KEEP CUSTOMERS AND OURSELVES SAFE

Mark Shelton, District 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.

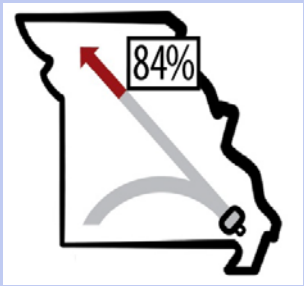
RESULT DRIVER:
Mark Shelton
District Engineer

MEASUREMENT DRIVER:
Tonya Lohman
District Maintenance and Traffic Engineer

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 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.

The targets are based on a 9 percent improvement rate from the immediate prior year fatalities and a 5 percent improvement in serious injuries from the immediate prior year.



KEEP CUSTOMERS AND OURSELVES SAFE

Number and rate of fatalities and serious injuries – 1a

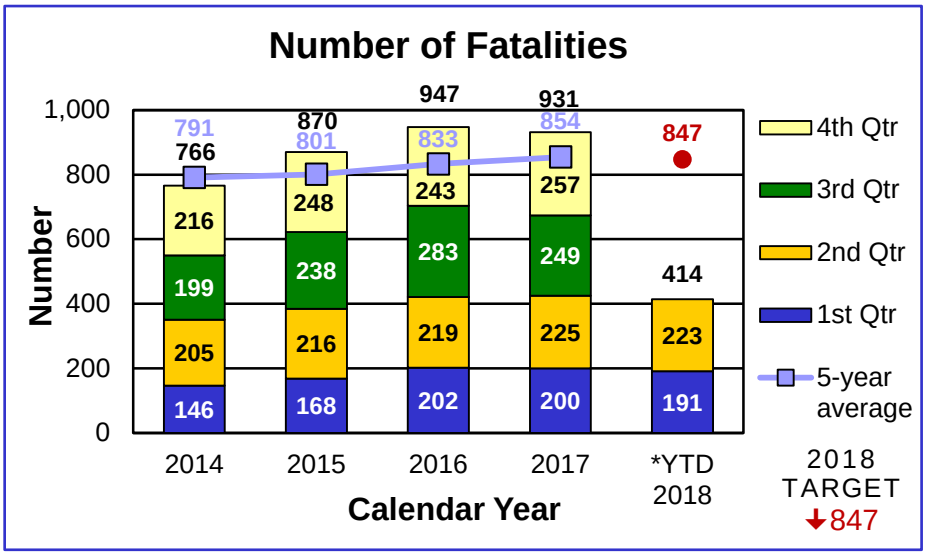
MoDOT wants everyone to reach their destination safely, so all can go home to their families each day. *Missouri's Blueprint – A Partnership Toward Zero Deaths* is Missouri's strategic highway safety plan designed to reduce the number and severity of traffic crashes using the four key disciplines of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

MoDOT is improving safety culture through Statewide Strategic Initiatives such as Buckle Up Phone Down. This is an opportunity for citizens and businesses to commit to driving without distractions by putting the phone down and having all passengers use safety belts.

Additionally, MoDOT is using innovation to improve system-wide safety with a prioritized project list based on techniques offered in the Highway Safety Manual, analyzed with benefit cost ratios and implemented via a Design-Build program. The project provides impactful safety techniques such as: upgrading guardrails, applying high friction surface treatment, installing centerline and edge line rumble stripes, as well as adding roundabouts, intersection conflict warning systems and flashing beacons.

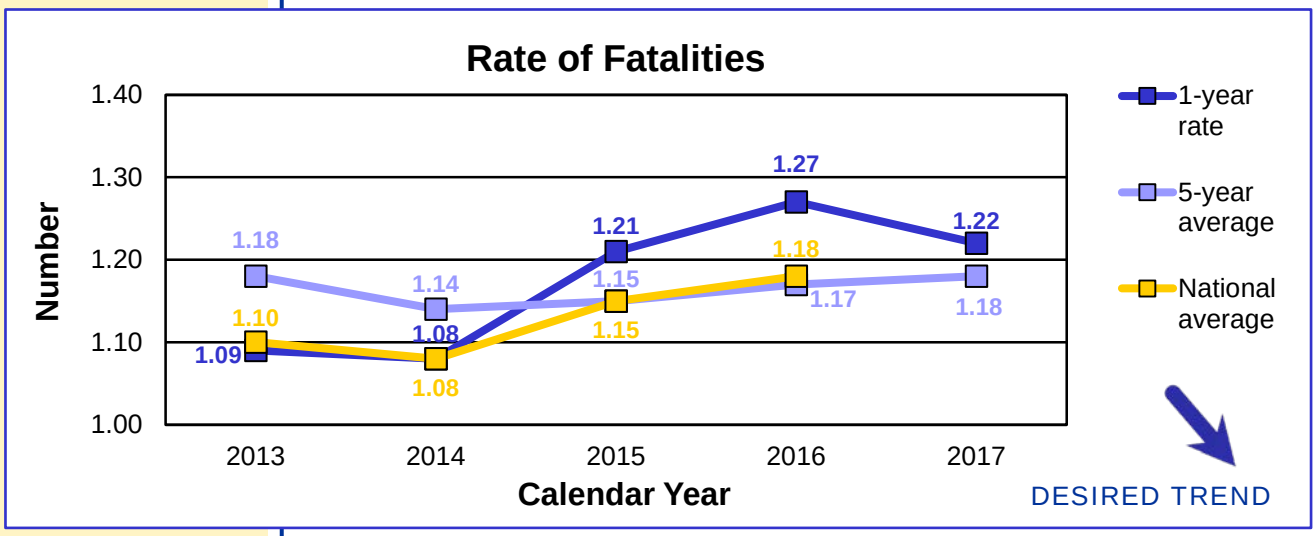
MoDOT is partnering with other agencies and the private sector through predictive analytics to optimize development of enforcement and winter operations resources.

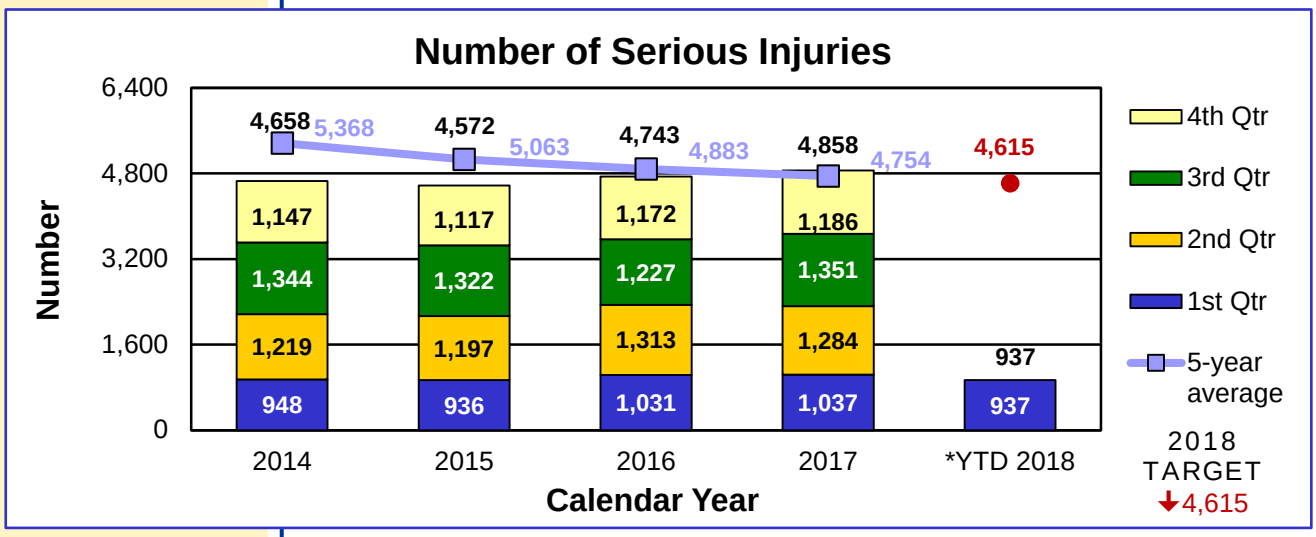
In order to reach our Blueprint goal of 700 or fewer by 2020, new reduction targets have been established for 2018: reduce fatalities by 9 percent and serious injuries by 5 percent. Compared to 2017, fatalities are down 2 percent. Serious injuries have decreased by 10 percent. These targets may seem aggressive but are needed to work toward the ultimate goal of zero fatalities.



