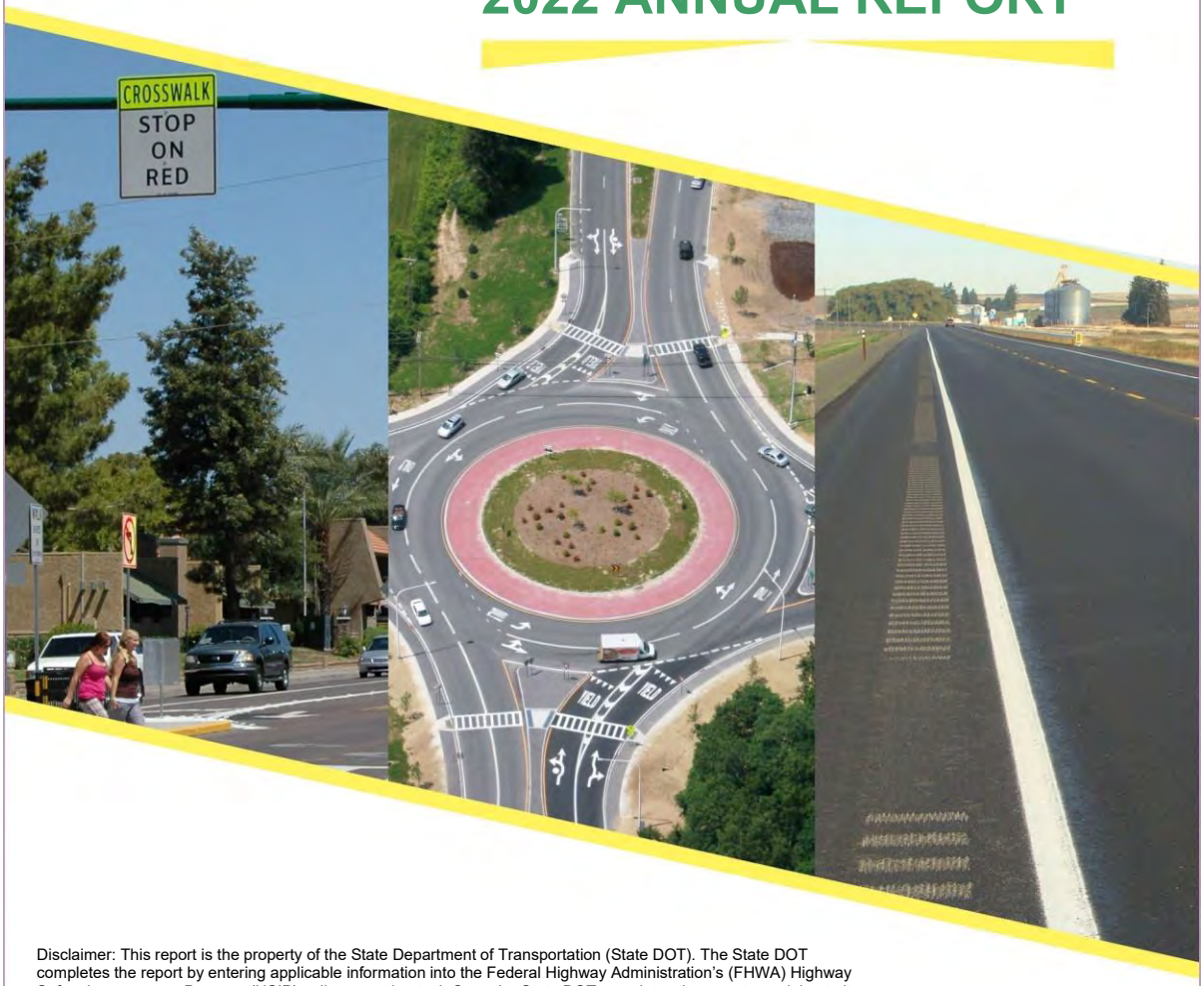
# MISSOURI

# HIGHWAY SAFETY IMPROVEMENT PROGRAM

## 2022 ANNUAL REPORT

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# Disclaimer

## *Protection of Data from Discovery Admission into Evidence*

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 407 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

