



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 13% improvement rate from the immediate prior year for fatalities and 8% improvement in serious injuries from the immediate prior year.



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Number and rate of fatalities and serious injuries – 1a

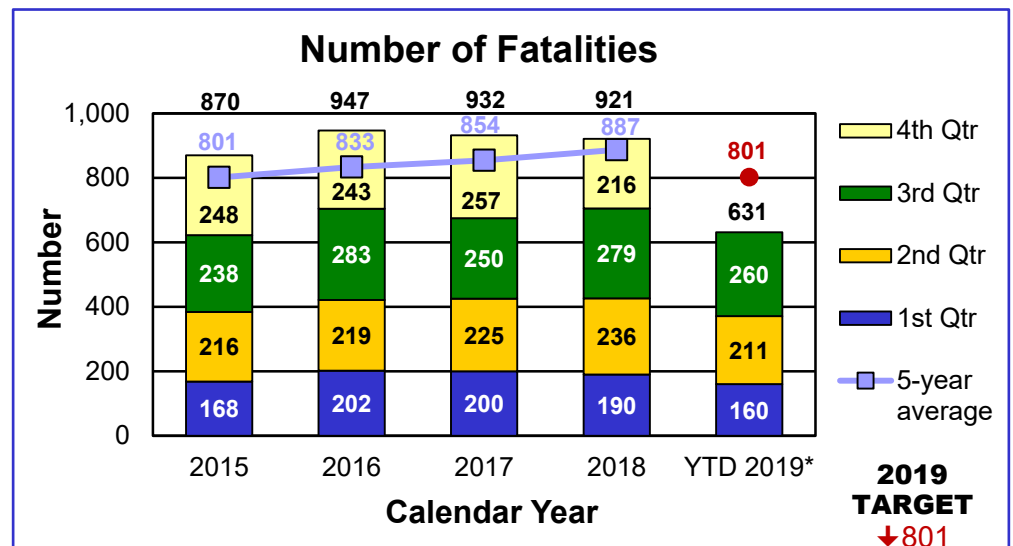
Safety is MoDOT's number one priority, so much so that the Mission Statement was updated to include safety. A strategic planning framework called FOCUS that is based on Safety, Service and Stability was also created.

MoDOT supports *Missouri's Blueprint – A Partnership Toward Zero Deaths*, a 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. In order to reach the Blueprint goal of 700 or fewer fatalities by 2021, new reduction targets were established for 2019: reduce fatalities by 13% and serious injuries by 8%.

Distracted driving is still a serious concern that MoDOT is addressing with news releases, digital message boards and the Buckle Up Phone Down campaign.

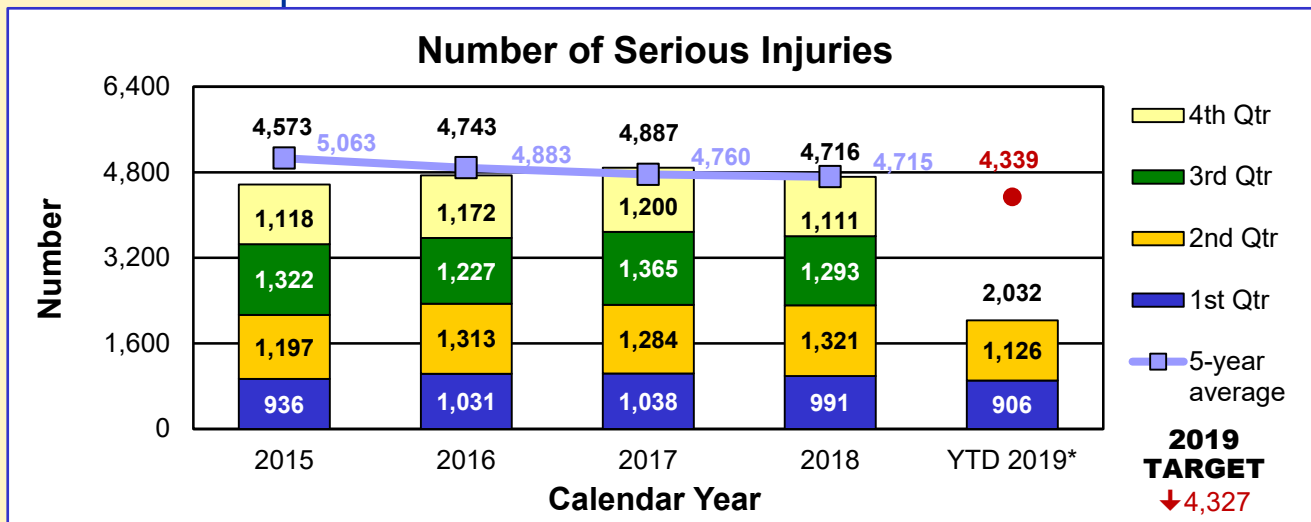
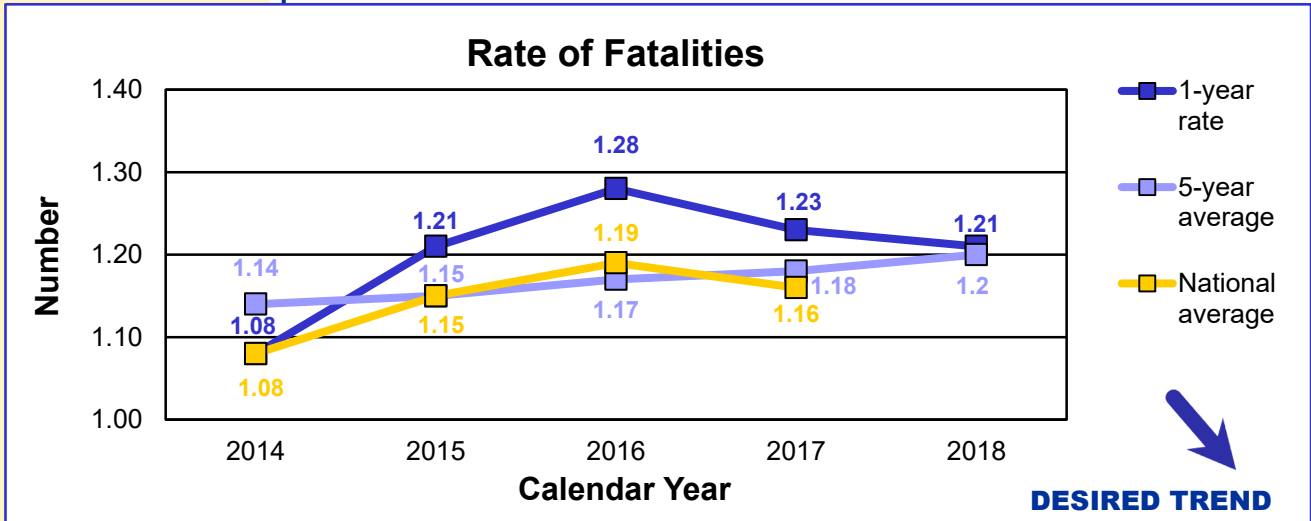
There were 260 fatalities in the third quarter of 2019. The 631 fatalities year-to-date is the least for the first three quarters since 2015. Previous year's first three quarter totals were 71% to 76% of the year's total fatalities. The 631 fatalities year-to-date in 2019 represent 79% of the 801 fatalities target.

