportation Management System. MoDOT staff query and analyze this data to identify work zone related crash statistics. MSHP prioritizes entry of the crash reports by fatality, serious injury and then property damage only. The target for this measure is updated quarterly. This target is established by projecting a 10 percent improvement over a five-year average.

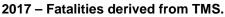
### KEEP CUSTOMERS AND OURSELVES SAFE

### Number of fatalities and serious injuries in work zones – 1d

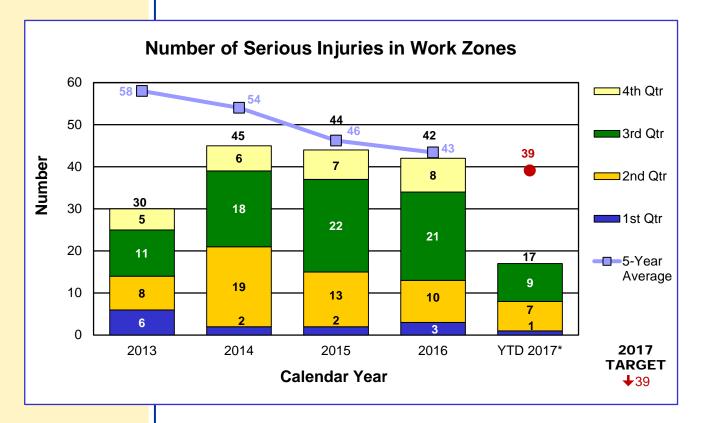
Work zone safety is at the center of MoDOT's safety culture and the driving force in all maintenance and construction work. Just as MoDOT expects its crews to be safe and visible, it also expects contractors and utility companies to provide safe work zones and visible workers. Staying safe in work zones also is a partnership shared with the driving public. MoDOT wants everyone to get home safely. While MoDOT makes every effort to work safely, motorists need to pay attention, slow down, move over, buckle up and drive without distractions.

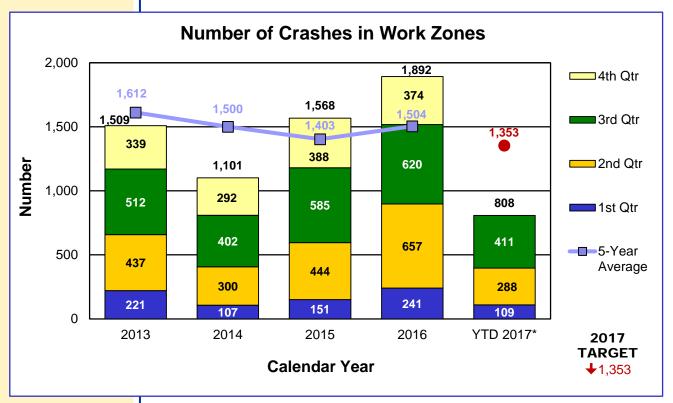
Based on information currently available, there have been 10 work zone crashes that resulted in 13 fatalities in 2017: one worker, seven drivers and five passengers. Four of the crashes were located in MoDOT maintenance work zones, three crashes involved distracted drivers and seven crashes occurred while workers were present. Nine of the fatalities were a result of rear-end crashes with stopped traffic. The 2017 target has been exceeded.





### KEEP CUSTOMERS AND OURSELVES SAFE





\*YTD 2017 – Due to a backlog of crash reports into STARS, serious injury and crash measures are not final and only illustrate data derived from TMS. Fourth quarter 2017 data is unavailable through the MSHP radio reports and is incomplete in TMS.

#### **RESULT DRIVER:** Mark Shelton

District Engineer

#### MEASUREMENT DRIVER:

Scott Jones Highway Safety Program Administrator

#### PURPOSE OF THE MEASURE:

This measure tracks annual trends in seat belt use in passenger vehicles. This data drives the development and focus of the Missouri Highway Safety Plan and supports Missouri's Blueprint to Save More Lives.

# MEASUREMENT AND DATA COLLECTION:

Each June, a statewide survey is conducted at 560 preselected locations in 28 counties. The data collected is calculated into a seat belt usage rate using a formula approved by the National Highway Traffic Safety Administration. Data collection locations represent 85 percent of the state's vehicle occupant fatalities. The data collection plan is the same each year for consistency and compliance with NHTSA guidelines. The target for this measure is updated annually in October for the next calendar year. This target is established as the current national average.

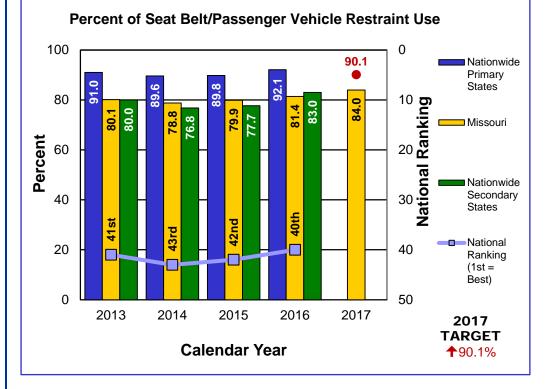
### KEEP CUSTOMERS AND OURSELVES SAFE

### Percent of seat belt/passenger vehicle restraint use – 1e

Seat belts save lives, but getting people to use them – even to protect their own lives – is a challenge. Public education is one way to keep the issue in front of motorists. Legislation is another. MoDOT supports each approach, attacking the problem with focused marketing campaigns and reinforcing it with hard facts to back legislative efforts. Several municipalities across the state are taking matters into their own hands enacting primary ordinances within city limits. Missouri currently has 53 municipalities and two counties that have adopted primary seat belt ordinances, representing nearly one fourth of the state's population.

Based on 115,902 observations, the seat belt use in Missouri for 2017 was 84.0 percent. Johnson County was the lowest at 57.2 percent and Callaway County was the highest at 95.1 percent. The national average for seat belt use in 2016 was 90.1 percent (2017 data is not yet available). Missouri's national ranking in 2016 was 40th, with 10 states ranking lower in seat belt use.

States with a primary seat belt law rank highest on seat belt use nationwide. States that have a secondary law continue to rate lowest in national rankings.



### Missouri Department of Transportation 1e

#### MEASUREMENT DRIVER:

Steff Copeland Motor Carrier Services Investigations Administrator

#### PURPOSE OF THE MEASURE:

This measure tracks the number of Commercial Motor Vehicles involved in fatal and serious injury crashes and compares those annual totals to the number of vehicle miles traveled annually by commercial motor vehicles. MoDOT uses the information to target education, enforcement and improvement of safety features.

#### MEASUREMENT AND DATA COLLECTION:

Missouri law enforcement agencies submit a vehicle accident report form to the Missouri State Highway Patrol to be entered into a statewide traffic crash database. The database automatically updates MoDOT's crash database system, which is a part of the Transportation Management System. The rate of fatal and serious injury charts display the annual fatality and injury rates per 100 million vehicle miles traveled for commercial motor vehicles for these same crashes. Crash rate data is reported annually.

### KEEP CUSTOMERS AND OURSELVES SAFE

# Number and rate of fatality and serious injury crashes involving commercial motor vehicles – 1f

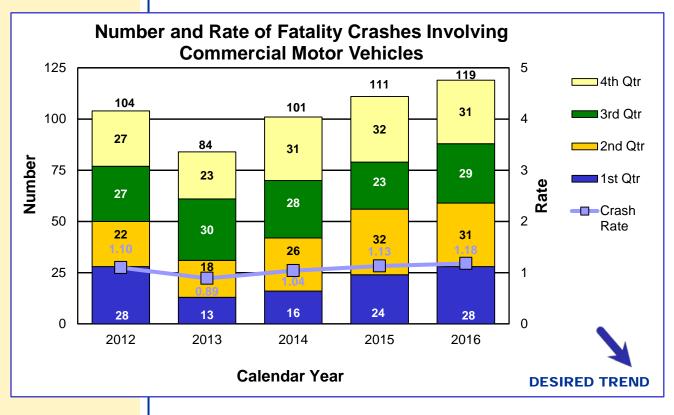
Commercial motor vehicles are the lifeblood of Missouri's economy. They transport the goods and materials that keep the nation moving. Partnering with the Missouri State Highway Patrol and St. Louis and Kansas City police departments, MoDOT does everything in its power to keep CMV drivers safe and their vehicles on the road. By tracking the number of CMV crashes resulting in fatalities and serious injuries, MoDOT can target educational and enforcement efforts, and also improve safety features such as highway signs, reflective pavement markings, guard cables, rumble strips and incident management alert signs.

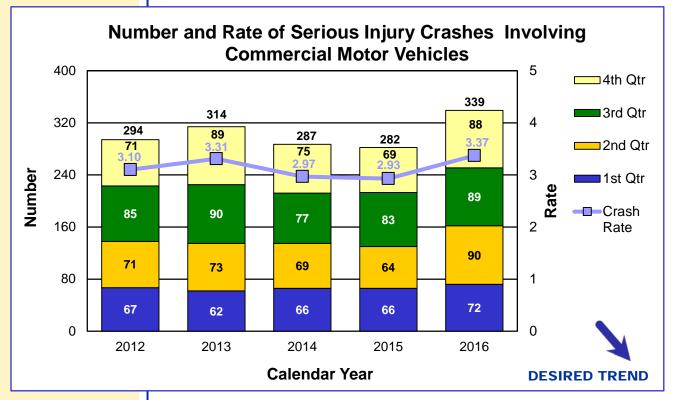
While efforts from all agencies combined are beneficial and have effectiveness, Missouri is experiencing an increase in the number and rate of fatality and serious injury crashes. Between 2012 and 2016, fatal crashes involving a CMV increased by 14.4 percent and the fatality crash rate increased from 1.10 to 1.18 per 100 million CMV vehicle miles traveled. In 2016, the 119 fatality crashes Missouri experienced is eight more than 2015 or a 7.2 percent increase. This resulted in a 2016 crash rate of 1.18 as compared to the 1.13 rate for 2015.

Between 2012 and 2016, serious injury crashes involving a CMV increased by 15.6 percent and the serious injury crash rate increased from 3.10 to 3.37 per 100 million CMV vehicle miles traveled. The 340 serious injury crashes Missouri experienced in 2016 is 51 more than reported for 2015 or a 17.6 percent increase. This resulted in a 2016 crash rate of 3.37 as compared to the 2.93 rate for 2015.



### KEEP CUSTOMERS AND OURSELVES SAFE





Due to a backlog of crash reports into STARS, these measures will only illustrate data derived from TMS.

### RESULT DRIVER:

Mark Shelton District Engineer

#### MEASUREMENT DRIVER:

Evan Adrian Senior Safety Officer

#### PURPOSE OF THE MEASURE:

This measure tracks the number of recordable injuries in total and as a rate of injuries per 100 workers.

# MEASUREMENT AND DATA COLLECTION:

The calculation for incidence rate is the number of recordables times 200.000 divided by the number of hours worked. The 200,000 used in the calculation is the base for 100 full-time workers (working 40 hours per week, 50 weeks per year). MoDOT defines a recordable incident as a workrelated injury or illness that results in death, days away from work or medical treatment resulting in cost to the department. The injury data is collected from Riskmaster, the department's risk management claims administration software. The number of hours worked is taken from MoDOT's payroll data.

The target for total recordable incidents is updated quarterly. The target for rate of recordable incidents is updated annually. The target is calculated by subtracting 10 percent from the year to date comparison period.

### KEEP CUSTOMERS AND OURSELVES SAFE

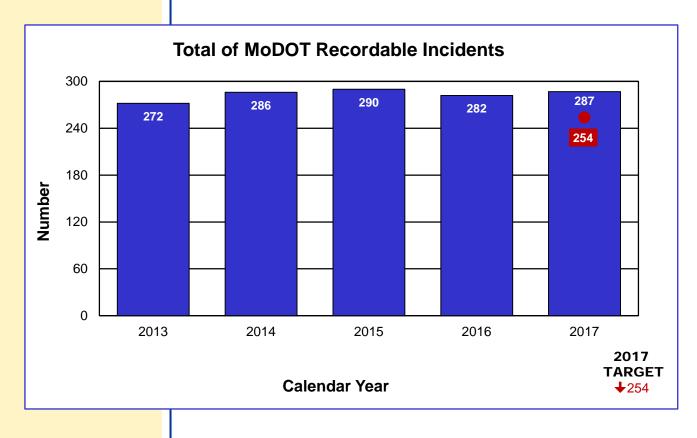
### Total and rate of MoDOT recordable incidents – 1g

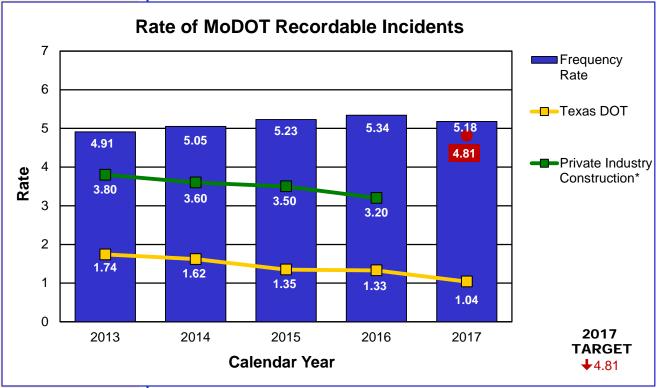
Safety is MoDOT's highest value and is a responsibility shared by each employee. The total and rate of recordable incidents are tracked to look for areas of improvement and learn from mistakes. Behavior Based Safety also is being integrated into our Comprehensive Safety Program. A holistic approach of using BBS in conjunction with engineering and administrative safety controls will allow the department to achieve a more robust safety culture and realize the goal of fewer injuries.

There has been a slight increase in total number of recordables in 2017. However, there was a slight decrease in the rate of incidents from last year. Leading causes of injuries this year were: slips, trips and falls (17 percent); strain or injury (17 percent); struck or injured by (14 percent); and cut, punctured, or scraped (12 percent). Based on the work activity being performed at the time of the incident, 26 percent of employee injuries were equipment related, 15 percent were related to mowing, and 13 percent were related to material handling. MoDOT has established a target of a 10 percent reduction in incidents per quarter and a 10 percent reduction in rate per year until the ultimate goal of zero is reached.



### KEEP CUSTOMERS AND OURSELVES SAFE





\*OSHA private industry data is not yet available for 2017.

### RESULT DRIVER:

Mark Shelton District Engineer

#### MEASUREMENT DRIVER:

Steve Patterson Safety and Claims Manager

#### PURPOSE OF THE MEASURE:

This measure tracks the number of general liability claims and the amount paid.

# MEASUREMENT AND DATA COLLECTION:

General liability claims arise from allegations of injuries/damages caused by the dangerous condition on MoDOT property and the injury/damage that directly resulted from the dangerous condition. In addition, an employee must be negligent and create the dangerous condition or MoDOT must have actual or constructive notice of the dangerous condition in sufficient time prior to the injury/damage to have taken measures to protect the public against the dangerous condition. Claims data is collected from Riskmaster, the department's risk management claims administration software.

The target for this measure is updated annually. This target is calculated by determining a five-year average and subtracting 10 percent. (Exceptionally high or low years are excluded from the five-year average calculation to determine a practical target).

### KEEP CUSTOMERS AND OURSELVES SAFE

### General liability claims and costs – 1h

Keeping employees and the public safe is MoDOT's highest value. Controlling damage to vehicles and reducing personal injury in work zones, on right of way and other areas under department control helps MoDOT accomplish this goal. Compared to 2016, there was a 10 percent increase in the number of claims. The majority of claims for 2017 were attributed to pavement defects. During the same timeframe, there was a 2 percent increase in the amount paid.

This quarter, payment was made on 105 claims against the department, totaling \$2,227,168. Four claims accounted for 69 percent of this quarter's payments. The department settled a 2015 claim where a vehicle lost control in icy conditions and crashed into a previously damaged guardrail end that impaled the vehicle causing serious injuries to the passenger. This claim was settled for \$414,418 based on the lack of timely repair of the guardrail end. The second claim occurred in 2012 where an arbitration panel ruled against the department. The panel found a poorly maintained guardrail directly contributed to severe injuries to the passenger in a crash. The plaintiff was awarded \$414,418. The third claim occurred in 2012. A blade patch that unraveled caused the claimant to lose control and crash, resulting in serious injuries. This claim was settled for \$315,000. The last claim occurred in 2012 and was settled for \$375,000 where a missing stop sign contributed to a collision at an intersection, resulting in serious injuries to the passenger and driver.

The target for number of general liability claims is a 10 percent reduction from a five-year average. In an effort to achieve this target, the focus needs to be on our most common claims. For 2017, the top three claims types are attributed to potholes, chipseal and mowing operations.



Missouri Department of Transportation 1h

### KEEP CUSTOMERS AND OURSELVES SAFE





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# KEEP ROADS AND BRIDGES IN GOOD CONDITION

Scott Marion, Motor Carrier Services Director



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 10,403 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:** Scott Marion Motor Carrier Services Director

#### MEASUREMENT DRIVER:

Steve Engelbrecht District Planning Manager

#### 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 5,517 total miles on the major highway system, and the condition of these roadways is determined using a variety of measures.

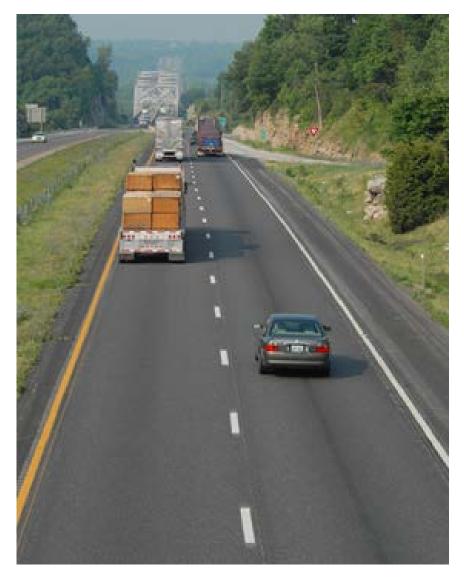
Missouri measures the condition of its roadways using smoothness as one factor, but also considers physical distresses such as cracking.

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

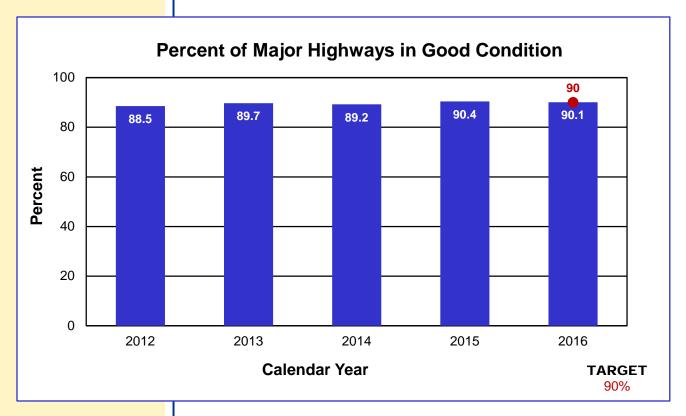
### **KEEP ROADS AND BRIDGES IN GOOD CONDITION**

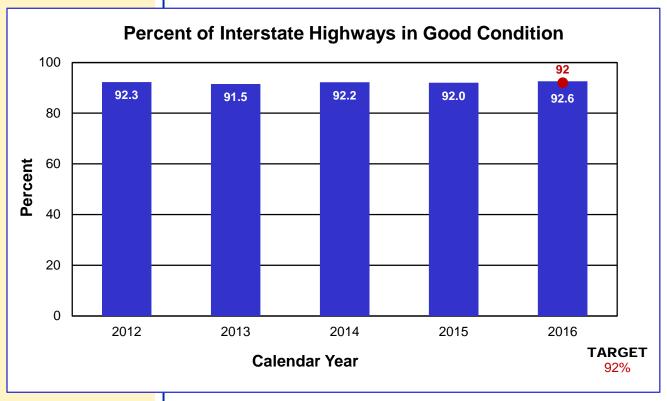
### Percent of major highways in good condition – 2a

Missourians have repeatedly told MoDOT keeping roads smooth is a top priority. Over the years, MoDOT has been able to fund pavement improvement programs improving pavement conditions on the thousands of miles of state highways. Currently, more than 90 percent of Missouri major highways are rated in good condition. A statewide target for both major highways and interstate highways has been set. The target for Missouri major highways is 90 percent and the target for interstates is 92 percent. These targets are based on the statewide asset management plan and represent MoDOT's goal of maintaining current conditions.



### **KEEP ROADS AND BRIDGES IN GOOD CONDITION**





#### **RESULT DRIVER:** Scott Marion Motor Carrier Services Director

#### MEASUREMENT DRIVER:

Wesley Stephen District Planning Manager

#### 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 lesstraveled state highways, including those routes that mainly serve local transportation needs. The minor highway system includes most lettered routes. There are 28,339 miles of minor highways in Missouri. The condition of these routes is determined using a variety of measures.

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

Data are collected in the previous calendar year and updated in April of the current calendar year. It is subsequently reported on, annually, in July of the current calendar year.

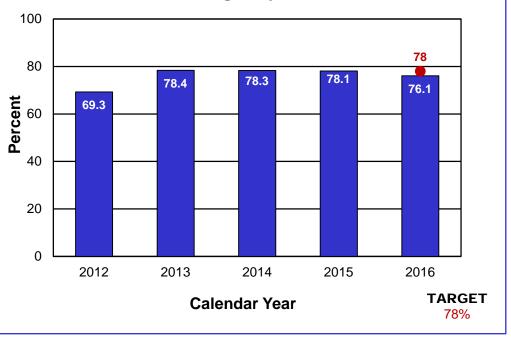
The target for this measure is set by internal policy and will not change unless policy changes.

### **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 declining 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, 76 percent of Missouri's minor highways are in good condition, which is slightly below 2015. A target of 78 percent of minor highways has been established. This target is based on the statewide asset management plan and represents MoDOT's goal of maintaining current condition.



