



## KEEP CUSTOMERS AND OURSELVES SAFE

*Eileen Rackers, State Traffic and Highway Safety Engineer*



# Tracker

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:**  
Eileen Rackers  
State Traffic and Highway  
Safety Engineer

# KEEP CUSTOMERS AND OURSELVES SAFE

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

**MEASUREMENT DRIVER:**  
Bill Whitfield  
Highway Safety Director

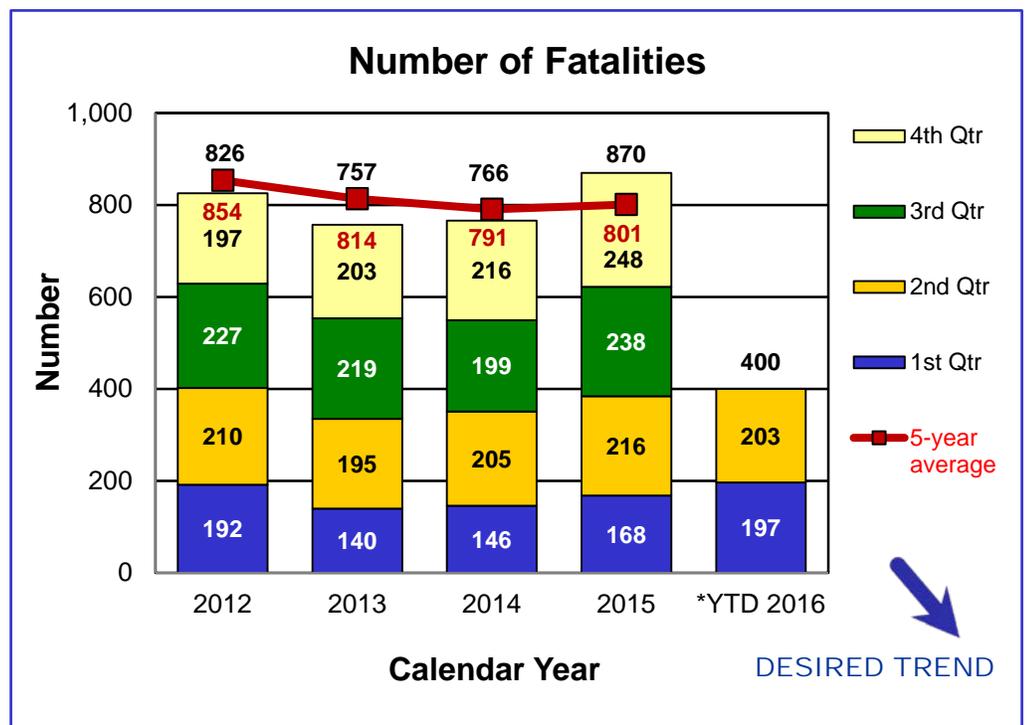
**PURPOSE OF THE MEASURE:**  
The fatal and serious injury number measures track quarterly, annual and five-year average trends resulting from traffic crashes on all Missouri roadways.

**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 five-year 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.

Traffic crash prevention is one of MoDOT's highest priorities. In 2015, Missouri experienced 870 fatalities, resulting in a 14 percent increase over 2014. Of those fatalities, 63 percent were unbuckled when the crash occurred. This unbuckled trend has fluctuated from a high of 71 percent in 2013 to current levels.

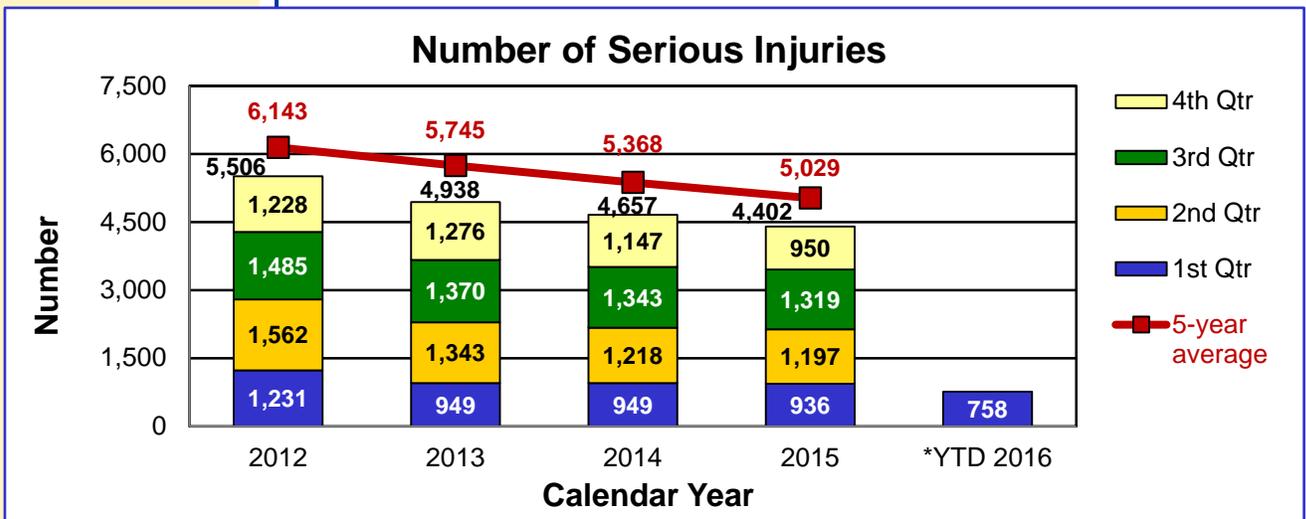
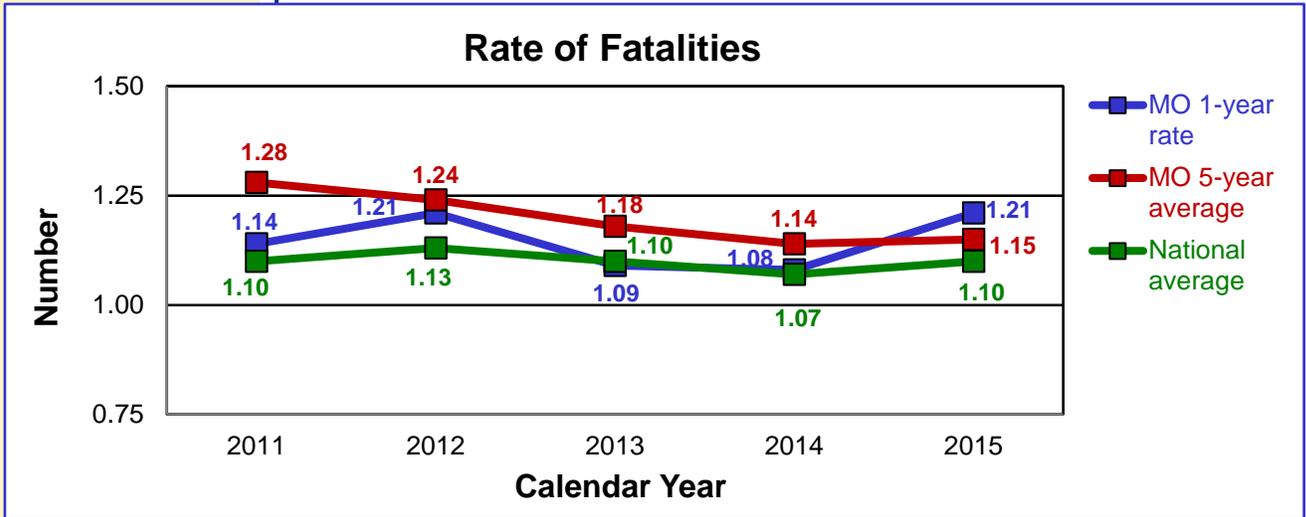
Crash data from 2010 to 2014 showed the leading contributing circumstances that can be attributed to driver behavior were substance impaired driving, driving too fast for conditions, exceeding the speed limit, distraction/inattention, following too closely and fatigue. Crash statistics also showed impaired drivers had an unbuckled fatality rate of 87 percent. This group of drivers makes two deadly decisions: to drive impaired and unbelted. Once 2015 MSHP crash files are closed, more extensive analysis will be completed.