MoDOT had 2,032 serious injuries during the first two quarters of the year. Previous first two quarter injuries have been 46% to 49% of the year's totals. The half year total is 47% of the 4,339 target, providing incentive to again lower annual injuries.

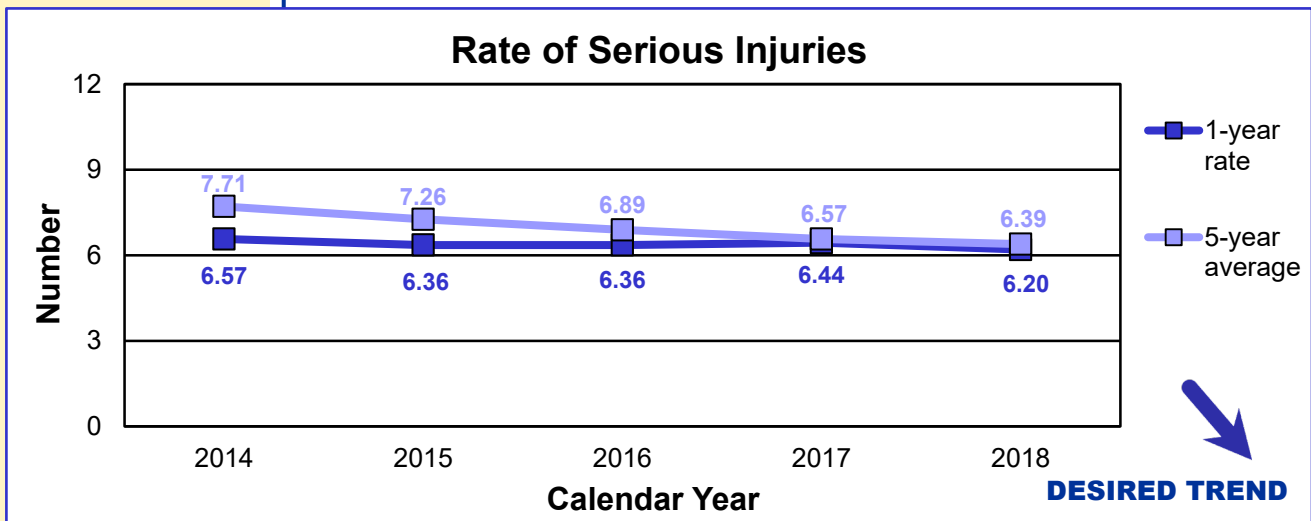


*2019 – Due to the backlog of data, first and second quarter data were derived from TMS and third quarter fatalities from MSHP radio reports.

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*2019 – Due to a backlog of crash reports into STARS, the serious injury measure only includes data derived from TMS. Third quarter 2019 data is unavailable 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.

