

Missouri  
Department of  
Transportation



2019

# MoDOT RESULTS

Safety. Service. Stability.



Missouri Department of Transportation  
[www.modot.org](http://www.modot.org)



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## MoDOT RESULTS

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“We work hard to deliver quality transportation projects every day.”

## SAFETY

Be Safe

Be Accountable

## SERVICE

Be Respectful  
Be Inclusive

Be Bold

Be Better

## STABILITY

Be One Team

So we can be a  
great organization

# MoDOT Delivers Results

**The Missouri Department of Transportation is mission-centered.** By focusing on customers and providing transparent measures of our progress, MoDOT delivers results through accountability, innovation and efficiency.

We have developed a system of performance metrics to deliver results while being good stewards of the state's transportation dollars.

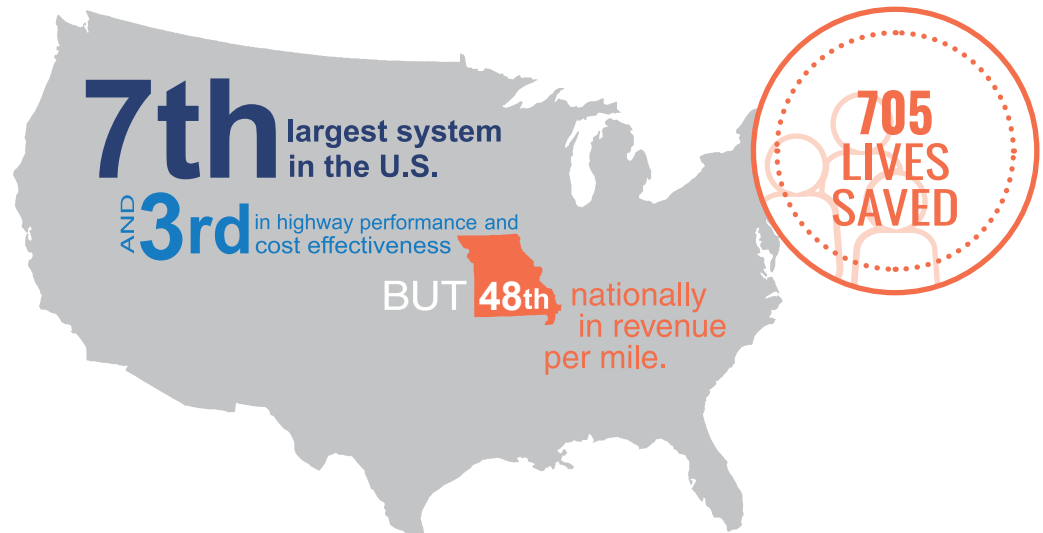
Since 2007, MoDOT has documented more than **\$5.0 billion** in one-time or on-going savings. This includes redirection of \$273 million in efficiency savings in 2019 to roads and bridges and \$685 million in savings to our customers. In the last 12 years, efficiencies and safety enhancements resulted in an estimated 705 lives saved.

MoDOT is not afraid to make tough decisions. We realized years ago that we could not provide customers' top needs without a change in the way we do business. As a result, we decided we will do the best we can with what we have for as long as we can.

By re-examining all we do from project design to daily operations, we were able to identify savings and transfer funds to meet more customer expectations. That wasn't enough.

In 2010, we began a reduction of 124 facilities, 750 pieces of equipment and 1,200 employees (19 percent) resulting in \$1.1 billion reinvested in roads and bridges through 2019.

MoDOT's core values are safety, service and stability. With those pillars as our foundation, MoDOT is committed to preserving the transportation system which is essential to Missouri's economic growth.



# SAFETY

## More Signs Installed Quicker Saves Lives

Missouri ranks 5th nationally in wrong way fatalities. From 2013 to 2016, wrong-way fatalities essentially doubled in Missouri, from 14 to 27 deaths. In response, MoDOT identified a systematic safety improvement to maximize the effectiveness at capturing the attention of a wrong-way driver to prevent these high-speed, head-on crashes, which often result in multiple fatalities. These safety countermeasures included installing enhanced “DO NOT ENTER” and “WRONG WAY” signage along the top corridors experiencing fatal and serious injury wrong-way crashes. In addition to these interstate projects, we expanded the implementation at interchanges along four-lane expressways.