# Executive Summary

The Missouri Coalition for Roadway Safety and the Missouri Department of Transportation (MoDOT) are dedicated to improving safety of roadway users through education, engineering, enforcement and emergency medical services initiatives. Safety is one of MoDOT's core values: "Be Safe." This message is also reinforced in the Department's Practical Design Guide that states, "Safety will not be compromised. Every project we do will make the facility safer after its completion." Additionally, "keeping our customers and ourselves safe" is a MoDOT Tangible Result and is regularly tracked and reviewed in MoDOT's performance management system.

Missouri's Highway Safety Improvement Program (HSIP) is driven by the state's Strategic Highway Safety Plan (SHSP). In October 2020, Missouri introduced its fifth edition of the SHSP and established a highway safety goal of ZERO fatalities by 2030. Show-Me ZERO: Driving Missouri Toward Safer Roads guides the State's safety initiatives and addresses safety from a comprehensive standpoint including engineering, enforcement, education, emergency medical services, technology and public policy solutions. The SHSP focuses on implementing strategies that will reduce both fatal and serious injuries on Missouri roadways.

Evidenced-based decision-making is paramount to a sound safety program. Data analysis is a critical part of identifying overrepresented crash types, locations, driver age, driver gender, and driver behaviors. These findings guide the deployment of effective and appropriate strategies to improve safety on the entire system. Efforts are made to analyze fatal and serious injury crashes to help discern where limited safety funding should be applied so that maximum safety benefits are attained.

Missouri experienced 1,016 fatalities in 2021, which is the highest number since 2006. This spike may have been influenced by the COVID-19 pandemic and the increase in speeding and aggressive driving seen throughout the state. While the overall fatalities did rise, the benefits of Missouri's HSIP helped to mitigate this increase in severe crashes. This can be attributed to the systemic initiatives and high benefit spot treatments being deployed, as well as other efforts to change the safety culture of Missouri's motorists, such as the Buckle Up/Phone Down campaign.

# Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

# Program Structure

## *Program Administration*

### Describe the general structure of the HSIP in the State.

The overall HSIP is administered by MoDOT's Highway Safety and Traffic Division. However, the division does not typically identify individual projects as part of this process. Instead, HSIP funds are distributed to each of MoDOT's seven districts based on a three-year average of the number of fatalities and serious injuries occurring their areas. From there, each district identifies how their share of HSIP funds will be programmed in accordance with Missouri's SHSP and the latest safety research and guidance. The districts carry out the projects to completion. Occasionally, statewide safety projects may be carried out by the Highway Safety and Traffic Division. While Missouri's HSIP is led by MoDOT, each project goes through a robust planning process and allows input from various stakeholders. Additionally, these projects are tied to strategies identified in the SHSP, which involved collaboration with various partners throughout the state.

### Where is HSIP staff located within the State DOT?

Planning

MoDOT's Highway Safety and Traffic Division leads the HSIP reporting effort. MoDOT's District Traffic Offices facilitate the selection of HSIP projects and implement the HSIP program.

With the goal that every MoDOT project makes the facility safer after completion, Design and Planning staff also consider safety in their efforts.

### How are HSIP funds allocated in a State?

- Formula via Districts/Regions

MoDOT's Highway Safety and Traffic Division also have some HSIP funds distributed to them. In January of 2018, the Missouri Highways and Transportation Commission approved the use of a new formula for distributing safety funds to MoDOT's Districts. This new formula places more focus on areas where fatalities and serious injuries are occurring. This new distribution took effect in SFY 2021. Additionally, in past years the funding distribution was for a partial amount of the full HSIP funding available to Missouri. This year the Commission approved the full programming of HSIP funds.