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

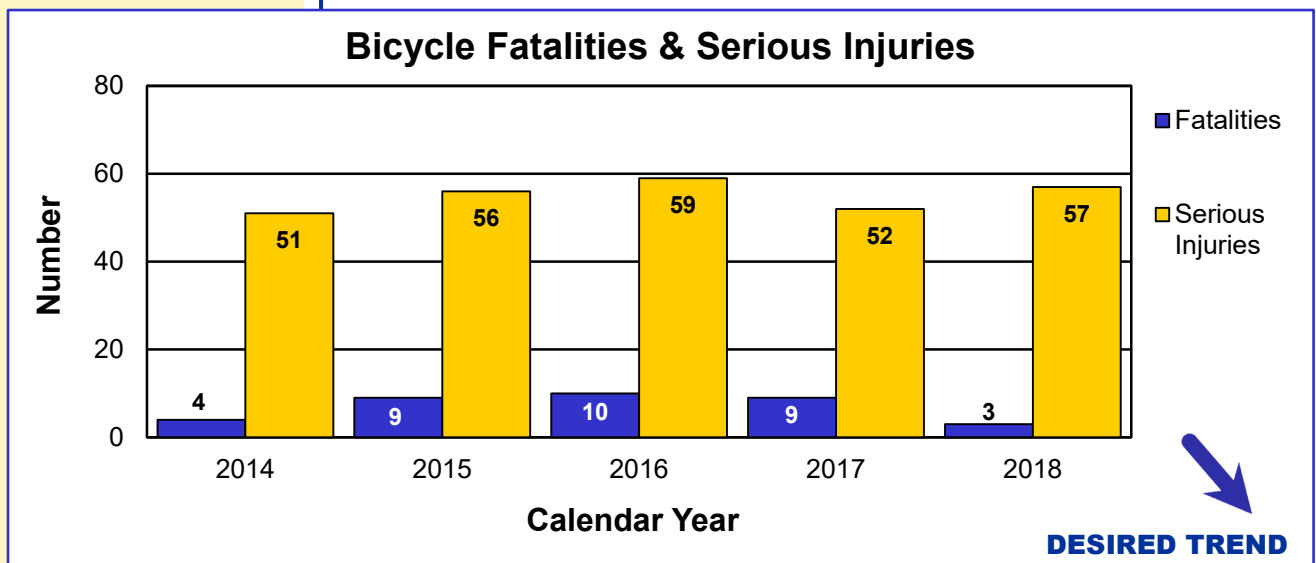
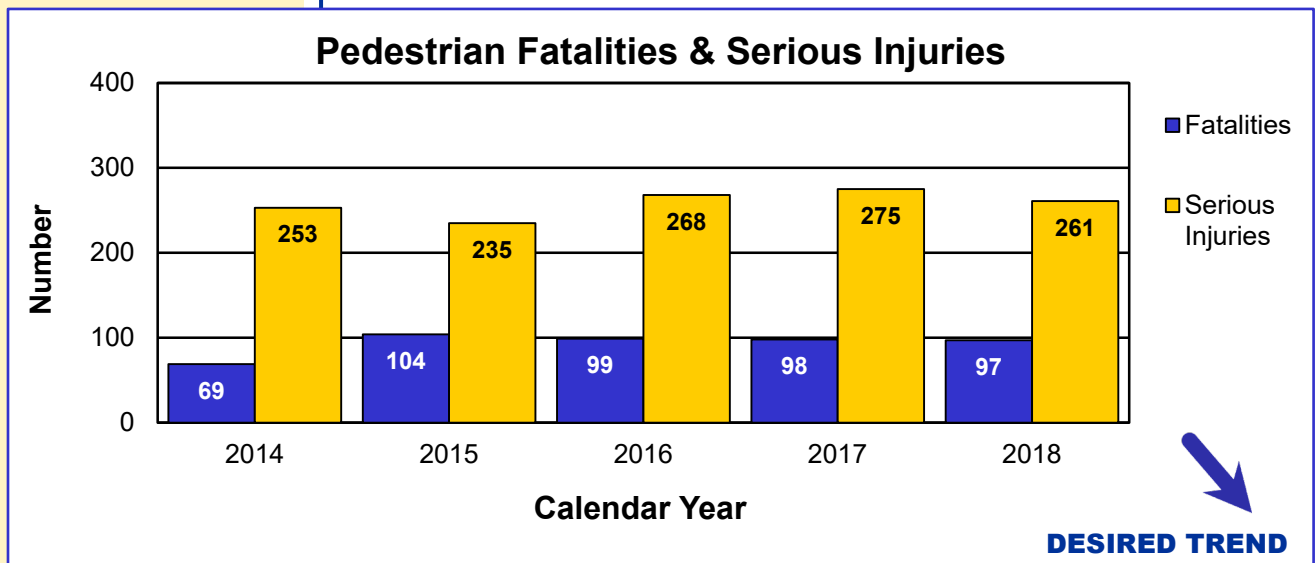
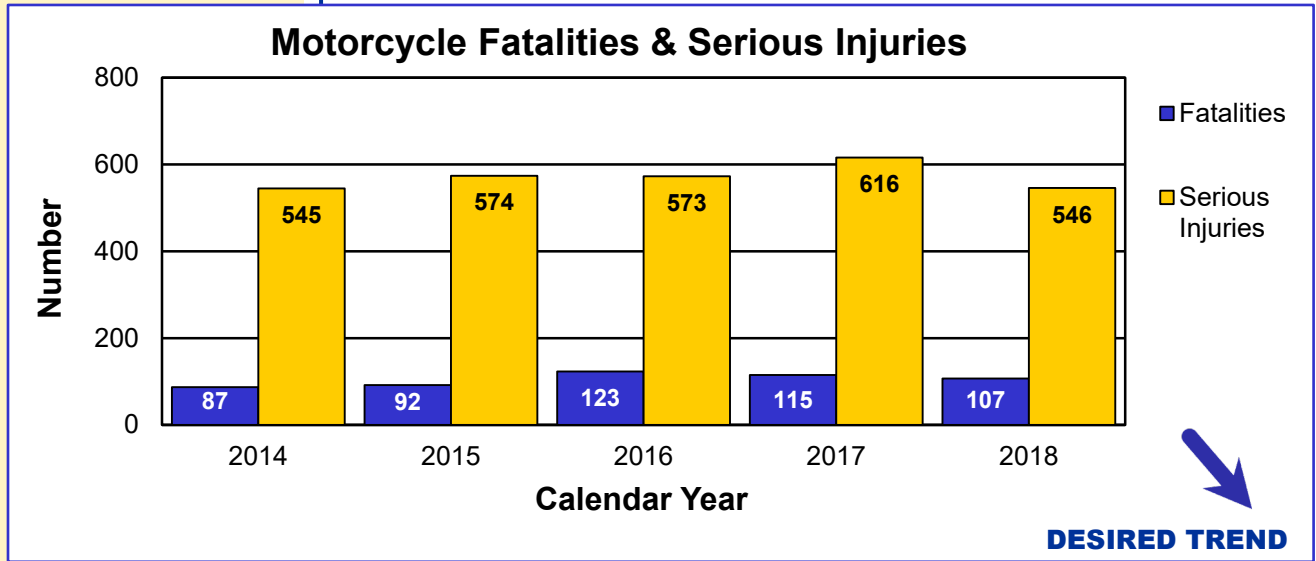
For 2018, the number of vulnerable roadway users has decreased from 2017. Motorcycle fatalities decreased 7%, while bicycle fatalities decreased 67%. Pedestrian fatalities remained almost unchanged from 2017 to 2018, although it has been decreasing by one each year for the last two years.

Motorcycle serious injuries decreased by 12% in 2018, and pedestrian serious injuries decreased by 6%. Meanwhile, bicyclist injuries increased 10%.

MoDOT is included in the Move Over Law encouraging all vehicles to get over for emergency vehicles, tow trucks, utility vehicles and maintenance equipment. In addition, Lyndon's Law was signed by Governor Parson on July 9, 2019, authorizing the Missouri Department of Revenue to revoke the driver's license of anyone who hits a highway or utility worker in a work zone or an emergency responder in an emergency zone.



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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 seven 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, distracted 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.