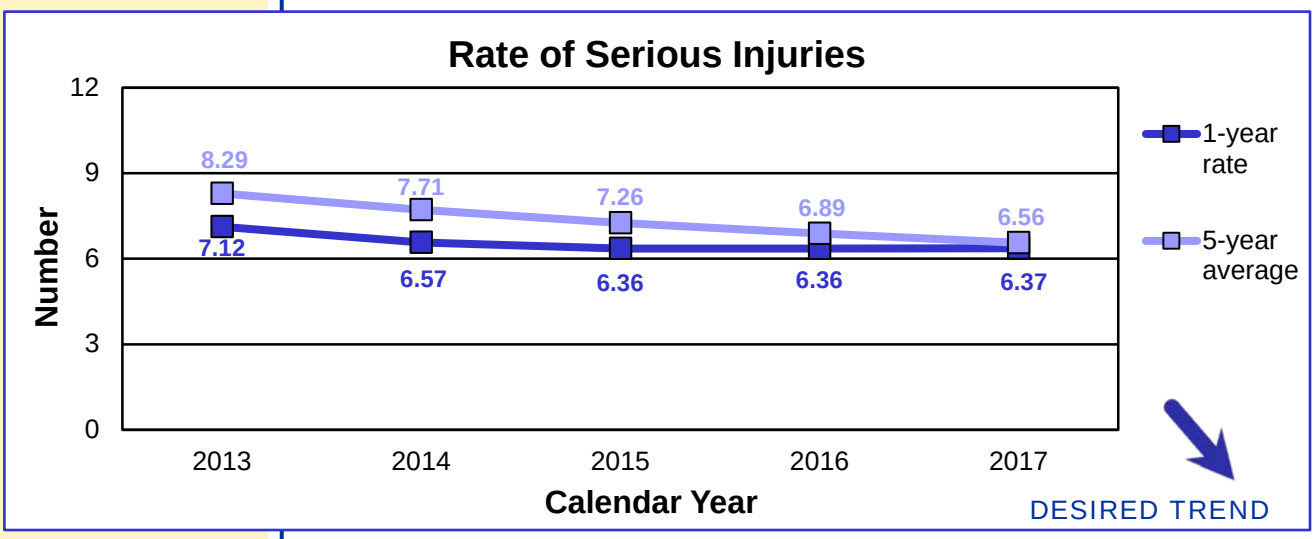
***YTD 2018 – Due to the backlog of data, first quarter fatalities were derived from TMS and second quarter fatalities are from MSHP radio reports.**

KEEP CUSTOMERS AND OURSELVES SAFE





***YTD 2018 – Due to a backlog of crash reports into STARS, the serious injury measure only includes data derived from TMS. Second quarter 2018 data is not available on the MSHP radio reports and is incomplete in TMS**



RESULT DRIVER:
Mark Shelton
District Engineer

MEASUREMENT DRIVER:
Tonya Lohman
District Maintenance and Traffic Engineer

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-related 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 2017, vulnerable roadway users were 24 percent of the total number of fatalities. Pedestrian fatalities remained almost unchanged from 2016 to 2017. Motorcycle and bicycle fatalities decreased, 7 percent and 1 percent, respectively.

Motorcycle serious injuries increased by 7 percent in 2017, meanwhile bicyclist injuries decreased 14 percent, and pedestrian injuries were relatively unchanged.

Walking is an essential form of transportation for many Missourians. However, not all pedestrians who die or are injured on the roadway are out walking. Frequently, people are out of their vehicles after an incident occurs and are hit in the crash zone. Others are out of their vehicles to change a tire or check a load. MoDOT is included in the state law encouraging all vehicles to get over for emergency vehicles, tow trucks, utility vehicles and maintenance equipment, to help protect MoDOT employees. But, driver behavior still needs to change so that more vehicles slow down and move over.