To get to the most locations possible as quickly as possible with limited funds, MoDOT piloted a new innovative bidding process called Fixed Price Variable Scope (FPVS). This innovative bidding method lets MoDOT set a budget, bid a project and have the contractor complete the work in a priority order until the budget is spent.

The contractor started on priority interchanges along Interstate 70 and used remaining budget money on interchanges on Route 61 in the Northeast District and U.S. Route 63 in the Central and Northeast Districts. MoDOT was able to complete all the interchanges planned along I-70 in addition to five interchanges along Route 61 and 15 interchanges along U.S. Route 63.

This allowed for treating more locations with the same budget and ultimately reduce the number of wrong-way fatalities and serious injuries. In fact, it is estimated **25 wrong-way crashes were prevented saving eight lives**. With traditional bidding methods, it could have taken an additional two years before the work was completed on Routes 61 and 63.

## More People Buckling Up in Missouri



There was lots of good news for seatbelt usage in Missouri this year.

Not only did MoDOT’s popular Buckle Up Phone Down effort surpass 11,000 participants, but seatbelt use showed a dramatic increase over previous years. In fact, 87.7% of people are now buckling up in the Show-Me State according to a recent survey, the highest number ever recorded.

“We’ve seen a 6.4% increase in usage in the past three years alone,” said Jon Nelson, executive committee chair for the Missouri Coalition for Roadway Safety. “We’ve increased educational efforts through the Buckle Up Phone Down program statewide, and the survey results show those messages are being heard.”

# RESULTS



## KEEPING ALL TRAVELERS SAFE

**\$1.3 Billion in Safety Benefits, 110 Lives Saved**

The Smooth Roads Initiative and Better Roads, Brighter Future programs were back-to-back efforts that improved 5,600 miles of highways. Completed earlier than scheduled, the efforts delivered smoother pavement, brighter striping, rumble stripes and other safety improvements to the highways that carry 80% of Missouri's traffic. These improvements have resulted in more than \$1.3 billion of safety benefits to customers since 2007.



## SAFETY COMMITMENT

**\$942 Million Customer Savings, 522 Lives Saved**

In the spirit of improving safety on every Missouri road, MoDOT has provided treatments on roadways to address "run-off-the-road" crashes. By installing thousands of miles of shoulders and rumble strips on rural highways, MoDOT has reduced severe crashes by 30%. Guard cable is used on portions of interstates and other major routes, drastically reducing the number of median crossover crashes, which are often fatal. Also, high-grip surface treatments have achieved a 20% reduction in run-off-the-road crashes and help hold vehicles on the driving lanes.



## STATE-OF-THE-ART DESIGN

**\$609 Million in Total Savings, 67 Lives Saved**

The Diverging Diamond Interchange, first used in Springfield, Missouri in 2009, solves major traffic and safety issues at a much lower cost than traditional interchange designs. Missouri now has 24 DDIs. Many other states have followed suit, with at least one DDI of their own. J-Turns are a cost-effective alternative to an overpass on four-lane highways and reduce the number and severity of crashes. At locations where J-Turns installed, crashes are down 25% and there are 88% fewer fatalities. Missouri also uses shared four-lane highways that feature alternating passing lanes to give motorists periodic opportunities to pass without pulling into the opposing lane.



## INNOVATIONS CHALLENGE

**TMA-Flagger project wins Governor's Award**

Four MoDOT employees received the Governor's Quality and Productivity Pinnacle Award, which recognizes projects for innovation, efficiency and customer service. The team developed an automated flagging device that completely removes MoDOT employee flaggers from the roadway. The Pinnacle Award is given out on the rare occasion an entry receives acclaim in all available categories. Only three Pinnacle Awards have been given out since 2010, and MoDOT has received two of the three awards.

# SERVICE

## Keeping Missouri Moving

Missouri experienced a challenging winter season in 2018-2019 that cost about \$66.4 million or about 50% more than typical winters. From November 2018 to March 2019, MoDOT crews used:

- 182,932 tons of salt
- 4,397,046 gallons of salt brine
- 153,435 tons of abrasives
- 531 tons of calcium chloride
- 109,187 gallons of liquid calcium chloride
- 181,130 gallons of liquid magnesium chloride
- 684,763 gallons of beet juice

Every weekend seemed to bring more heavy weather. But even after winter moved on, the battle with the elements was just beginning.