Unofficial reporting for the first two quarters of 2016 show 400 fatalities on Missouri roadways, which is a 4 percent increase from the same time last year.

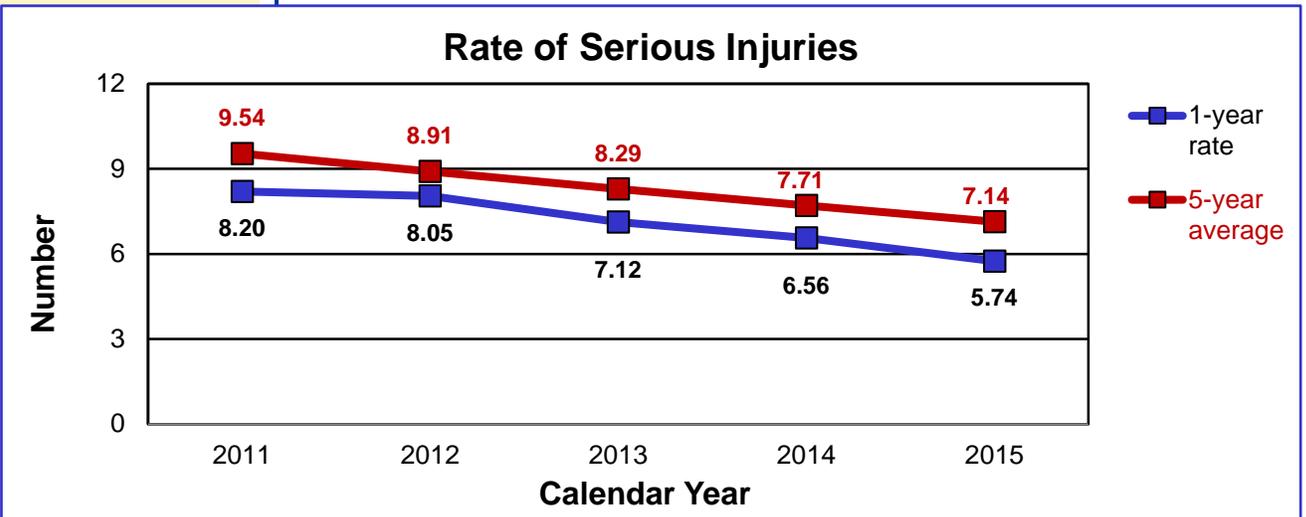


\*YTD 2016 – Second quarter fatalities were derived from MSHP radio reports.

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\*2016 – Due to a backlog of crash reports into STARS, the serious-injury measure only includes data derived from TMS. Second quarter 2016 data is not available on the MSHP radio reports and is incomplete in TMS.



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State Traffic and Highway  
Safety 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.

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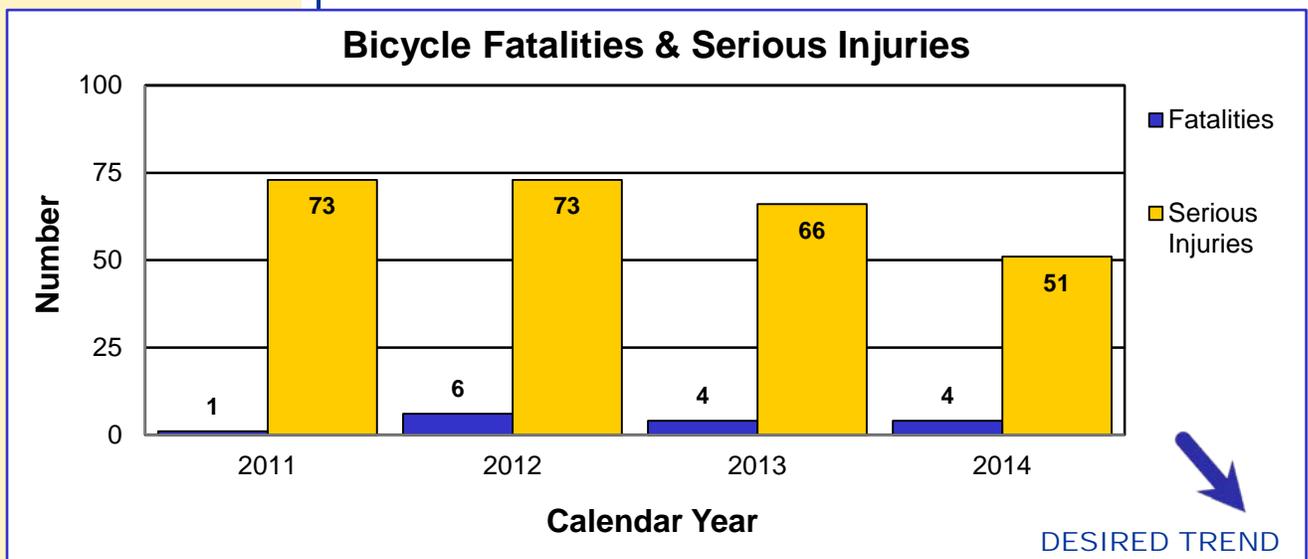
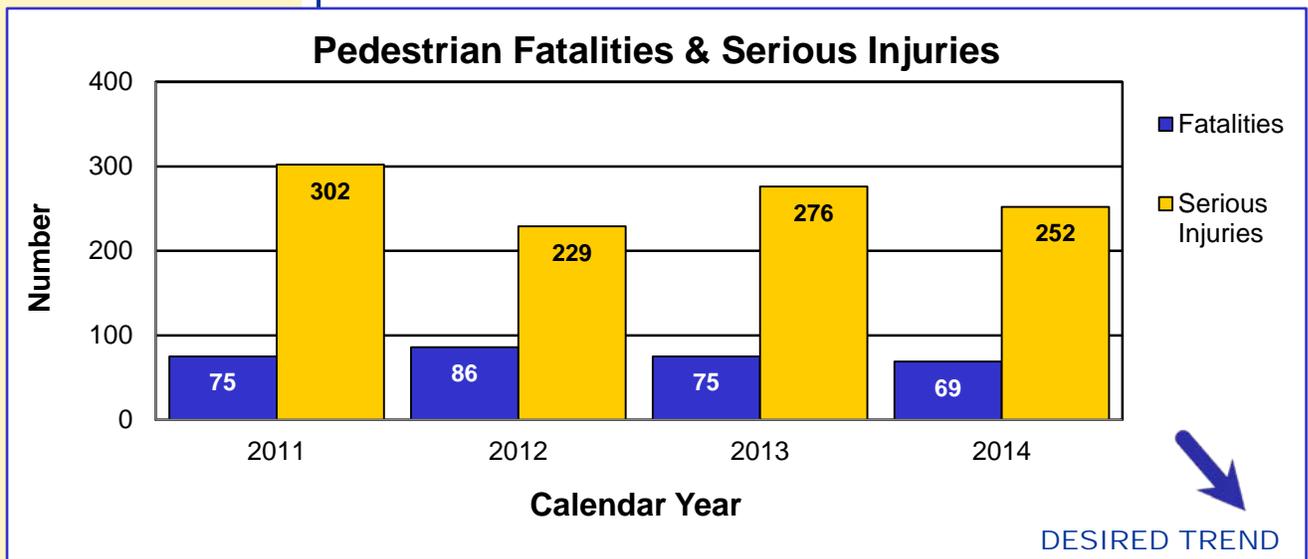
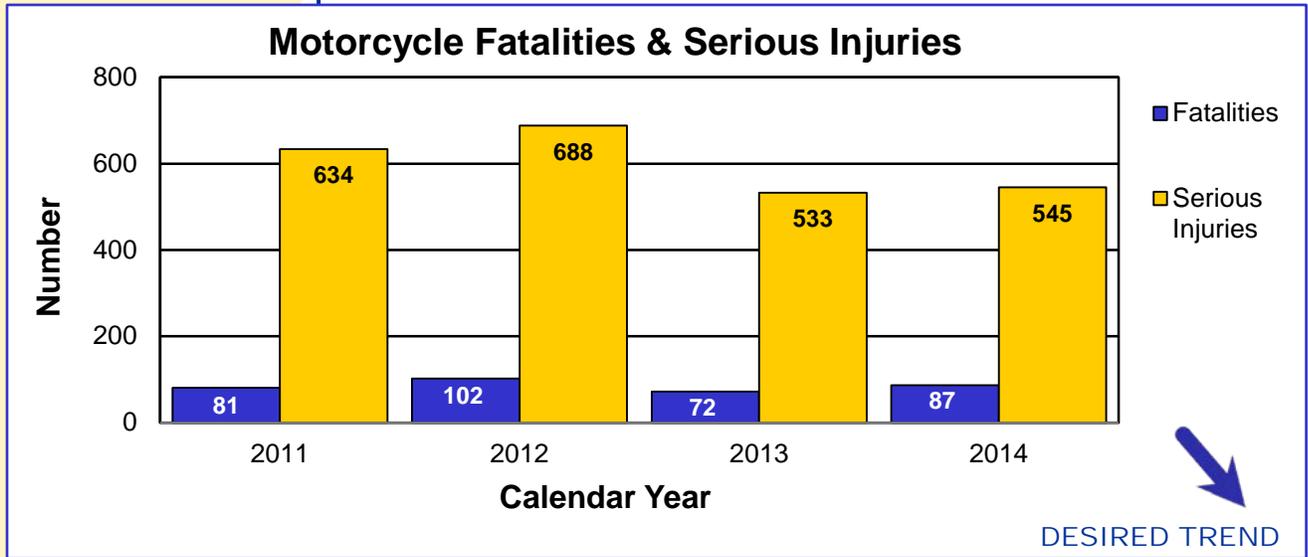
### *Number of vulnerable roadway user fatalities and serious injuries – 1b*