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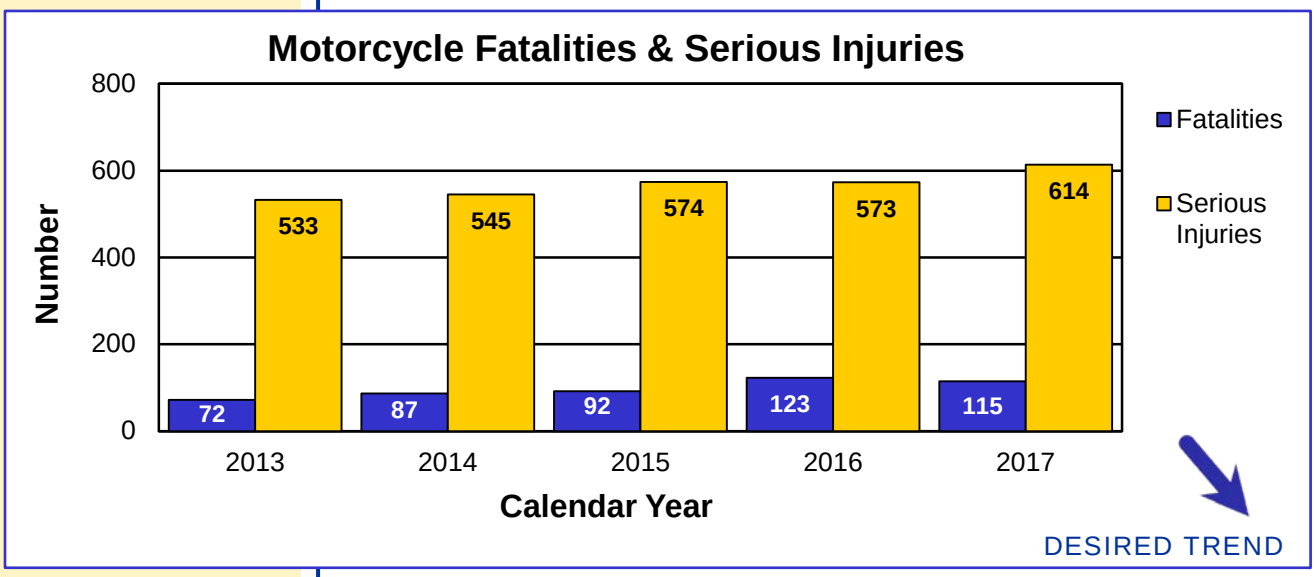
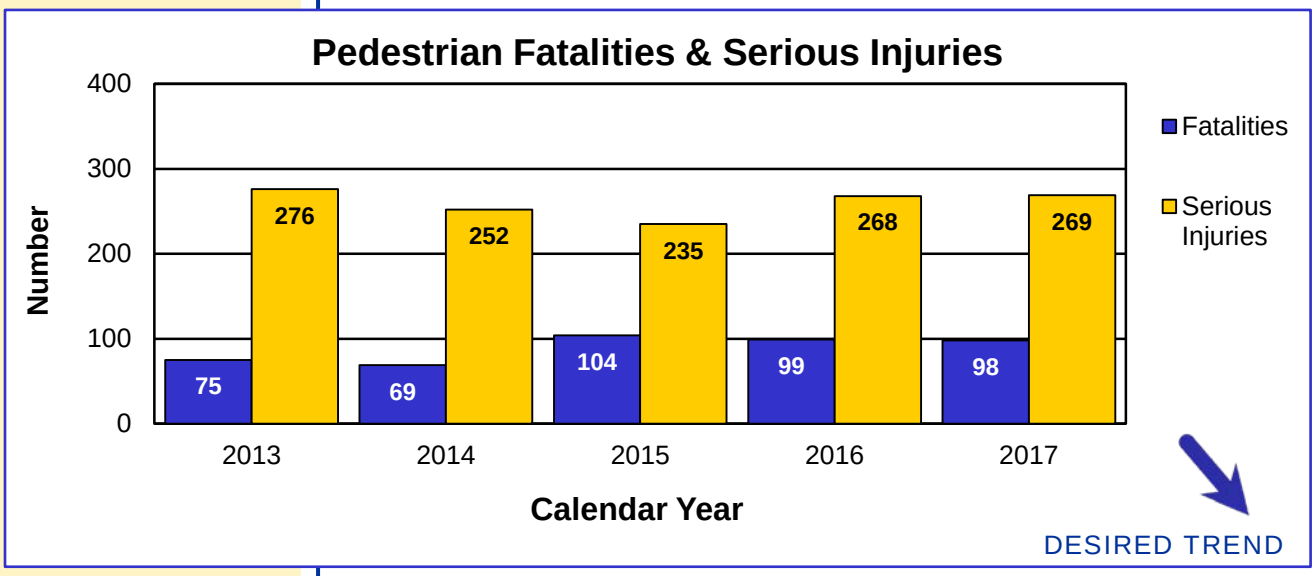
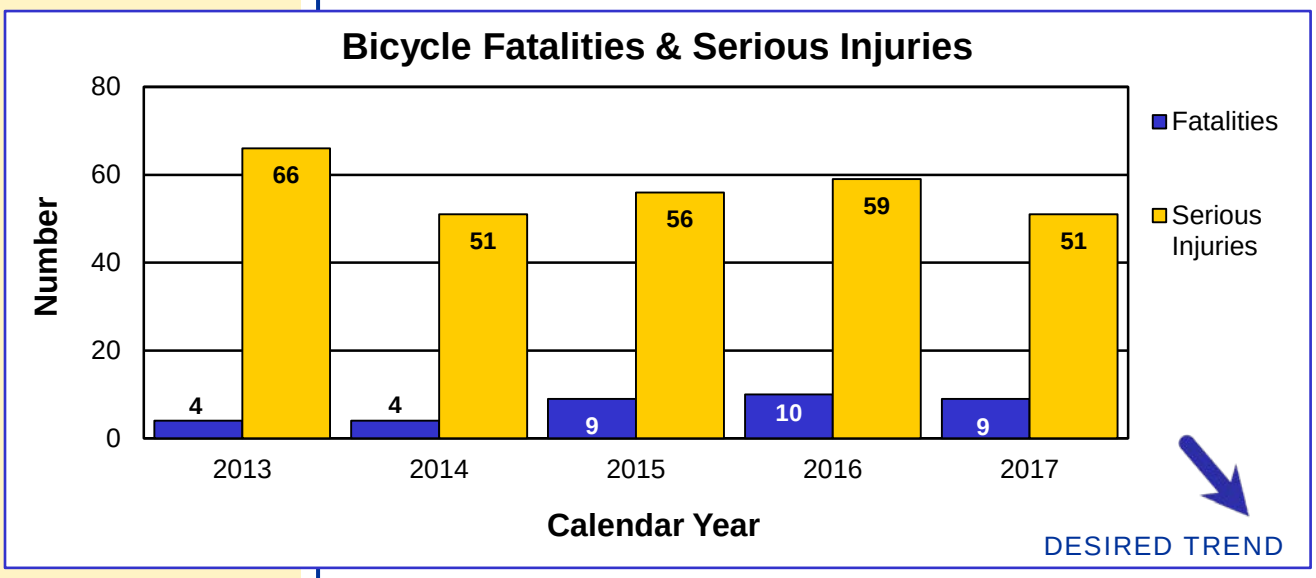






RESULT DRIVER:
Mark Shelton
District Engineer

MEASUREMENT DRIVER:
Jon Nelson
Assistant to the State Highway Safety and Traffic 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.

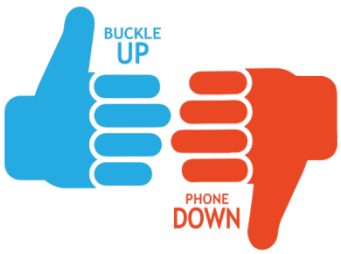
KEEP CUSTOMERS AND OURSELVES SAFE

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

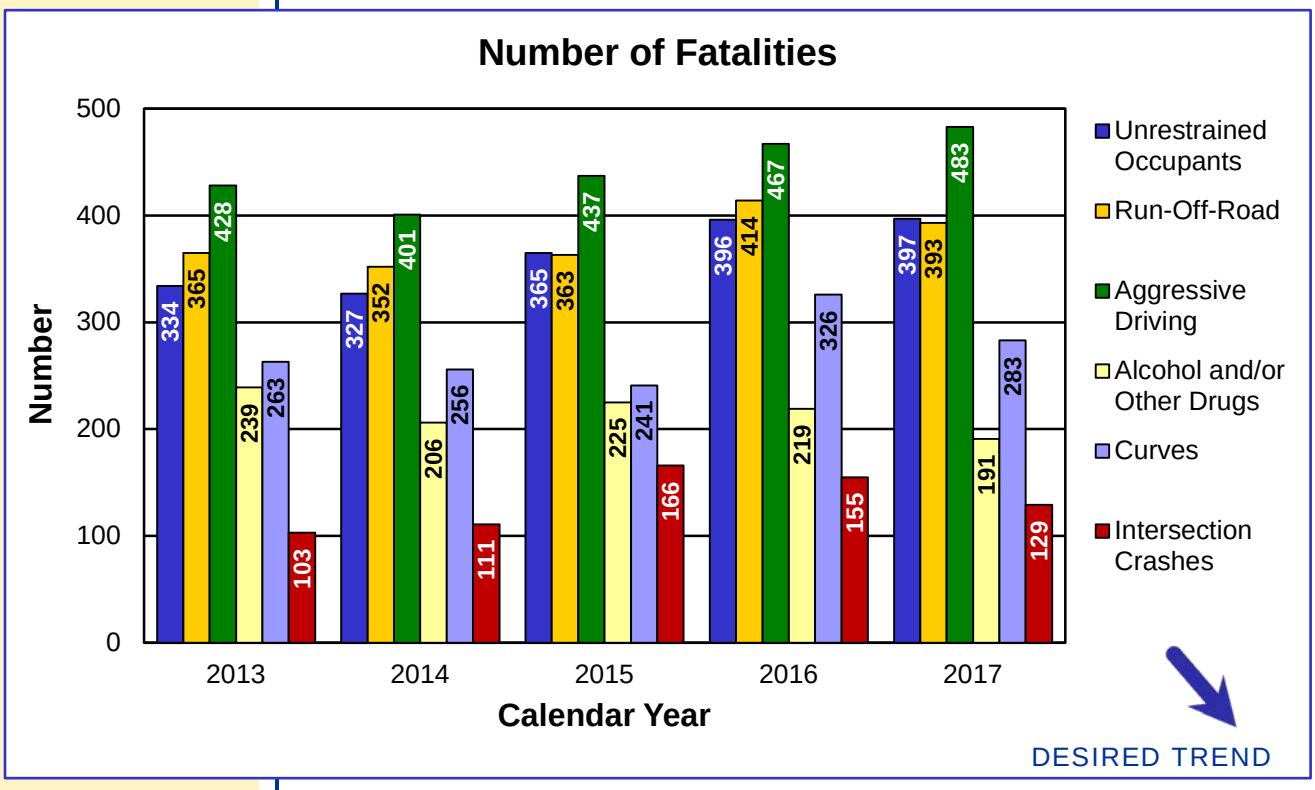
MoDOT's first value and tangible result is to keep customers and ourselves safe. The greatest challenge in providing this is the recurring frequency of fatal and serious crashes on Missouri roadways. In order to combat this, MoDOT utilizes a comprehensive data-driven analysis to identify the most common contributing circumstances of severe crashes. By identifying behaviors and characteristics most closely associated with these crashes, MoDOT can make more informed decisions to address the problem. Though the most common causes are related to human behavior, MoDOT can help implement solutions through education, enforcement and engineering to minimize poor decisions or the impact of the resulting consequences.