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

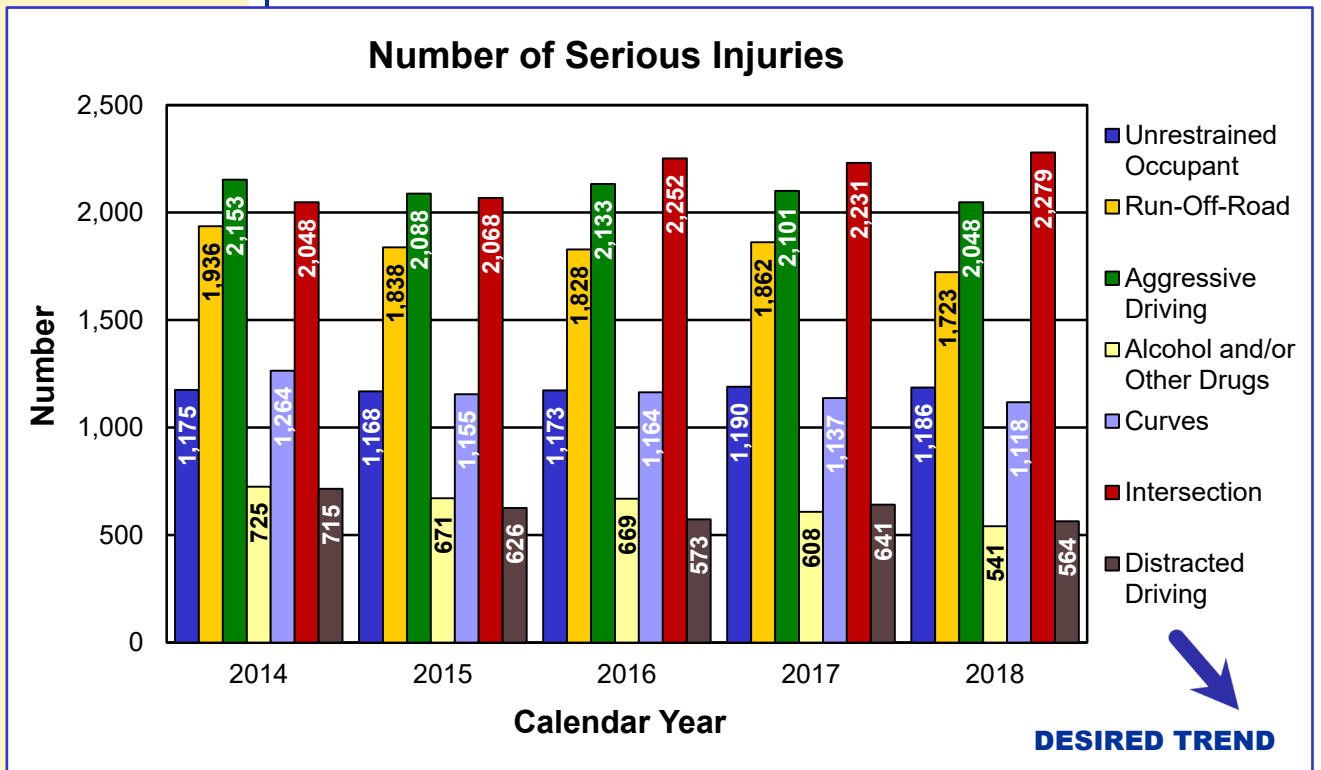
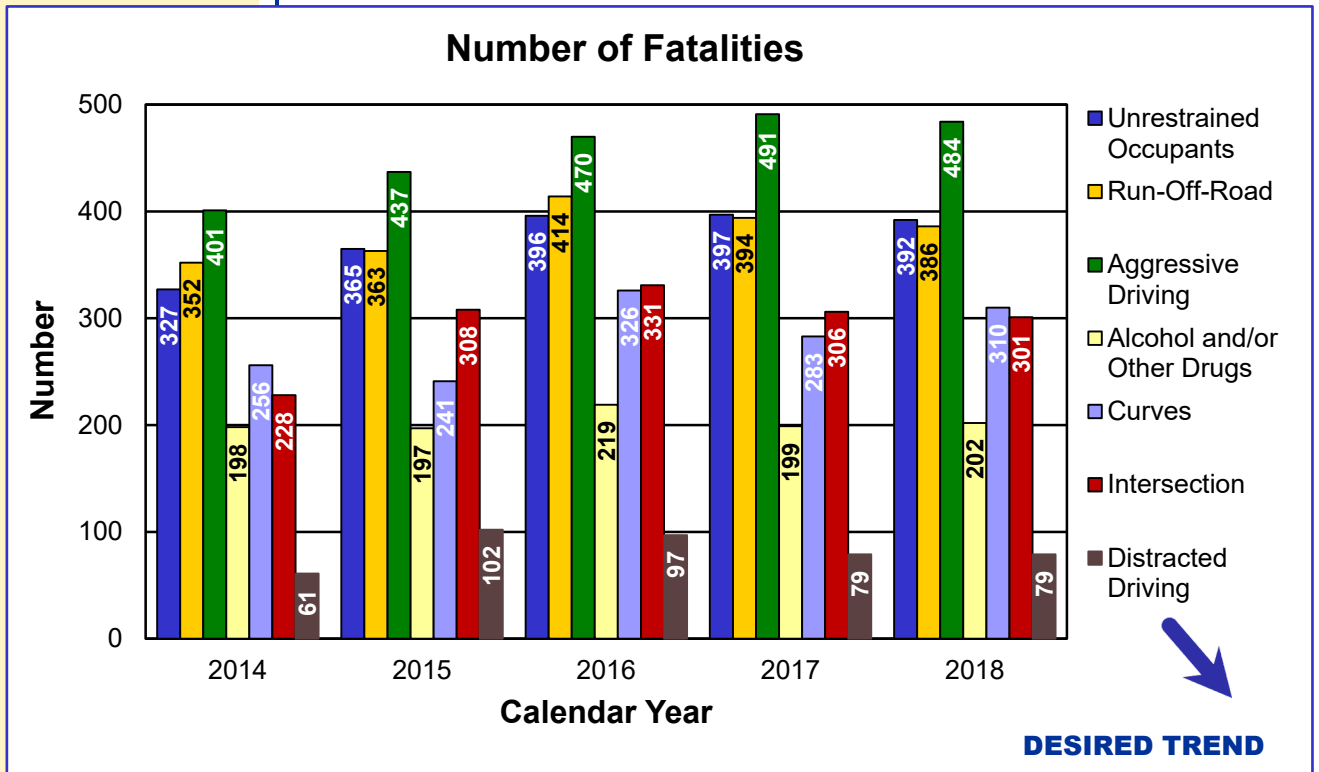
MoDOT's first tangible result is to keep customers and ourselves safe. The greatest challenge in providing this is the recurring frequency of fatal and serious crashes on Missouri roadways. In order to combat this, MoDOT utilizes a comprehensive data-driven analysis to identify the most common contributing 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 921 traffic fatalities in 2018, aggressive driving and unrestrained occupants are the leading behavioral issues in Missouri's severe crashes. Aggressive driving includes speeding and driving too fast for conditions, which contributed to approximately 40% of the state's fatalities. 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 the 2018 Seat Belt Survey, only 13% of Missouri roadway drivers and passengers were unbuckled. However, they accounted for 62% of the state's fatalities. Another increasingly troubling behavior is distracted driving, particularly due to cellphones. While cellphone use is relatively difficult to capture in the crash data, reported cellphone crashes in Missouri are up 35% since 2014.

Through the Statewide Transportation Improvement Program, MoDOT continues to program millions of dollars in safety improvements each year, including 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-cost 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. The Buckle Up Phone Down campaign now has more than 9,930 pledges from individuals and participation from more than 474 organizations. MoDOT will continue implementing programs to reach new audiences and improve the culture of highway safety in Missouri.



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RESULT DRIVER:

Mark Shelton
District Engineer

MEASUREMENT

DRIVER:

Brian Okenfuss
Area 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. Missouri State Highway Patrol 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% improvement over a five-year average.

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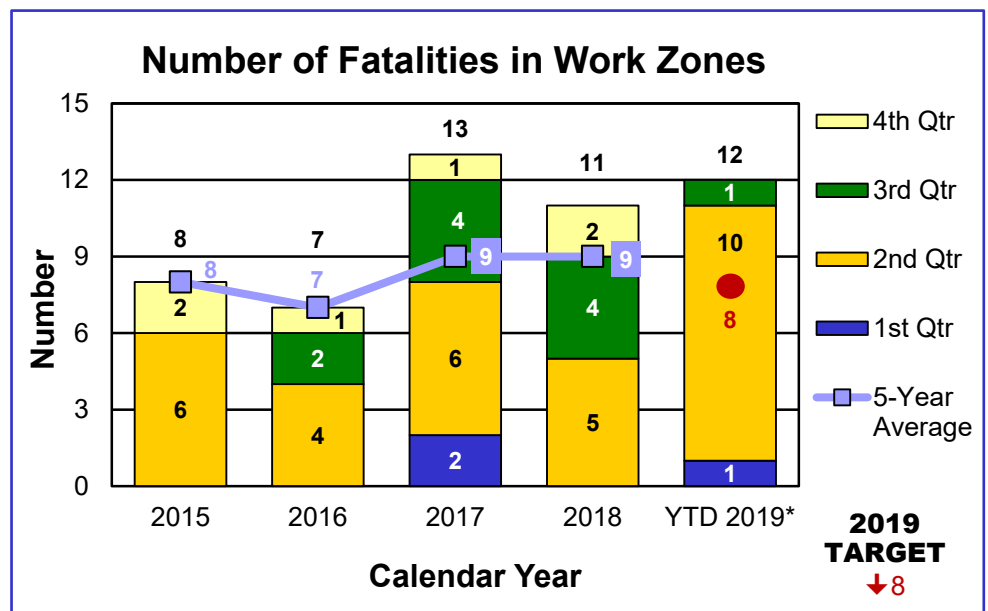
Number of fatalities and serious injuries in work zones – 1d

Safe, efficient travel for the public through work zones is important. All crews working in work zones are expected to conduct operations safely. MoDOT makes every effort to ensure this is the case and asks motorists to pay attention, slow down, move over, buckle up and drive without distractions.