In 2014, vulnerable roadway users were 21 percent of the total number of fatalities. Pedestrian fatalities decreased in 2014 by 8 percent. Motorcycle fatalities increased by 21 percent and bicycle fatalities remained unchanged. Fatality data for 2015 are incomplete.

Motorcycle, pedestrian and bicycle serious injuries experienced a downward trend in 2014. Serious injury data for 2015 are incomplete.



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State Traffic and Highway  
Safety Engineer

## KEEP CUSTOMERS AND OURSELVES SAFE

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

**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 or the crash occurred at an intersection or within a curve. Currently, the Highway Patrol is experiencing a lag in the data entry, which prohibits MoDOT from using complete crash data for 2015. 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.

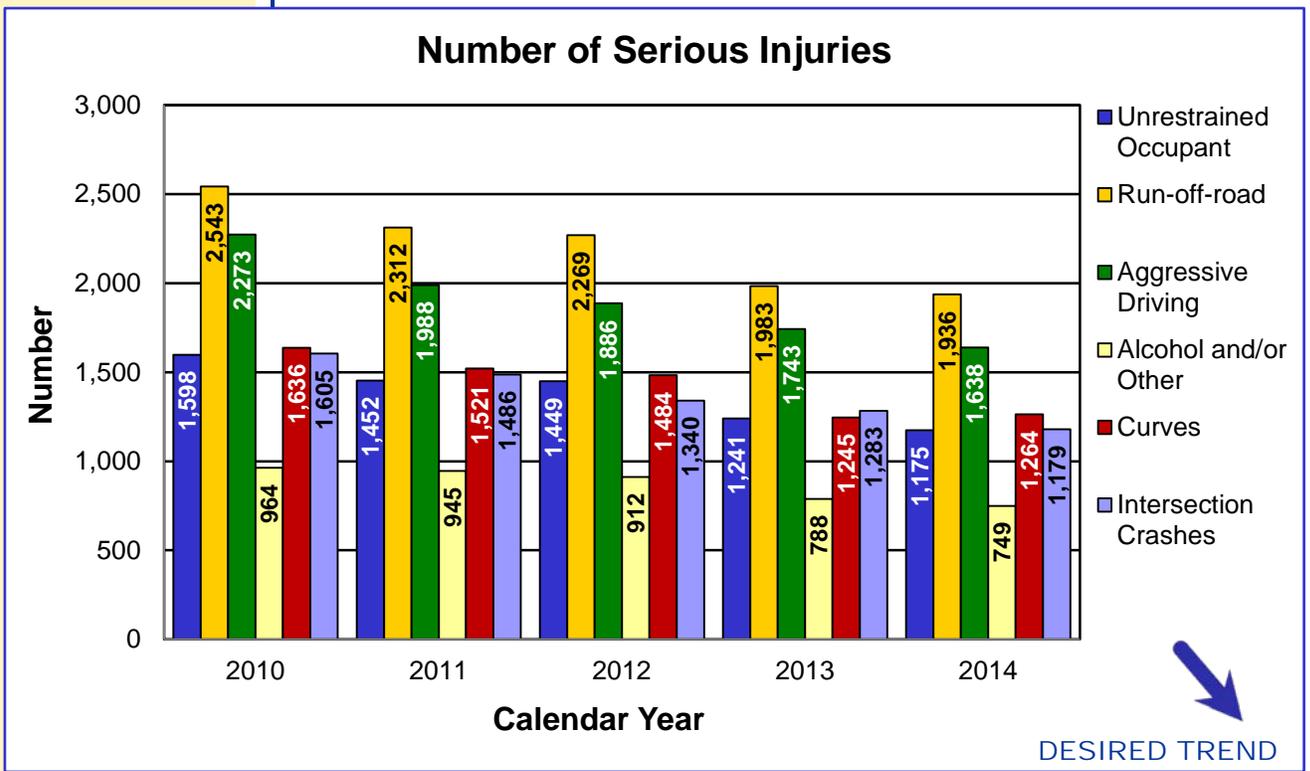
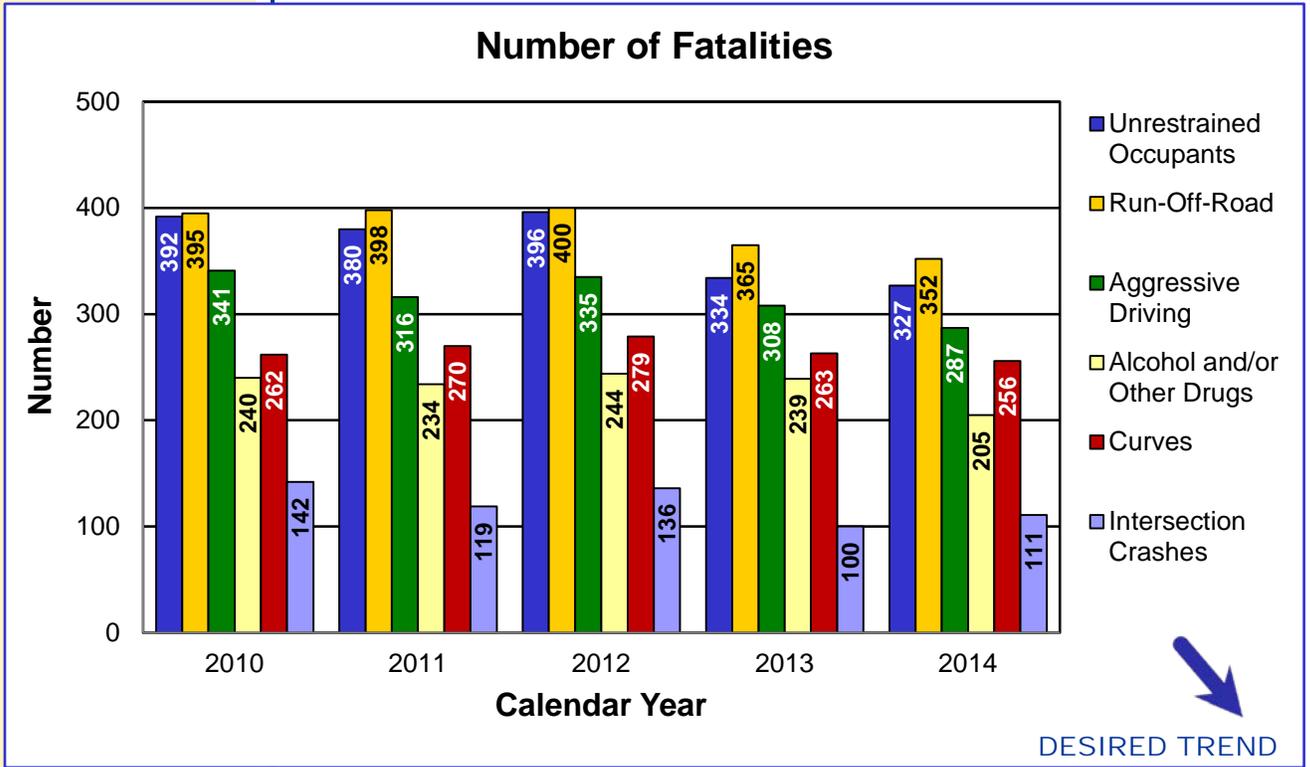
Recording and monitoring crash data is an important part of improving safety for Missouri drivers. But without looking at the causes of these incidents, the data is nothing but numbers. Looking for the reasons why an incident occurs is MoDOT's best approach to address the problem. With that approach,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