### Percent of Minor Highways in Good Condition

#### **RESULT DRIVER:** Scott Marion Motor Carrier Services Director

#### 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 10,403 bridges on state highways, 207 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 conditionrelated 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 – 2c

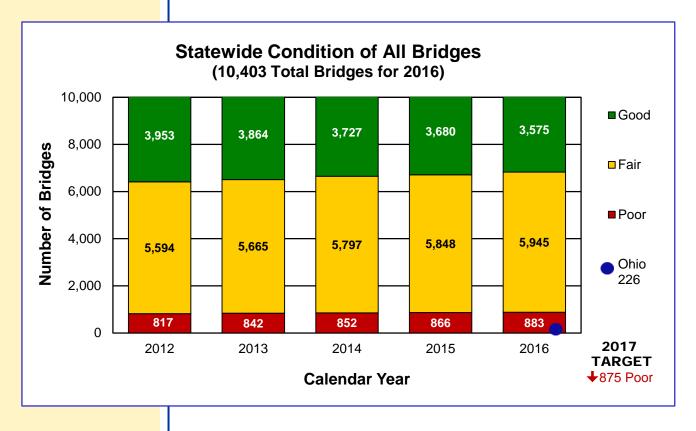
The public has indicated the condition of Missouri's existing roadway system should be one of the state's highest priorities. Currently, 883 (21 major) structures are in poor condition, 5,945 (129 major) structures are in fair condition and 3,575 (57 major) structures are in good condition.

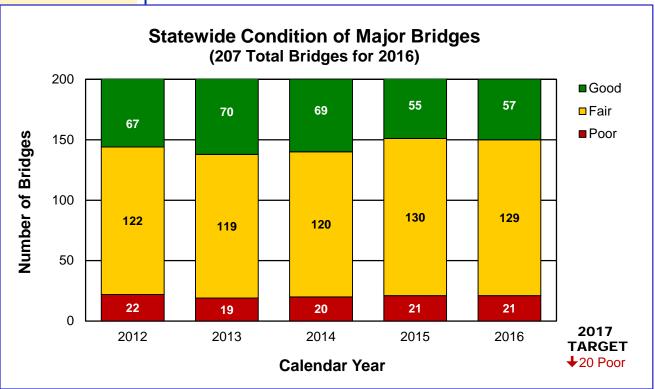
Statewide, the number of structures in poor condition has been slowly increasing over the last five years. The number of structures in good condition peaked in 2012 and has been steadily declining since then, while the number of structures in fair condition has significantly increased. The slow increase in the number of poor condition structures reflects that MoDOT is essentially "holding it's own" even with significant Statewide Transportation Improvement Program investments on bridges in recent years. The decline in good structures reflects the fact that the construction program has slowed down in recent years with the focus on taking care of the existing system. The number of structures in fair condition continues to significantly increase which is reflective of MoDOT's aging bridge demographics 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 number of state bridges (10,394) is only nine fewer than Missouri, as well as having similar demographics, geography and weather conditions.



### **KEEP ROADS AND BRIDGES IN GOOD CONDITION**





Missouri Department of Transportation 2c2

#### **RESULT DRIVER:** Scott Marion Motor Carrier Services Director

### MEASUREMENT DRIVER:

David 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:

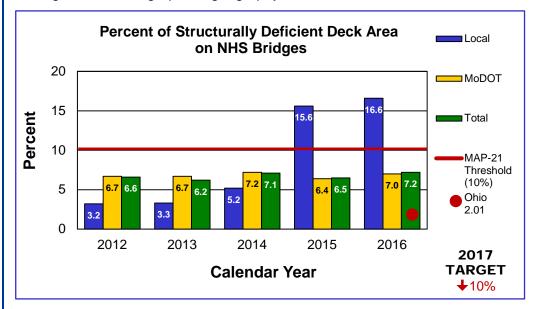
The NHS is defined by federal law and consists of all roadways functionally classified as principal arterials as well as some routes that serve as major connections to multimodal freight-type facilities and some locally owned roadways. Fixing America's Surface **Transportation Act requires** states to 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 FAST Act, this definition has changed and this measure reflects those changes. 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 the below 10 percent target.

### **KEEP ROADS AND BRIDGES IN GOOD CONDITION**

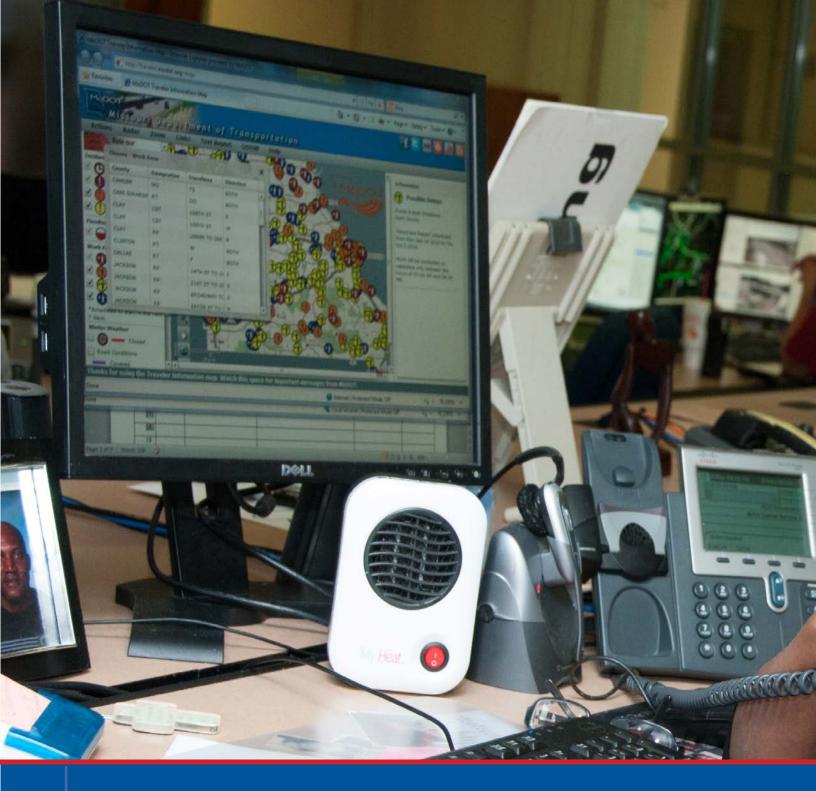
### Percent of structurally deficient deck area on National Highway System – 2d

The public has indicated keeping Missouri's existing roads and bridges in good condition should be one of the state's highest priorities. FAST Act established a 10-percent penalty threshold for states, that when exceeded, has special rules that essentially require a state to focus money on bridges until they are back under 10 percent. The local system has 86 NHS structures (five SD) and the MoDOT system has 3,557 NHS structures (144 SD). Missouri currently falls below the penalty threshold with the statewide structurally deficient deck area at 7.2 percent. This is attributable to the continued efforts at focusing on major bridges when funding is available as well as the increased focus on dealing with the poor condition bridges within the STIP.

Statewide, this measure is also heavily influenced by major bridges because one structure has the ability to impact this measure +/-0.5 percent. When looking at the local system, a large bridge can have a very dramatic impact because of the small number of local structures that are part of the NHS. This is witnessed below in the dramatic change on the local system from 2014 to 2015, which was the result of one newly deficient large structure. The changes on the measure from 2015 to 2016 result from 24 structures dropping off the list while 34 structures were added to the list, resulting in a slight increase in the area of structurally deficient structures on the NHS. After a few years of changes, the roadways included on the NHS have stabilized with only minor changes from year to year resulting in negligible impacts on this measure. Ohio has been selected for comparison as their number of state bridges (10,394) is only nine fewer than Missouri, as well as having similar demographics, geography and weather conditions.



#### Missouri Department of Transportation 2d



# PROVIDE OUTSTANDING CUSTOMER SERVICE

Fay Fleming, Communications Director



MEASURES OF DEPARTMENTAL PERFORMANCE



Every MoDOT employee is responsible for delivering outstanding customer service. We strive to be respectful, responsive, and clear in all our communication. We want to build strong relationships with our transportation partners, our customers and each other.

#### **RESULT DRIVER:** Fay Fleming Communications Director

#### MEASUREMENT DRIVER:

Sally Oxenhandler District Communications Manager

#### PURPOSE OF THE MEASURE:

This measure tracks MoDOT's progress toward the mission of delighting its customers.

# MEASUREMENT AND DATA COLLECTION:

Data is collected through a biennial, in odd-numbered years, telephone survey of approximately 3,500 randomly selected Missourians. Benchmarking data is provided by the American Customer Satisfaction Index.

The target for this measure is updated annually in October for the next calendar year. The target for this measure was set by management directive.

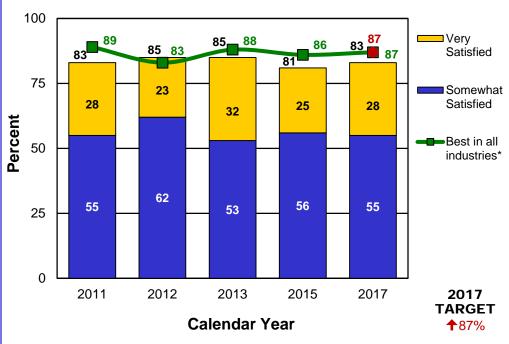
### PROVIDE OUTSTANDING CUSTOMER SERVICE

### Percent of overall customer satisfaction – 3a

Customer satisfaction with MoDOT continues to remain high. Eighty-three percent of Missourians surveyed said they were satisfied with the job MoDOT is doing, up from 81 percent in 2015. In addition, those customers reporting they are very satisfied with MoDOT increased from 25 percent to 28 percent.

Data compiled by the American Customer Satisfaction Index in 2017 shows Chick-fil-A as having the highest customer satisfaction rate – 87 percent – out of the hundreds of companies and government agencies the ACSI scores.

As in 2015, the 2017 Report Card from Missourians shows that the condition of roads and bridges remains the most important transportation service to customers. The fact that Missourians' satisfaction with MoDOT's efforts to maintain roads and bridges increased in 2017 could explain the increase in overall customer satisfaction.



Percent of Overall Customer Satisfaction

\*2010-2011 – Lincoln Mercury, 2012 – Apple, Inc., 2013 – Mercedes Benz, 2015 – Chick-fil-A, 2017 – Chick-fil-A

#### MEASUREMENT DRIVER:

Gregg Ochoa Senior Communications Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks the percent of customers who view MoDOT as a leader and expert in transportation issues. The measure shows how effectively MoDOT conveys its expertise to the traveling public.

# MEASUREMENT AND DATA COLLECTION:

Data is collected through a biennial, in odd-numbered years, telephone survey of approximately 3,500 randomly selected Missourians. The target for this measure is updated annually in October for the next calendar year. This target is established by projecting a 10 percent improvement over a five-year average.

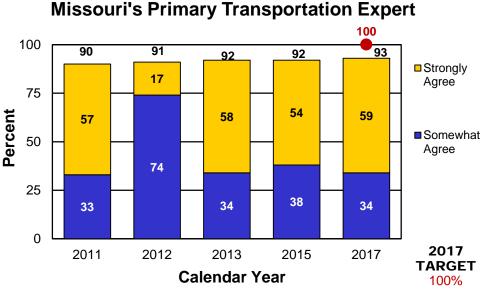
### PROVIDE OUTSTANDING CUSTOMER SERVICE

# Percent of customers who view MoDOT as Missouri's transportation expert – 3b

As the agency responsible for transportation in Missouri, MoDOT must hold its lead as an expert in the field. The department should serve as the frontrunner – representing the best transportation options for Missouri and partnering with state and national organizations and others to deliver a strong transportation system.

The 2017 survey shows an overwhelming majority of customers perceive the department as Missouri's transportation expert. Ninety-three percent of those surveyed agreed MoDOT serves this role, a percentage the department has consistently maintained since 2009. Of the 93 percent, 59 percent of respondents "strongly agreed" and 34 percent "somewhat agreed" MoDOT serves as the state's primary transportation expert.

The department continues to work on improving partnerships with all Missourians, including local government, elected officials and transportationrelated groups and organizations in order to deliver the very best possible transportation system with the resources available.



#### Percent of Customers Who View MoDOT as Missouri's Primary Transportation Expert

#### MEASUREMENT DRIVER:

Markl Johnson Senior Communications Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks the percent of customers who trust MoDOT to keep its commitments. Public trust is an important component in building support for transportation issues.

# MEASUREMENT AND DATA COLLECTION:

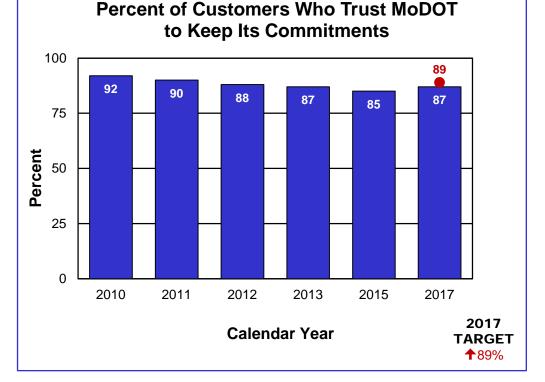
Data is collected through a biennial, in odd-numbered years, telephone survey of approximately 3,500 randomly selected Missourians. The target for this measure is updated annually in October for the next calendar year. The target for this measure was set by management directive.

### PROVIDE OUTSTANDING CUSTOMER SERVICE

# Percent of customers who trust MoDOT to keep its commitments to the public – 3c

Gaining and keeping the public's trust is critical to MoDOT's overall success. The best way MoDOT can accomplish this is to deliver on the commitments it makes.

The 2017 survey results indicated 87 percent of the residents trust MoDOT to keep its commitments to the public compared to 85 percent in the previous survey. Although this is only a 2 percent increase, it puts us back up to where MoDOT was in 2013.



#### MEASUREMENT DRIVER:

Jennifer Williams Communications Manager

#### PURPOSE OF THE MEASURE:

This measure tracks whether customers feel MoDOT provides timely, accurate and understandable information about road projects, highway conditions and work zones.

# MEASUREMENT AND DATA COLLECTION:

Data is collected through a biennial, in odd-numbered years, telephone survey of approximately 3,500 randomly selected Missourians. The target for this measure is updated annually in October for the next calendar year. The target for this measure was set by management directive.

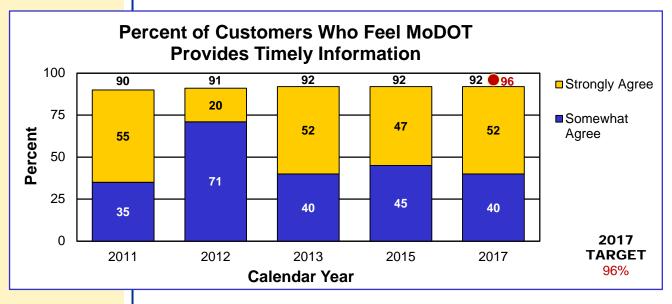
### PROVIDE OUTSTANDING CUSTOMER SERVICE

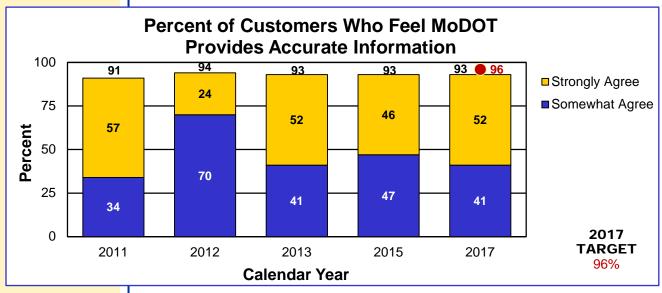
# Percent of customers who feel MoDOT provides timely, accurate and understandable information – 3d

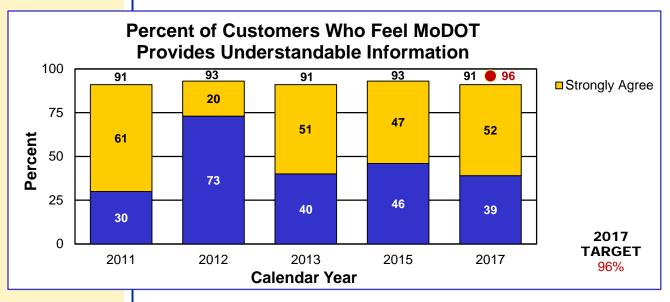
Just like well-maintained roads and bridges, MoDOT delivers information. The citizens of Missouri expect timely, accurate and understandable information from their department of transportation. Whether it's a news release, e-update, text alert or a notice of a public meeting, MoDOT makes every effort to get the word out as quickly and as clearly as possible. The results of this effort are public trust and respect. With numbers consistently above 90 percent agreement for the past five years, this measure shows the department meets customers' high expectations.



### PROVIDE OUTSTANDING CUSTOMER SERVICE







#### Missouri Department of Transportation 3d2

#### MEASUREMENT DRIVER:

Tammy Wallace Senior Communications Specialist

#### PURPOSE OF THE MEASURE:

This measure shows how satisfied customers who contact MoDOT are with the politeness, clarity and responsiveness they receive.

# MEASUREMENT AND DATA COLLECTION:

Data for this measure comes from a monthly telephone and e-mail survey of 200 customers who contacted a MoDOT customer service center in the previous month. The customer contacts come from call reports logged into the customer service database. Survey participants are asked to respond on an agreement scale regarding three qualities of their experiences. A fourth question is asked regarding their overall satisfaction. This measure also includes the time to complete requests logged into the customer service database. Requests requiring more than 30 days to complete are removed to prevent skewing the overall results.

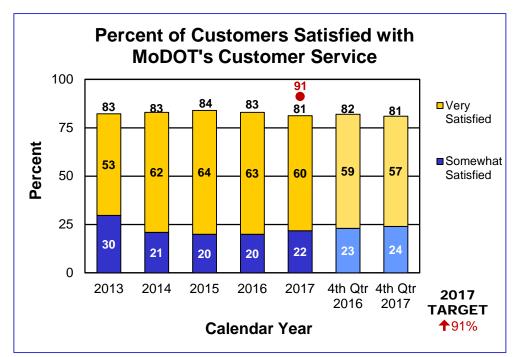
The target for this measure is updated quarterly. This target is established by projecting a 10 percent improvement over a five-year average.

### PROVIDE OUTSTANDING CUSTOMER SERVICE

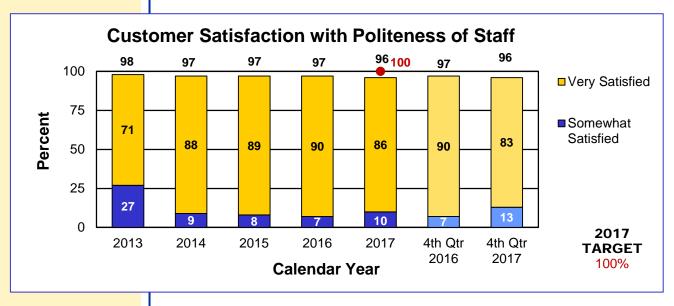
# Percent of customers satisfied with MoDOT's customer service – 3e

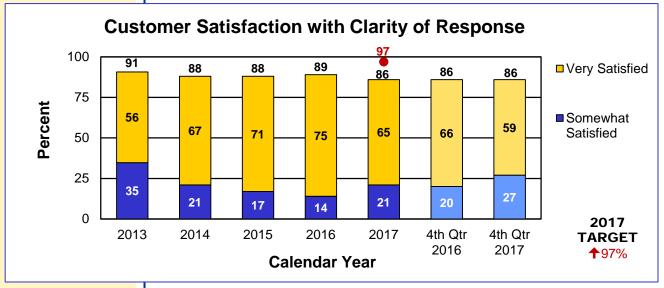
MoDOT actively seeks feedback from the customers it serves. MoDOT uses a statewide call system and an enhanced online call report system that enables customer service representatives to work across seven district boundaries in a one-team approach. Since its implementation, customer perceptions of MoDOT's politeness, responsiveness and clarity increased, resulting in improved customer satisfaction.

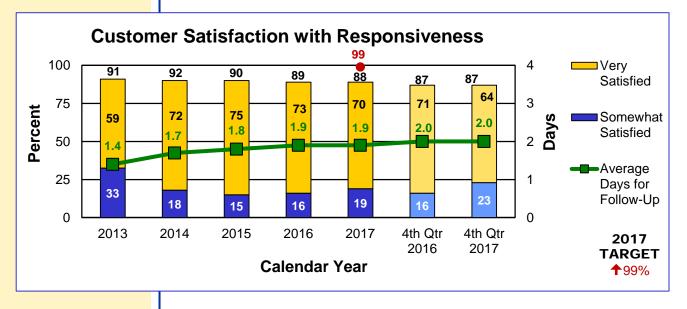
There was slight movement in numbers comparing fourth quarter 2016 to fourth quarter 2017. Overall customer satisfaction was down slightly from 82 to 81 percent. Politeness of response was also down slightly from 97 to 96 percent. Customers satisfied with the clarity of the response remained the same at 86 percent, as did the time to respond at 87 percent. The average time to complete customer requests was two days, the same as the fourth quarter last year. For the year, overall customer satisfaction was down from 83 percent in 2016 to 81 percent, which is 10 percent below the 2017 target.



### PROVIDE OUTSTANDING CUSTOMER SERVICE







#### Missouri Department of Transportation 3e2

#### MEASUREMENT DRIVER:

Chris Kelly Communications Manager

#### PURPOSE OF THE MEASURE:

This measure tracks the number of MoDOT customers hitting the department's social media and website information.

# MEASUREMENT AND DATA COLLECTION:

MoDOT gathers information for this measure from a variety of sources including Google Analytics. Website traffic and YouTube information are cumulative totals based on visits. Facebook and Twitter information is based on account followers. The target for this measure is updated quarterly. This target is established by projecting a 7 percent improvement over the same quarter in the previous year.