MoDOT's goal is zero fatalities in work zones. Only through continued efforts from MoDOT, the contracting industry and the driving public can that goal be accomplished. There will be continual improvement in planning, available strategies and technologies employed. It is up to MoDOT to deploy the proper tools in each of the work zones.

Based on information currently available, seven fatal work zone crashes through the first three quarters of calendar year 2019 have accounted for 12 fatalities. Of those seven crashes, only three occurred when workers were present and only two were impacted by the work zone. In both of those cases, all traffic control devices were properly installed.

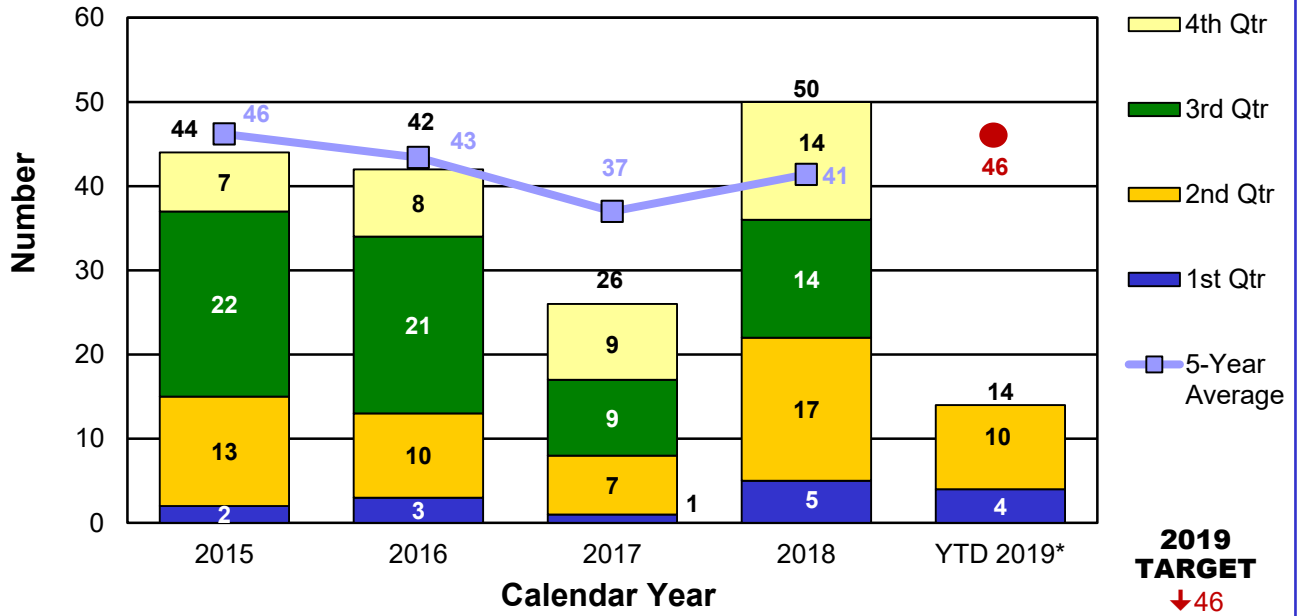
Poor driver behavior remains a primary factor in these fatal crashes which proves difficult for MoDOT to control. Community outreach and public awareness campaigns, such as Buckle Up Phone Down, are very helpful, but ultimately MoDOT is dependent upon the driving public to make good choices when driving in work zones. Unfortunately, of the 12 fatalities only one person was known to be properly wearing a safety device. The challenges for MoDOT remain many, with changing driver behaviors at the top.



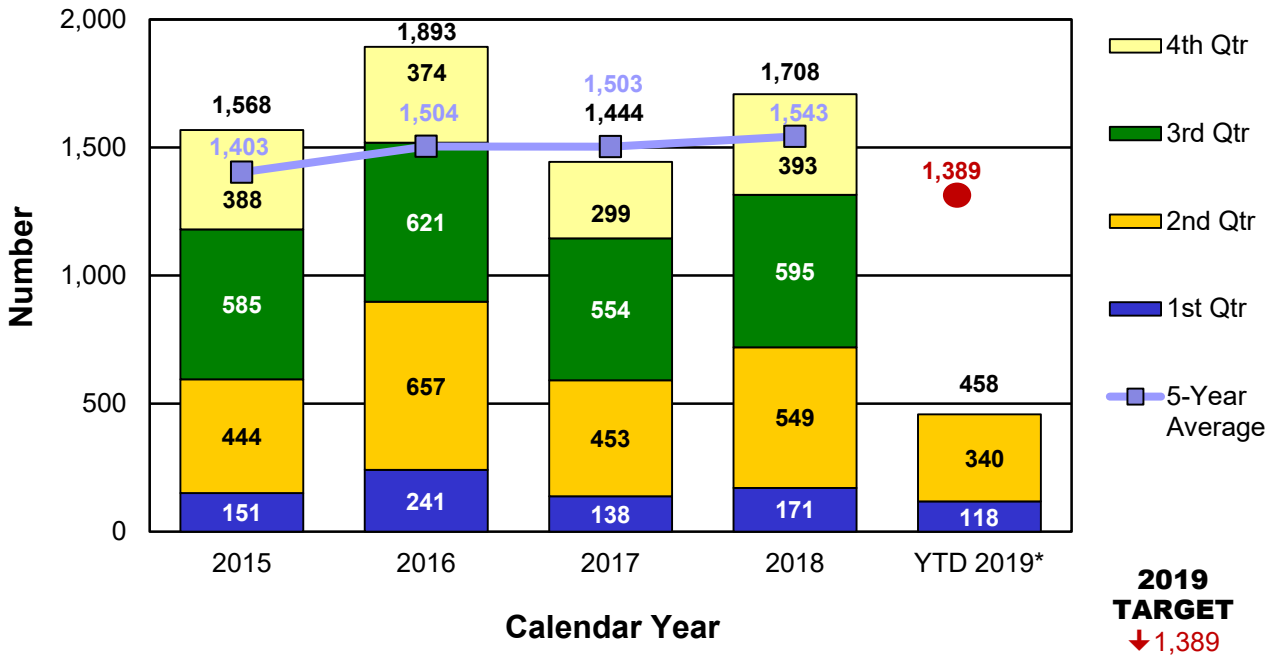
*2019 – Fatalities derived from TMS.