The general trend for both fatalities and serious injuries has declined for the last five years. Comparing the number of fatalities in 2013 to 2014 shows the following results: 2 percent reduction in unrestrained occupants, 4 percent reduction in run-off-road, 7 percent reduction in aggressive driving, 14 percent reduction in alcohol and/or other drugs, 3 percent reduction in curve related, and an 11 percent increase in intersection related. Comparing the number of serious injuries in 2013 to 2014 shows the following results: 5 percent reduction in unrestrained occupants, 2 percent reduction in run-off-road, 6 percent reduction in aggressive driving, 5 percent reduction in alcohol and/or other drugs, a 2 percent increase in curve related, and an 8 percent reduction in intersection related.

With increased traffic on Missouri roadways, it will be difficult to maintain the downward trends for each of these causes. The primary current initiatives include adding shoulders and rumble strips to minor roads and improving intersection safety. While driver behavior is difficult to correct, MoDOT continues to focus on using funds to target locations and behaviors based on crash data analysis.



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State Traffic and Highway  
Safety Engineer

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

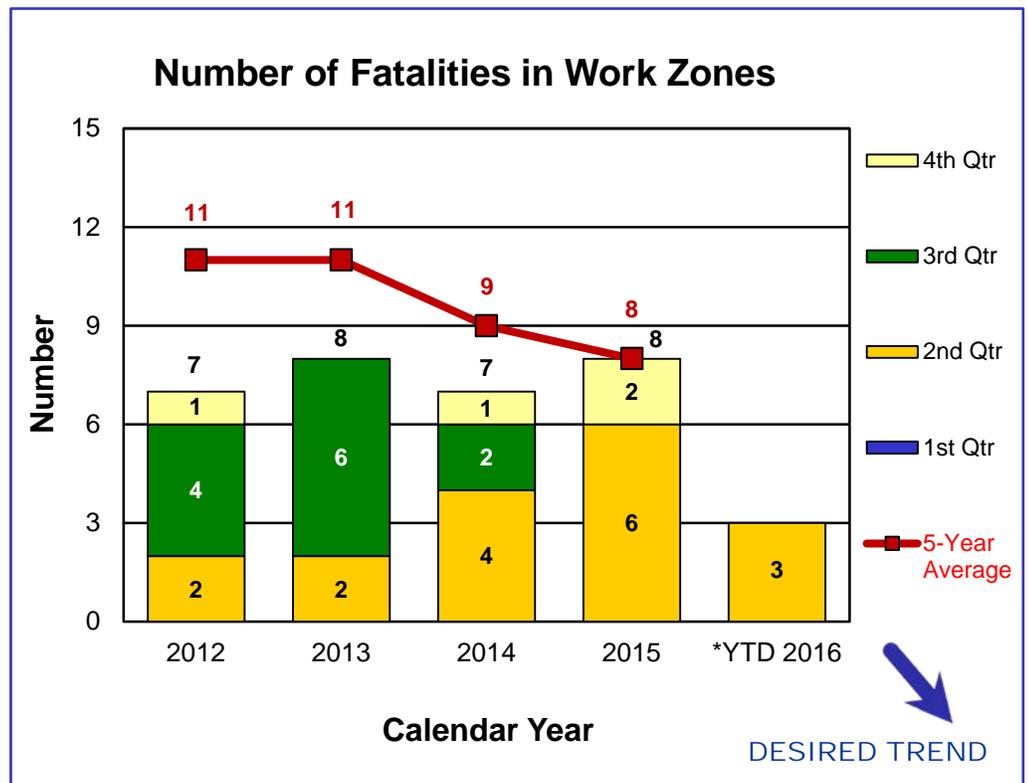
**MEASUREMENT  
DRIVER:**  
Julie Stotlemeyer  
Traffic Liaison Engineer

**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.

Work zone safety is at the center of MoDOT's safety culture. It is a 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. This is demonstrated by the partnership MoDOT has with contractors and utility companies using the same personal protection equipment it uses. Staying safe in work zones also is a partnership the department shares 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.

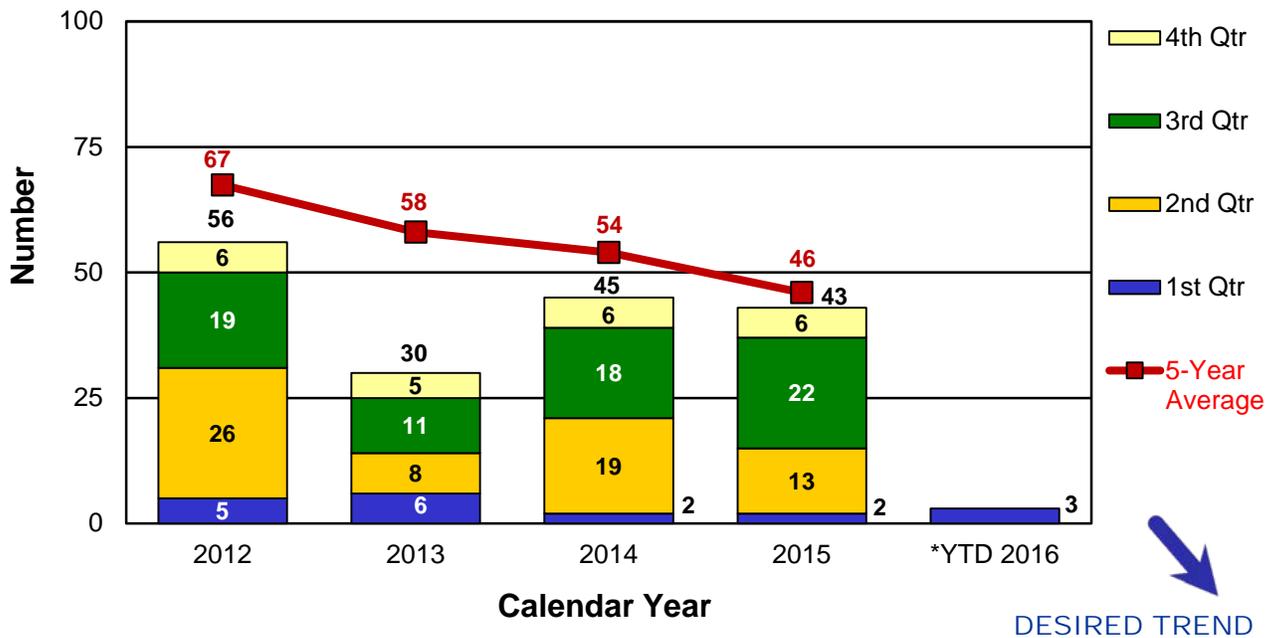
Based on information currently available for the second quarter of 2016, there have been three work zone crashes that resulted in three fatalities in Missouri. Of these fatalities, two were unbuckled and one was a flagger in a work zone. Two crashes in work zones involved large trucks and occurred on divided highways. One was a rear-end crash and the other was head-on.