### PROVIDE OUTSTANDING CUSTOMER SERVICE

### Customer communication engagement – 3f

Good organizations share information with the people they serve. The best, most-trusted organizations engage customers in conversation. MoDOT often interacts with its customers through Internet-based social media networking websites and applications. MoDOT's social media accounts continue to attract followers. When comparing the second quarters of fiscal years 2017 and 2018, there was a growth of 64,716 followers on Facebook statewide and 23,263 to Twitter statewide.

During the second quarter of FY 2018, the most popular social media post on the statewide Facebook page was a graphic alerting drivers of the increased presence of deer near roadways. The post reached 97,816 people with 4,059 engagements including post clicks, shares, comments and reactions.

MoDOT websites trended slightly downward when making yearly comparisons with 902,392 sessions on MoDOT websites during the second quarter of FY 2018 compared to 1.6 million in the second quarter of FY 2017. The slow start to the winter season is believed to be responsible for the decrease in numbers when compared to this time last year.

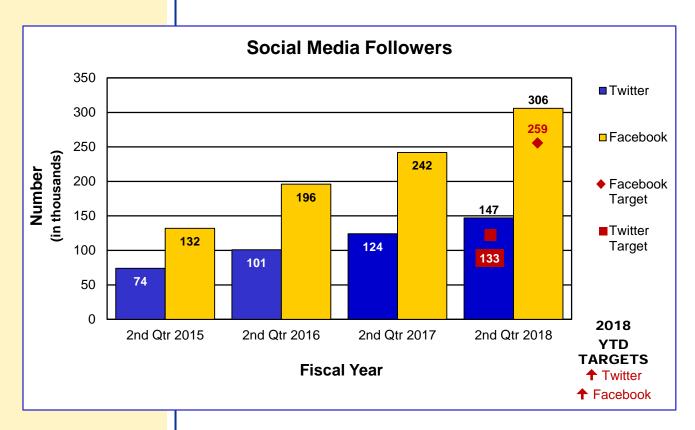
The top five pages on MoDOT's website for this quarter were:

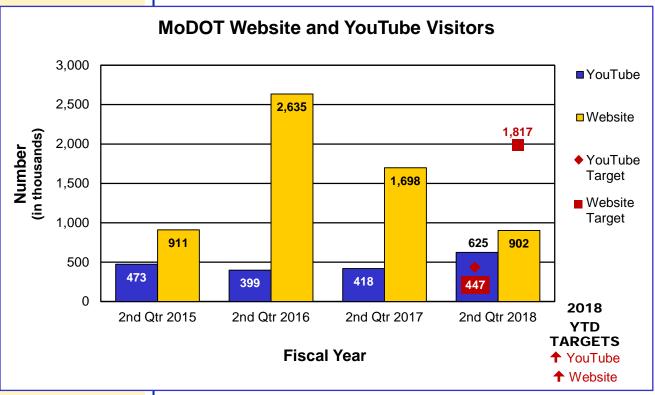
- Traveler Information Map 361,545
- KC Scout Homepage 143,220
- MoDOT Homepage 137,635
- Job Listings 50,007
- Open Letting Information 27,691

MoDOT videos on YouTube were viewed 624,917 times in the second quarter of FY 2018. Numbers now include views through SaveMOLives YouTube account. Lower numbers account for not having as many SaveMoLives campaigns running compared to last quarter. The top five videos viewed in the last quarter were:

- MoDOT Holiday Impaired 2017
- Tow Plow Action
- MoDOT Operation Safe Driver
- MoDOT Tow Plow in Action
- Buckle Up Phone Down Destination Safe

### PROVIDE OUTSTANDING CUSTOMER SERVICE





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Eric Schroeter, State Design Engineer



MEASURES OF DEPARTMENTAL PERFORMANCE



MoDOT customers expect transportation solutions delivered on time and within budget. We manage our projects to get them completed quickly and at the best possible value. We work with our transportation partners to leverage innovation in improving our products and how we work. We pledge to honor our commitments and deliver the best, most cost-effective solutions.

#### **RESULT DRIVER**:

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER:

Doug Hood Planning and Programming Coordinator

#### PURPOSE OF THE MEASURE:

The measure determines how close total project costs are to the programmed costs. The programmed cost is considered the project budget.

# MEASUREMENT AND DATA COLLECTION:

Completed project costs are reported during the fiscal year in which a project is completed. Road and bridge project costs include design, right-of-way purchases, utilities, construction, inspection and other miscellaneous costs. The programmed cost is based on the amount included in the most recently approved Statewide Transportation Improvement Program. Completed costs include actual expenditures. Multimodal and local public agency project costs typically reflect state and/or federal funds but not local funding contributed toward such projects.

The target for this measure is set by internal policy and will not change unless policy changes.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

# Percent of programmed project cost as compared to final project cost – 4a

Accurate program cost estimates help MoDOT deliver more timely improvements for taxpayers. As of December 31, 2017, 148 road and bridge projects were completed in fiscal year 2018 at a cost of \$399 million. This represents a deviation of 6.8 percent (or \$29 million) less than the programmed cost of \$428 million. Of the 148 road and bridge projects completed, 58 percent were completed within or below budget. In comparison, 50 percent of projects were completed within or below budget as of the same date a year ago. The largest component of project savings came from awards at \$22.7 million. Miscellaneous savings (right-of-way purchases, utilities and other costs) were \$14.8 million. There may be projects that have adjustments pending, which could cause a slight change in the final values.

In addition, 18 multimodal projects were completed at a cost of \$18.1 million, 7.9 percent or \$1.6 million less than the programmed cost of \$19.6 million. A total of 76 local public agency projects were completed at a cost of \$80.1 million, 8.2 percent or \$7.2 million less than the programmed cost of \$87.3 million.

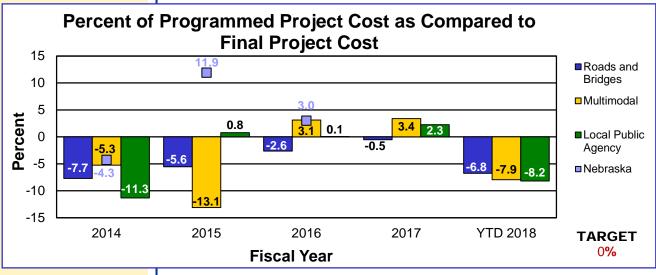
The target is 0 percent difference, indicating MoDOT is making timely use of available funds. Road and bridge, multimodal and local public agency projects were within 8.2 percent of the target for projects awarded through the second quarter of FY 2018.

There was an adjustment to the final FY 2017 values, resulting in the multimodal percentage changing from 1.7 to 3.4 percent.

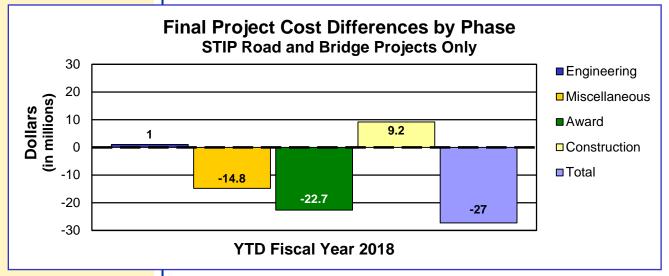
MoDOT uses this historical data as a guide for programming future projects. Projects awarded in FY 2016 and FY 2017 were about 8 percent lower than programmed values. If FY 2018 projects also reflect significant award savings, MoDOT plans to accelerate projects from FY 2019 to FY 2018.



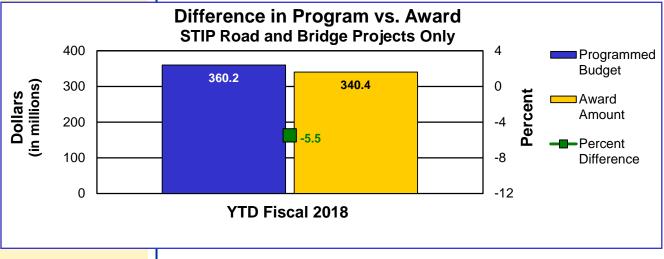
Missouri Department of Transportation 4a



Positive numbers indicate the final (completed) cost was higher than the programmed cost.



Negative numbers indicate savings. Miscellaneous includes right-of-way purchases, utilities and other costs.



Amounts include STIP road and bridge projects with two percent construction contingency applied.

### **RESULT DRIVER:**

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER:

Dan Oesch Field Materials Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the percentage of road and bridge projects opened by the commitment date established in the contract. This commitment also includes local public agency projects and multimodal projects (rail, aviation, waterway and transit).

## MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, the project manager collaborates with the project team to establish the project completion day which is specific to when the road or bridge project will be opened to the public so to eliminate a financial penalty. The resident engineer uses the SiteManager system to track and document the work. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance.

The target for this measure was set by management directive.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

### Percent of projects completed on time – 4b

MoDOT's customers expect transportation improvements to be completed and roadways opened quickly with minimal impact to their lives. Delivering projects by the contract completion date is the target for all projects and is considered a commitment to Missourians and drivers. Completing projects on time helps maintain credibility with Missourians, minimizes drivers' exposure to work zones and provides facilities in good condition that improve safety and reduce vehicle maintenance costs.

MoDOT works to meet the initial contract completion date by preparing accurate plans and quantities, setting aggressive but reasonable completion dates and setting liquidated damages to reinforce completion dates without undue bid risks. In the first and second quarters of fiscal year 2018, 77 percent of all closed-out projects were completed by their planned completion dates.

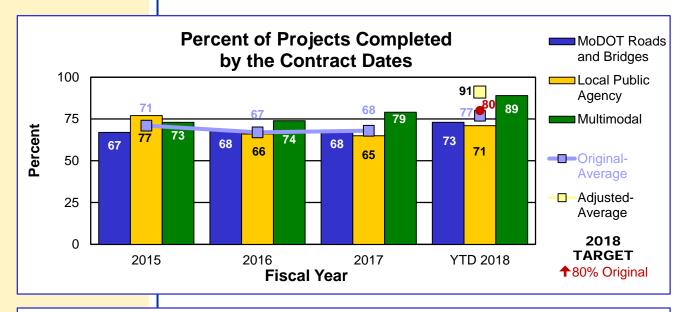
Sometimes, weather, additional work or a MoDOT directive necessitates an authorized extension of the completion date, without any financial assessment to the contractor. In the first two quarters of FY 2018, 91 percent of the closed-out projects were completed by the adjusted dates.

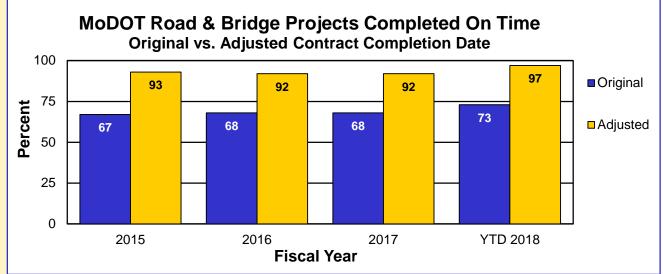
There are times when a contractor misses the contract completion date and the contractor is assessed damages. Of the road and bridge projects completed in the first and second quarter of FY 2018 that did not meet the original contract date, 37 percent were extended due to weather delays, 21 percent were extended due to extra work, 5 percent experienced utility delays, 26 percent were extended by MoDOT and 11 percent missed the completion date with damages assessed totaling \$106,600.

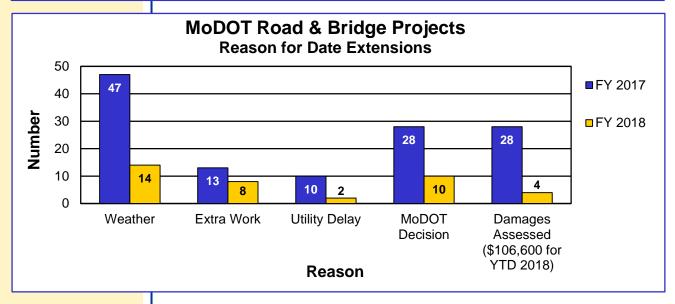
The target for this measure is to have at least 80 percent of projects completed by the original completion date. At the end of the first and second quarter of FY 2018, the average number of all contracts completed by the original completion date was 77 percent which is a nine percent improvement from the previous year.



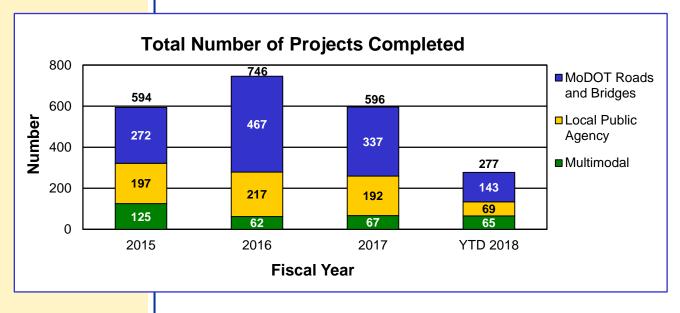
Missouri Department of Transportation 4b

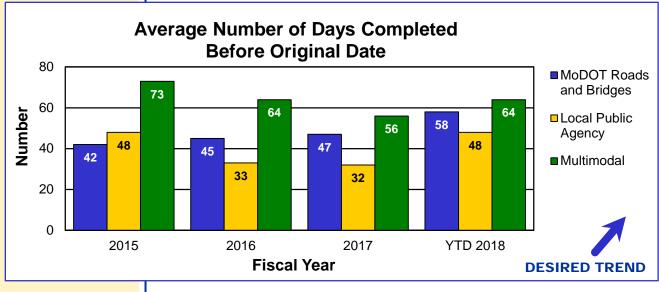


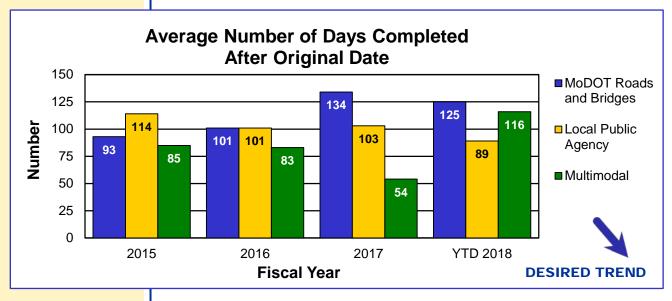




Missouri Department of Transportation 4b2







Missouri Department of Transportation 4b3

#### **RESULT DRIVER**:

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER: Lori Greer

Field Materials Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the percentage difference of total construction payouts to the original contract award amounts. This indicates how many changes are made on projects after they are awarded to the contractor for road, bridge, local public agency and multimodal projects – rail, aviation, waterway and transit.

## MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, contractor payments are generated through MoDOT's SiteManager database and processed in the financial management system for payment. Change orders document the underrun/overrun of the original contract cost. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance. The target for this measure is set by internal policy and will not change unless policy changes.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

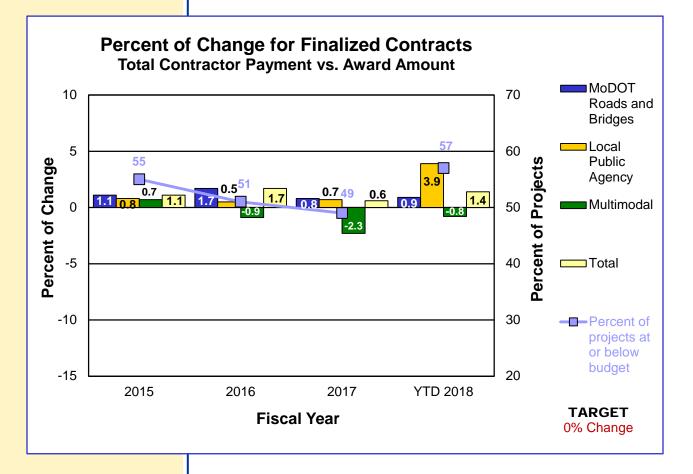
### Percent of change for finalized contracts – 4c

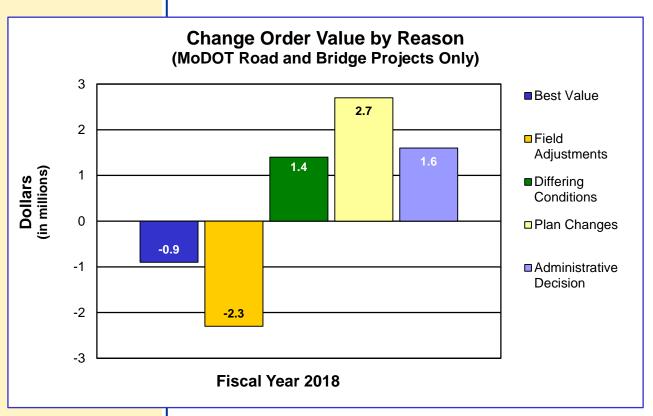
By limiting overruns on contracts, MoDOT can continue to keep its maintenance and construction commitments. This emphasis, combined with the use of practical design and value engineering, has contributed to limiting overruns on contracts. MoDOT's performance in the first two quarters of fiscal year 2018 is 1.4 percent over the award amount (\$5.2 million over the award amount of \$376 million worth of projects completed) with 57 percent of the projects being completed below the original award amount.

Many factors can affect the ability to complete a project within 2 percent of the award amount. These factors can include design changes, differing conditions, additional work items and administrative decisions.

For the first two quarters of FY 2018, MoDOT road and bridge projects were completed 0.9 percent over budget; local public agency projects were completed 3.9 percent over budget and multimodal projects were completed 0.8 percent under budget.







#### **RESULT DRIVER:**

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER:

David Simmons Design Liaison Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the use of innovative contracting methods on MoDOT projects including: A + B contracts, alternate technical concept contracts, and design-build contracts.

# MEASUREMENT AND DATA COLLECTION:

MoDOT projects utilizing innovative contracting methods are reported during the fiscal year in which they are awarded. Contract award values are collected through MoDOT's bid opening summaries and project records.

A target of 10 percent of the programmed STIP, or two projects per year, is an appropriate target for utilizing innovative contracting methods in Missouri.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

### Innovative contracting methods - 4d

MoDOT has delivered over \$1.5 billion in Design-Build projects that have saved taxpayers over \$275 Million. When combined, these projects were completed more than 60 months ahead of schedule. MoDOT partners with the public and private sectors to deliver projects that maximize available resources into collaborative solutions that achieve goals. This effort challenges the way projects are delivered with innovation, speed and efficiency as driving forces. MoDOT pushes the boundaries to execute projects using innovative data-driven processes and a wide range of partnerships.

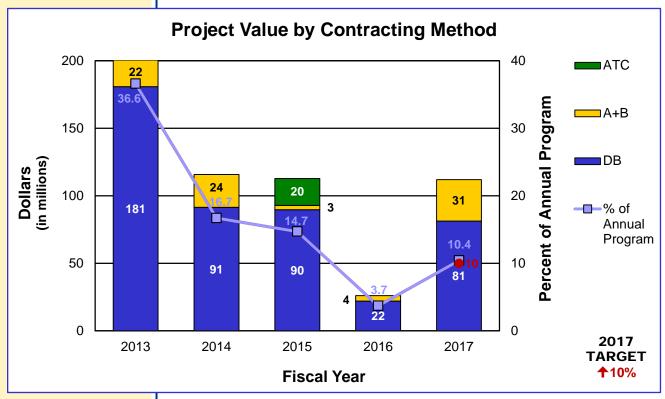
MoDOT evaluates project risks such as size (cost), type (preservation, rehabilitation or reconstruction), and complexity (opportunity for innovation and speed) when determining project delivery methods. The advantages of MoDOT's innovative contracting methods are as follows:

- DB contracts include design and construction under one contract, procured using a two-phased selection process. MoDOT scores proposals using a best-value or "build-to-budget" selection.
- Cost-plus-time bidding (A + B) aims to expedite project completion through competitive bidding on construction time (days).
- Alternate Technical Concepts (ATCs) give the contractor the opportunity to provide a more cost-effective alternative design prior to the bid. ATC discussions are held in a confidential environment which maximizes competitive bidding. The low bid is awarded the contract.

During this reporting period, DB projects were awarded in the St. Louis and Northeast Districts. The Safety Improvements DB Project was procured using a data-driven process to systematically target roadway improvements that are expected to save lives quickly and efficiently. The U.S. Route 54 Champ Clark Bridge was procured with Missouri as the lead, but in a unique bi-state partnership with Illinois as its first experience with DB.

Based on the 2017 STIP, MoDOT delivered five out of 402 projects statewide using innovative contracting methods. Two were delivered using DB and three were delivered using the A+B process. The two DB projects accounted for \$81.28 million of the \$776 million programmed budget (10.4 percent). This target was met for FY 2017 and has been exceeded four of the last five fiscal years.





#### **RESULT DRIVER**:

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER:

Sarah Kleinschmit Policy and Innovations Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the use of value engineering during design and construction on traditional MoDOT projects including: value analysis during the design phase, construction value engineering proposals, and implementation of best practice into standards and policies.

## MEASUREMENT AND DATA COLLECTION:

Information on value analysis during design is gathered from MoDOT's Statewide Transportation Improvement Program information management system. The target for this measure is updated annually in October for the next fiscal year. This target is established by projecting a 10 percent improvement over a five-year average.