From April into summer, more than 470 locations were closed across the state due to high water, including Interstate 29 north of St. Joseph. Even Amtrak's Missouri River Runner suspended its passenger rail service as the banks of the Mighty Mo overflowed and covered its tracks.

It wasn't until flood waters receded that crews could come in and repair damage. Debris was scattered over roadways for miles in the Northwest District and damage to road substructure had to be inspected and repaired before travel could resume.

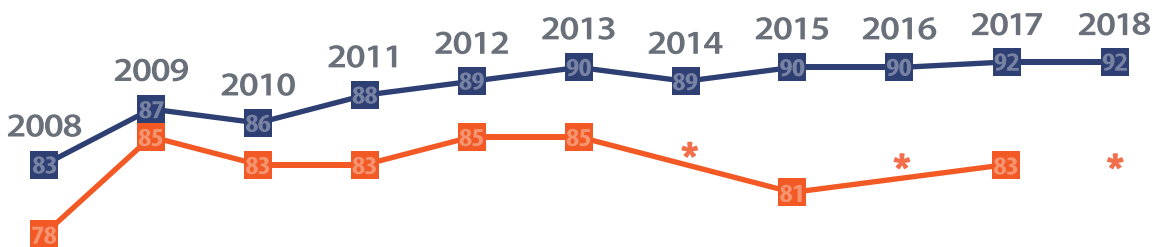
Although weight restrictions were relaxed on motor carriers hauling rock, sand and gravel, MoDOT maintenance crews could only wait out the event and make repairs in the aftermath.

While the final figure has not been totaled, current figures show spring floods damaged 316 sites throughout the state with current repair estimates at nearly \$32 million.

## Road Condition and Customer Satisfaction

■ % Major Highways in Good Condition    ■ % Overall Customer Satisfaction

\* Survey not conducted for these years.



“Having goals isn't enough. With the help of our partners, we continuously improve our performance and hold ourselves accountable to our customers.”

# RESULTS



## CUSTOMER PRIORITIES

**\$409 Million in Total Savings**

MoDOT focuses on citizen priorities when reassessing services provided. Without sacrificing safety, adjusting mowing and striping schedules on low-volume highways, fighting snow with innovative materials and equipment, reevaluating our snow routes, and using incarcerated crews where feasible, \$409 million is redirected to roads and bridges annually.



## KEEPING BUSINESSES MOVING

**\$98 Million in Total Customer Savings**

Missouri's economic health depends on the efficient movement of the goods it produces and consumes. MoDOT Carrier Express, our first-in-the-nation online business portal, streamlines Missouri-based motor carriers' business transactions with the state — getting their drivers and the products they haul on the road in record time. The system, a **Computerworld Honors Laureate** honoree, saved customers \$8.5 million in 2019.



## INNOVATIVE PROCUREMENT

**\$292 Million Redirected to Roads and Bridges**

MoDOT uses Alternative Technical Concepts to provide solutions that are equal or better to the original bid requirement. ATCs have been used on multiple projects since 2007. Looking to copy private-sector success, legislators authorized Design-Build project delivery. MoDOT has delivered 11 Design-Build projects that were completed 74 months ahead of schedule. Concentrating on project goals, innovation, schedule and budget, construction is completed more efficiently, with less impact on travelers.



## RECYCLED MATERIALS

**\$323 Million Saved from 2007-2019**

Like many other organizations, MoDOT recycles office paper, ink cartridges and the like. In addition, we use recycled shingles, tires, asphalt and other materials to deliver the best pavement with cost — and the environment — in mind.

# STABILITY

## Focus on Bridges

**Governor's "Focus on Bridges" program will improve or replace 260 bridges across the state**

Missouri's bridge program received a much-needed boost in 2019.

Throughout the year, Gov. Mike Parson repeatedly stressed the need to fund Missouri's infrastructure. In his State of the State address, he asked the Missouri General Assembly to consider a concurrent resolution to fund 250 bridge projects - bridges already programmed for repair or replacement in the Missouri Department of Transportation's Statewide Transportation Improvement Program.

The legislature ultimately approved **\$301 million** in bonding revenue to repair or replace 215 bridges, contingent upon the department receiving collateral funding in the form of a federal Infrastructure for Rebuilding America (INFRA) grant.