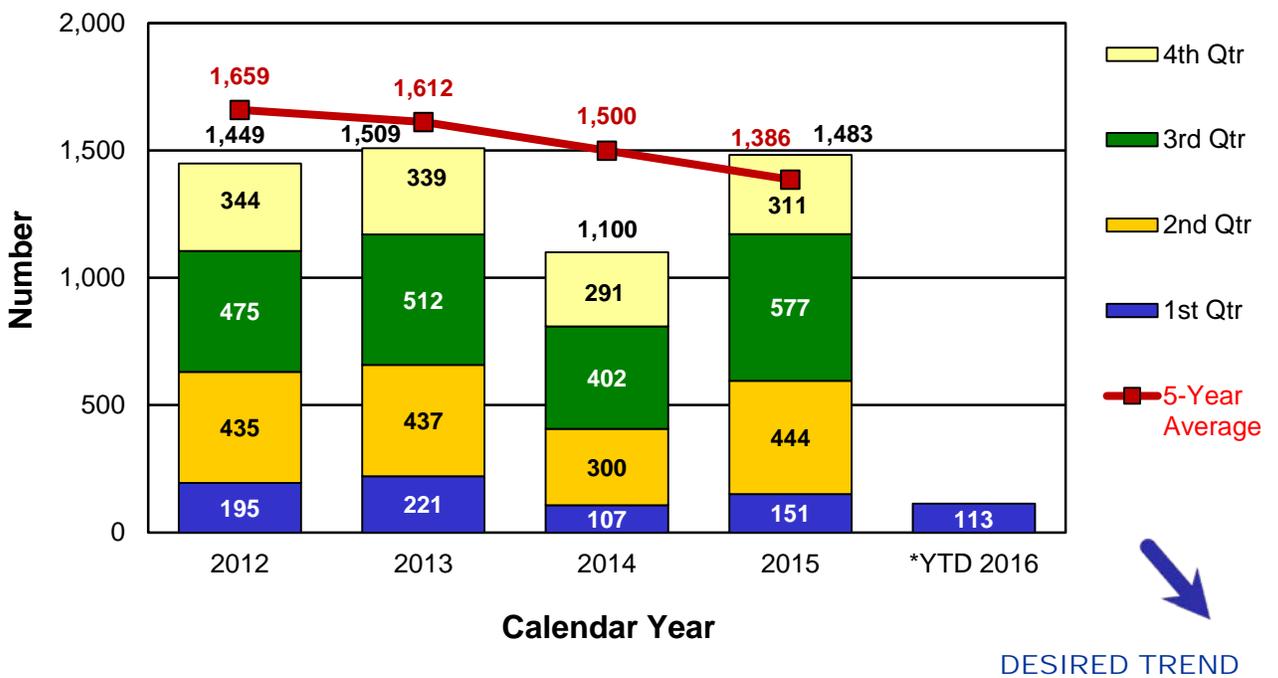
\*YTD 2016 – Fatalities derived from TMS.

# KEEP CUSTOMERS AND OURSELVES SAFE

## Number of Serious Injuries in Work Zones



## Number of Crashes in Work Zones



\*YTD 2016 – Due to a backlog of crash reports into STARS, these measures are not final and only illustrate data derived from TMS. Second quarter 2016 data is unavailable through the MSHR radio reports and is incomplete in TMS.

**RESULT DRIVER:**  
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Safety Engineer

# KEEP CUSTOMERS AND OURSELVES SAFE

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

**MEASUREMENT DRIVER:**  
Scott Jones  
Highway Safety Program  
Administrator

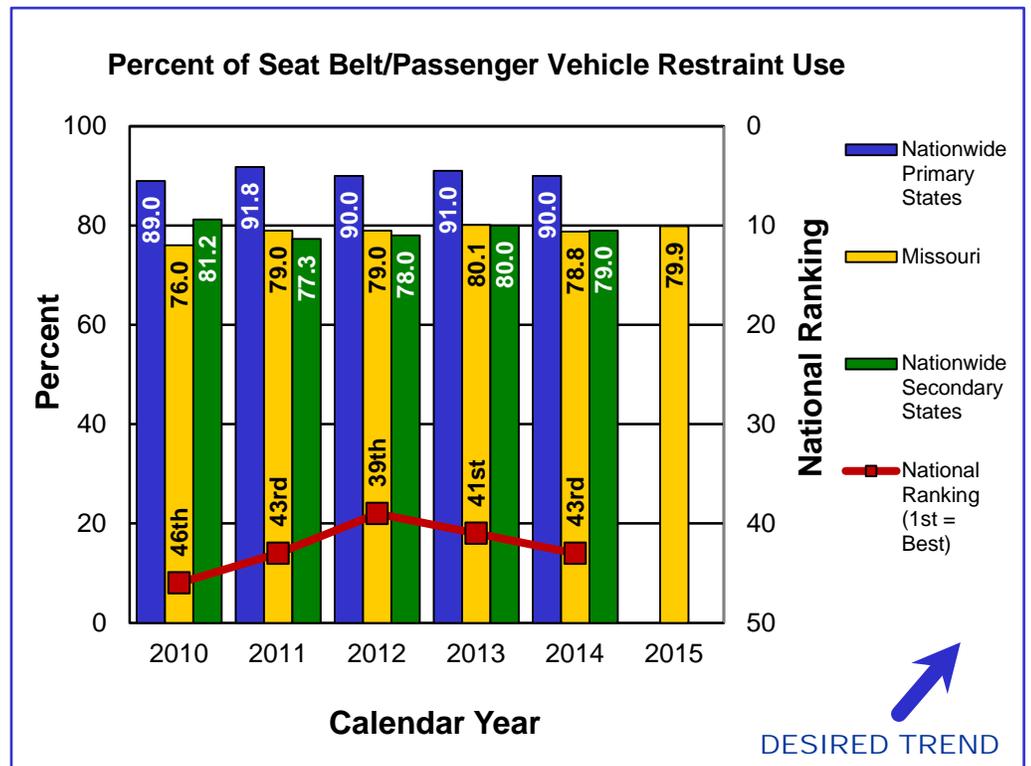
**PURPOSE OF THE MEASURE:**  
This measure tracks annual trends in seat belt use in passenger vehicles. This data drives the development and focus of the Missouri Highway Safety Plan and supports Missouri's Blueprint to Save More Lives.

**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.

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 both approaches, 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 46 municipalities and two counties that have adopted primary seat belt ordinances, representing 23 percent of the state's population.

Seat belt use in Missouri for 2015 was 80 percent. The national average for seat belt use in 2014 was 87 percent. Missouri's national ranking is currently 43rd. Only seven states rank lower in seat belt use than Missouri.

Missouri's seat belt use has plateaued. 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.