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Number of Serious Injuries in Work Zones



Number of Crashes in Work Zones



*2019 – Third quarter 2019 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 are selected from counties that represent 85% of the state's vehicle occupant fatalities. While the data collection plan is the same each year for consistency, NHTSA guidelines require survey sites to be re-selected every five years based on updated fatality data. The 2019 survey is the second survey using updated survey sites since Missouri's new survey methodology started in 2013, and remains consistent with the 2018 results. The target for this measure is established as the current national average, which includes both primary seat belt law states and secondary law states.

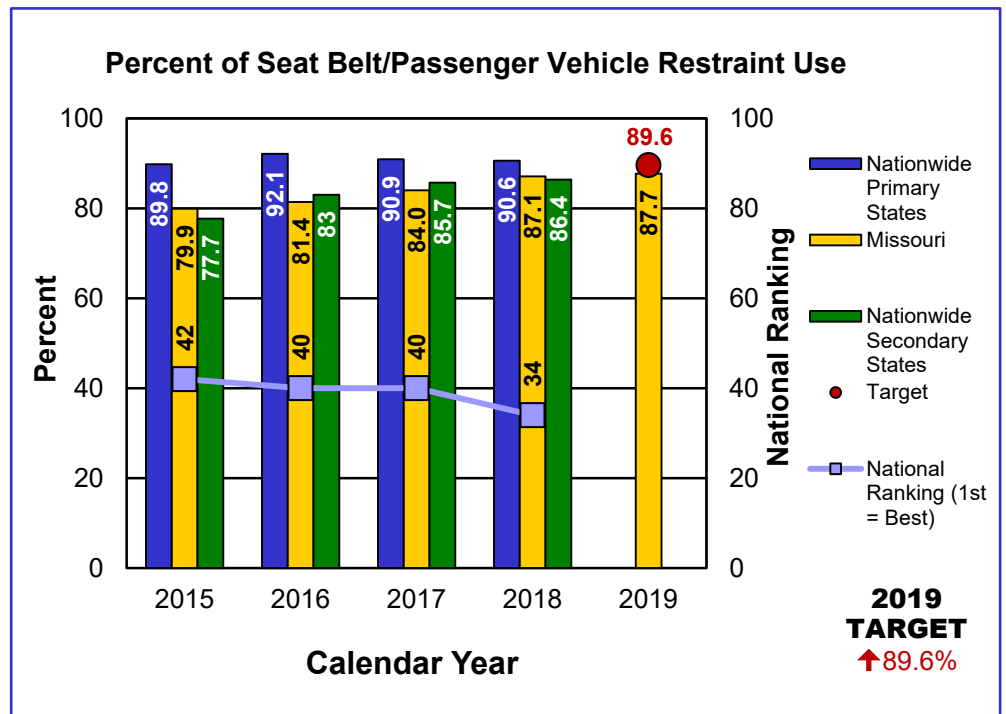
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Percent of seat belt/passenger vehicle restraint use – 1e

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, along with legislation. 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 one county and 63 municipalities that have adopted primary seat belt ordinances, representing over 27% of the state's population.

Based on 119,413 observations, seat belt use in Missouri for 2019 was 87.7%, a 0.6% increase from 2018. Gasconade County was the lowest at 67.7% and Callaway County was the highest at 96.0% (weighted data). The national average for seat belt use in 2018 was 89.6% (2019 data is not yet available). Missouri's national ranking (including Washington DC) in 2018 was 34th, with 17 states ranking lower in seat belt use. States with a primary seat belt law generally rank highest on seat belt use nationwide, while states that have a secondary law continue to rate lowest in national rankings.

MoDOT is improving its safety culture through statewide strategic initiatives such as Buckle Up Phone Down and by coordinating Click It or Ticket, Youth Seat Belt and Child Passenger Safety Campaigns, as well as providing educational programs such as Teens Taking Action To Prevent Traffic Crashes and ThinkFirst.



RESULT DRIVER:

Mark Shelton
District Engineer

MEASUREMENT DRIVER:

Angie Hoecker
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, which is the plan required to receive Motor Carrier Safety Assistance Program 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% improvement rate from the immediate prior year fatalities and a 5% improvement in serious injuries from the immediate prior year.