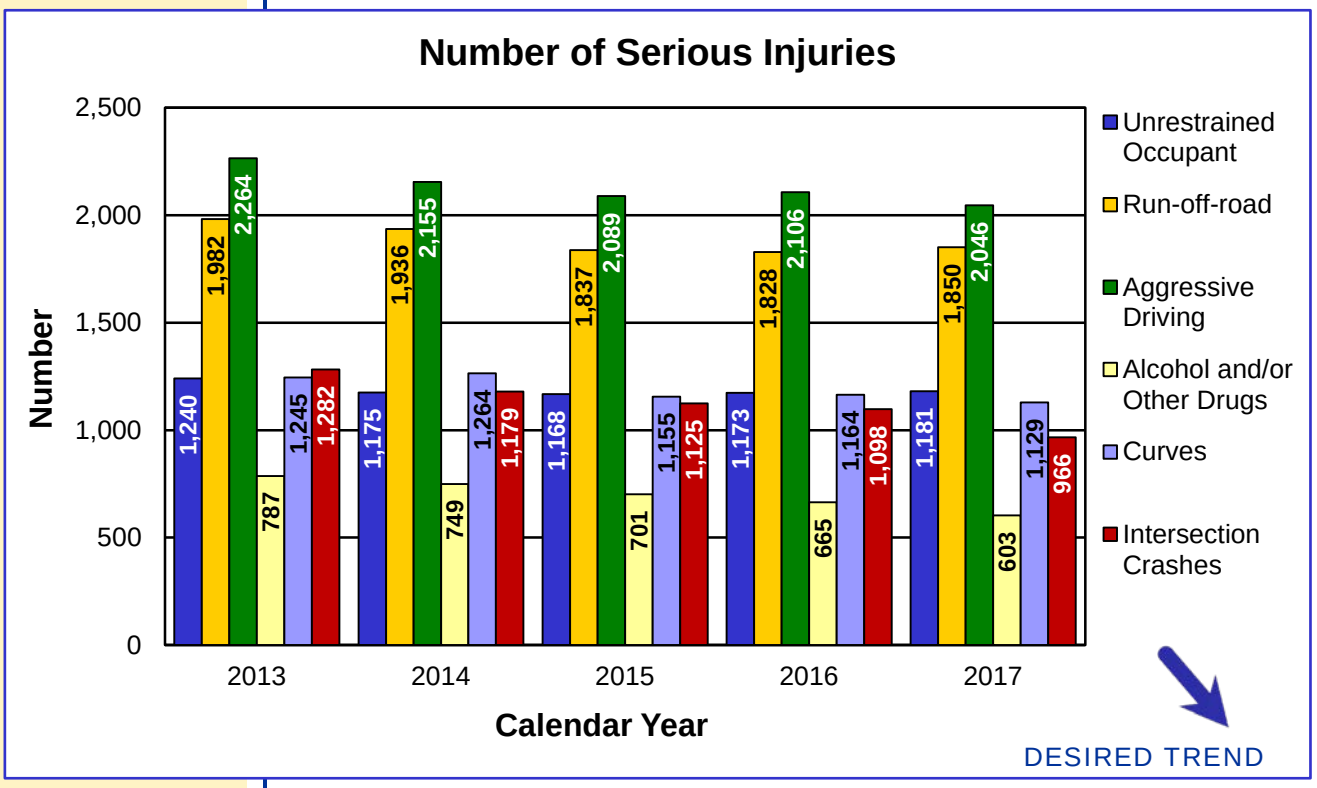
With 932 traffic fatalities in 2017, aggressive driving and impaired driving continued to be the leading behavioral causes of severe crashes in Missouri. These poor driving behaviors have a direct impact on the occurrence of run-off road crashes, particularly in curves and intersection crashes. When coupled with the decision to not buckle up, the results are even more deadly. In 2017, only 16 percent of Missourians were unbuckled. However, they accounted for 64 percent of the state's fatalities. Another increasingly troubling behavior is distracted driving. Studies have shown distracted driving significantly increases the risk of having a crash.

Through the STIP, MoDOT continues to program millions of dollars in safety improvements each year: curve improvements, high friction surface treatment, paved shoulders, rumble strips and intersection improvements including J-Turns, turn lanes, roundabouts and pedestrian accommodations. These improvements are being identified through a data-driven, benefit costs analysis to maximize the return on investment. In addition, MoDOT continues to invest in educational and enforcement programs to reduce the occurrence of poor driving behaviors. Substance impaired crashes are trending downward over the last five years, an indication these programs are effective. In addition, the Buckle Up Phone Down campaign has more than 4,600 pledges from individuals and participation from more than 380 organizations. MoDOT will continue implementing programs to reach new audiences and improve the culture of highway safety in Missouri.



KEEP CUSTOMERS AND OURSELVES SAFE





RESULT DRIVER:
Mark Shelton
District Engineer

MEASUREMENT DRIVER:
Steve Campbell
District Construction & Materials 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.

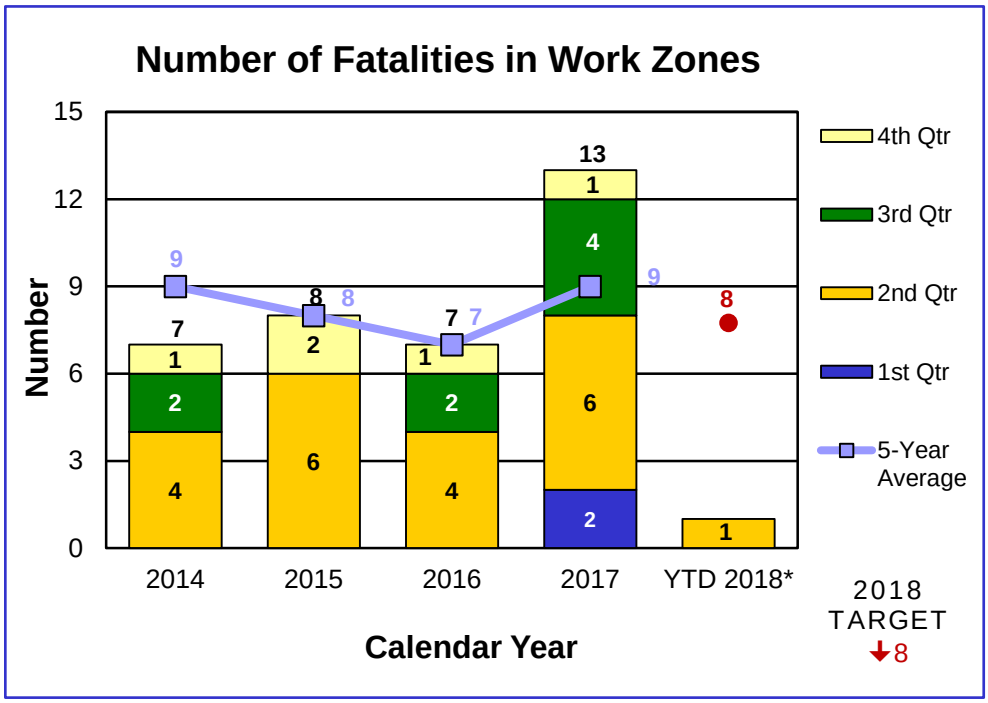
KEEP CUSTOMERS AND OURSELVES SAFE

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

Work zone safety is crucial. MoDOT crews are expected to be safe and visible and expect contractors and utility companies to do the same. 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.