## Describe how local and tribal roads are addressed as part of HSIP.

Crash data on local roadways are included in the Missouri Statewide Traffic Accident Records System (STARS) managed by the Missouri State Highway Patrol (MSHP). MoDOT uses this data to evaluate all roadways in the state and places emphasis where severe crashes are occurring. This analysis is performed for both intersections and non-intersection locations. This analysis method places weight towards locations experiencing a higher frequency of severe crashes and identifying them as locations of higher interest. Most locations are on state system roadways, but there are local roadways identified on these lists as well. While the majority of the severe crash problem is located on the state system, non-state system needs are also investigated. MoDOT also communicates the locations of interest to planning entities such as the Metropolitan Planning Organizations and Regional Planning Commissions.

More than half of non-state system fatalities occur in four counties (Jackson, St. Louis City, St. Louis County, and Greene). In total, there were 305 non-state system fatalities. However, these four counties accounted for 176 or 58% of the fatalities. In previous years, local strategic highway safety plans (SHSP) were developed for the top counties experiencing severe crashes. The local SHSPs identified systemic countermeasures and projects.

The Missouri Coalition for Roadway Safety has a subcommittee focused on infrastructure improvement. In this subcommittee, several local agencies discuss implementation of key SHSP strategies, promote road safety assessments and local road safety plans, and share information on the latest safety research. Missouri now has three Vision Zero cities, which are Columbia, Kansas City, and Kirkwood.

Missouri's LTAP center continues to move safety forward. MoDOT has begun piloting a Safety Circuit Rider program through the LTAP center. This program provides a safety expert to work with local agencies that may not have the staff required for the development of a local road safety plan or identification of safety countermeasures for issues in their community.

Additionally, MoDOT facilitates the Transportation Engineering Assistance Program (TEAP) which allows local public agencies (LPAs) to receive engineering assistance for studying traffic engineering problems.

## Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

- Design
- Districts/Regions
- Governors Highway Safety Office
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

There is some overlap in these selections with the way MoDOT is structured. Traffic engineering/safety could be included under operations. However, operations is more inclusive in other traffic areas, so both were selected.

## Describe coordination with internal partners.

MoDOT has focused for some time on system-wide safety solutions. Collaboration continues to take place with the Design Division to update MoDOT's Engineering Policy Guide, the Maintenance Division to improve roadsides, and the Planning Division to better evaluate and select safety needs for improvements. Training

opportunities are offered to the internal partners mentioned previously, in topics such as the Highway Safety Manual (HSM), Complete Streets, and Safe Transportation for Every Pedestrian (STEP). FHWA's Resource Center continues to provide training support in these subjects. Additionally, we work daily with the Highway Safety office to evaluate and monitor the crash types. It is vital that all areas in our department work together and focus on safety improvements.

MoDOT has also established a process to report the safety benefits of all projects utilizing HSIP funds as part of an ongoing internal assessment of Missouri's HSIP program. This assessment is used as part of an evaluation process for safety projects planned to be incorporated into the State Transportation Improvement Program.

In an effort to continue furthering safety, MoDOT's Highway Safety and Traffic division has created the SAFER document. The intent is for SAFER to be used to promote more safety conversations throughout the project development process.

## Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Governors Highway Safety Office
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Other-National Highway Traffic Safety Administration
- Other-Federal Motor Carrier Safety Administration
- Other-Emergency Services, Department of Revenue, etc

## Describe coordination with external partners.

Missouri's Strategic Highway Safety Plan (SHSP) is the umbrella document that identifies emphasis areas and prioritizes strategies for reducing fatalities and serious injuries on all Missouri roadways. The development of the SHSP utilized significant involvement from external stakeholders throughout the state, including metropolitan planning organizations and local government agencies.

MoDOT also works with Missouri's LTAP center to continue to move safety forward. MoDOT sees benefit in continuing the Safety Circuit Rider program through the LTAP center. The Safety Circuit Rider helps to assist local public agencies in the analysis of safety issues on locally owned roads and help determine possible low-cost solutions to improve safety.