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

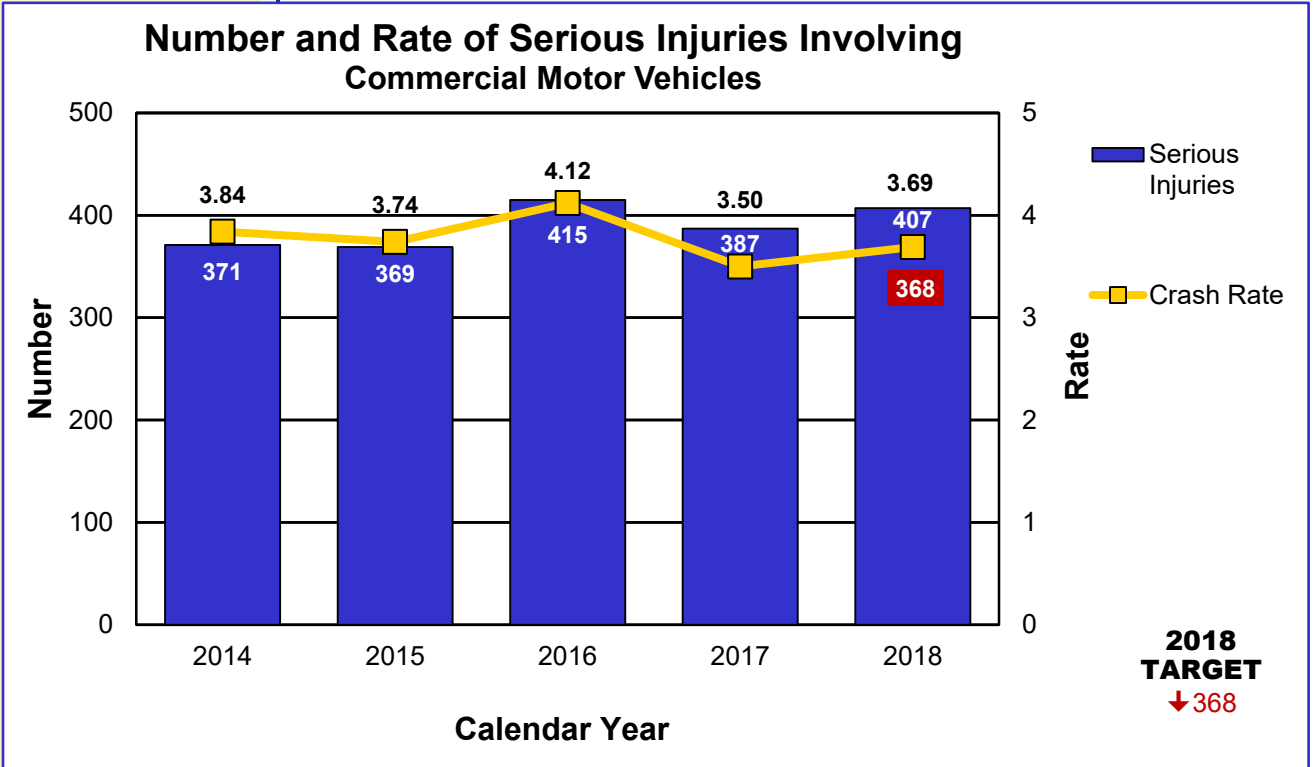
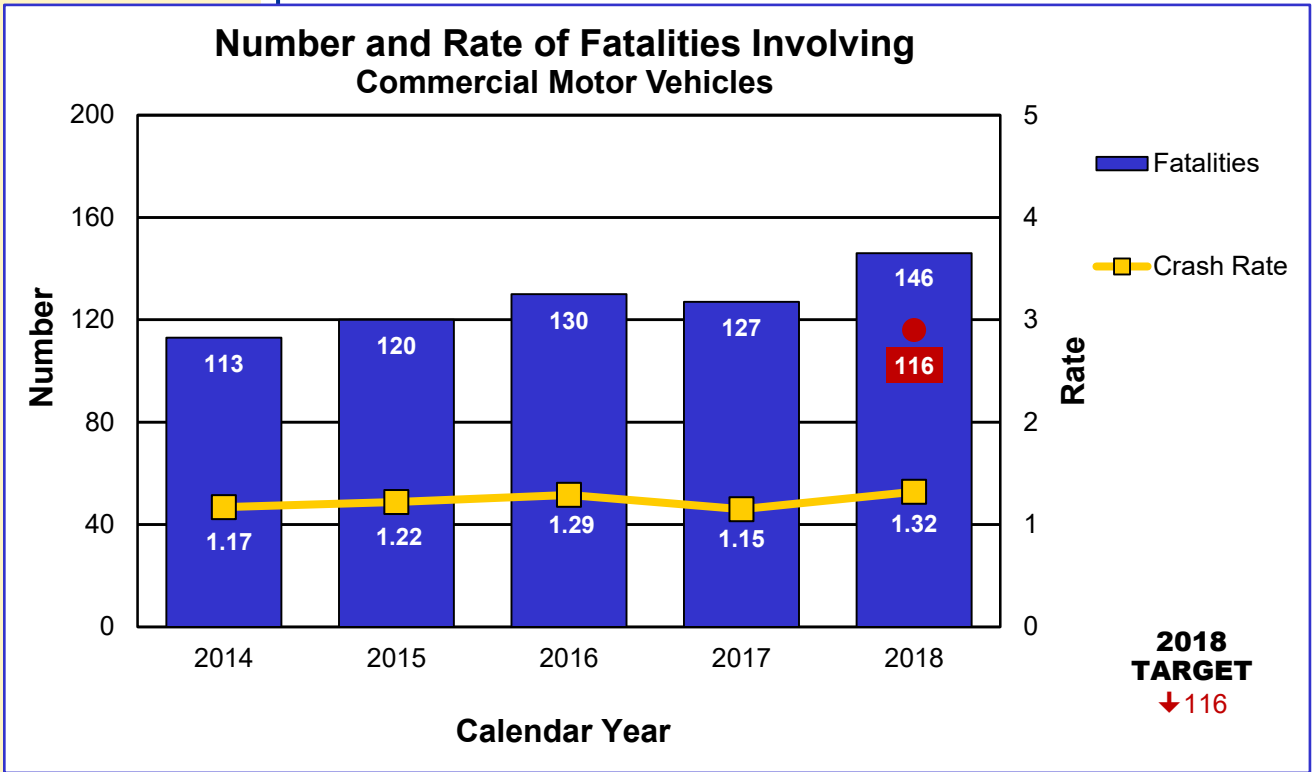
Commercial Motor Vehicles play a vital role in our nation's economy by transporting the products we need. By tracking the number of CMV involved fatalities and serious injuries, MoDOT can target educational and enforcement efforts, as well as improve safety features along Missouri roadways. MoDOT partners with the Missouri State Highway Patrol, St. Louis Metropolitan Police Department, Kansas City Police Department and St. Louis County Police Department to keep people safe while traveling in and around CMVs.

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 2014 and 2018, fatalities involving a CMV increased by 29.2% and the fatality rate increased from 1.17 to 1.32 per 100 million CMV vehicle miles traveled. In 2018, Missouri experienced an increase of 19 fatalities involving a CMV as compared to 2017. This resulted in a 2018 fatality rate of 1.32 compared to 1.15 for 2017. The target for 2018 was 116 fatalities and unfortunately the goal was not met.

Between 2014 and 2018, serious injuries involving a CMV increased by 9.7% and the serious injury rate decreased from 3.84 to 3.69 per 100 million CMV vehicle miles traveled. The 407 serious injuries experienced in 2018 is 20 greater than reported for 2017. This resulted in a serious injury rate of 3.69 in 2018 compared to 3.50 for 2017. The target of 368 serious injuries was not achieved.



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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
State Safety Coordinator

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% from the year-to-date comparison period.