MoDOT's ultimate goal is zero fatalities in work zones. Only through continual efforts from everyone will that happen. There must be constant improvement in both planning and technologies we employ in the field. Based on information currently available through the second quarter of 2018, work zone crashes have accounted for one fatality and five serious injuries.

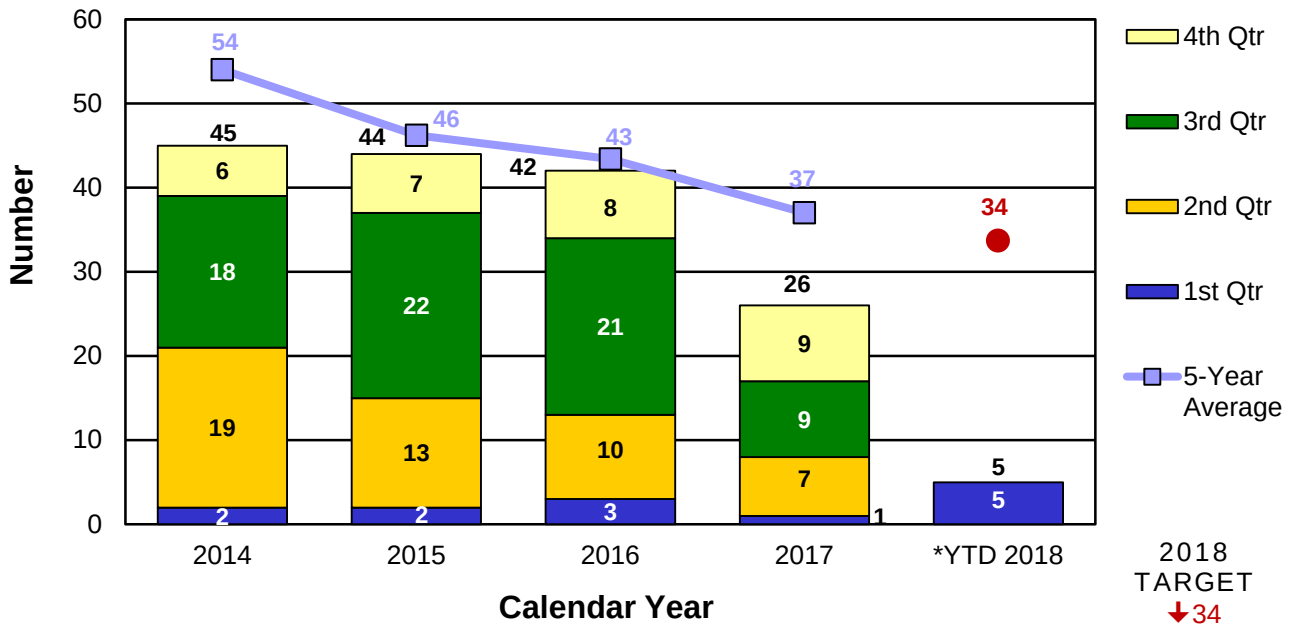
The challenges for 2018 are many. Some of MoDOT's strategic initiatives, such as the use of autonomous Truck Mounted Attenuators and TMA flagger vehicles, will help overcome some of the challenges. Continual monitoring of work zones and deployment of sound queue management strategies are imperative. The time of day and day of week should always be considered before working.



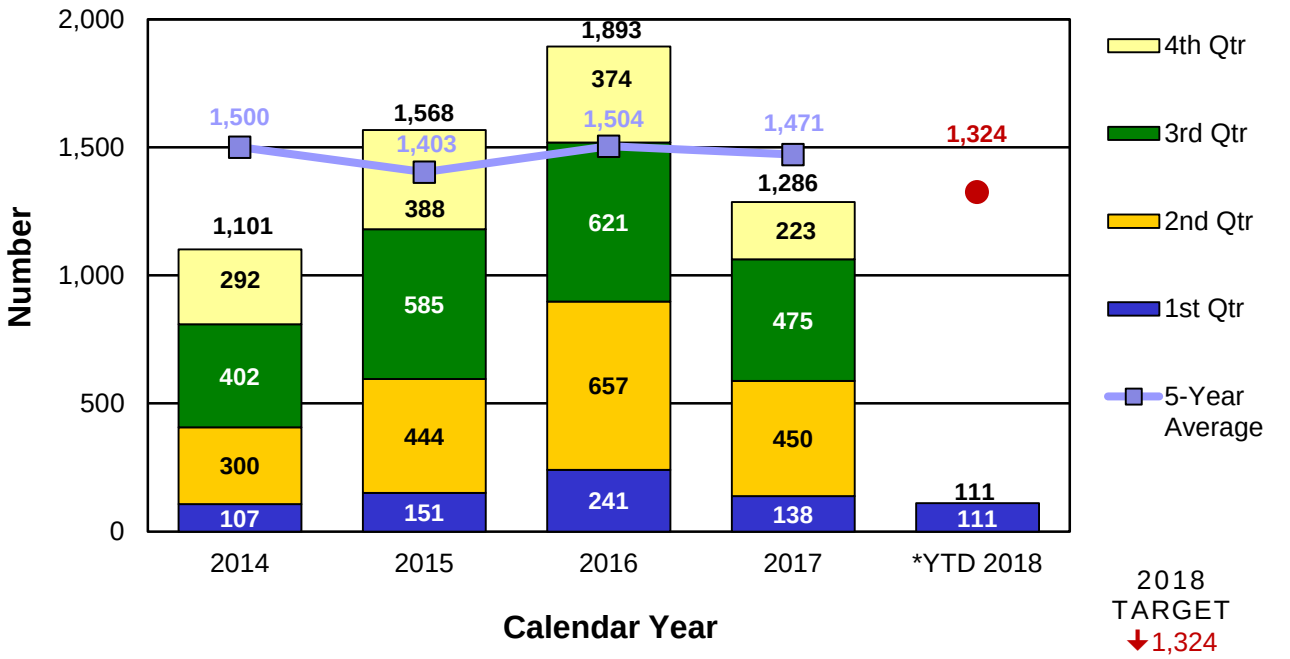
***YTD 2018 – Fatalities derived from TMS.**

KEEP CUSTOMERS AND OURSELVES SAFE

Number of Serious Injuries in Work Zones



Number of Crashes in Work Zones



***YTD 2018 – Due to a backlog of crash reports into STARS, serious injury and crash measures are not final and only illustrate data derived from TMS. Second quarter 2018 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