Each project in Missouri has engagement with local agencies through MoDOT’s planning framework, starting with locals identifying and prioritizing projects through MoDOT’s regional process for programming into the STIP. MoDOT also collaborates with planning partners through monthly webinars, which include a safety update in each webinar. This is used to let partners know about safety issues, legislation, tools, challenges, opportunities, resources, up to date status on fatalities and trends, as well as safety target coordination.

## Describe other aspects of HSIP Administration on which the State would like to elaborate.

Safety impacts are assessed for any project utilizing HSIP funds. These are tracked in MoDOT's internal project management system. This system has been updated to incorporate data required for the annual HSIP report, including items such as improvement category, subcategory, and SHSP relationship. This will

streamline the annual HSIP reporting process. Additionally, this internal project management system is being enhanced to collect more detailed information for any project improving safety regardless of the use of HSIP funds programmed on that project.

## *Program Methodology*

**Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?**
No

MoDOT has an Engineering Policy Guide (EPG) article published online that outlines safety program guidelines.

http://epg.modot.org/index.php?title=907.1_Safety_Program_Guidelines

### Select the programs that are administered under the HSIP.

- Bicycle Safety
- Horizontal Curve
- Intersection
- Median Barrier
- Pedestrian Safety
- Roadway Departure
- Skid Hazard
- Wrong Way Driving
- Other-Work Zone Enforcement
- Other-MASH Upgrades
- Other-Stripe Retroreflectivity

## Program: Bicycle Safety

### *Date of Program Methodology:10/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

**Crashes**

- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only

**Exposure**

- Traffic
- Volume

**Roadway**

- Functional classification

### *What project identification methodology was used for this program?*

- Crash frequency
- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*

Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic Evaluation

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

## Program: Horizontal Curve

### *Date of Program Methodology:2/8/2013*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes<br>• Fatal and serious injury crashes only | • Volume | • Horizontal curvature |

### *What project identification methodology was used for this program?*

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- Relative severity index

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*

Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic evaluation

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**

Other-Systemic safety initiative:2
Other-Severity Index:1

## Program: Intersection

### *Date of Program Methodology:1/21/2009*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

**Crashes**

- All crashes
- Fatal and serious injury crashes only

**Exposure**

- Volume

**Roadway**

- Functional classification

### *What project identification methodology was used for this program?*

- Crash frequency
- Excess proportions of specific crash types
- Relative severity index

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*

Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic evaluation

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**

Other-Systemic safety initiative:2
Other-Severity Index:1

## Program: Median Barrier

### *Date of Program Methodology:9/27/2002*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

**Crashes**

- All crashes
- Fatal and serious injury crashes only

**Exposure**

- Volume

**Roadway**

- Median width
- Horizontal curvature
- Functional classification
- Roadside features

### *What project identification methodology was used for this program?*

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- Relative severity index

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*
Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic evaluation

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**
Other-Systemic safety initiative:1

## Program: Pedestrian Safety

### *Date of Program Methodology:10/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*
Competes with all projects

### *What data types were used in the program methodology?*

**Crashes**

- All crashes

**Exposure**

- Traffic
- Volume

**Roadway**

- Functional classification

### *What project identification methodology was used for this program?*

- Crash frequency
- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*
Yes

### *Are local road projects identified using the same methodology as state roads?*
Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic Evaluation

***Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).***

**Rank of Priority Consideration**

Ranking based on B/C:1

## Program: Roadway Departure

### *Date of Program Methodology:10/1/2004*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes<br>• Fatal and serious injury crashes only | • Volume | • Functional classification |

### *What project identification methodology was used for this program?*

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- Relative severity index

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*

Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic evaluation

***Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).***

**Rank of Priority Consideration**

Other-Systemic safety initiative:2
Other-Severity Index:1

## Program: Skid Hazard

### *Date of Program Methodology:2/8/2013*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

**Crashes**

- All crashes
- Fatal and serious injury crashes only
- Other-Wet pavement crashes