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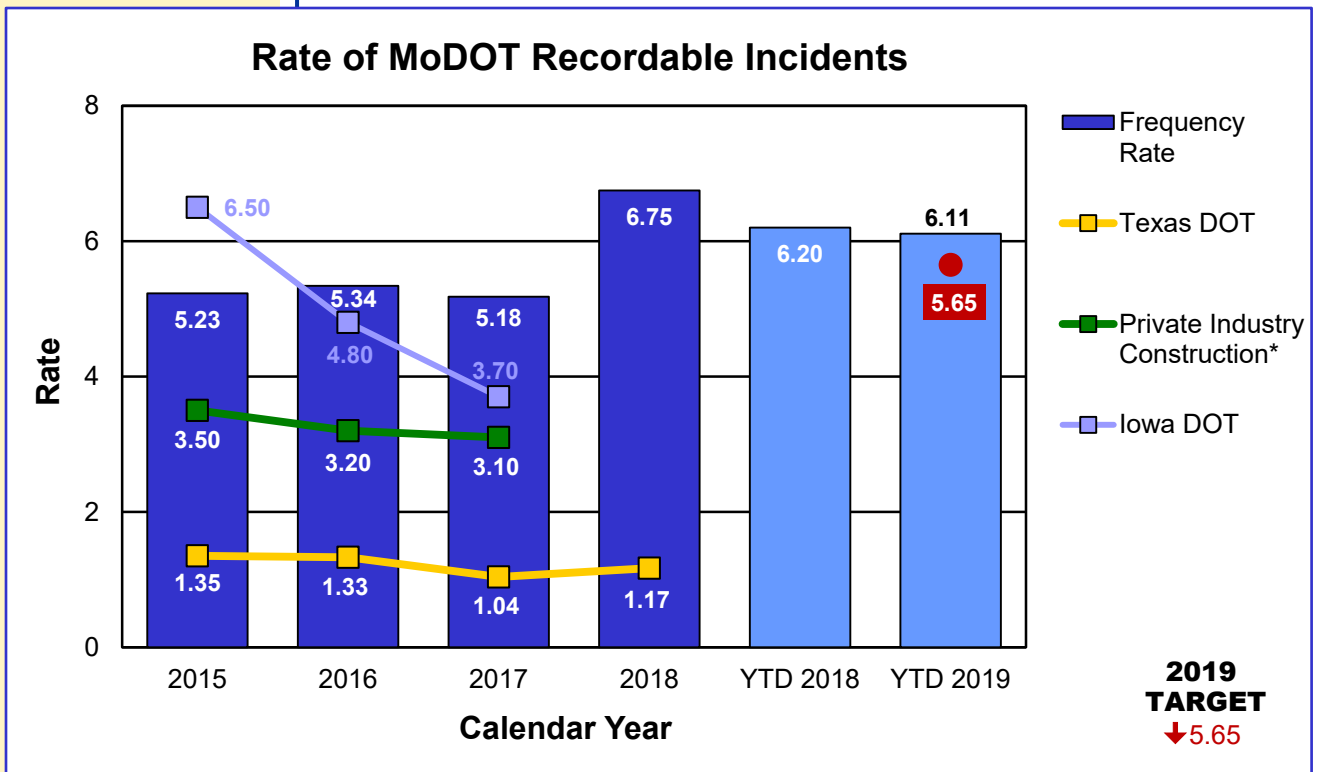
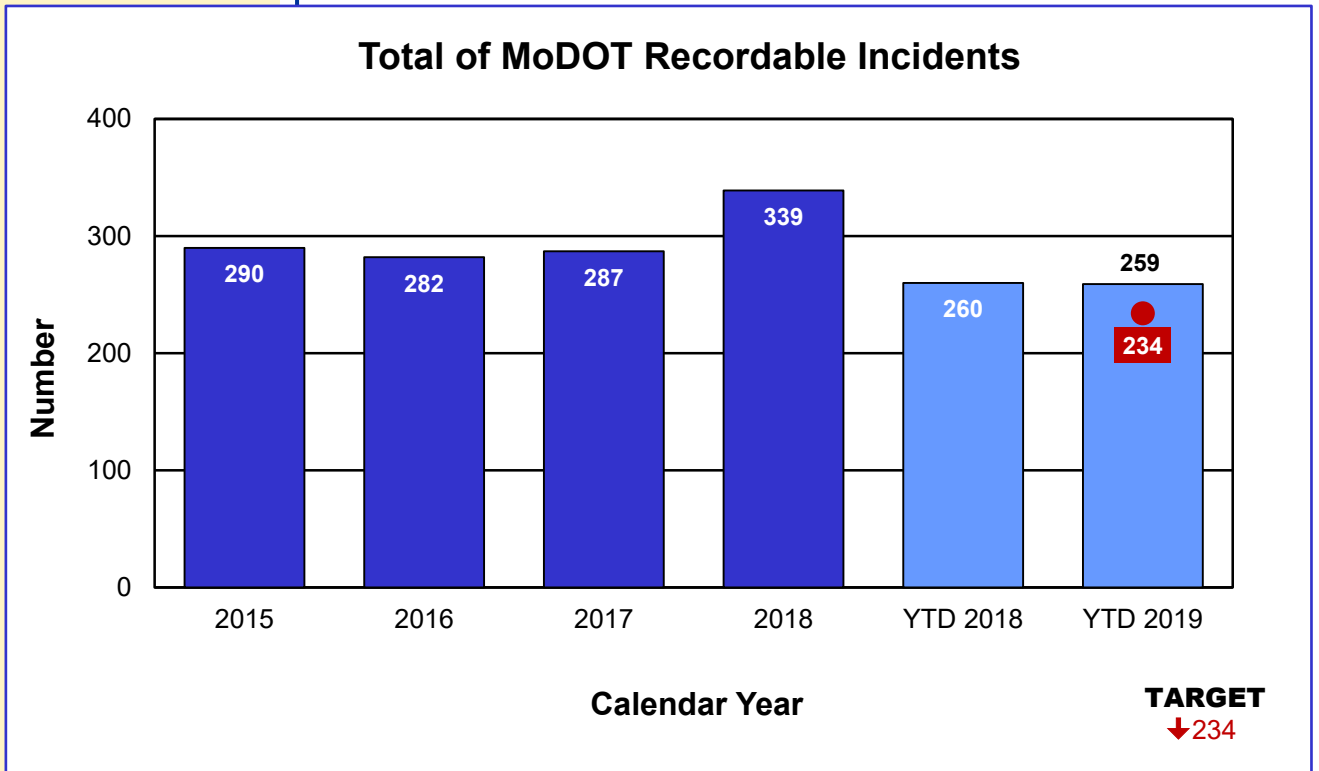
Total and rate of MoDOT recordable incidents – 1g

The total and rate of recordable incidents are tracked to measure the department's goal of fewer injuries. MoDOT's goal is for every employee to go home every night to their families unharmed. Reporting injuries allows the department to arrange for prompt treatment and to learn from mistakes or remediate hazards. The total number of recordables for the first three quarters of 2019 has remained steady compared to the same period in 2018. The rate of incidents has also remained similar to last year's third quarter. There was a 1.5% decrease from the first three quarters of 2018.

Leading causes of injuries this quarter were slips, trips and falls (23%), strains (17%) and cut/punctured/scraped (14%). Based on the work activity being performed at the time of the incident, equipment use accounted for 29% of employee injuries, bridge work accounted for 12% and 10% were due to vehicle use.



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*OSHA private industry data is not yet available for 2018.

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%. (Exceptionally high or low years are excluded from the five-year average calculation to determine a practical target).

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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 three quarters of 2018, there was a 71% increase in the number of claims. Most of the claims in 2019 were attributed to pavement defects. During the same timeframe, there was a 74% decrease in the amount paid.

This quarter, payments were made on 149 claims against the department, totaling \$498,829. One claim accounted for almost one-third of the third quarter's payments. The claim occurred in 2017 when a vehicle was driving across a bridge that had washed out on the opposite end. The vehicle went off the bridge into the creek below causing injuries to the driver and several passengers. The bridge has since been modified. This claim was globally settled for \$163,000 based on the department having prior notice of washouts and inadequate signing.

To achieve the general liability claim's target, the focus needs to be on MoDOT's most common claims. MoDOT's top five claim types are pavement defects, debris on the roadway, chip seal, striping and mowing operations.



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