Construction value engineering change proposal information is gathered from MoDOT's Value Engineering Proposal database. Implementation of best practice progress is tracked by MoDOT staff.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

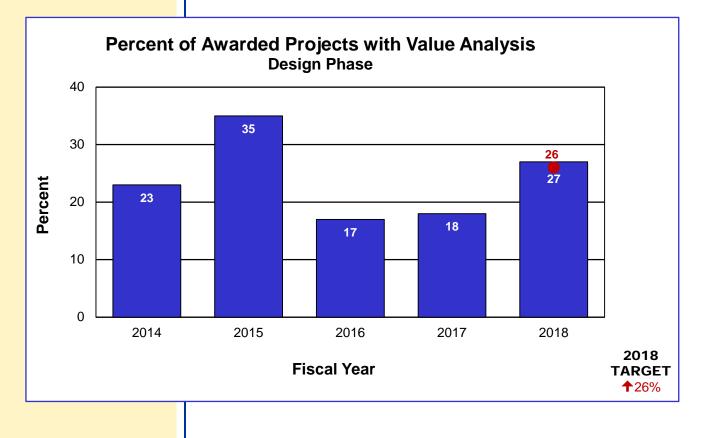
### Value engineering – 4e

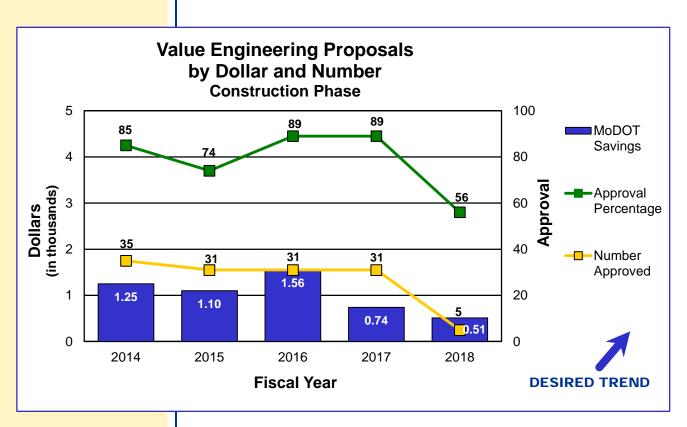
The goal of value engineering (VE) is to build the right project at the right time, meeting the project need with the appropriate project scope. MoDOT uses the VE program to ensure the public receives great value for every tax dollar invested in Missouri's transportation system. MoDOT has been increasingly focused on smaller, maintenance-type projects that are not traditionally targeted by the VE program. Still, MoDOT must be innovative in using the VE process to search for solutions to reduce project costs and provide additional value.

MoDOT uses design-phase value analysis to remove unnecessary scope, reduce project costs and improve project flexibility. For the first half of fiscal year 2018, 27 percent of applicable projects underwent some form of value analysis during design, which is on target for design-phase value analyses. Programmatic value analysis studies associated with the level-course and seal coat programs continue to account for the largest portion of this percentage. Districts continue to use the Practical Review Tool to add value and cost savings to projects.

MoDOT partners with industry to find more cost-effective solutions during the construction phase. Value Engineering Change Proposals (VECPs) engage contractor ideas to deliver improved projects. For the first half of FY 2018, five VECPs were approved resulting in a MoDOT savings of \$505,826. This represents a 56 percent approval rate. One Post-Award Value Engineering (PAVE) change proposal has resulted in a MoDOT cost savings of \$20,130.

Nationally, VE studies save millions of dollars every year. In FY 2016, MoDOT saved over \$11.2 million and ranked 12<sup>th</sup> out of 52 state departments of transportations. The Texas and Florida DOTs ranked highest with \$263 million and \$175 million, respectively.





#### **RESULT DRIVER:**

Eric Schroeter State Design Engineer

#### MEASUREMENT DRIVER:

Missy Wilbers Design Liaison Engineer

#### PURPOSE OF THE MEASURE:

This measure provides information regarding the public's perception of MoDOT's performance in providing the right transportation solutions.

# MEASUREMENT AND DATA COLLECTION:

Data for this measure was previously collected through an annual survey mailed to users of projects completed and opened to traffic within the previous year. The districts identified 21 projects - three per district – in three categories: large, medium and small. Large projects were defined as those involving a major route or one that was funded through major project dollars. Medium projects were of district-wide importance. Small projects had only local significance. A sample of residents was drawn from zip code areas adjoining the recently completed project.

In 2017, MoDOT changed the methodology for collecting data for this measure. Data collection will utilize social media platforms to gain more immediate feedback from customers impacted by projects.

### DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

# Percent of customers who believe completed projects are the right transportation solutions – 4f

One of the most prominent products MoDOT delivers to its customers is a highway construction project. While the department tries to involve local residents in planning and designing local projects, the real impact of the project isn't known until people actually use the results of the project.

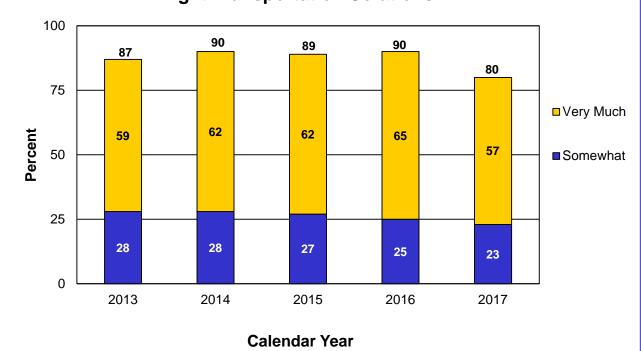
In 2016, a pilot project was conducted to determine the value of implementing an alternative survey mechanism. Two projects – one large and one small – were surveyed online. These online surveys yielded similar results, but cost 75 percent less than previously used mailed surveys.

In 2017, nearly 4,900 surveys were submitted online showing Missourians are satisfied with the majority of local projects and believe MoDOT provides the right transportation solution. The respondents thought the projects made the roadway: safer (75 percent), more convenient (72 percent), less congested (66 percent), easier to travel (69 percent), better marked (77 percent) and considered the projects the right transportation solution (80 percent).

Survey responses resulted in the following percentages of customers who believe completed projects are the right transportation solutions in each district: Northwest (84), Northeast (94), Kansas City (71), Central (92), St. Louis (54), Southwest (87) and Southeast (78).

As part of the survey, each respondent has the opportunity to provide comments about why the project was – or was not – the right transportation solution. More than 2,350 comments were received for the 21 online surveys. These comments were shared with local staff for evaluation to guide future projects.

Percent of Customers Who Believe Completed Projects Are the Right Transportation Solutions



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Becky Allmeroth, State Maintenance Engineer



MEASURES OF DEPARTMENTAL PERFORMANCE



Missourians expect to get to their destinations on time, without delay regardless of their choice of travel mode. We coordinate and collaborate with our transportation partners throughout the state to keep people and goods moving freely and efficiently. We also maintain and operate the transportation system in a manner to minimize the impact to our customers and partners.

#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Alex Wassman Traffic Management and Operations Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the mobility of significant state routes in St. Louis, Kansas City, Springfield and Columbia.

# MEASUREMENT AND DATA COLLECTION:

Travel time data is collected continuously via wireless technology. To assess mobility, MoDOT compares travel times during rush hour to free-flow conditions where vehicles can travel at the posted speed limit. This measure also assesses reliability, an indicator of how variable those travel times are on a daily basis.

The charts in this measure show the average travel time and the 95th percentile travel time, which is the time motorists should plan in order to reach their destinations on time 95 percent of the time.

The maps display the mobility of specific sections of roadways during rush hour.

The target for this measure is updated quarterly. This target is established by projecting a 10 percent improvement over the same quarter of the previous year. The minimum value for the target time is 10 minutes. This corresponds to the time it takes to travel 10 miles at the posted speed limit of 60 miles per hour.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

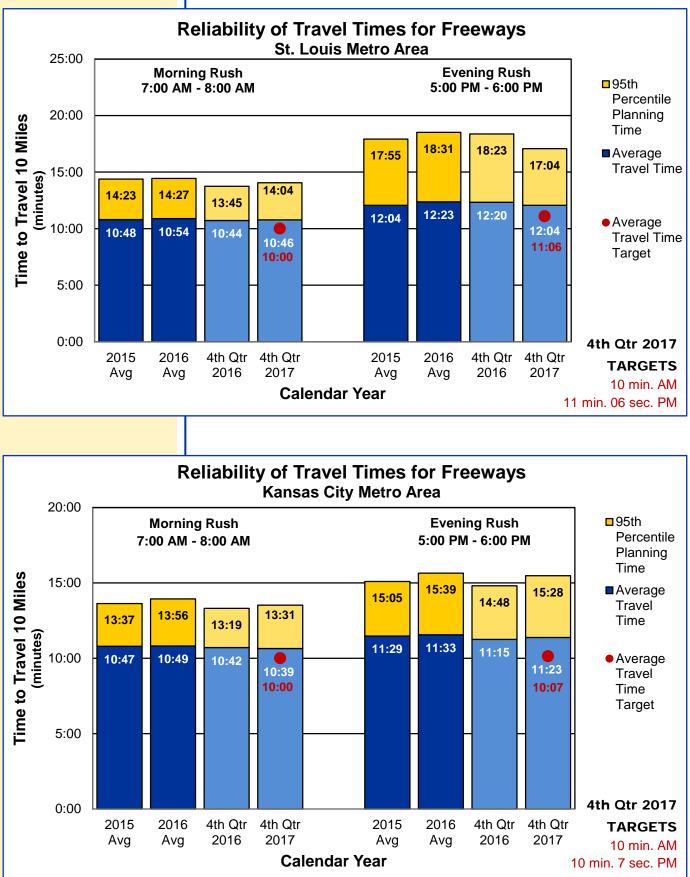
### Travel times and reliability on major routes – 5a

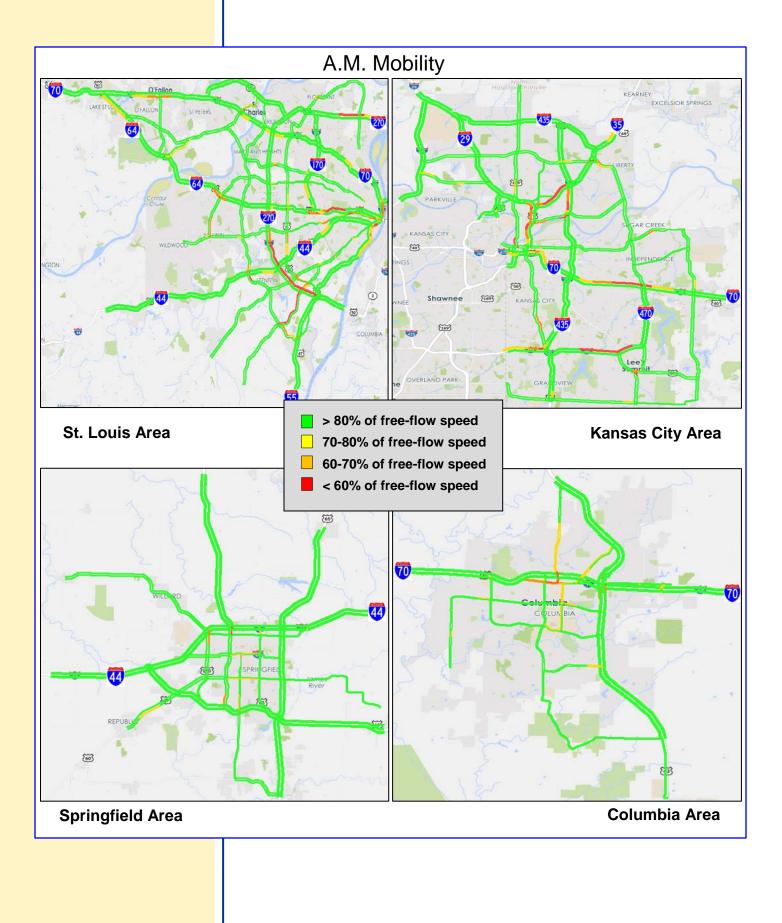
From October to December 2017, average travel times in St. Louis and Kansas City were stable or improved slightly compared to the same period last year. In the first quarter of 2017, the average 10-mile travel time in St. Louis was 10 min., 46 sec. during the morning and 12 min., 4 sec. during the evening. For Kansas City, the average travel time was 10 min., 39 sec. during the morning and 11 min., 23 sec. during the evening. The average travel times for the St. Louis morning and Kansas City evening rushes were higher than the previous year, while the average times decreased for the St. Louis evening and Kansas City morning rushes. All average travel times are lower than the 2016 average. Overall, average speeds ranged between 48 and 56 mph.

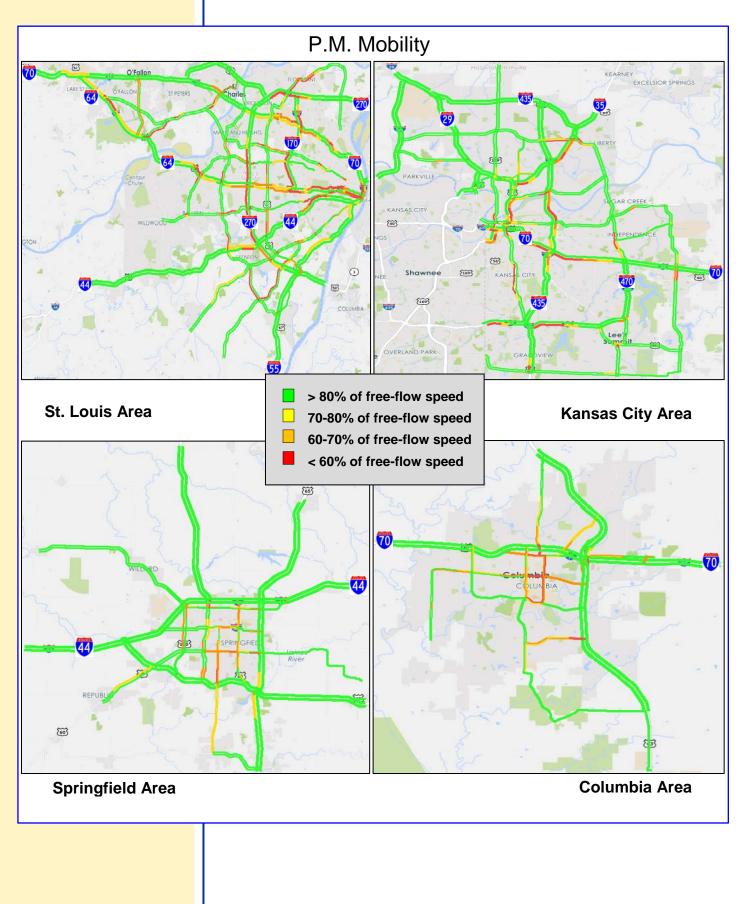
The planning times account for unexpected delays and indicate how long customers needed to plan in order to arrive on time 95 percent of the time. In St. Louis, the average 10-mile planning times were 14 min., 4 sec. during the morning and 17 min., 4 sec during the evening. This means customers in the St. Louis evening rush needed to plan about seven minutes more for a 10-mile trip than they would need in free-flow conditions. In Kansas City, the average planning times were 13 min., 31 sec. during the morning and 15 min., 28 sec. during the evening. Customers in the Kansas City evening rush needed to plan about five and a half minutes more for a 10-mile trip than they would need in free-flow conditions. The planning times in St. Louis and Kansas City represent average rush-hour speeds between 33 and 44 mph. The planning times for all rushes were higher than the previous year with the exception of the St. Louis evening rush. All planning times for the quarter were lower than the 2016 average.

The average travel times in both regions are higher than the target for the second quarter of 2017. The morning travel times are 39-46 seconds greater than the target, while the evening travel times are 58 seconds to 1 minute 16 seconds greater than the target.

Individual freeway segments within the regions experienced longer travel times than the regional averages as depicted in the maps. The maps also depict rush-hour conditions on selected arterial routes compared to normal traffic flow during non-peak traffic conditions.







#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Jeanne Olubogun District Traffic Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the annual cost and impact of traffic congestion to motorists for motorist delay, travel time, excess fuel consumed per auto commuter and congestion cost per auto commuter.

## MEASUREMENT AND DATA COLLECTION:

A reporting tool available in the **Regional Integrated** Transportation Information System looks at user delay costs. This data, in combination with industry standard costs for passenger cars and trucks, reflects the overall costs of congestion. **RITIS** also includes historic data so trend lines can be tracked and evaluated. The unit cost per passenger car is \$17.67 per hour and is obtained from the Texas A&M Transportation Institute. The unit cost per truck is \$68.09 obtained from the American **Transportation Research** Institute, which specializes in tracking freight mobility and provides the best source of data related to freight costs. For previous reporting, the department used data provided by the TTI, which annually produces the Urban Mobility Report. The target for this measure is updated annually in July and is established by projecting a 10 percent improvement over a three-year average.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

### Cost and impact of traffic congestion – 5b

Recurring congestion occurs at regular times, although the traffic jams are not necessarily consistent day-to-day. Nonrecurring congestion is an unexpected traffic crash or natural disaster that affects traffic flow. When either occurs, the time required for a given trip becomes unpredictable. This unreliability is costly for commuters and truck drivers moving goods, which results in higher prices to consumers.

While the desired trend for both costs is downward, challenges exist in Missouri's metropolitan regions to continue toward this desired outcome. A comprehensive look at congestion is needed, looking beyond typical solutions of adding capacity. Using smarter technology to help guide motorists is a must. Still, the desired outcome is lower congestion costs and an indication that traffic is moving more efficiently.

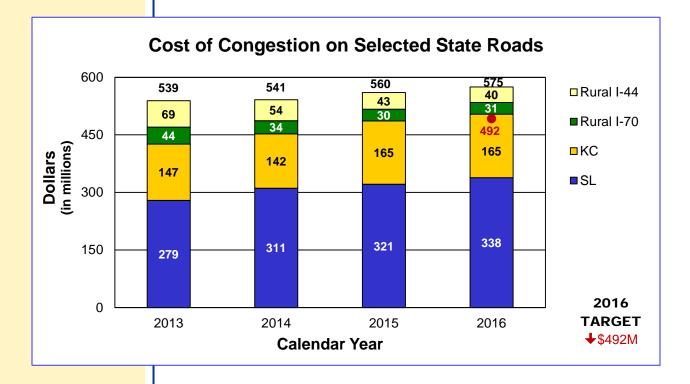
The 2016 target was \$492 million. The actual calculation from the RITIS data is \$575 million. This report looks at the 2013 to 2016 cost of congestion in the urban areas of Kansas City and St. Louis, as well as rural I-44 and I-70 across the state.

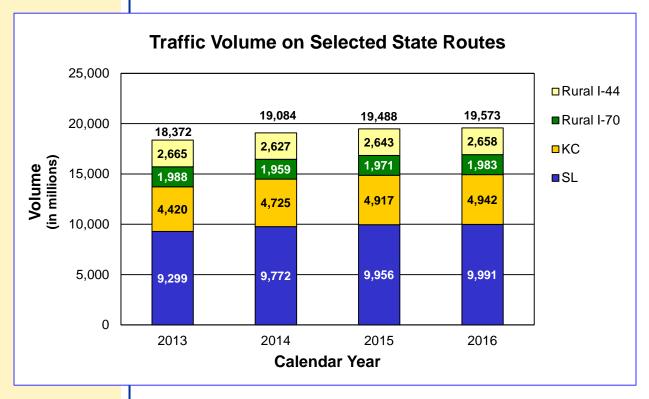
Congestion costs in Kansas City and St. Louis have steadily increased during this period, and the volume trends have also been upward. Interestingly, the costs on rural I-44 and I-70 have decreased, and the volume trends have remained somewhat unchanged.

Volume growth is often seen when gas prices remain low. Compared to prices of three to four years ago, Missouri gas prices are relatively low.

Traffic congestion is widely viewed as a growing problem in many urban areas because the overall volume of vehicular traffic in many areas (based on VMT) continues to grow faster than the overall capacity of the transportation system. Capacity is not merely defined by roadway expansion, but also by things such as carpool efforts, transit usage increases, flexible work hours, incident clearance practices, work zone management and many other factors.

As a state and region, a comprehensive look at all available means to reduce the cost of congestion is necessary.





#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Randy Johnson Traffic Center Manager

#### PURPOSE OF THE MEASURE:

This measure is used to determine the trends in incident clearance on the state highway system.

# MEASUREMENT AND DATA COLLECTION:

Advanced transportation management systems are used by the Kansas City and St. Louis traffic management centers to record incident start time and the time when all lanes are declared cleared. Traffic incidents can be divided into three general classes of duration set forth by the Manual on Uniform Traffic Control Devices that include minor, intermediate and major. Each class has unique traffic control characteristics and needs.

This target is established by projecting a 10 percent improvement over a five-year average.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

### Average time to clear traffic incident – 5c

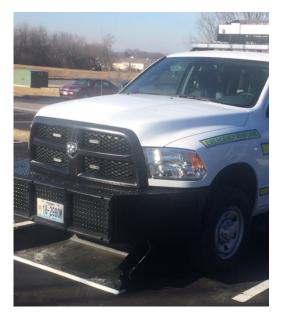
A traffic incident is an unplanned event that blocks travel lanes and temporarily reduces the number of vehicles that can travel on the road. The speed of incident clearance is essential to the highway system returning back to normal conditions. Responding to and quickly addressing the incident (crashes, debris and stalled vehicles) improves system performance.

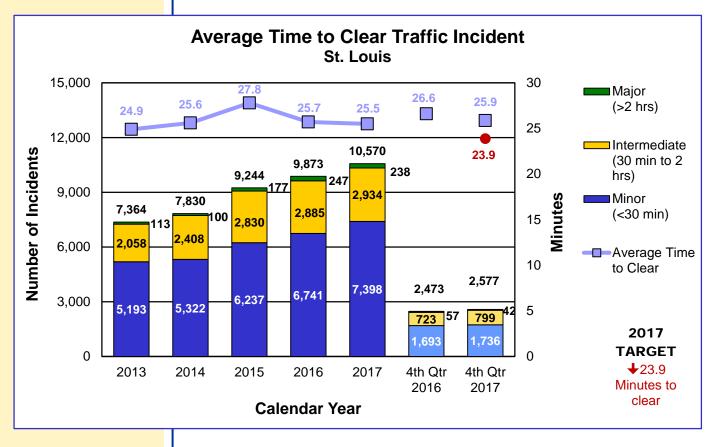
St. Louis recorded 2,577 incidents in the fourth quarter of 2017. The average time to clear traffic incidents was 25.9 minutes, a decrease of 2.8 percent from the fourth quarter of 2016.