**Exposure**

**Roadway**

- Horizontal curvature

### *What project identification methodology was used for this program?*

- Crash frequency
- Excess proportions of specific crash types
- Other-Wet/Dry Crash Ratio
- Relative severity index

### *Are local roads (non-state owned and operated) included or addressed in this program?*

Yes

### *Are local road projects identified using the same methodology as state roads?*

Yes

### *How are projects under this program advanced for implementation?*

- Other-Systemic evaluation

***Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).***

**Rank of Priority Consideration**

Other-Systemic safety initiative:0
Other-Wet/Dry Crash Ratio:1

## Program: Wrong Way Driving

### *Date of Program Methodology:6/1/2017*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes<br>• Fatal and serious injury crashes only | • Volume | • Functional classification |

### *What project identification methodology was used for this program?*

- Crash frequency
- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*

No

### *Are local road projects identified using the same methodology as state roads?*

### *How are projects under this program advanced for implementation?*

- Competitive application process

***Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must***

***equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).***

**Rank of Priority Consideration**

Other-Systemic Safety Initiative:1

## Program: Other-Work Zone Enforcement

### *Date of Program Methodology:10/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • Fatal and serious injury crashes only | • Traffic | • Functional classification |

### *What project identification methodology was used for this program?*

- Crash frequency
- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*

No

### *Are local road projects identified using the same methodology as state roads?*

### *How are projects under this program advanced for implementation?*

- selection committee

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**

Available funding:1

## Program: Other-MASH Upgrades

### *Date of Program Methodology:10/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| | | • Roadside features |

### *What project identification methodology was used for this program?*

- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*

No

### *Are local road projects identified using the same methodology as state roads?*

### *How are projects under this program advanced for implementation?*

- selection committee

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**

Available funding:1

## Program: Other-Stripe Retroreflectivity

### *Date of Program Methodology:10/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| | • Lane miles | |

### *What project identification methodology was used for this program?*

- Probability of specific crash types

### *Are local roads (non-state owned and operated) included or addressed in this program?*

No

### *Are local road projects identified using the same methodology as state roads?*

### *How are projects under this program advanced for implementation?*

- selection committee

### *Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).*

**Rank of Priority Consideration**

Available funding:1

### What percentage of HSIP funds address systemic improvements?

43

### HSIP funds are used to address which of the following systemic improvements?

- Cable Median Barriers
- High friction surface treatment
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Upgrade Guard Rails
- Wrong way driving treatments

## What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan
- Stakeholder input
- Other-Enforcement and other stakeholders input.
- Other-Peer Exchange - lessons learned

All the countermeasure identification processes listed here are applicable to MoDOT's countermeasure selection, although they vary depending on how the safety need was identified (Systemic, Spot, RSA).

## Does the State HSIP consider connected vehicles and ITS technologies?

Yes

## Describe how the State HSIP considers connected vehicles and ITS technologies.

Missouri's Strategic Highway Safety Plan, Show-Me ZERO: Driving Missouri Toward Safer Roads, highlights several strategies to reduce severe crashes. One of these strategies is to take advantage of technology solutions to reduce the likelihood of crashes. This includes:

- Use intelligent transportation systems to detect and warn of high-risk or adverse conditions.
- Support ongoing implementation of crash avoidance systems in vehicles by maintaining retroreflectivity levels for signs and markings and by sharing traveler information and traffic control data with mobile providers.

MoDOT is also actively pursuing the use of autonomous Truck Mounted Attenuators (TMAs) for mobile work zones. A pilot project is currently underway testing an autonomous TMA that follows a lead vehicle. This pilot testing is just beginning its field testing stage.

## Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

## Please describe how the State uses the HSM to support HSIP efforts.

By MoDOT policy, any project that is funded with HSIP funds must calculate the anticipated reduction in fatal and serious injury crashes. This information is then used to justify and prioritize projects, to maximize the value of these limited safety funds.