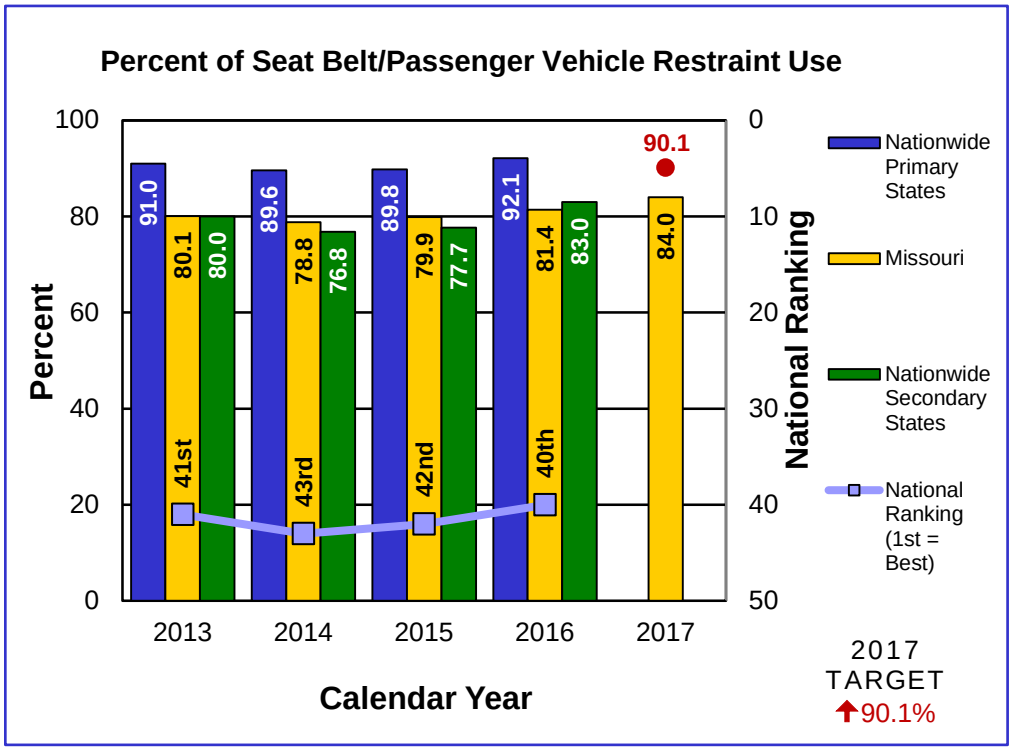
Percent of seat belt/passenger vehicle restraint use – 1e

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 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.

MoDOT is improving safety culture through Statewide Strategic Initiatives such as Buckle Up Phone Down. This is an opportunity for citizens and businesses to commit to driving without distraction by putting the phone down and having all passengers use safety belts.



RESULT DRIVER:
Mark Shelton
District Engineer

MEASUREMENT DRIVER:
Angie Hoecker
Highway Safety and Traffic Commercial Motor Vehicle Program Manager

PURPOSE OF THE MEASURE:
This measure tracks annual trends in fatalities and serious injuries involving Commercial Motor Vehicles. This data guides the development and focus of the Commercial Vehicle Safety Plan (CVSP), which is the plan required to receive Motor Carrier Safety Assistance Program (MCSAP) funds.

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 fatal and serious injury rates on the charts display the annual fatality and injury rates per 100 million vehicle miles traveled for commercial motor vehicles for these same crashes. The targets are based on a 9 percent improvement rate from the immediate prior year fatalities and a 5 percent improvement in serious injuries from the immediate prior year.

KEEP CUSTOMERS AND OURSELVES SAFE

Number and rate of fatalities and serious injuries involving commercial motor vehicles – 1f

Commercial Motor Vehicles are essential to Missouri's economy. They transport goods and products to keep the nation moving. MoDOT partners with the Missouri State Highway Patrol, St. Louis Metropolitan Police Department, Kansas City Police Department, St. Louis County Police Department and Franklin County's Sheriff's Office to keep people traveling safely in and around CMVs. By tracking the number of CMV involved fatalities and serious injuries, MoDOT can target educational and enforcement efforts, as well as improve safety features such as highway signs, reflective pavement markings, guard cables, rumble strips and incident management alert signs. Deploying a suite of these demonstratably impactful safety techniques through a design-build program structure is one of the Strategic Vision Initiatives that will help MoDOT use Innovation to improve work zone and system-side safety.

While efforts from MoDOT and the partner agencies are effective in improving safety on roadways, Missouri has experienced an increase in the number and rate of fatalities and serious injuries involving CMVs. Between 2013 and 2017, fatalities involving a CMV increased by 24.2 percent and the fatality rate increased from 1.04 to 1.11 per 100 million CMV vehicle miles traveled. In 2017, Missouri had seven fewer fatalities involving a CMV. This resulted in a 2017 fatality rate of 1.11 as compared to 1.29 for 2016.

Between 2013 and 2017, serious injuries involving a CMV decreased by 3.5 percent and the serious injury rate decreased from 4.24 to 3.51 per 100 million CMV vehicle miles traveled. The 388 serious injuries experienced in 2017 is 27 less than reported for 2016. This resulted in a 2017 serious injury rate of 3.51 compared to 4.12 for 2016.

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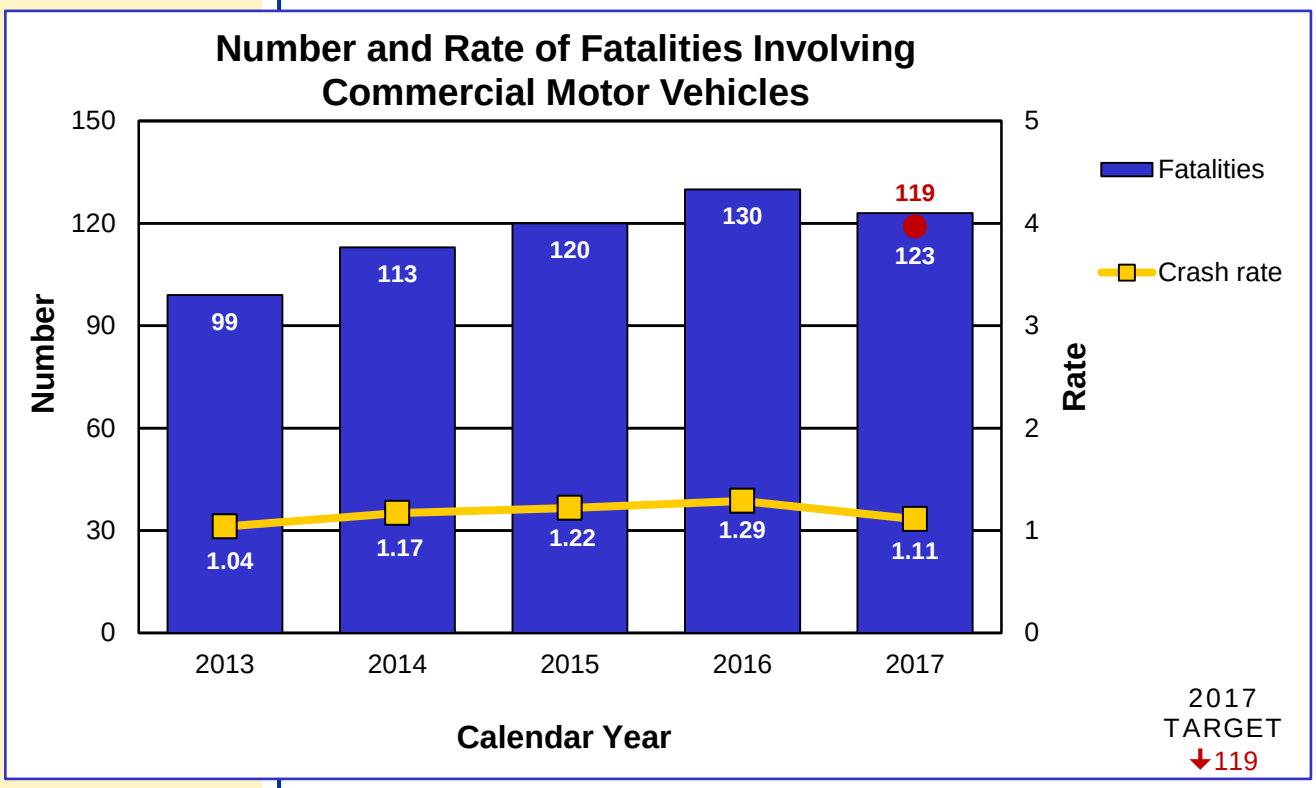