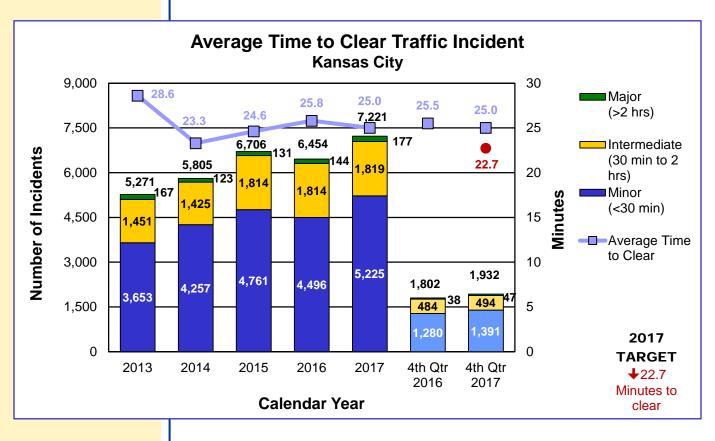
Kansas City recorded 1,932 incidents in the fourth quarter of 2017. The average time to clear traffic incidents was 25 minutes, a decrease of 2 percent from the fourth quarter of 2016.

The fourth quarter for Kansas City and St. Louis revealed an array of incidents that ranged from single vehicle crashes, hazardous material spills and reconstructions due to fatalities. Kansas City and St. Louis had an increase in the number of incidents when compared to 2016, but used communication, coordination and data to reduce the average time to clear. Continuous traffic incident management training has helped with quick clearance of incidents. Innovation has helped create safer environments for those working the incident and the traveling public. The most recent innovation is a device that lowers to quickly clear debris from the road allowing the driver to stay in the vehicle (pictured below).

Compared to 2016, both St. Louis and Kansas City had a reduction in the average time to clear in 2017. These reductions have helped them move toward their individual targets.







#### Missouri Department of Transportation 5c2

#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Laurel McKean Assistant District Engineer

#### PURPOSE OF THE MEASURE:

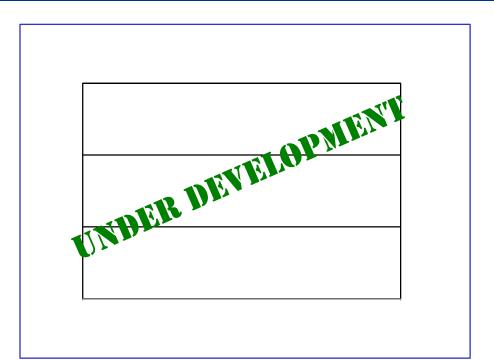
This measure tracks the traffic incident impacts on Interstate 70 and Interstate 44 due to highway incidents.

## MEASUREMENT AND DATA COLLECTION:

Interstate route closures having an actual or expected duration of 30 minutes or more are entered into MoDOT's **Transportation Management** System for display on the Traveler Information Map. By using the incident locations identified from the Traveler Information Map data along with the Regional Integrated **Transportation Information** System, real-time durations and delays for these incidents can be identified. The impact duration is the total amount of time that there was a noticeable impact on traffic speeds as a result of the incident regardless of how long the actual incident closure lasted. The maximum delay is the longest delay that an individual traveler would have experienced as a result of the incident. What is important about these measurements is that they represent the impacts that are "felt" by our customers resulting from incident closures.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

# *Traffic incident impacts on major interstate routes – 5d*



#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Jon Nelson Design Liaison Engineer

#### PURPOSE OF THE MEASURE:

Work zones are designed to allow the public to travel through safely and with minimal disruptions. This measure indicates how well significant work zones perform.

## MEASUREMENT AND DATA COLLECTION:

Work zone impacts are identified using automated data collection or by visual observations. An impact is defined as the additional time a work zone adds to normal travel. Impacts resulting in a delay of at least 10 minutes are included in this report.

The targeted number of impacts greater than 10 minutes represents a 10 percent improvement from the previous two years of data based on the number of lane closures during a given quarter. The target for this measure is updated quarterly.

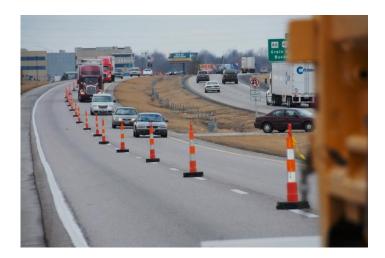
### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

### Work zone delays to the traveling public – 5e

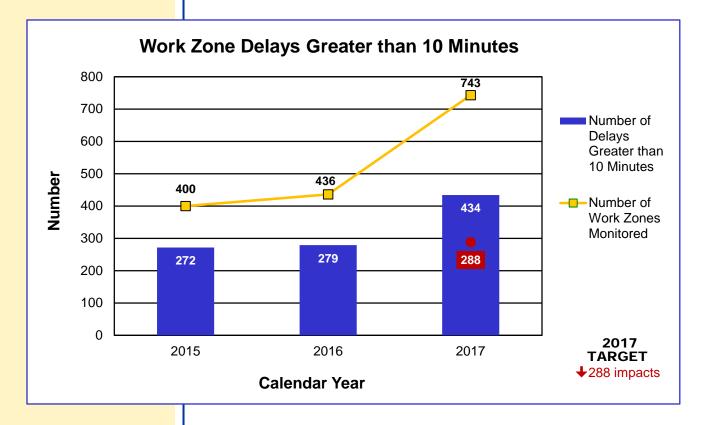
Motorists want to get through work zones with as little inconvenience as possible. MoDOT tries to minimize travel impacts by shifting work to nighttime hours or during times when there are fewer impacts to the traveling public. Other strategies include using technology in work zones, providing valuable information to customers and innovative uses of traffic control devices to promote efficient traffic flow. To measure the effectiveness of these strategies, each quarter MoDOT monitors the performance of work zones with the greatest potential to impact traffic. The goal is to minimize the number of times a work zone creates a traffic delay of 10 minutes or more.

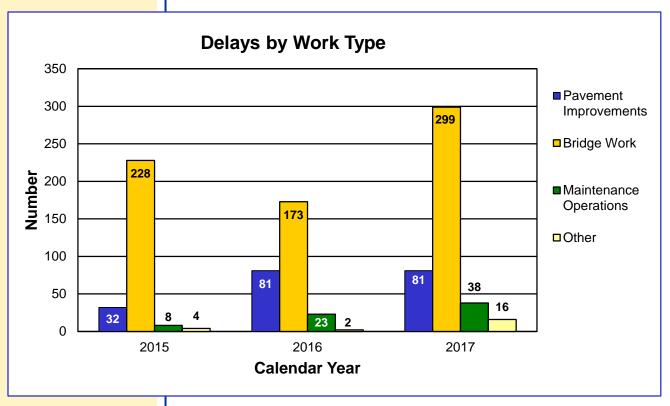
From October to December, MoDOT monitored 225 significant work zones with 92 instances in which traffic was delayed for at least 10 minutes. Based on the number of lane closures this quarter, the targeted number of instances in which such a delay was exceeded was 60 times or less. Twenty-two of the delays (24 percent) occurred on I-70 in Jackson County for concrete barrier wall maintenance. Nineteen delays (21 percent) occurred on the Poplar Street Bridge project in St. Louis as work on the bridge deck continued. Twelve delays (13 percent) occurred on I-64 EB in St. Louis County for paving operations during nighttime hours. Fourteen other delays (15 percent) occurred on three separate bridges in Jackson County. The remaining 25 delays were experienced across 16 different work zones.

For 2017, there were 434 total delays of at least 10 minutes, which is 146 more than the target of 288 delays or less and 155 more than in 2016. Bridge work accounted for the majority of work zone delays, followed by pavement improvements and maintenance operations. MoDOT will continue using available tools and resources to minimize the number of impacts. Where impacts are anticipated, MoDOT will continue to monitor and communicate conditions to customers.



### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM





Missouri Department of Transportation 5e2

#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Arisa Prapaisilp Assistant District Maintenance Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the amount of time needed to perform MoDOT's snow and ice removal efforts.

#### MEASUREMENT AND DATA COLLECTION:

For major highways and regionally significant routes, the objective is to restore them to a mostly clear condition as soon as possible after the storm has ended. MoDOT calls these "continuous operations" routes. State routes with lower traffic volumes should be opened to two-way traffic and treated with salt or abrasives at critical areas such as intersections, hills and curves. These are called "noncontinuous operations" routes. After each winter event, maintenance personnel submit reports indicating how much time it took to meet the objectives for both route classifications.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

# *Time to meet winter storm event performance objectives – 5f*

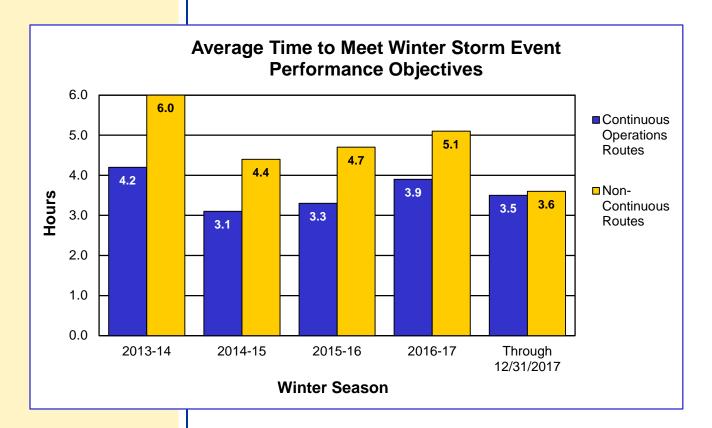
Knowing the time it takes to clear roads after a winter storm can help the department better analyze the costs associated with that work. MoDOT's response rate to winter events provides good customer service for the traveling public while keeping costs as low as possible.

Through December, the 2017-2018 winter has been relatively light. Only a few winter events have occurred with little to no accumulation. These light winter events have resulted in the average times to meet MoDOT's objectives 3.6 hours for continuous operations routes, and 3.5 hours for non-continuous routes. The time of 3.6 hours for continuous operations routes is typical while the time of 3.6 hours for non-continuous operations routes is lower than previous years. This can be attributed to the light accumulations being addressed more quickly and easily.

Winter operations, on average, cost about \$45 million per year. As of December 31, 2017, MoDOT has expended \$3.6 million responding to events this winter. With less money spent on clearing the roads of snow and ice because of a light winter, these savings mean more funds are available to maintain the roadways in the spring to complete surface improvements, sign repair, brush cutting and drainage work.



### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM





#### **RESULT DRIVER:** Becky Allmeroth State Maintenance Engineer

#### MEASUREMENT DRIVER:

Ron Effland Non-Motorized Transportation Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks MoDOT's investment in pedestrian facilities and progress toward removing barriers. Accessibility needs occur within the right of way, such as sidewalks and traffic signals. Removal of the barriers listed in MoDOT's 2010 ADA Transition Plan is required as part of the department's compliance with the Americans with Disabilities Act.

## MEASUREMENT AND DATA COLLECTION:

MoDOT's investment in pedestrian facilities is determined from the awarded contract amounts for the 20 most common construction elements used on pedestrian projects each year.

ADA Transition Plan progress is based upon completed work that has corrected defective items reported in the ADA Transition Plan inventory. The dollar amounts are based on unadjusted estimates from 2008 and will not reflect actual expenditures. This avoids impacts from inflation or changing field conditions. A progress target line is included to show where MoDOT's progress should be in order to fully complete the ADA Transition Plan by 2027. Annual funding levels necessary to complete the ADA Transition Plan by 2027 determine the target, which is set in April of each year.

### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

# Bike/pedestrian and ADA transition plan improvements – 5g

MoDOT has improved more than \$29.6 million of deficient Americans with Disabilities Act facilities in the right of way since 2008. However, additional work totaling more than \$121.7 million is necessary to complete the 2010 ADA Transition Plan inventory by the August 2027 target date. To meet the commitment of the Missouri Highways and Transportation Commission (MHTC), MoDOT needs to be completing more than \$13 million of improvements each year until 2027.

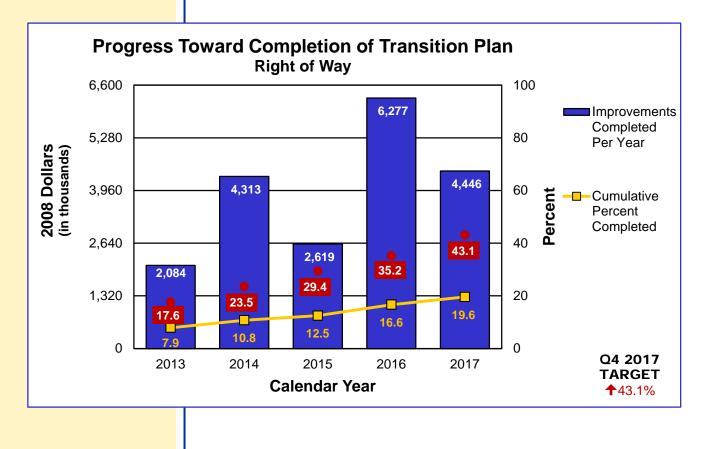
In 2017, MoDOT completed only \$4.4 million in ADA improvements. This amount is well below the annual pace needed to complete the required ADA improvements as promised. Significant improvement in performance is necessary for MoDOT to be able to complete the ADA Transition Plan by August 2027.

In February 2016, the MHTC included money in the 2017-2021 State Transportation Improvement Plan for funding ADA Transition Plan improvements. This \$5 million per year funding is in addition to \$8.5 million per year of Transportation Alternatives Program funding dedicated to the ADA work on the state highway system. Missouri now has a dedicated funding source of \$13.5 million per year for use toward completion of the ADA Transition Plan work. The spending target for this measure is currently set at \$15 million annually because not all work funded in this category is for work specifically listed in the 2010 ADA Transition Plan.

In 2017, MoDOT invested only \$5.38 million towards improvements in pedestrian facilities. This is the lowest amount invested in more than seven years. At 0.72 percent, it also is the lowest percentage of the yearly STIP awarded for ADA improvements in the last seven years. The 2017 investment used only 39 percent of the \$13.5 million from the dedicated budget for ADA improvements in 2017.



### OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM





#### Missouri Department of Transportation 5g2

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## USE RESOURCES WISELY Brenda Morris, Financial Services Director



MEASURES OF DEPARTMENTAL PERFORMANCE



MoDOT has access to many resources including people, funding, supplies and equipment. Taxpayers trust MoDOT is a good steward of these limited resources while limiting the impact on our environment. We are accountable for everything we do.

#### MEASUREMENT DRIVER:

Paul Imhoff Special Projects Coordinator

#### PURPOSE OF THE MEASURE:

This measure tracks the change in the number of fulltime equivalencies (a calculation of hours) expended within the department and compares it to the number of FTEs in the legislative budget.

# MEASUREMENT AND DATA COLLECTION:

This measure converts the regular hours worked or on paid leave of temporary and salaried employees, as well as overtime worked (minus any hours that are flexed during the workweek), to FTEs. In order to calculate FTEs, the total number of hours worked or on paid leave is divided by 2,080. For comparison purposes, data for salaried employment is annualized, whereas temporary employment and overtime data represent actual year-to-date calculations. This measure does not represent salaried headcount.

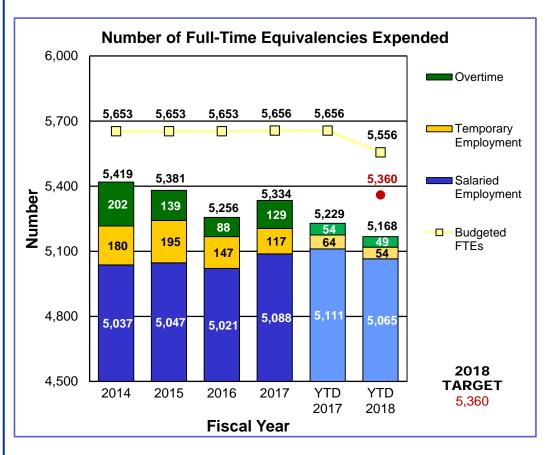
The target for this measure was set by management directive.

### **USE RESOURCES WISELY**

### Number of full-time equivalencies expended – 6a

Having the right number of employees to provide outstanding customer service and respond to the state's transportation needs, especially during emergency situations, is an important part of MoDOT's effort to use resources wisely.

During the first two quarters of fiscal year 2018, the number of FTEs expended decreased by 61, or 1 percent, compared to the same time in FY 2017. Three quarters of this drop is attributed to a decrease in salaried employment FTEs compared to the previous quarter. Fluctuations in overtime and temporary employment FTEs are smaller and will have clearer trends presented in later quarters of FY 2018. The trend away from the FY 2018 target points to a need for a concerted effort to fill salaried positions and work hard on retention of those new employees to carry out essential duties and meet customers' needs.



#### MEASUREMENT DRIVER:

Paul Imhoff Special Projects Coordinator

#### PURPOSE OF THE MEASURE:

This measure tracks the percentage of employees who leave MoDOT. Turnover rates as shown in this measure include voluntary and involuntary separations.

# MEASUREMENT AND DATA COLLECTION:

The data is collected statewide from SAM II Advantage HR system and includes only salaried employees. Voluntary turnover includes resignations and retirements. Involuntary turnover reflects dismissals. Data is reported quarterly, with current year-to-date data included. Stretch goal is derived from Price Waterhouse Cooper's Saratoga Institute benchmark data.

The target for this measure was set by management directive.

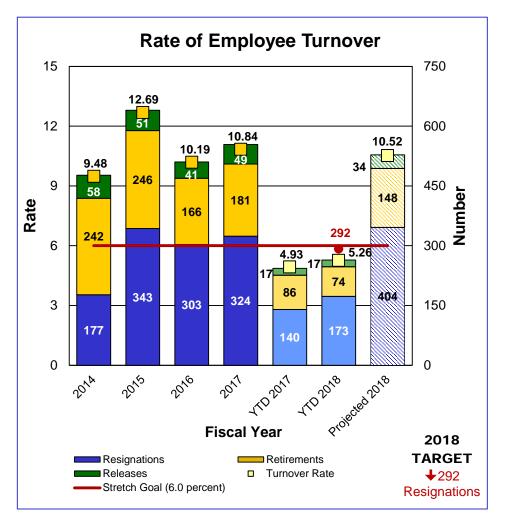
### **USE RESOURCES WISELY**

### Rate of employee turnover - 6b

When employees leave MoDOT, the department loses a large investment in recruiting, hiring and training its workforce. While some turnover is appropriate, MoDOT needs to retain a great workforce that has the knowledge and specialized skills to deliver the department's commitments and provide outstanding customer service.

The overall turnover rate has risen slightly from 4.93 percent in the first two quarters of fiscal year 2017 to 5.26 percent in the first two quarters of FY 2018. During the first two quarters of FY 2018, resignations showed an upward trend and retirements showed a downward trend. Releases remained the same at 17 in FY 2017 and FY 2018. The 2018 target is to have 292 or fewer resignations.

MoDOT conducts exit interviews with resigning employees to identify specific ways to improve employee retention.



#### MEASUREMENT DRIVER:

Elizabeth Reed Special Projects Coordinator

#### PURPOSE OF THE MEASURE:

This measure tracks the level of employee satisfaction throughout the department at specific points in time.

# MEASUREMENT AND DATA COLLECTION:

Employee satisfaction is measured with a bi-annual employee survey in evennumbered years. Employees rate items related to their satisfaction with MoDOT using a five-point scale, with one indicating low satisfaction and five indicating high satisfaction. Society for Human Resources Management best practice data was gathered from an SHRM report of an annual job satisfaction survey of 55 Fortune 500 companies. The target for this measure is updated in odd-numbered years.

The target for this measure was set by management directive.

Illinois DOT was selected as a comparative due to its similar employee demographics.

### **USE RESOURCES WISELY**

### Level of job satisfaction - 6c

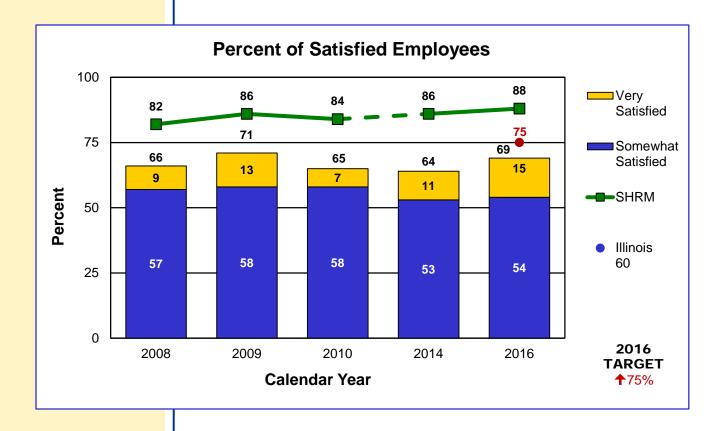
MoDOT wants employees to be satisfied with their work and workplace and feel like they are a good fit for their jobs. Employee satisfaction can be a driver of overall organizational performance. The more satisfied and engaged employees are with the workplace, the more discretionary effort they are willing to put forth on the job.