MoDOT is attempting to expand our use of the HSM to be performed on any project impacting safety, regardless of use of HSIP funds. One method that being implemented to promote this at MoDOT is the SAFER document.

Additionally, MoDOT developed systemic evaluation tools for commonly used safety countermeasures. These tools provide information regarding the anticipated value that the systemic improvement may have, based on identified risk factors.

## Describe other aspects of the HSIP methodology on which the State would like to elaborate.

MoDOT uses data driven safety analysis to identify the top crash types occurring in Missouri and developed a list of strategies focused on addressing these crash types. Additionally, MoDOT develops lists of various locations of interest that identify where there may be safety concerns based on various criteria, such as:

- High Severity Locations (Intersections/Range)
- Run Off Road Crash Locations (Curves and No Shoulders)
- Wet Crash Locations
- Crossed Centerline Crash Locations

Details regarding MoDOT's Safety Program can be found in MoDOT's Engineering Policy Guide 907.1.

# Project Implementation

## *Funds Programmed*

### Reporting period for HSIP funding.

State Fiscal Year

### Enter the programmed and obligated funding for each applicable funding category.

| FUNDING CATEGORY | PROGRAMMED | OBLIGATED | % OBLIGATED/PROGRAMMED |
|---|---|---|---|
| **HSIP (23 U.S.C. 148)** | $23,499,000 | $58,431,540 | 248.66% |
| **HRRR Special Rule (23 U.S.C. 148(g)(1))** | $0 | $0 | 0% |
| **Penalty Funds (23 U.S.C. 154)** | $16,330,000 | $14,286,742 | 87.49% |
| **Penalty Funds (23 U.S.C. 164)** | $0 | $0 | 0% |
| **RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))** | $0 | $0 | 0% |
| **Other Federal-aid Funds (i.e. STBG, NHPP)** | $0 | $0 | 0% |
| **State and Local Funds** | $2,611,000 | $6,492,393 | 248.66% |
| **Totals** | $42,440,000 | $79,210,675 | 186.64% |

One of the reasons for the difference between the total programmed funds and obligated funds is due to MoDOT's retroreflectivity striping and guardrail upgrades programs. Estimates for these programs were not included in the programmed numbers above. However, they are included in the obligated number above.

Another item of note is the programmed and obligated 154 penalty (open container) funds. Given the fact that the federal fiscal year ends in September and the state fiscal year ends in June, there are some safety projects programmed with open container funds that could be obligated in the following state fiscal year.

State and Local Funds were assumed to be 10 percent of the HSIP funds if other federal funds were included on projects for non-safety purposes.

### How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

0%

### How much funding is obligated to local or tribal safety projects?

0%

### How much funding is programmed to non-infrastructure safety projects?

3%

### How much funding is obligated to non-infrastructure safety projects?

3%

### How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

0%

### How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

0%

### Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

MoDOT actively practices asset management to ensure the maintenance of the existing transportation network. Implementing new safety improvements that will add to the transportation system can be a challenge to fund in Districts that are unable to meet their asset management goals. It has been proposed to include HSIP projects into MoDOT's asset management process to ensure the safety improvements constructed will be able to be maintained into the future.