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Safety Engineer

## KEEP CUSTOMERS AND OURSELVES SAFE

### *Number and rate of fatalities and serious injuries for commercial motor vehicle crashes – 1f*

**MEASUREMENT DRIVER:**  
Mark Biesemeyer  
Motor Carrier Services  
Program Manager

**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.

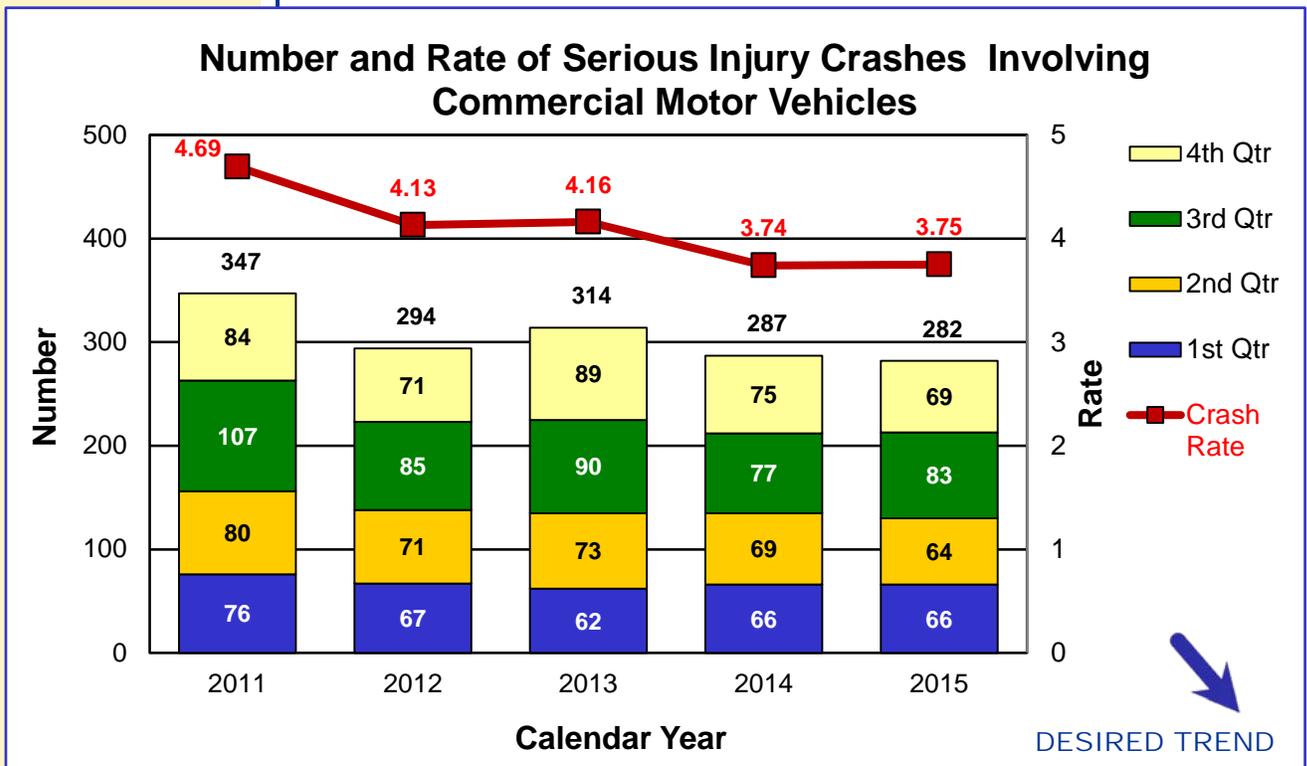
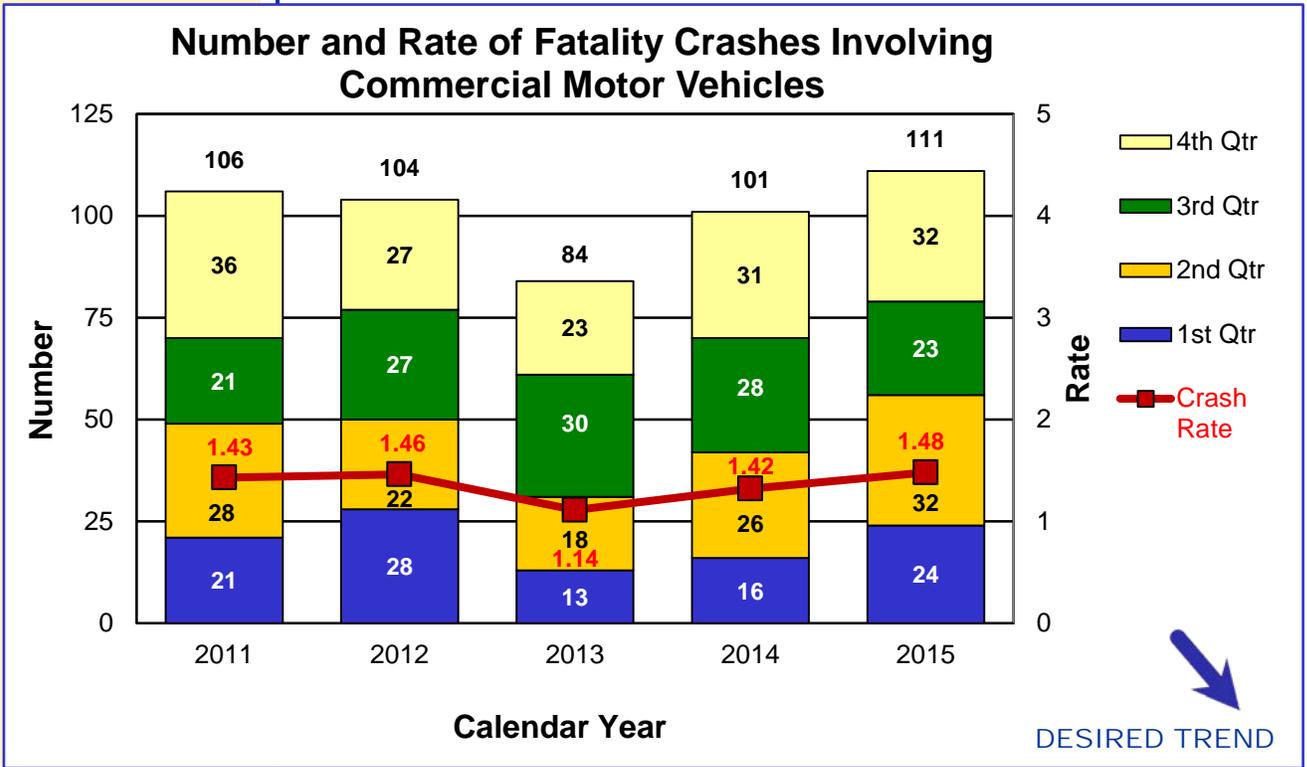
Commercial motor vehicles are the lifeblood of Missouri's economy. They transport the goods and materials that keep the nation moving. Partnering with the Missouri State Highway Patrol and St. Louis and Kansas City police departments, MoDOT does everything in its power to keep CMV drivers safe and their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

Between 2011 and 2015, fatal crashes involving a CMV increased by 4.7 percent, and the fatality crash rate increased from 1.43 to 1.48 per 100 million CMV vehicle miles traveled. In 2015 the 111 fatality crashes Missouri experienced is 10 more than 2014 or a 9.9 percent increase. This resulted in a 2015 crash rate of 1.48 as compared to the 1.42 rate for 2014.

Serious-injury crashes involving a CMV decreased by 18.7 percent and the serious-injury crash rate dropped from 4.69 to 3.75 per 100 million CMV vehicle miles traveled between 2011 and 2015. The 282 serious-injury crashes Missouri experienced in 2015 is five fewer than reported for 2014 or a 1.7 percent decrease. This resulted in a 2015 crash rate of 3.75 as compared to the 3.74 rate for 2014.