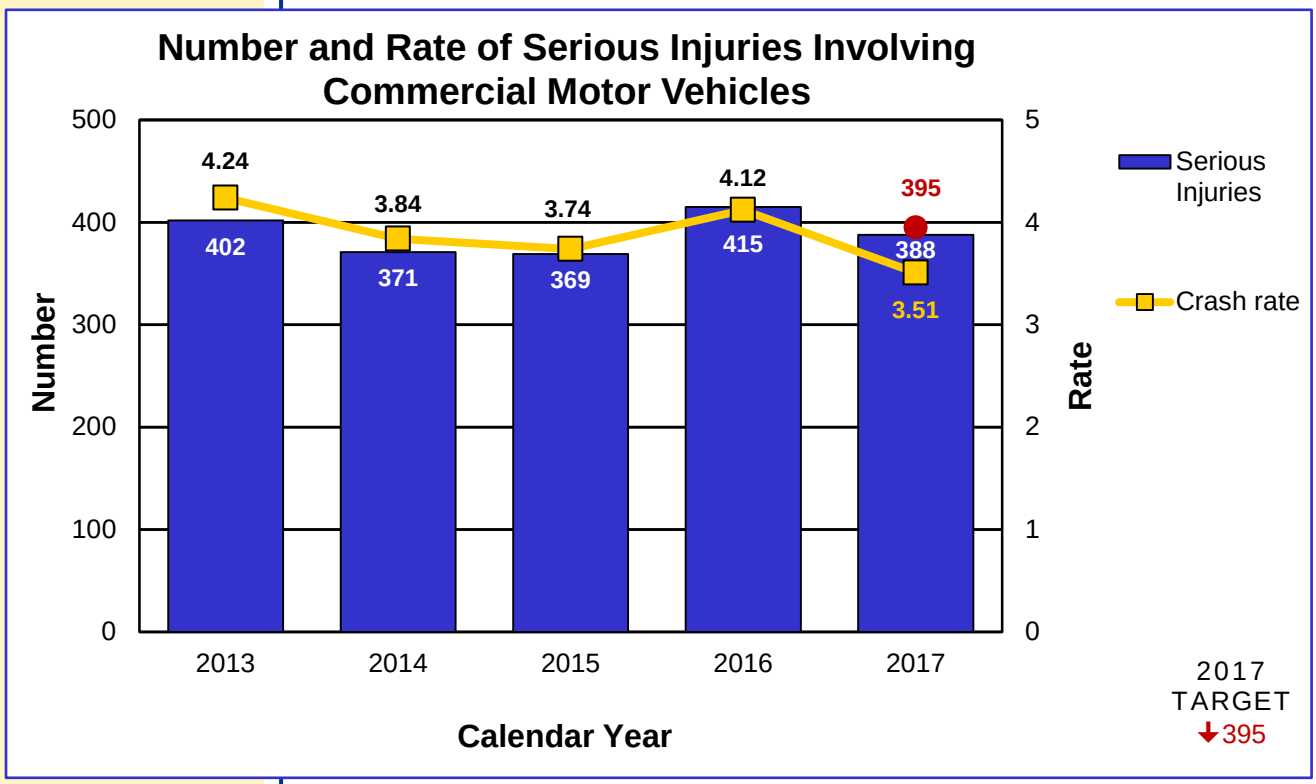

Due to a backlog of crash reports into STARS, these measures will only illustrate data derived from TMS.

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 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.

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

The total and rate of recordable incidents are tracked to measure the Department's performance in improving safety. Behavior Based Safety is a strategic initiative that has been implemented over the last two years to improve MoDOT's safety culture. BBS is a concept that emphasizes employees' actively caring about the safety of themselves and their co-workers. BBS training also involves instruction regarding the ability to understand human behavior. The objective of BBS is to eliminate or, at least, reduce the number of recordable incidents and injuries attributable to employees' actions.

Additionally, the development of Statewide Safety Standard Operating Procedures will result in the clarification and union of MoDOT's current safety practices and processes with the department's strategic vision to "…provide a world-class transportation system that is safe…" Focus will be primarily in the updating of Safety Policies and Procedures and Risk-Based Assessments as well as incorporating BBS in the revisions. Excellent training is a cornerstone of a successful safety culture. Innovative initiatives such as Kansas City's Training Academy will give employees the skills needed to progress in this measure. The marked success of this program is a welcome addition to the department's safety culture. There has been an evident increase in both total and rate of recordable incidents. This is an anticipated result of employee acceptance of BBS and the maturing of safety culture. MoDOT is committed to improving this measure and recognizes that it takes time to move culture.