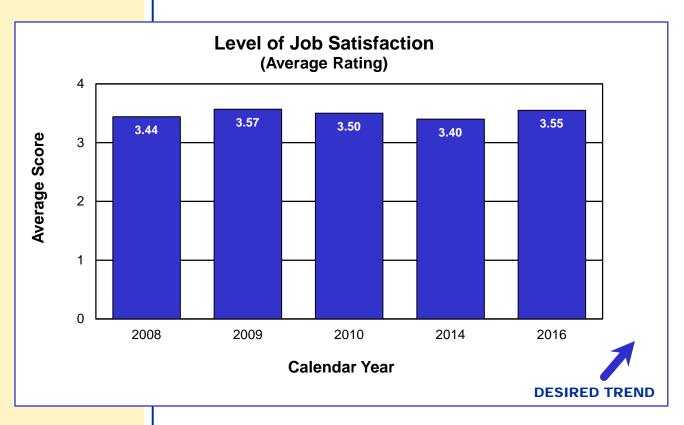
Between 2005 and 2010, the average employee satisfaction ratings and percent of satisfied employees both showed upward trends with peaks in 2009. Following a four-year break, the employee survey was conducted in the spring of 2014 and showed little change from the 2010 survey. Given the major organizational changes the department went through, the slight decline in job satisfaction from 3.5 in 2010 to 3.4 in 2014, and the slight decrease in the percentage of satisfied employees from 65 percent in 2010 to 64 percent in 2014 were seen as good. In fact, the percentage of very satisfied employees during that period increased from 7 percent in 2010 to 11 percent in 2014.

Following the 2014 survey, five employee-led teams worked to develop a series of recommendations to the concerns employees raised in the survey. The recommendations are in various stages of implementation.

The most recent employee survey was conducted in the spring of 2016. Overall job satisfaction increased from 3.40 in 2014 to 3.55 in 2016. The percentage of satisfied employees also increased from 64 percent in 2014 to 69 percent in 2016. The survey results also show the percentage of very satisfied employees increased from 11 percent in 2014 to 15 percent in 2016.

Areas of low satisfaction centered on not having acceptable opportunities for professional growth and not making MoDOT employees feel valued. The lack of salary increases was scored low on most surveys and dominated written comments as well. Areas of high satisfaction revolved around having a cooperative work unit and having supervisors support needs to balance work and family.





Missouri Department of Transportation 6c2

#### MEASUREMENT DRIVER:

Todd Grosvenor Assistant Financial Services Director

#### PURPOSE OF THE MEASURE:

This measure shows the precision of state and federal revenue budgets.

## MEASUREMENT AND DATA COLLECTION:

State revenue for roads and bridges include motor fuel taxes, motor vehicle and driver licensing fees, and motor vehicle sales taxes paid by highway users, interest earnings and miscellaneous revenues. State revenue for other modes includes motor vehicle sales taxes, aviation fuel taxes, jet fuel sales taxes, motor vehicle licensing fees, railroad assessments and appropriations from General Revenue and interest earnings. The measure provides the cumulative, yearto-date percent variance of actual state revenue versus budgeted state revenue by state fiscal year. Federal revenue for roads and bridges is the amount available to commit in a federal fiscal year of federal funds. Federal funds are distributed to states via federal law. Federal revenue for other modes is the amount reimbursed to MoDOT for expenses incurred in a state fiscal year.

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

### **USE RESOURCES WISELY**

### State and federal revenue budgets - 6d

State and federal revenue budgets help MoDOT staff do a better job of budgeting limited funds for its operations and capital program. The desired trend is for actual revenue to match budgets with no variance.

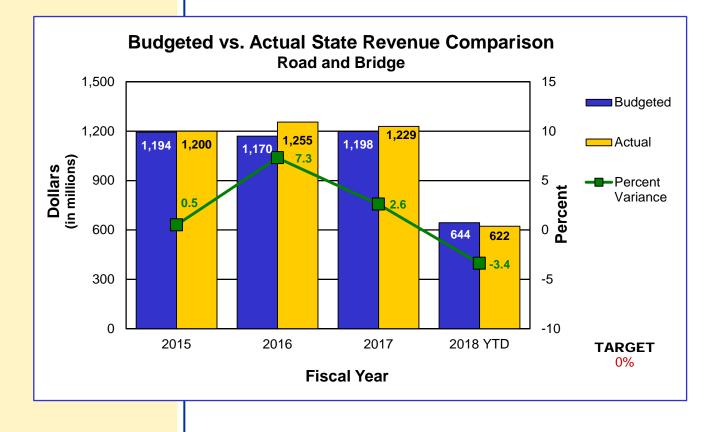
The actual state revenue for road and bridge from motor fuel taxes, motor vehicle sales taxes, motor vehicle and driver licensing fees and miscellaneous was 3.4 percent less than budgeted for the second quarter of fiscal year 2018. The majority of the variance is related to miscellaneous revenue. The negative variance of 0.3 percent for non-highway modes is mostly attributable to the jet fuel sales tax.

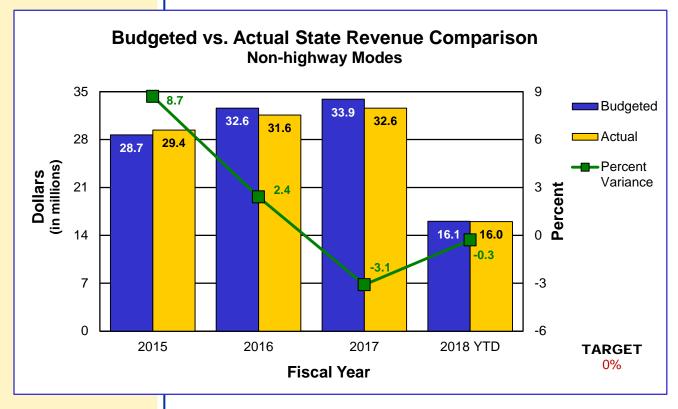
The actual federal revenue for road and bridge was only 0.2 percent less than budgeted for federal fiscal year 2017. The negative variance of 32.6 percent for non-highway modes is attributable to the timing of project expenditures.

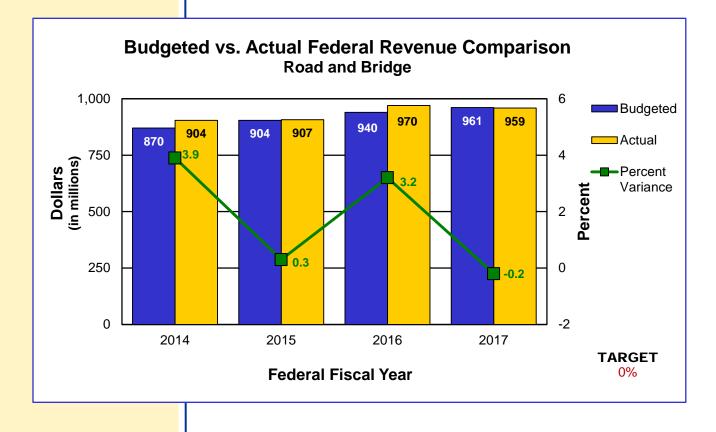
The largest source of transportation revenue is from the federal government. Funding is received through various federal transportation agencies including Federal Highway, Transit, Aviation and Railroad Administrations. In December 2015, Congress passed a five-year federal transportation reauthorization act entitled Fixing America's Surface Transportation Act. The FAST Act increases the amount of road and bridge funding for all state transportation departments. Federal revenue for other modes is reliant on the timing of project expenditures.

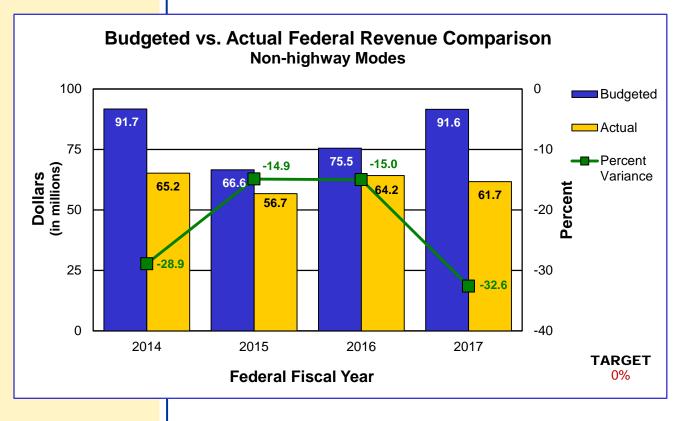
The primary source of federal and state revenue is motor fuel tax. The motor fuel tax rates have not changed in more than 20 years, while the costs for materials and labor have doubled or even tripled in the same timeframe.











#### **RESULT DRIVER:** Brenda Morris

Financial Services Director

#### MEASUREMENT DRIVER:

Frank Miller District Planning Manager

#### PURPOSE OF THE MEASURE:

This measurement monitors the effectiveness of MoDOT's cost-sharing and partnering programs.

# MEASUREMENT AND DATA COLLECTION:

MoDOT collects this data from the Statewide Transportation Improvement Program and the permits database. The dollars are shown in the fiscal year in which construction contracts are awarded and permit jobs are issued. The percent is the number of cost-sharing projects divided by the total number of projects per year in the STIP.

The target for this measure is set by internal policy and will not change unless policy changes.

### **USE RESOURCES WISELY**

# Number of dollars generated through cost-sharing and partnering agreements for transportation – 6e

MoDOT works with public agencies to leverage its limited resources to implement projects that might not otherwise be built. Cost-share projects are transportation improvements in which costs are shared by MoDOT and other public agencies such as cities and counties. After a temporary suspension of the Cost Share Program through FY 2017, the Missouri Highways and Transportation Commission reactivated the Cost Share Program with the adoption of the 2018-2022 Statewide Transportation Improvement Program.

In addition, MoDOT partners with cities and counties for projects not part of the formal Cost Share Program, with other states for projects of mutual interest such as border bridges and with federal agencies through competitive discretionary programs. MoDOT also partners with developers and other private entities to make improvements to the state transportation system through the permitting process.

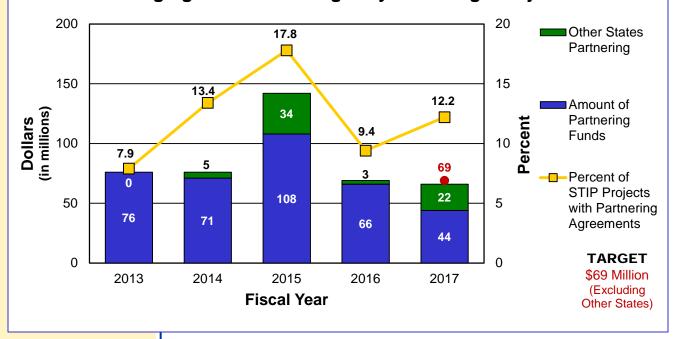
The amount of partnership funding declined significantly in FY 2017, with \$44 million in partnerships on the MoDOT system and \$22 million in partnerships with other states for projects on jointly-owned facilities. For partnerships only on the MoDOT system, this is a decrease of approximately one third.

While the amount of partnership funding declined, the percent of projects in the STIP with partnership funding increased from 9.4 percent in FY 2016 to 12.2 percent in FY 2017. However, the total number of projects in the STIP decreased in FY 2017 with the number of projects with partnership contributions being down. In FY 2016, there were 66 projects with funds from partnership agencies, but in FY 2017, that number decreased to 53.

The average partner contribution to partnership projects decreased in FY 2017. In FY 2017, the average partner contribution per project was \$824,000, compared to the five year average of \$1,161,000.



#### Number of Dollars Generated Through Cost-sharing and Partnering Agreements for Highway and Bridge Projects



Missouri Department of Transportation 6e2

#### MEASUREMENT DRIVER: Dion Knipp

Administrator of Transit

#### PURPOSE OF THE MEASURE:

This measurement provides the percent of state funds invested in non-highway modes of transportation. Modes include aviation, rail, transit, waterways, freight and bike/pedestrian.

# MEASUREMENT AND DATA COLLECTION:

Investments in non-highway modes of transportation represent the state and federal dollars spent on aviation, rail, transit, waterways, freight and bike/pedestrian. Federal investments represent the amount spent on MoDOTadministered programs only. Investments are limited to the amounts appropriated by the state legislature each year.

The target for this measure was set by management directive.

### **USE RESOURCES WISELY**

# Percent of state funds invested in non-highway modes of transportation – 6f

During the long-range planning process, "On the Move," Missourians chose more transportation choices as a top priority. MoDOT works closely with its multimodal partners to provide more choices within the available funding amounts. In fiscal year 2017, state and federal expenditures for non-highway modes of transportation decreased \$1.3 million and \$2.2 million, respectively.

Aviation – Fiscal year 2017 state expenditures of \$10.3 million represent 26 percent of funds invested. Federal Aviation Administration and State Aviation Trust funds require a minimum local match of 10 percent.

Rail – Fiscal year 2017 state expenditures of \$12.4 million represent 64 percent of funds invested.

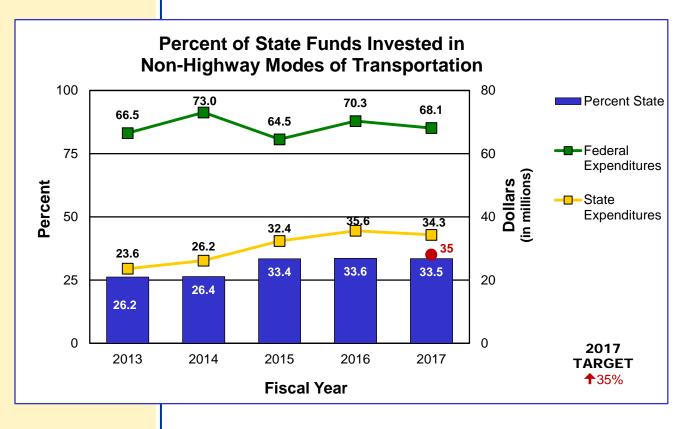
Transit – Fiscal year 2017 state expenditures of \$4.5 million represent 15 percent of funds invested.

Waterways – Fiscal year 2017 state expenditures of \$4.5 million represent 100 percent of funds invested.

Freight – Fiscal year 2017 state expenditures of \$1 million represent 100 percent of funds invested.

Bike/Pedestrian – Fiscal year 2017 state expenditures of \$1.6 million represent 20 percent of funds invested.





Missouri Department of Transportation 6f2

#### MEASUREMENT DRIVER:

Julie Stotlemeyer Assistant State Design Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the percent of available local program funds committed to projects.

# MEASUREMENT AND DATA COLLECTION:

The data is obtained from the Federal Highway Administration's Fiscal Management Information System and based on the federal fiscal year from Oct. 1 through Sept. 30. The committed amounts represent what FHWA will reimburse for the project. The available amounts represent the federal program funds distributed to local sponsors. The goal of this measure is to commit all federal funds available to local public projects.

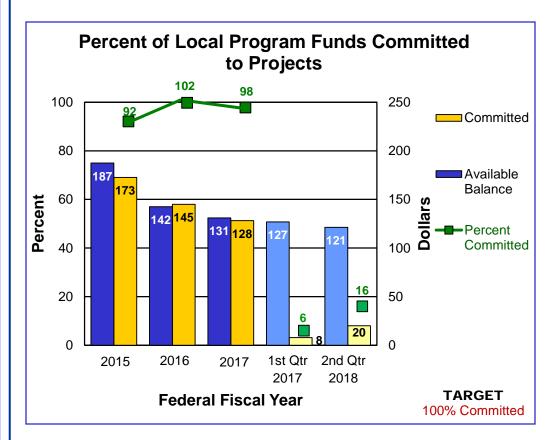
The target for this measure is set by internal policy and will not change unless policy changes, regardless of performance.

### **USE RESOURCES WISELY**

# Percent of local program funds committed to projects – 6g

Some of the federal funds MoDOT receives are required to be passed through to local entities, such as cities and counties. Available funds for local entities include those that are allocated this year and those that have not been committed in prior years. When local entities use federal funds, they provide the matching funds. Matching funds provided by local entities help MoDOT use all the transportation federal funding available to Missouri.

MoDOT has set a target of committing 100 percent of local program funds to projects each year. In the first quarter of federal fiscal year 2018, 16 percent (\$19.9 million) of the \$121 million in available funds has been committed to local projects. This represents a 13 percent increase in commitments compared to first quarter FFY 2017. Since FFY 2015, the percent of local program funds committed to projects has increased from 92 percent to 98 percent.



#### MEASUREMENT DRIVER:

Kevin James Assistant District Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks progress of fleet usage compared to department thresholds based on annual mileage over the life of the equipment. The measure also tracks fuel efficiency for five vehicle classes: cars, pickups, lightduty trucks, heavy duty trucks and extra-heavy duty trucks. These classes represent the majority of fleet expenditures and miles driven.

## MEASUREMENT AND DATA COLLECTION:

Data reflects performance for the vehicle based on its age. Ideal fleet usage falls within 75 to 125 percent of the vehicle's threshold. For example, a passenger car has a threshold of 15,000 miles per year. If a car is three years old, the mileage should be between 33,750 to 56,250 miles. The fleet threshold analysis graphs are updated in January and July. This measure also reports MoDOT's total fuel consumed and shows how fleet choices can affect fuel economy. The fuel data is collected in the statewide financial system. Mileage data is obtained from MoDOT's fleet management system, FASTER.

The target for this measure is updated quarterly. This target is established by projecting a 3 percent improvement over a five-year average.

### **USE RESOURCES WISELY**

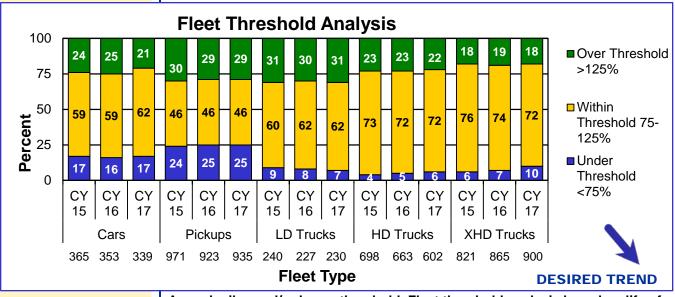
### Fleet usage and fuel efficiency – 6h

The fleet threshold measure for 2017 shows 62 percent of cars, 46 percent of pickups, 62 percent of LD trucks, 72 percent of HD trucks and 72 percent of XHD trucks are within threshold. An increase in over threshold equipment will result in equipment needing to be replaced sooner than expected. Equipment under the thresholds results in underutilized equipment that could be used in other areas of the department.

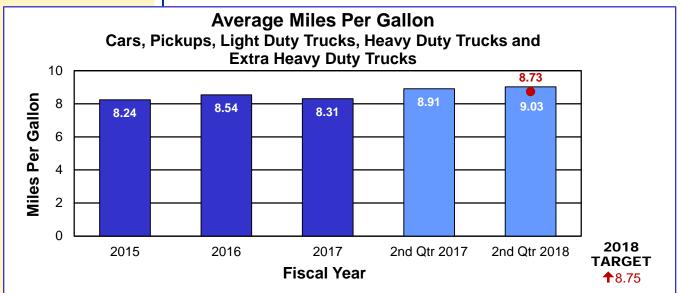
The fuel efficiency measure shows an increase, and the fuel consumption measure shows a decrease in the second quarter of fiscal year 2018 compared to the second quarter of FY 2017. Fuel consumption in FY 2018 has decreased by 3.5 percent (132,163 gallons) compared to FY 2017. During the second quarter of FY 2018, fewer gallons were used for snow and ice prevention/removal compared to the second quarter of FY 2017. For the same period, increases in gallons used for mowing and repairing pipe culverts were recorded. Changes in fuel use by activity resulted in an increase in fuel efficiency of 0.12 miles per gallon compared to the same period last year.

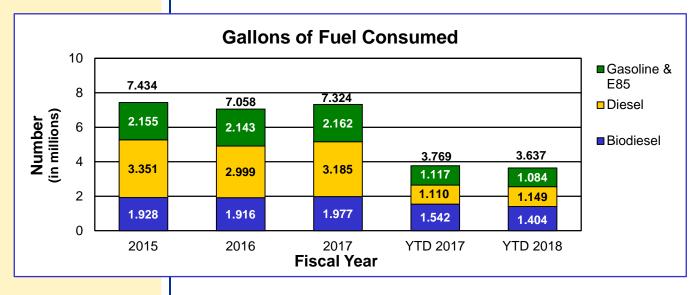
MoDOT has set a target of 8.73 average miles per gallon based on the fiveyear average of 8.48 mpg plus 3 percent. The usage trends by activity and vehicle type (pickup trucks versus dump trucks) resulted in miles per gallon higher than the target. Strategies to maintain results at target level include encouraging more carpooling and using more fuel-efficient light-duty vehicles when able.





Annual miles and/or hours threshold. Fleet threshold analysis based on life of vehicle. Number of fleet vehicles by fiscal year is shown under categories.





Missouri Department of Transportation 6h2

#### MEASUREMENT DRIVER:

Jonathan Varner Intermediate Materials Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks MoDOT's recycling efforts in construction projects and internal operations.

# MEASUREMENT AND DATA COLLECTION:

The recycled material used in construction projects is measured through MoDOT's SiteManager database, which tracks material incorporated into projects. Data is collected on an annual basis due to the seasonal nature of construction. Recycled material from internal MoDOT operations, are captured from the annual Missouri State Recycling Program report and from other internal records.

### **USE RESOURCES WISELY**

### Number of tons of recycled material – 6i

For more than a decade, MoDOT has incorporated recycled asphalt pavements and roof shingles into new asphalt pavements to help offset increasing costs. While the cost of rock, sand, liquid asphalt, labor, fuel and equipment have increased, recycling efforts have helped offset the cost increases. In 2016, 32 percent of the 3.89 million tons of new asphalt pavement constructed came from recycled components. Based on tonnage bids in 2016, this saved taxpayers about \$5.50 per ton, or \$21.3 million overall. The \$21.3 million savings would be equivalent to improving more than 476 miles of a two-lane roadway with a thin overlay.

MoDOT also engages in internal recycling efforts. In 2016, the amount of recycled material decreased by 518 tons. The majority of the recycled tonnage comes from scrap metal and scrap rubber/tires. More than 1,650 tons of scrap metal and 324 tons of scrap rubber/tires (equivalent to about 28,800 passenger car tires) were recycled. The cost to recycle some items, such as scrap rubber/tires and oil, was just under \$261,000. Other recycling efforts returned more than \$448,000. The net revenue was slightly more than \$187,000.