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

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Safety Engineer

# KEEP CUSTOMERS AND OURSELVES SAFE

## Number of lost workdays – 1g

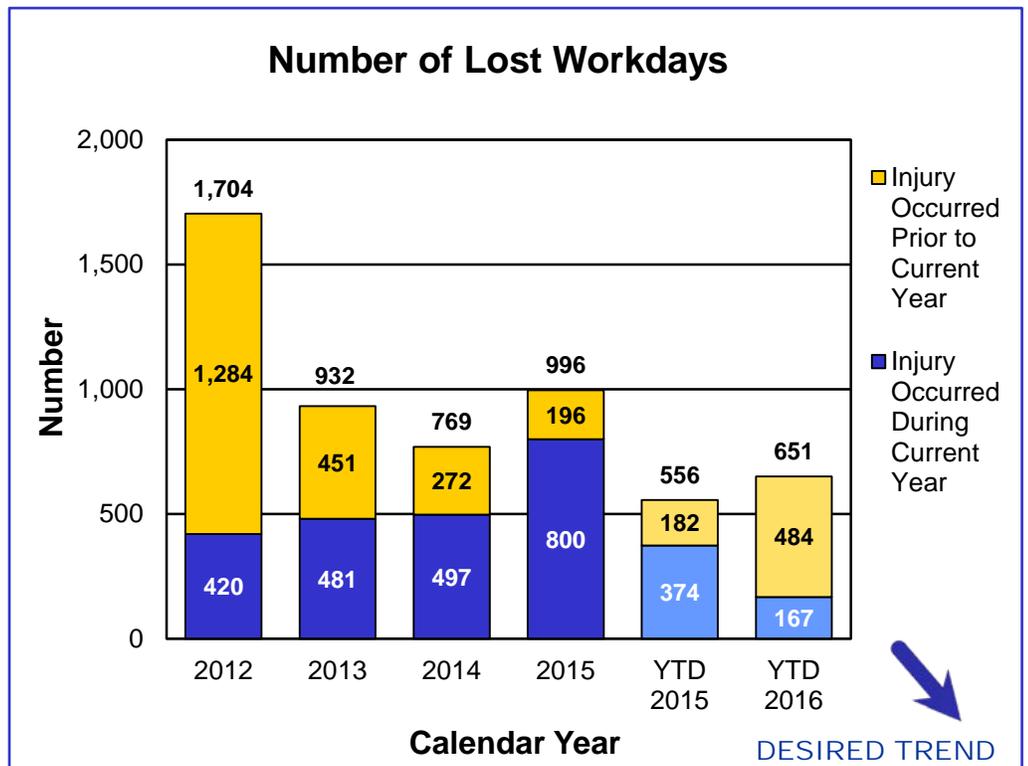
**MEASUREMENT DRIVER:**  
Roberta Jacobson  
Claims Administration Manager

**PURPOSE OF THE MEASURE:**  
This measure tracks the actual number of days employees cannot work due to work-related injuries.

**MEASUREMENT AND DATA COLLECTION:**  
The data for this measure is collected from Riskmaster, the department's risk management claims administration software.

The impact of work-related injuries cannot be underestimated. Employees injured at work not only affect the department, but can disrupt the personal lives of MoDOT employees and their families. Measuring lost workdays shows more than a number on a chart. These are people whose lives can be changed by a split second of inattention or poor preparation.

For the first two quarters of 2016, the total number of lost workdays increased 17 percent from the same period in 2015. There were two incidents in which employees were lifting equipment or materials, accounting for 26 percent of the lost workdays. Another 20 percent of the lost workdays were attributable to one motor vehicle incident involving another party. One incident involving ice/snow from a prior year accounted for 10 percent of the lost workdays.



**RESULT DRIVER:**  
Eileen Rackers  
State Traffic and Highway  
Safety Engineer

**MEASUREMENT  
DRIVER:**  
Jeff Padgett  
Risk and Benefits  
Management Director

**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 work-  
related 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.

## KEEP CUSTOMERS AND OURSELVES SAFE

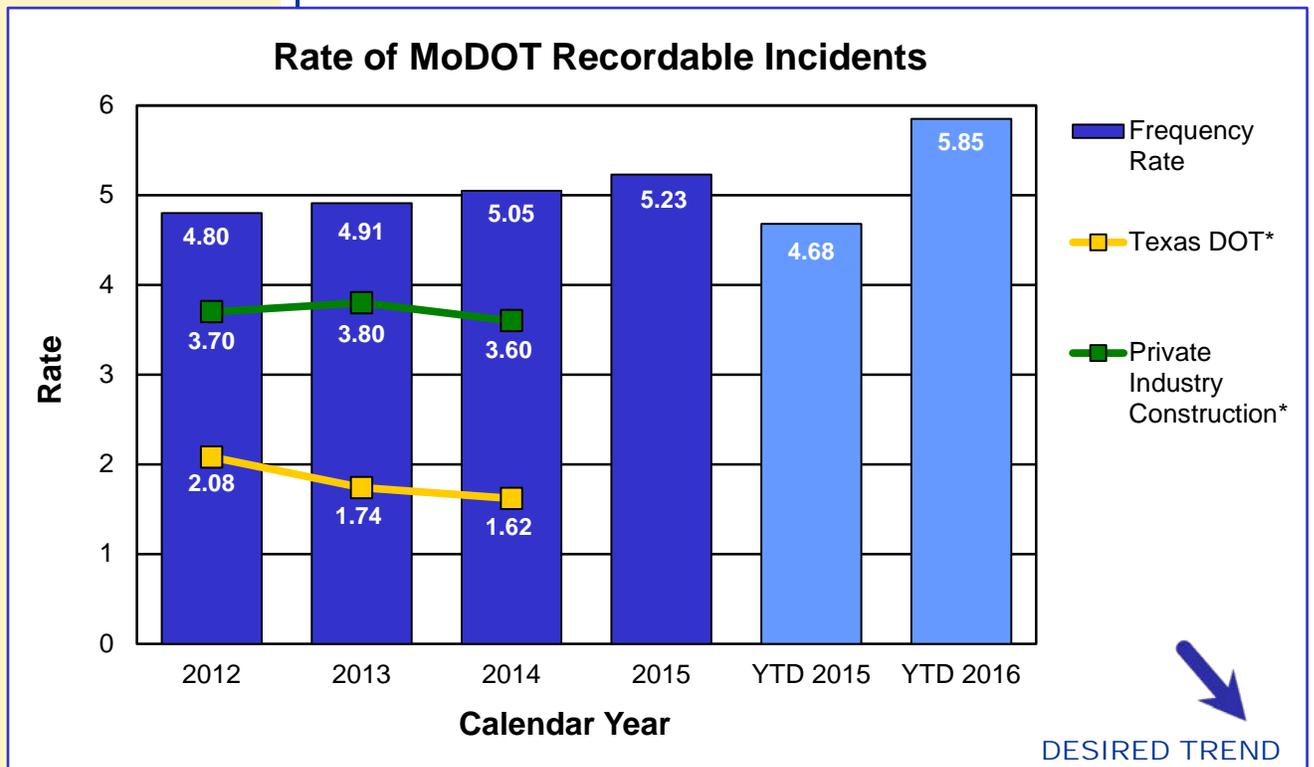
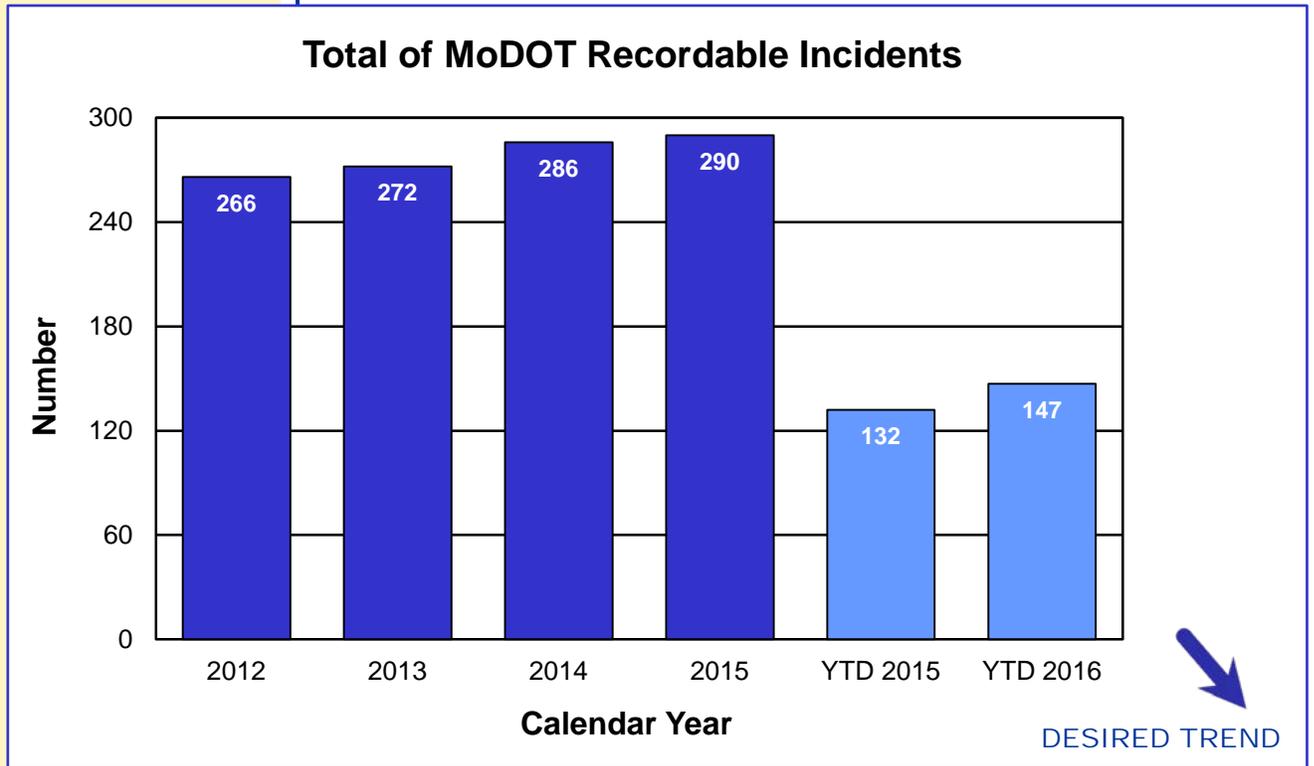
### *Total and rate of MoDOT recordable incidents – 1h*