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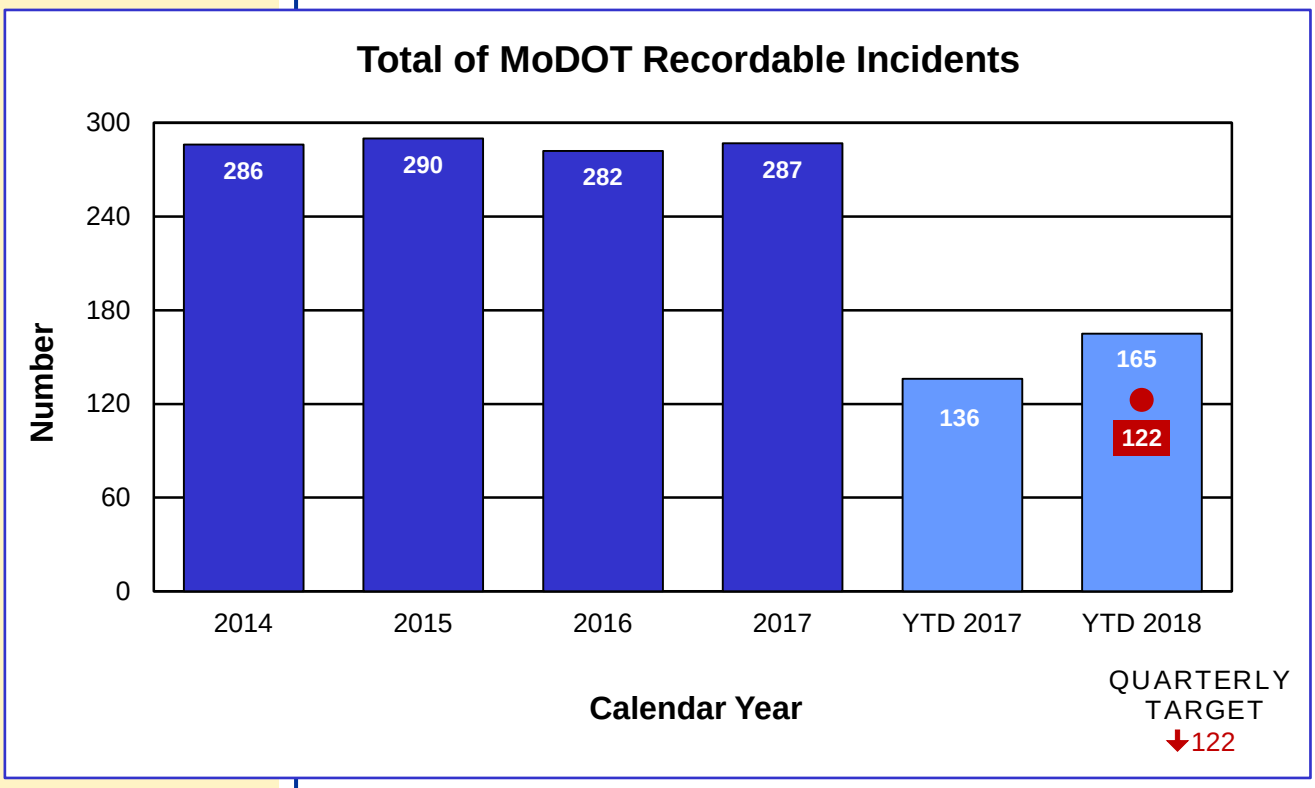
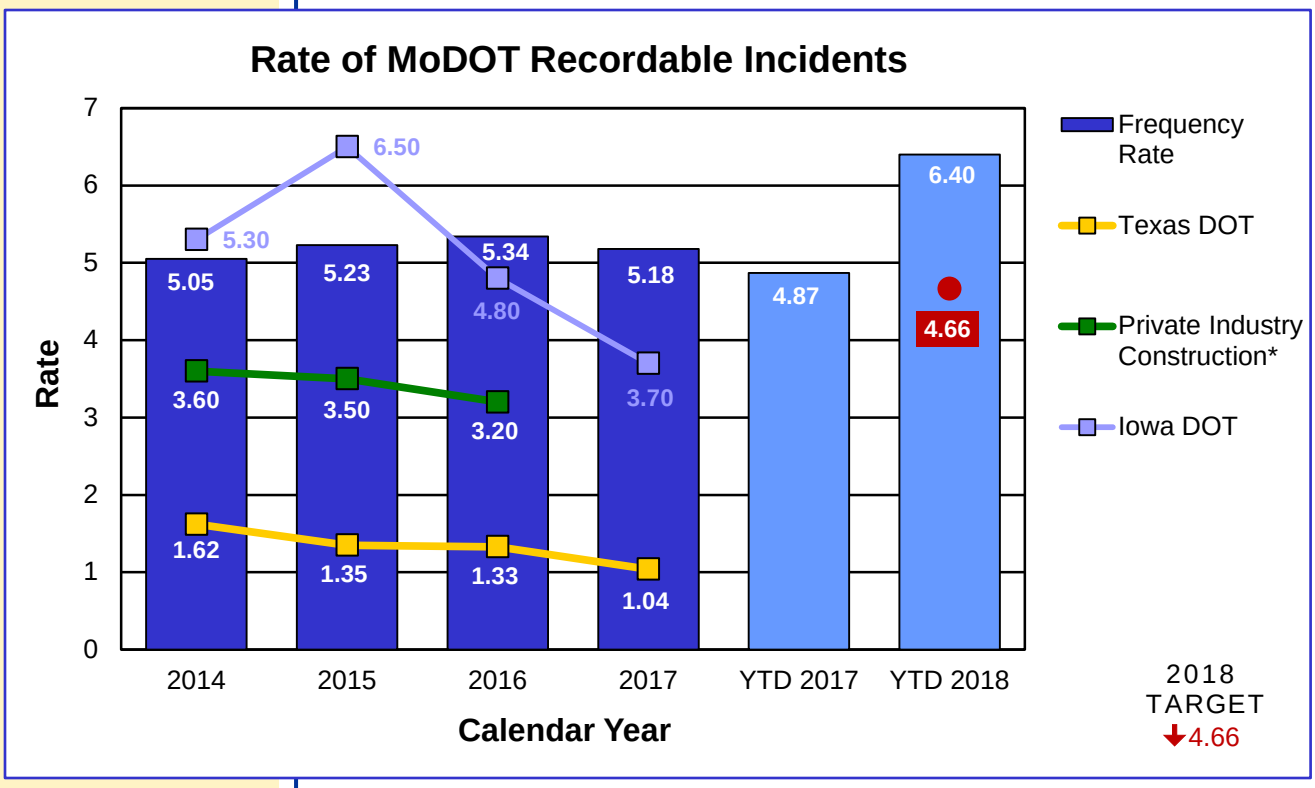




***OSHA private industry data is not yet available for 2017.**

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

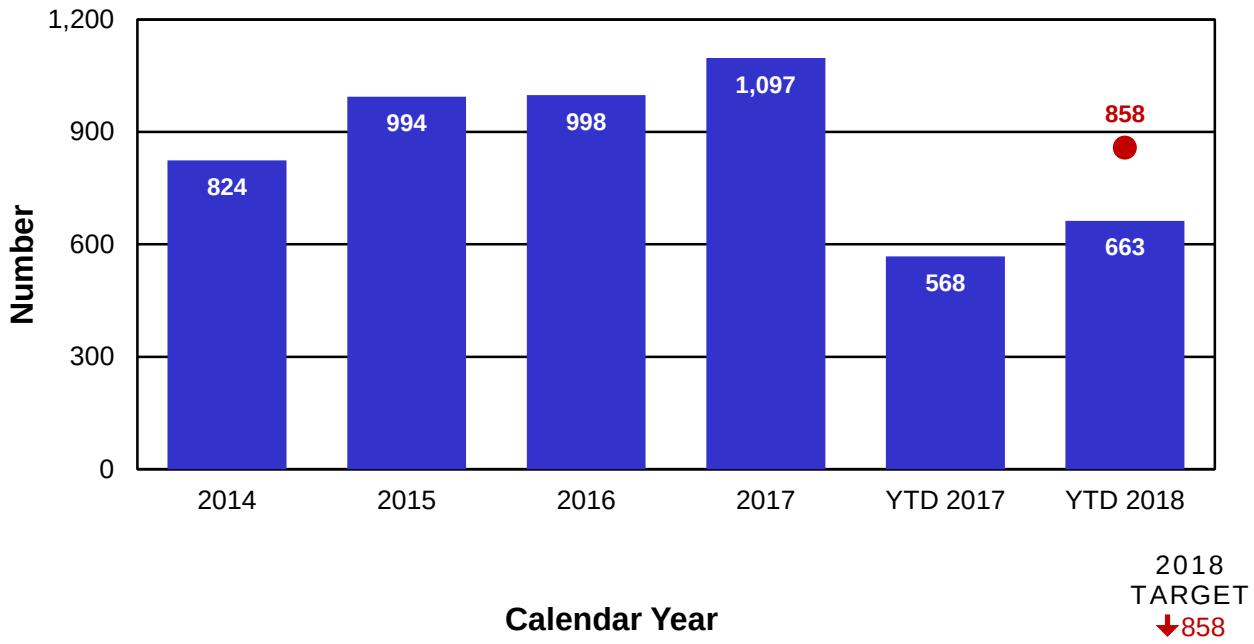
Keeping employees and the public safe is MoDOT's highest value. Controlling damage to vehicles and reducing personal injury in work zones, on right-of-way and other areas under department control helps MoDOT accomplish this goal. Compared to the first two quarters of 2017, there was a 17 percent increase in the number of claims. The majority of claims in the first two quarters of 2018 were attributed to pavement defects. During the same timeframe, there was a 160 percent increase in the amount paid.

This quarter, payments were made on 104 claims against the department, totaling $1,656,564. Three claims accounted for 49 percent of the second quarter's payments. The first claim occurred in 2015 when a motorcycle came over a slight hill and struck a stopped or slowed vehicle. This claim was settled for $200,000 based on the allegation of inadequate sight distance and lack of a warning sign which created a dangerous condition. The second claim occurred in 2006 where two vehicles collided in a curve. This claim was settled for $290,000 based on MHTC not installing a speed advisory sign timely. The third claim occurred in 2015 where the plaintiff on a bicycle was struck by a vehicle causing serious injuries. This claim was settled for $325,000 based on lighting at this location not being maintained.

The target for the 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 MoDOT's most common claims. For 2018, the top three claims types are attributed to potholes, chip seal operations and debris on roadway.

KEEP CUSTOMERS AND OURSELVES SAFE

Number of General Liability Claims



Amount Paid on General Liability Claims