Recycling is good for the environment and helps continue to stretch available funds.

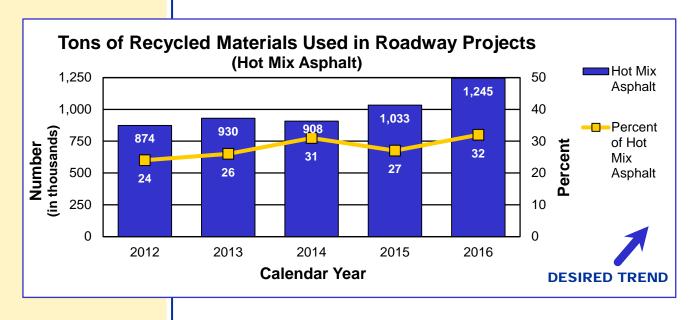
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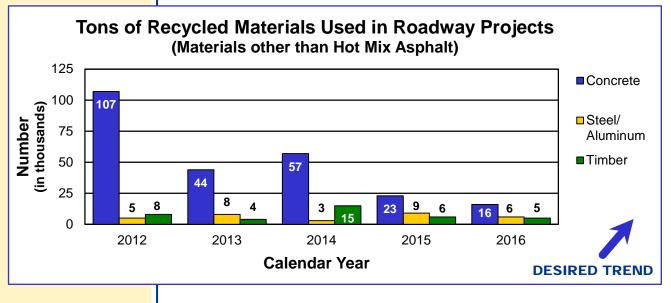


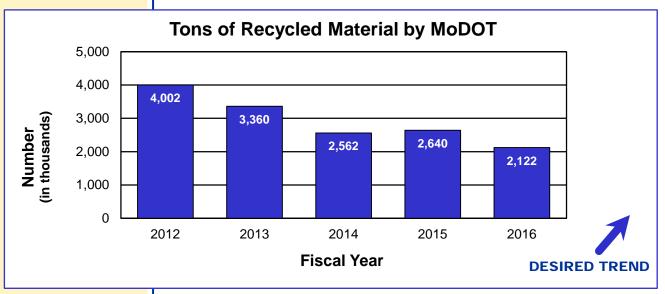


### Roofs to Roads

MoDOT is among the first state agencies in the nation to recycle shingles to resurface or rebuild highways.







Missouri Department of Transportation 6i2

#### MEASUREMENT DRIVER:

Mary Miller District Construction and Materials Engineer

#### PURPOSE OF THE MEASURE:

This measure tracks the annual trend of compliance with environmental laws and regulations, which includes obtaining and abiding by specific requirements contained in various permits.

# MEASUREMENT AND DATA COLLECTION:

Notices of Violation are similar to a traffic ticket as they are written to indicate you are operating outside of legal limits. A Letter of Warning indicates that there are problems and, if not corrected, could lead to a notice of violation. Issued by environmental regulatory agencies, NOVs, LOWs and letters of satisfactory inspections are collected and tracked by location and/or project. The measure reports by calendar year the number of NOVs, LOWs and satisfactory inspections received by the department for any activity.

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

### **USE RESOURCES WISELY**

# Number of environmental warnings and violations – 6j

MoDOT seeks to reduce its impact on Missouri's natural resources by complying with environmental laws and regulations. The department is serious about protecting human health, air, water, wildlife and ecosystems. Compliance with environmental laws and regulations helps to prevent and counteract possible damage from MoDOT activities.

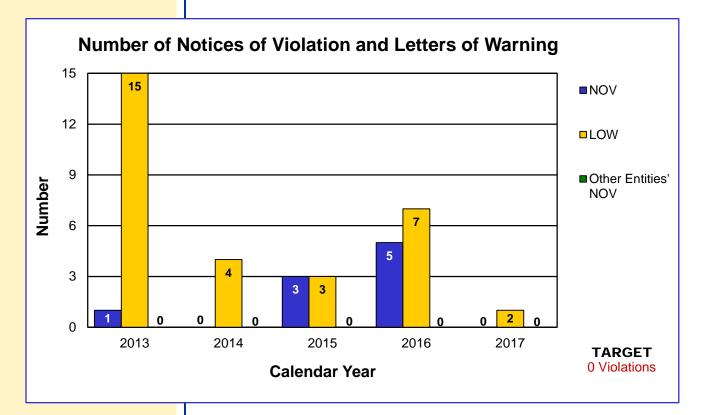
MoDOT has a zero-tolerance policy toward any NOV's from regulating agencies, such as the Missouri Department of Natural Resources or the Environmental Protection Agency. Department employees study the situations that lead to NOVs and LOWs then take action to prevent future occurrences.

For 2017, MoDOT received no NOV's. Two LOW's were received during 2017, which is down from seven LOW's during 2016. The target for the year is zero LOWs or NOVs.

The first LOW was for hazardous waste storage and handling associated with interchange improvements at Route YY and Division in Greene County. Household hazardous wastes (oil based paints and insecticides) were found in a shed on the property. Due to the amount of waste on the site, MoDOT registered it as a small quantity generator with DNR with the intent of making one waste shipment to a hazardous waste facility for disposal. DNR subsequently inspected the site and issued an LOW citing 15 violations, including failure to have fire suppression equipment, internal communications, an alarm system and arrangements with local emergency response in case of a spill. MoDOT responded to the letter and disputed the findings since they were pertinent for a commercial facility and not an unmanned shed. Two days after the inspection, the waste was hauled by a waste disposal contractor to their facility and the site was deactivated. DNR issued a return to compliance letter for this site.

The second LOW was issued for violations at the wastewater treatment facility at the I-55 rest area in Bloomsdale. This site was inspected by DNR on August 8, 2017, and found to be in non-compliance with the Missouri State Operating Permit for the site. This permit requires testing and documentation at the site a minimum of two times per week. Upon inspection, DNR found the site only had inspections documented quarterly, which violated the MSOP. The rest area contractor has since implemented new testing procedures to comply with the MSOP.





#### MEASUREMENT DRIVER:

Brian Williams Stormwater Compliance Coordinator

#### PURPOSE OF THE MEASURE:

This measure tracks compliance with MoDOT's stormwater permit and court ordered consent decree. The consent decree established requirements for MoDOT projects from 2015-2018 where greater than one acre of land is disturbed.

# MEASUREMENT AND DATA COLLECTION:

A database is used to record the compliance of MoDOT and construction contractors with requirements to:

- maintain personnel in stormwater oversight positions;
- obtain the required stormwater training;
- ensure timely stormwater inspections, and
- ensure the resulting stormwater control repairs are completed within the required time.

The database also tracks fines resulting from not meeting the decree requirements. The target for this measure is set by internal policy and will not change unless policy changes. MoDOT's benchmark is the Kansas DOT because it monitors similar elements of the Clean Water Act. Kansas' consent decree was a four year decree beginning in 2013. There also are significant differences in how their consent decree computes violations compared to MoDOT's.

### **USE RESOURCES WISELY**

### Number of stormwater violations – 6k

MoDOT is committed to ensuring all land disturbance projects are in compliance with environmental laws through the use of adequate erosion and sediment control practices.

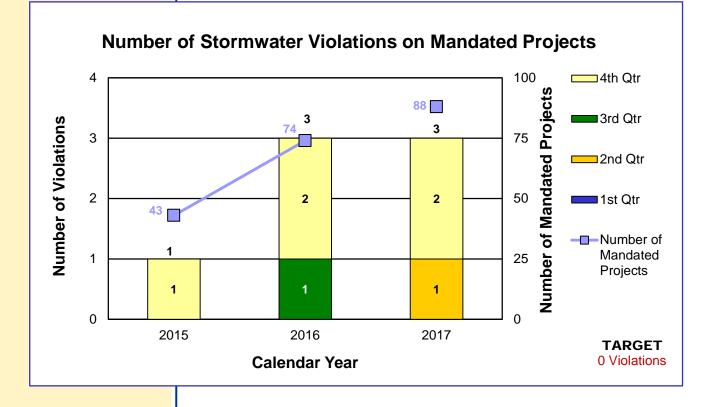
Two consent decree violations have occurred in the fourth quarter of 2017. The first violation was a missed inspection certification by a resident engineer. This violation carries a penalty of \$250. The resident engineer inadvertently deleted the automatic email notice for the inspection and only completed two of the three certifications that were required that day. Following the violation, the resident engineer was informed of the multiple ways to check their jobs for required actions other than the automatic email notices. The database is multifunctional and allows searching by job number, contract ID, district and by resident engineer.

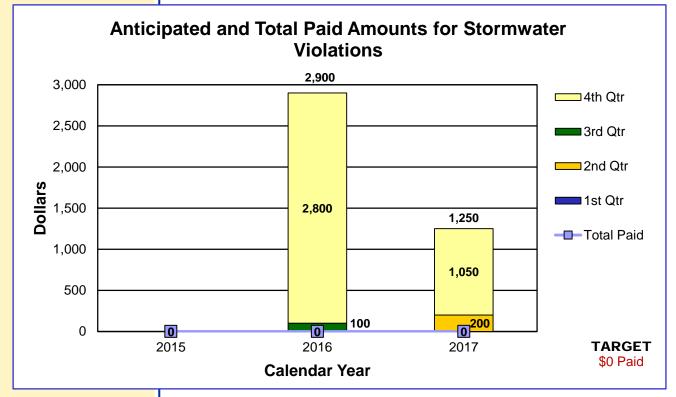
The second violation was identified through an internal audit inquiry into an employee who was acting in the capacity of a stormwater inspector. The investigation revealed that, while the inspection was documented in the stormwater database, no actual inspection was performed as required. This violation carries a penalty of \$800.

The target for this measure is no violations and no penalties paid. The accumulated total consent decree violations are now at seven and no penalties have been paid. The Environmental Protection Agency has not commented on MoDOT's 2016 Annual Report.

In KDOT's four years under a consent decree with the EPA, a total of 360 violations valued at \$1.15 million were reported. Taking these same 360 violations compared to how MoDOT's consent decree computes violation amounts, the total violation amount would be \$458,250. This amount could be broken down to an average of 90 violations per year at an average value of \$114,563 per year.

Continued communication with the field staff and district contacts to keep everyone engaged and focused will assist MoDOT in keeping on track and meeting the target.





#### MEASUREMENT DRIVER:

Curtis Clem Information Systems Supervisor

#### PURPOSE OF THE MEASURE:

This measure reports how MoDOT ranks in cybersecurity incidents per employee compared to other state agencies. An incident is defined as any threat that standard anti-virus protection software can't detect.

# MEASUREMENT AND DATA COLLECTION:

Data for this measure is captured from the Office of Administration reporting and individual agency websites.

A target for this measure is in the process of being determined.

The reporting period for this measure is a rolling 12 months.

### **USE RESOURCES WISELY**

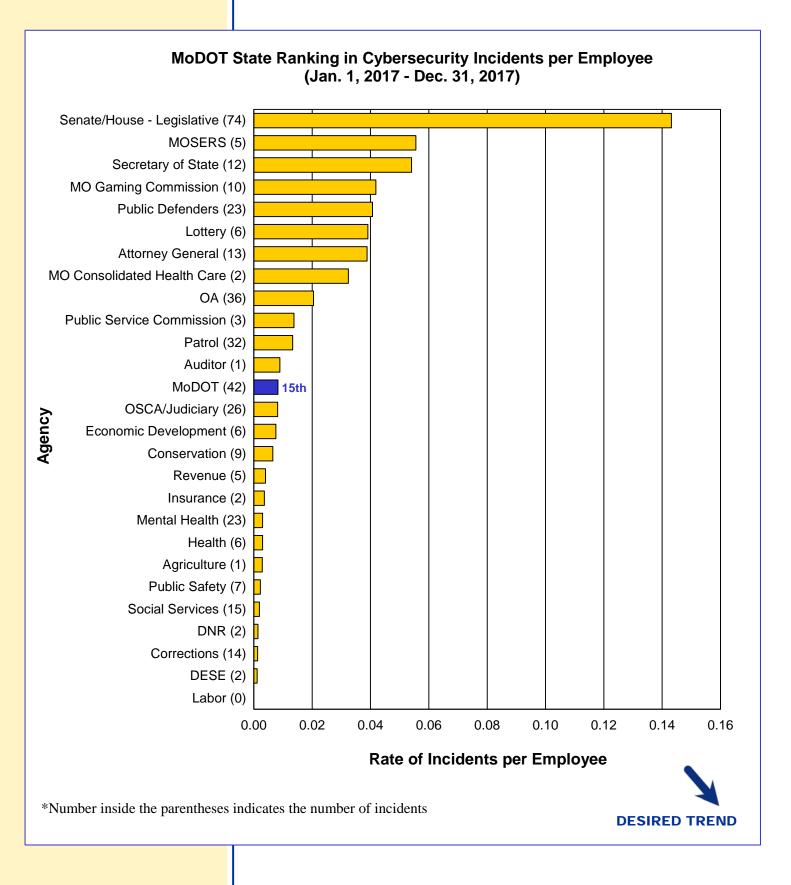
### MoDOT state ranking in cybersecurity incidents per employee – 6l

MoDOT uses thousands of computer devices to get its work completed from thousands of locations around the state. Keeping those computers safe from outside computer threats is a 24-hour job using the latest security measures. Still it's a responsibility all department computer users must share.

During the year ending December 31, 2017, MoDOT ranked 15th compared to all other state agencies in terms of cybersecurity incidents per employee. MoDOT's total of 42 cybersecurity incidents equated to a rate of .0083 incidents per employee. This is a slight increase from the last reporting period. Incidents included infected software downloads, web browsing drive-by events and other targeted technology exploits.

MoDOT continues to emphasize cybersecurity with users and provides cybersecurity training for all department computer users. The department's cybersecurity oversight team works to define areas of vulnerability and deploy solutions to address those risks.







### ADVANCE ECONOMIC DEVELOPMENT Lester Woods, External Civil Rights Director



MEASURES OF DEPARTMENTAL PERFORMANCE



Missouri's transportation system has a direct impact on the state's economy. Missouri businesses depend on our roadways, rail, waterways and airports to move their products and services both nationally and globally. An efficient, well-connected transportation system helps attract new businesses to our communities and helps existing businesses maintain a competitive edge with easy customer access, minimal shipping costs and strong links to a diverse workforce. We believe investments in transportation should create jobs and provide opportunities for advancement to all Missouri citizens. An investment in transportation should provide a positive economic impact on both the citizens we serve and the communities in which they live.

#### **RESULT DRIVER:** Lester Woods External Civil Rights Director

#### MEASUREMENT DRIVER:

Eva Voss Transportation Planning Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks the economic impact resulting from the state's transportation investments.

# MEASUREMENT AND DATA COLLECTION:

MoDOT works with the Economic Development Research Group to perform economic impact analyses for the state's transportation investments. The analyses are performed using a model called the Transportation Economic Development Impact System. The TREDIS model results demonstrate a strong link between transportation investment and economic development.

This target was set by analyzing historical performance. MoDOT would like to reach the performance level that was achieved in the 2014-2018 STIP cycle.

### ADVANCE ECONOMIC DEVELOPMENT

### Economic return from transportation investment – 7a

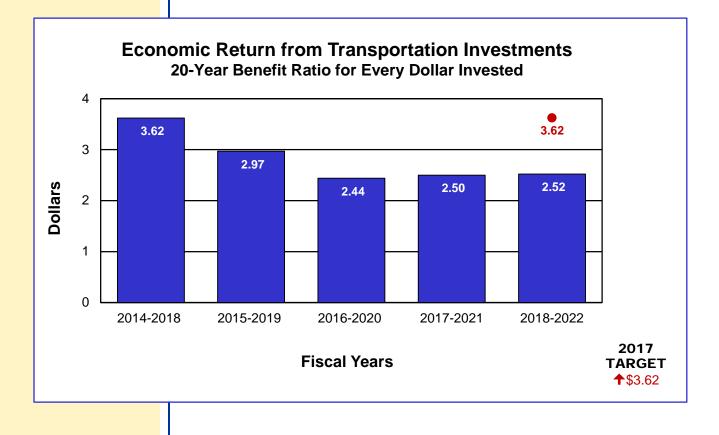
Investment in transportation improvements has long been held as a major economic engine that drives growth in job creation, personal income and new value added to Missouri's economy.

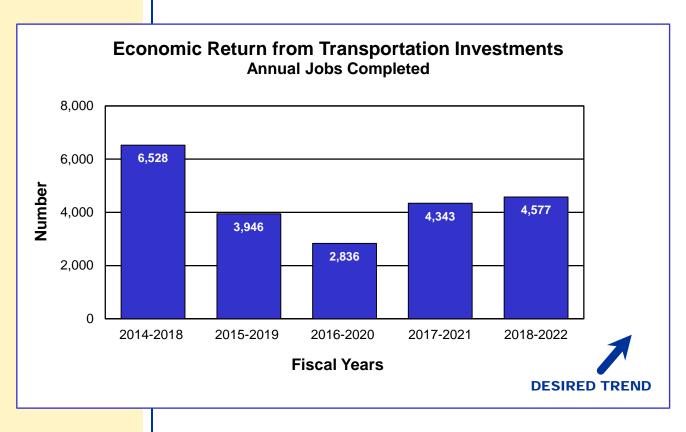
Based on MoDOT's 2018-2022 Statewide Transportation Improvement Program investment of \$5.9 billion, the program is estimated to create 4,577 jobs – a 5 percent increase when compared to MoDOT's 2017-2021 STIP. Transportation investments are expected to contribute \$14 billion of economic output during the next 20 years, resulting in a \$2.52 return on every \$1 invested in transportation. This year's return on investment, \$2.52, is approximately a 1 percent increase in comparison to last year's STIP return of \$2.50.

The increase in economic return is due to the increasing construction investment of highway and bridge improvements. Though these figures tell a powerful economic story, they are also a sign of missed opportunity. Current investments must focus on maintaining our current transportation system rather than new major projects that offer a larger economic return.



### ADVANCE ECONOMIC DEVELOPMENT





Missouri Department of Transportation 7a2

#### **RESULT DRIVER:** Lester Woods External Civil Rights Director

#### MEASUREMENT DRIVER:

Cheryl Ball Administrator of Freight and Waterways

#### PURPOSE OF THE MEASURE:

This measure tracks the estimated cost of transporting representative Missouri products from key economic industries (chemical manufacturing, transportation equipment and agriculture) to top destinations as compared to shipping the same products from competitor states. The relative costs for these illustrative products serve as a proxy for Missouri's competitiveness on transport costs as a whole.

## MEASUREMENT AND DATA COLLECTION:

Transearch 2011 freight data was used to identify products representative of Missouri's economic drivers as well as the top origins, destinations and modes of transport. Estimates of the transport costs are calculated using different external sources for the modes: (1) The 2014 American Transportation Research Institute report, An Analysis of the Operational Costs of Trucking, (2) AAA's diesel on-highway price data, (3) the Bureau of Labor Statistics wage data, (4) the Surface Transportation Board's Uniform Railroad Costing System and (5) the USDA's Average Weekly River Barge Rates.

### ADVANCE ECONOMIC DEVELOPMENT

### Goods movement competitiveness – 7b

Product transportation costs vary depending on the efficiency, reliability, safety and modal options in a state's transportation system. Accumulation of costs to transport, starting at product origination through travel to the production facility and finally to market, directly impact the final cost of a product as well as how competitive the product is in the global market. Transportation costs account for 9 - 14 percent of a product's market price. Therefore, maintaining low transportation costs is critical to retain and expand current businesses in Missouri as well as attracting new businesses to create new employment.

The three key Missouri products (soybeans, finished motor vehicles and chemical manufacturing) account for more than \$8 billion in revenue annually and employ more than 300,000 Missouri workers. Missouri producers of these products compete with other states and other countries for customers. MoDOT compares Missouri transportation costs to those of the closest domestic competitors. At this time, Missouri's transportation cost is among the lowest of these competitors.

Deterioration of any of the factors influencing transportation cost not only impacts the competitiveness of Missouri products in external markets, it also influences the cost to bring products into Missouri, which controls the prices at local stores.

MoDOT plays an active role in keeping costs low by working with existing businesses to identify transportation barriers that reduce their competitiveness regardless of transportation mode. These barriers can include bridges with load postings, closed bridges, rough pavement, at-grade rail crossings, congestion and inability to access a port or airport. MoDOT works to find solutions for these barriers, but Missouri's transportation funding does not allow the agency to fully respond to those needs.



#### MEASUREMENT DRIVER:

Bryan Ross Senior Multimodal Operations Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks the amount of freight moved by Missouri's largest transportation modes.

# MEASUREMENT AND DATA COLLECTION:

Twice a year, a freight tonnage estimator is used to calculate the amount of freight moved by railroads and highways. The estimator provides timely information for Missouri's primary freight movers. Freight data for aviation and waterways is a combination of direct surveys and trend analysis. This measure's data is estimated yet provides an indication of current trends and movements.

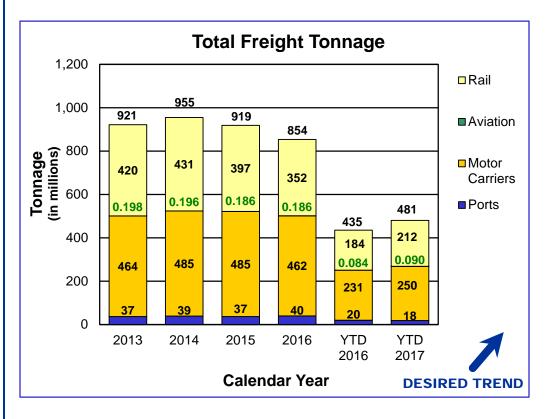
### ADVANCE ECONOMIC DEVELOPMENT

### Freight tonnage by mode – 7c

Everything comes from somewhere. How it gets from place to place depends on a number of factors. The different transportation modes experience volume shifts from year to year, often based on the health of the national economy and shifts in consumer preferences. A key element to a healthy economy is a robust transportation system.