MoDOT is dedicated to employee safety. Getting home safely is a responsibility every employee shares. To reinforce this value, the “Safety Begins with Me” program reminds all employees that safety is a personal responsibility. Additionally, an agreement is now in place to provide training on “behavior based safety” to employees. Implementation and practice of the techniques provided is expected to result in fewer recordable incidents.

The number of recordable incidents and the rate of recordable incidents increased for the first two quarters of 2016 compared to the same period in 2015. Leading causes of incidents during this reporting period were: slips, trips and falls at 20 percent; struck or injured by at 16 percent; cuts/punctures at 15 percent and strains or injuries at 14 percent. Based on the work activity the employee was doing at the time of the incident, 30 percent of these injuries were equipment related. Another 12 percent were related to bridge work. Roadway maintenance and mowing/brush cutting had 9 percent each.



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\*OSHA private industry and Texas DOT data is not yet available for 2015.

RESULT DRIVER:  
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## KEEP CUSTOMERS AND OURSELVES SAFE

### *General liability claims and costs – 1i*

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.

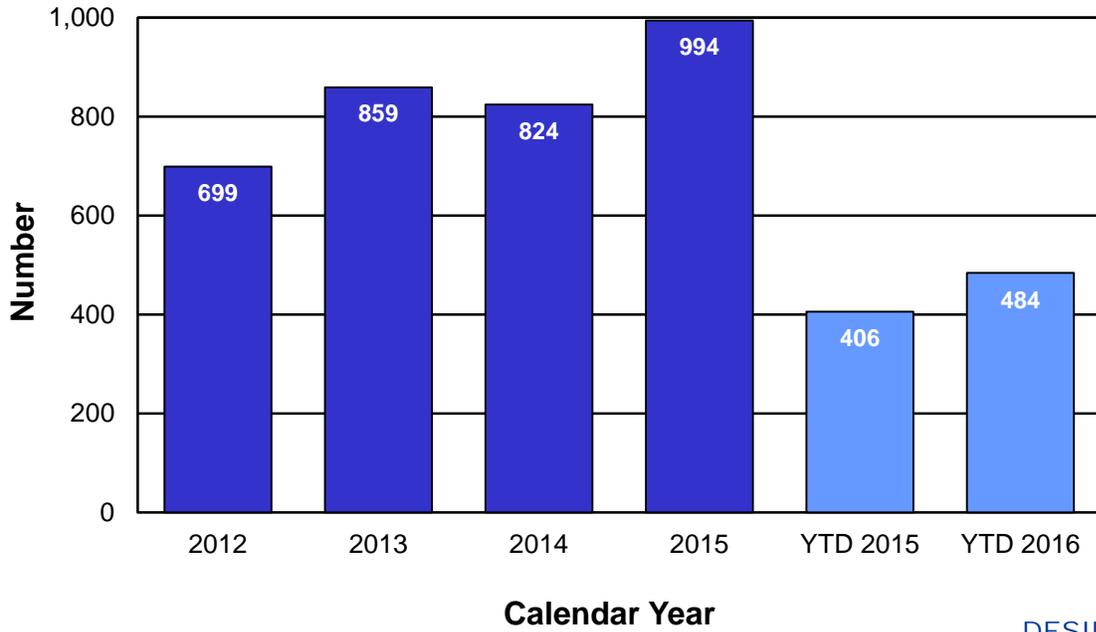
Keeping ourselves and the public safe is MoDOT's top priority. Controlling damage to vehicles and reducing personal injury in work zones, on right of way and other areas under department control helps MoDOT accomplish this goal. Compared to the first two quarters of 2015, there was a 19 percent increase in the number of claims. The majority of claims for the first two quarters of 2016 are attributed to pavement defects. During the same timeframe, there was a 64 percent decrease in the amount paid. The decrease is attributed to the lack of multiple large claims being settled the past two quarters. This quarter, payment was made on 141 claims against the department totaling \$939,407.

Two claims accounted for 49 percent of this quarter's payments. The department settled a claim occurring in 2014 based on the allegation that guardrail should have been in place at the crash location. A vehicle ran off the wet road and overturned several times resulting in permanent severe injuries. The case was settled for \$230,000. Another claim occurring in 2011 had two lawsuits filed against the department. A driver lost control of her vehicle, went through the guard cable, and struck a second vehicle resulting in a fatality and serious injuries. The allegation was made the guard cable was not reasonably safe because it did not stop the vehicle from crossing over into oncoming traffic. The claim with serious injuries was settled for \$25,000 and the fatality was settled for \$175,000.



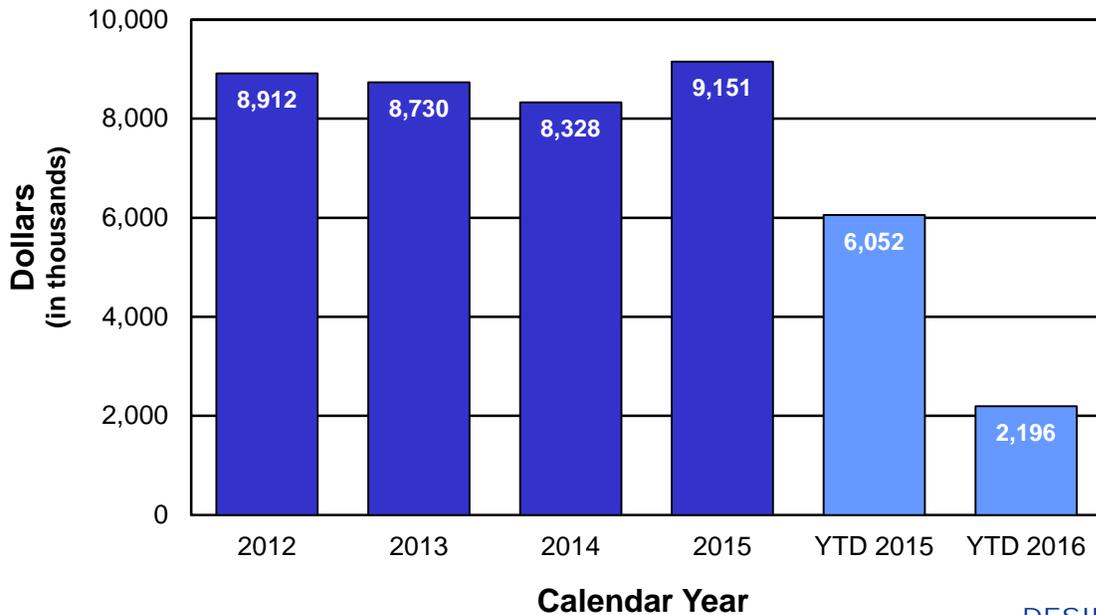
# KEEP CUSTOMERS AND OURSELVES SAFE

## Number of Claims for General Liability



DESIRED TREND

## Amount Paid in Claims for General Liability



DESIRED TREND