In addition, the Missouri legislature included **\$50 million** in general revenue in the fiscal year 2020 state budget to repair or replace 45 bridges throughout the state, and another **\$50 million** for a cost-share program. All 45 bridges will be under contract by the end of the year.

MoDOT learned in late July Missouri had been awarded **\$81.2 million** in INFRA funds toward replacement of the I-70 Missouri River Bridge at Rocheport and construction of I-70 climbing lanes at Mineola Hill in Montgomery County, the largest competitive grant MoDOT has ever received. The award also initiated the governor's "Focus on Bridges" program.

The grant will also free up \$301 million from the current Statewide Transportation Improvement Program for new transportation improvement projects.



“We will do the best we can with what we have for as long as we can.”



# RESULTS



## MANAGING ASSETS

### TAKING CARE OF OUR SYSTEM

#### \$38 Million in Total Savings

With 33,838 miles of state highway to manage, taking care of our signs and signals is a big challenge. By reassessing our road sign needs, modifying sign design and installations, converting signal and roadway lighting to LED, merging multiple software contracts into one and scrutinizing every aspect of traffic signal design and operation, \$38 million is sent back over time to take care of our system.



## PRACTICAL DESIGN

### DESIGNING FOR EFFICIENCY

#### \$1.5 Billion Savings

MoDOT is the birthplace of the Practical Design concept. Under the rallying cry of “Build Chevys – not Cadillacs,” MoDOT focused on core traveler needs and controlled costs. The effort earned the **AASHTO President’s Transportation Award** and became a Federal Highway Administration standard.



## FINANCIAL STABILITY

### FINANCIAL RESPONSIBILITY

#### \$1.4 Billion in Additional Funds

MoDOT refinanced and paid off some bond debt years early, saving \$86 million for roads and bridges.

#### \$86 Million in Additional Savings

Communities contribute to state highway projects to receive needed upgrades faster. If custom, decorative work is desired, those costs are contributed, too. In the last 10 years, locals shared \$1.4 billion in additional local or federal funding to MoDOT projects.



## CONNECTIONS & CHOICES

### IMPROVING ALL MODES

#### 2019 AASHTO America’s Transportation Awards Grand Prize Winner

The Infrastructure Improvements to Downtown St. Louis project, an \$801 million collaboration between the Missouri and Illinois departments of transportation, improved travel times, delivered major multimodal enhancements to both states and provided a new connection to the Gateway Arch. The project included the new Stan Musial Memorial Bridge, connecting it to a relocated interstate by adding ramps to and from the Poplar Street Bridge and an extra lane between St. Louis and St. Clair County in Illinois. A park replaced the previous interstate location, with bicycle and pedestrian access points added to the banks of the Mississippi River.

# RESULTS

## DELIVERING RESULTS

We continue to complete projects on budget and on time.

**State Fiscal Year 2019**  
368 projects completed

4.1 percent under budget  
92 percent completed on time.

**Over the last 10 years**  
4,362 projects worth  
\$11.3 billion completed

8 percent (\$957 million) under budget  
94 percent completed on time.

## I-435 Reconstruction Project Improves Safety and Congestion

In March 2019, MoDOT began reconstructing the Interstate 435/Interstate 70 interchange in Kansas City in Jackson County. This interchange is the first of its kind in the KC Region to use a design called a “partial turbine” which enhances safety and removes the less traditional left exits and improves the loop ramp configuration to relieve congestion. This project was identified in the I-70 Environmental Impact Study as one of the possible improvements to ease congestion and crashes often caused by merging and weaving at this location. Construction of the \$47 million project is scheduled to be completed by December 2020.



## For More Information

### ADDITIONAL INFORMATION

**Citizens Guide to Transportation Funding in Missouri**

[www.modot.org/guidetotransportation/](http://www.modot.org/guidetotransportation/)

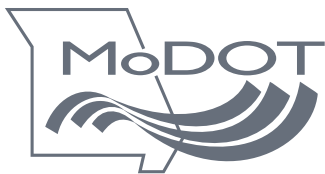
**TRACKER: Measures of Performance**

[www.modot.org/about/Tracker.htm](http://www.modot.org/about/Tracker.htm)

**Appendices and Additional Documents**

[www.modot.org/Results/Documents.html](http://www.modot.org/Results/Documents.html)

“Innovation is woven into MoDOT’s culture and is embraced by our partners.”



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