State funding cannot address transportation needs other than highways and bridges. Moving hundreds of million tons of freight a year requires thoughtful improvements of transportation facilities such as ports, railroads and airports. Yet many of these needs remain underfunded.

In the first six months of 2017, Missouri experienced a 10.5 percent increase in freight movements as compared to the same time period of the previous year. All modes, except for ports, saw year-to-year increases. Nationally, rail shipments of coal increased by about 325,000 carloads, and intermodal increased by about 180,000. Motor carriers continued to haul the most tonnage and experienced an 8 percent increase in shipping, which parallels an increase in U.S. consumer spending. However, ports experienced a 10 percent decrease in tonnage. The reduction made in the estimate of waterborne shipments is attributed to some customers of Missouri's port authorities cutting back on their operations.



#### MEASUREMENT DRIVER:

Brian Reagan Transportation System Analysis Engineer

#### PURPOSE OF THE MEASURE:

This measure is proposed to be used as a Fixing America's Surface Transportation Act national freight performance measure.

#### MEASUREMENT AND DATA COLLECTION:

Annual hours of truck delay quantifies the extra time spent by commercial motor vehicles on an interstate corridor based upon a state-determined threshold. Missouri's threshold is set at 55 mph in St. Louis and Kansas City. All other rural areas have a threshold of 65 mph. Speeds below that rate indicate congestion and/or other delay factors for trucks. Missouri chose this threshold because many commercial trucks are governed at 65 mph even though the posted speed limit for most interstate highways is 70 mph. Commercial vehicle delays on the interstate system may be caused by congestion due to factors such as traffic, severe weather, safety inspections or roadway geometrics. AHTD is composed of vehicle miles traveled by trucks, speed of travel and the desired speed of travel.

This target will be updated annually.

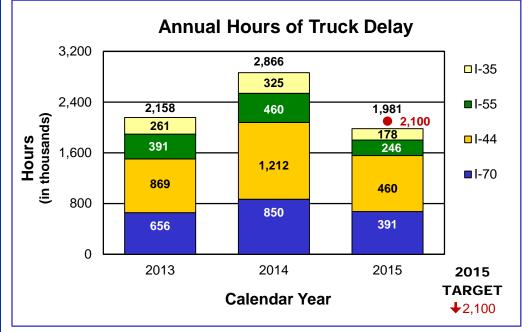
## ADVANCE ECONOMIC DEVELOPMENT

### Annual hours of truck delay – 7d

Time is money. Delay impacts the cost of goods and reduces an organization's ability to compete on a global basis. American businesses require more operators and equipment to deliver goods when delays lengthen shipping time. Businesses must hold more inventories in more distribution centers to deliver products quickly when lengthier trips are unreliable and slow. Slow traffic also affects the local economy by reducing the number of workers and job sites within easy reach of a location.

Growth in freight volumes is a major contributor to congestion in urban areas and on intercity routes. Long-distance freight movements are often a significant contributor to local congestion, and local congestion typically impedes freight to the detriment of local and distant economic activity. Unfortunately, Missouri's long-term transportation funding is insufficient to address congestion factors.

On average, those shipping by truck can expect a delay of 13.3 minutes per trip on I-70, 29.2 minutes on I-44, 12.7 minutes on I-55 and 8.6 minutes on I-35. The annual cost of delay for the trucking industry on I-70 is \$45.7 million, \$58.1 million on I-44, \$16.9 million on I-55 and \$12.3 million on I-35.



\*2013 data contains only July through December.

#### MEASUREMENT DRIVER:

Brian Reagan Transportation System Analysis Engineer

#### PURPOSE OF THE MEASURE:

This reliability measure is proposed to be used as a Fixing America's Surface Transportation Act national freight performance measure. By annually comparing the reliability index number for each corridor, MoDOT can determine if the corridor has become less or more reliable. A lower index for a succeeding year means reliability has improved.

#### MEASUREMENT AND DATA COLLECTION:

This measure uses the Truck Reliability Index, a ratio of the total truck travel time needed to ensure on-time arrival four out of five times to the agencydetermined threshold speed of 55 mph in St. Louis and Kansas City, and 65 mph in all other rural areas. The ratio is used to gauge consistency in truck freight travel times. Further guidance about data requirements and measure methodology will be forthcoming from the Federal Highway Administration.

### ADVANCE ECONOMIC DEVELOPMENT

### Truck reliability index - 7e

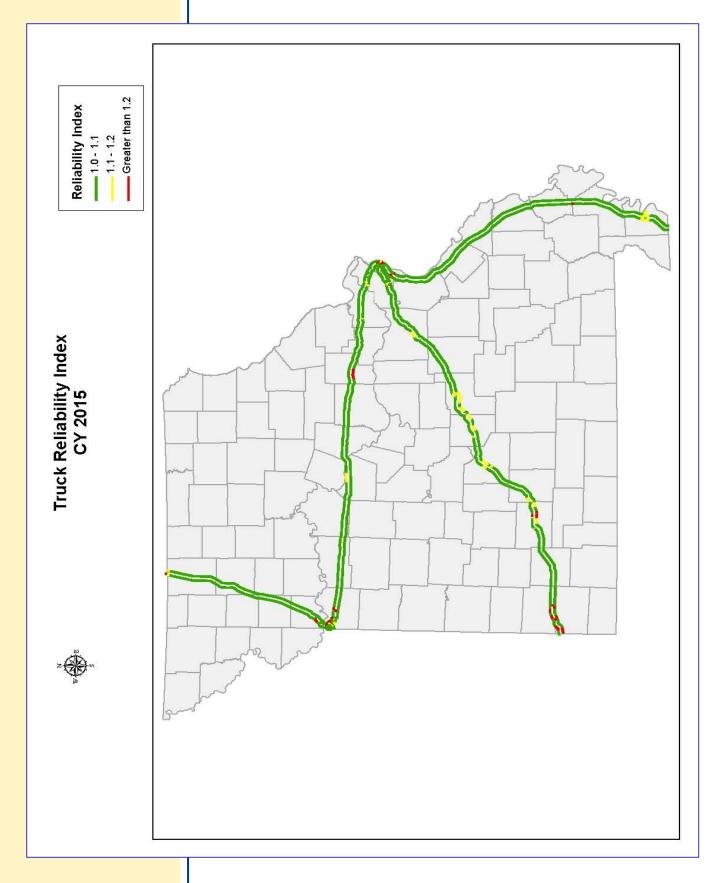
The reliable movement of goods by truck is critical to Missouri's economy. Travel time reliability is the variation of travel time for the same trip from day to day. When the variability is large, the travel time is unreliable; and, vice versa, when there is little to no variability, the travel time is reliable. Variable or unpredictable travel times make it more difficult for motor carriers and shippers to plan their travel, often forcing them to add extra time to protect themselves against the uncertainty of arrival times. This uncertainty can lead to unproductive travel decisions that waste time and money. The map includes four freight-significant corridors: I-70, I-44, I-55 and I-35. The color green indicates the most reliable travel times; yellow slightly less reliable; and red the least reliable of travel times.

In 2015 Kansas City and St. Louis metropolitan areas both improved truck travel time reliability reducing previously identified red areas. Springfield and Joplin were unchanged. I-35 South improved in Clay County near Liberty from yellow to green. I-70 East improved in Lafayette County at both Odessa and Concordia from yellow to green. I-44 East improved in Pulaski County near Waynesville from red to yellow and Franklin County near St. Clair from yellow to green. I-55 South improved in New Madrid County near Marston from yellow to green and Pemiscot County near Caruthersville from red to yellow.

MoDOT continually seeks ways to deliver the infrastructure to support reliable trips for drivers and to help keep costs down and improve travel-time reliability.



Missouri Department of Transportation 7e



#### MEASUREMENT DRIVER:

Sunny Wilde Financial Services Coordinator

#### PURPOSE OF THE MEASURE:

This measure tracks the number of jobs created through MoDOT's economic development program.

# MEASUREMENT AND DATA COLLECTION:

Data for this measure is collected from a partnership development database. This measure is based on the state fiscal year.

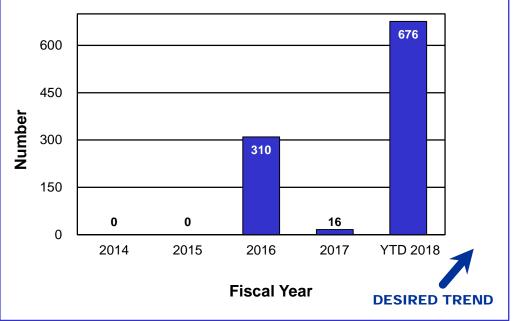
## ADVANCE ECONOMIC DEVELOPMENT

# Jobs created by projects funded through the economic development program – 7f

The Cost Share Program builds partnerships with local entities to pool efforts and limited resources in order to deliver state highway and bridge projects. MoDOT allocates Cost Share funds annually based on the funding distribution formula set by the Missouri Highways and Transportation Commission. Each year, at least 10 percent of the Cost Share funds are set aside for projects that demonstrate economic development through job creation. MoDOT may contribute up to 100 percent of the total cost for projects on the state highway system if the Missouri Department of Economic Development verifies the project creates jobs. Retail development projects are not eligible.

In FY 2018, John Deere Reman created 67 verified new jobs in conjunction with turn lane improvements at the intersection of Route OO and Route 125 in Greene County. The Jones Financial Companies created 609 verified jobs in conjunction with construction and reconstruction of the interstate interchange at Dorsett Road and I-270 in St. Louis County.





#### MEASUREMENT DRIVER:

Beckie Brietzke Senior Diversity and Inclusion Specialist

#### PURPOSE OF THE MEASURE:

This measure tracks minority and women employment in MoDOT's workforce and compares it with availability data from the Missouri 2010 Census report.

# MEASUREMENT AND DATA COLLECTION:

The SAM II database is used to collect data. The Missouri 2010 Census data is used as the benchmark for this measurement. The availability number is derived from two different sets of data: the 2010 census and the current pool of MoDOT employees who are trainable, transferable or promotable. The two statistics are factored together and weighted based on the hiring practices from the previous vear. The weighted number allows for a more accurate reflection of the hiring process. This number ultimately conveys the number of women and minorities who currently possess the skills necessary to work for the department.

The target for this measure is based on Missouri's availability and is set each October.

### ADVANCE ECONOMIC DEVELOPMENT

### Percent of minorities and women employed - 7g

By placing the right people in the right position, MoDOT can better serve its customers and help fulfill its responsibilities to taxpayers.

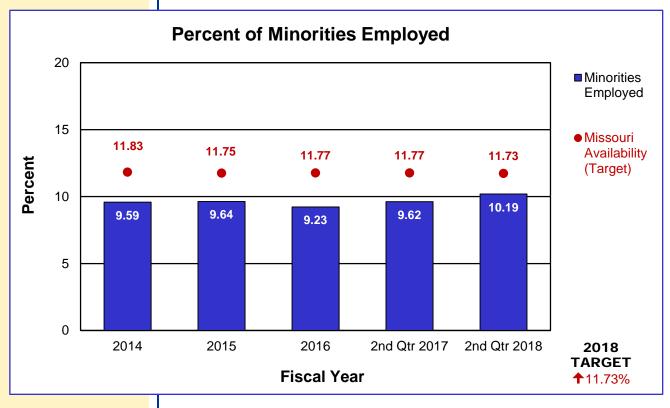
The number of minority employees increased about 6 percent (493 to 525) from second quarter fiscal year 2017 to second quarter FY 2018. The percent of minorities increased (9.62 to 10.19), but remains below Missouri's availability of 11.73 percent.

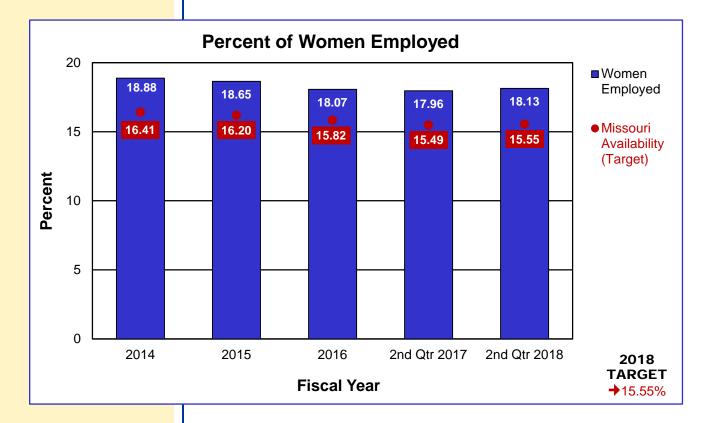
The number of women employees increased slightly from second quarter FY 2017 to second quarter FY 2018 (921 to 934). When compared to overall employment, the percent of women increased (17.96 to 18.13) and is still above Missouri's availability of 15.55 percent.

Total full-time employment between second quarter FY 2017 and second quarter FY 2018 increased from 5,127 to 5,153 employees.

Recently, MoDOT has developed new relationships with organizations and universities that are geared toward minorities and women. MoDOT has expanded its partnership with Lincoln University to include employment preparedness training opportunities and increased presence in disciplinespecific classrooms. These good-faith efforts aid in increasing an applicant pool of qualified minorities and women, which ultimately helps narrow the gap between actual employment and target employment of minorities and women.







#### MEASUREMENT DRIVER:

Missy Stuedle External Civil Rights Manager

#### PURPOSE OF THE MEASURE:

This measure tracks the percent of Disadvantaged Business Enterprise use on construction and engineering projects.

# MEASUREMENT AND DATA COLLECTION:

Data is collected through Site Manager for each construction project. The overall DBE goal is a yearly target established by MoDOT and the Federal **Highway Administration** regarding the expected total DBE participation on all federally-funded construction projects. Individual DBE project goals are determined by subcontract opportunity, project location and available DBE firms that can perform the scope of work. DBE utilization is tracked for each construction project identifying the prime contractor, contract amount, the established goal and how the prime contractor fulfilled the goal. This measure is based on the federal fiscal year. Collection of data began in FFY 2012.

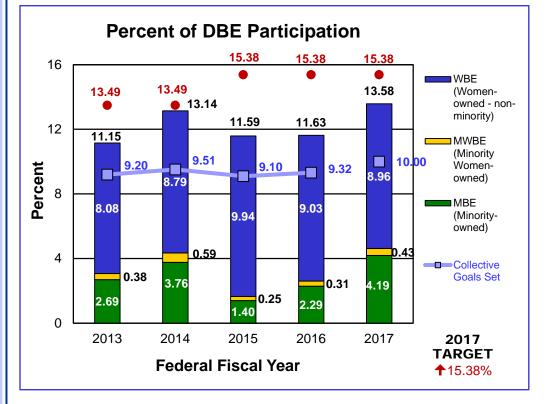
The target for this measure is set by FHWA policy and is updated every three years.

### ADVANCE ECONOMIC DEVELOPMENT

Percent of disadvantaged business enterprise participation on construction and engineering projects – 7h

MoDOT believes it is good business to support diversity among its contractors, subcontractors and suppliers. Contractors, subcontractors and suppliers working on construction projects that receive federal aid or federal financial participation are required to take reasonable steps to ensure DBEs have an opportunity to compete for and participate in project contracts and subcontracts.

The overall DBE target for federal fiscal year 2017 is 15.38 percent. The DBE participation for FFY 2017 is 13.58 percent. This is a 1.95 percent increase from FFY 2016. Of the 13.58 percent utilization, 4.19 percent was participation from minority-owned DBE firms, 0.43 percent was participation from women-owned DBE firms and 8.96 percent was participation from women-owned DBE firms. The collective goals set for projects closed during this period amounted to 10 percent. To narrow the gap between the target and performance, MoDOT is conducting outreach meetings to encourage new firms to apply for DBE certification and using DBE supportive services funding to expand the capacity of certified DBE firms.



#### MEASUREMENT DRIVER:

Kevin Kiesling General Services Manager

#### PURPOSE OF THE MEASURE:

This measure tracks the department's non-program spending with certified minority, women and disadvantaged business enterprises.

#### MEASUREMENTAND DATA COLLECTION:

Data is obtained from the statewide financial accounting system expenditure reports and United Missouri Bank purchasing card reports. Certified vendors are maintained in a statewide procurement vendor database. Vendors may be certified through the Office of Administration as well as the Missouri Regional Certification Committee. Included in these expenditures are items such as materials, equipment, tools and supplies. Program spending, including construction, design consultants, local agencies, highway safety and multimodal programs and exempted activities such as utilities, postage, organizational memberships, conferences and travel, is excluded from total dollars spent.

The target for this measure is an average of the availability percentage of minority-owned and women-owned businesses and MoDOT's most recent fiveyear average utilization. This target will be updated annually in October.

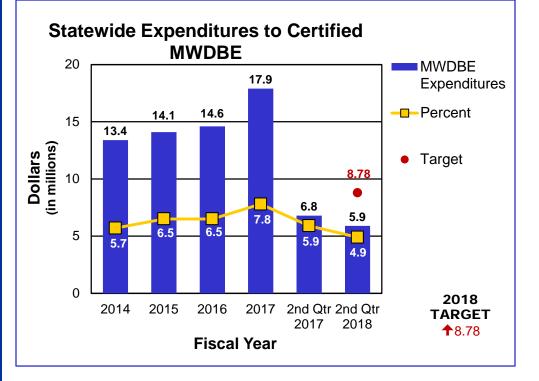
### ADVANCE ECONOMIC DEVELOPMENT

# Expenditures made to certified minority, women and disadvantaged business enterprises – 7i

Ensuring MoDOT spending is reflected in all Missouri communities advances economic development for all business enterprises. Historical data helps identify opportunities for improvement. Improvement efforts include training staff who have procurement authority, outreach to MWDBE vendors in order to encourage them to become certified and focused inclusion efforts.

Fiscal year 2018 second quarter results show a decrease of \$900,000 in MWDBE disbursements compared to the second quarter of FY 2017. Compared to second quarter FY 2017, the FY 2018 percentage of MWDBE expenditures decreased by 1 percent of total expenditures.

This measure will continue to track the department's efforts to ensure the vendor pool is representative of the business community as a whole, including MWDBE firms.



#### MEASUREMENT DRIVER:

Jay Wunderlich Governmental Relations Director

#### PURPOSE OF THE MEASURE:

This measure tracks the department's efforts toward eliminating restrictive language and unnecessary administrative rules that may hinder business growth in the state.

#### MEASUREMENT AND DATA COLLECTION:

Missouri Gov. Greitens' staff has given department managers a list of administrative rules containing restrictive language. **Restrictive language includes** any regulation containing the words "shall," "must," "may not," "required" or "prohibited." MoDOT business areas linked to those rules will conduct a full review to determine ways to amend rules to eliminate restrictive language or eliminate those rules entirely. Progress will be collected in a shared spreadsheet.

### ADVANCE ECONOMIC DEVELOPMENT

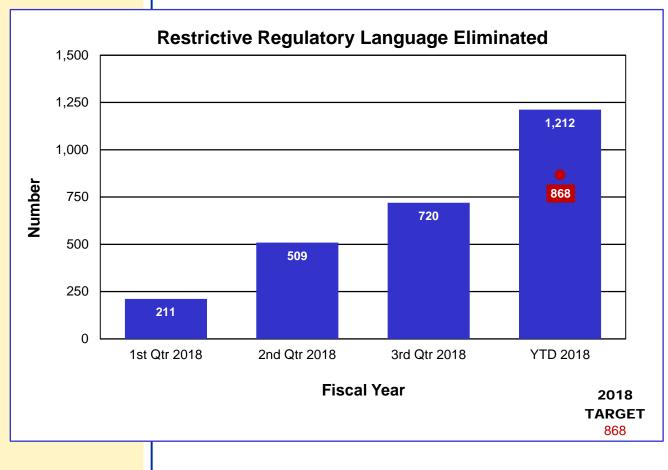
### Number of Restrictive Regulations Eliminated – 7j

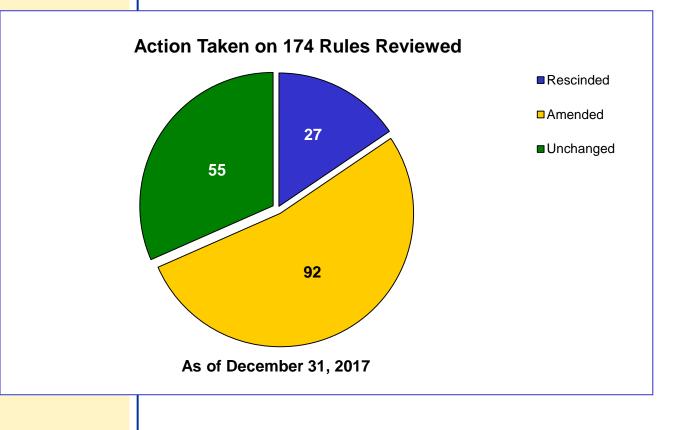
Being a business-friendly state can be a big plus in attracting and retaining business investments. A major decision point for many businesses is the amount of red tape or restrictive government rules they will encounter doing business in a state. Restrictive government rules also can mean lost time and revenue for existing businesses.

In 2016, *Forbes* magazine ranked Missouri as the 12<sup>th</sup> best state to do business in based on its regulatory environment. In January 2017, in an effort to improve that ranking and drive the state's economy, Missouri Gov. Eric Greitens issued a challenge to all state agencies to eliminate one-third of their restrictions by May 2018. For MoDOT, this targeted number is 868. Reducing restrictive regulatory language may result in fewer department-wide administrative rules.

To date, MoDOT has eliminated 1,212 restrictions representing 46 percent of the 2,631 restrictions within its administrative rules. These changes resulted in 92 regulations being amended and 27 being rescinded. MoDOT has reviewed 81 percent of its 214 administrative rules containing restrictive language.







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