## *General Listing of Projects*

**List the projects obligated using HSIP funds for the reporting period.**

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1P3306 - Pavement resurfacing and add rumblestripes from Rte. HH in Kingston to the Ray County line. $515,000 Open Container funds. | Roadway | Rumble strips – center | 8.2 | Miles | $515000 | $1665000 | Penalty Funds (23 U.S.C. 154) | Rural | Minor Arterial | 1,244 | 60 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| 1S3341 - Add roundabout at Rte. 116 near Lathrop. $796,000 Open Container funds. | Intersection geometry | Intersection geometry - other | 1 | Intersections | $796000 | $1122000 | Penalty Funds (23 U.S.C. 154) | Rural | Major Collector | 990 | 60 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 1P3315 - On-call work zone enforcement at various locations in the Northwest District. | Miscellaneous | Work zone enforcement | 1 | Locations | $10000 | $10000 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 1 | 1 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |
| 2P3156 - Add roundabout at Rte. 19 north junction (Basinger Corner) north of Laddonia. $2,346,000 Open Container funds. | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $3224000 | $3224000 | Penalty Funds (23 U.S.C. 154) | Rural | Principal Arterial-Other | 2,157 | 60 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 2P3090 - Bridge replacement over I-70 and construct roundabouts near New | Interchange design | Innovative Interchange Modifications | 2 | Interchanges | $3125000 | $13231000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 5,453 | 55 | State Highway Agency | Spot | Occupant Protection | Intersections |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Florence. Project involves bridge A0986. $808,000 Open Container and $443,195 | | | | | | | | | | | | | | | |
| 2P3211 - Pavement resurfacing and horizontal curve improvements from Rtes. E and N to 0.8 mile south of Rte. 54 east junction in Louisiana in Pike Cou | Roadway | Pavement surface – high friction surface | 0.3 | Miles | $432000 | $3591000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 498 | 55 | State Highway Agency | Systemic | Distracted Driving | Lane Departures |
| 2P3346 - Add rumblestripes, horizontal curve improvements and upgrade guardrail from Rtes. E and N to 0.1 mile north of Rte. 54 near Louisiana in Pike | Roadway | Rumble strips – edge or shoulder | 25.7 | Miles | $1805000 | $3645000 | Penalty Funds (23 U.S.C. 154) | Rural | Minor Arterial | 498 | 55 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| 2P3361 - On-call work zone enforcement at various locations in the Northeast District. | Miscellaneous | Work zone enforcement | 1 | Locations | $10000 | $10000 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 1 | 1 | State Highway Agency | Spot | Impaired Driving | Work Zones |
| 4S3273 - Add roundabout at Ward Road, turn lanes and signal upgrades at Rte. 291 and Rte. 58 and resurface 0.1 | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $3413000 | $3413000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 8,000 | 55 | State Highway Agency | Spot | Occupant Protection | Intersections |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mile east of Prairie Road to Rte. 291. | | | | | | | | | | | | | | | |
| 4P3295D - Improve sight distance at 112th Street. $416,000 Open Container funds. | Intersection geometry | Intersection geometry - other | 2 | Intersections | $1492000 | $1492000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 3,500 | 55 | State Highway Agency | Systemic | Distracted Driving | Intersections |
| 4P3295E - Rebuild curve and intersection realignment at 100th Street and Crockett Road. | Alignment | Horizontal curve realignment | 0.2 | Miles | $694000 | $694000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 1,000 | 55 | State Highway Agency | Spot | Speed and Aggressive Driving | Data Driven Safety Analysis |
| 3P3078 - Add J-turns at Rte. 127. $559,000 Open Container funds. | Access management | Median crossover - relocate/close crossover | 4 | Crossovers | $1889000 | $1889000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other Freeways & Expressways | 14,000 | 65 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 3P3102 - On-call work zone enforcement at various locations in the rural Kansas City District. $13,000 Open Container funds. | Miscellaneous | Work zone enforcement | 1 | Locations | $14000 | $14000 | Penalty Funds (23 U.S.C. 154) | Rural | Minor Arterial | 1 | 1 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |
| 4I3236 - On-call work zone enforcement at various locations in the urban Kansas City District. $170,000 Open Container funds. | Miscellaneous | Work zone enforcement | 5 | Locations | $170000 | $170000 | Penalty Funds (23 U.S.C. 154) | Urban | Principal Arterial-Interstate | 1 | 1 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5P3409 - Pavement resurfacing from Rte. B to Rte. 54, Tom Bass Road from south of E Meyer Industrial Drive to north of E Meyer Industrial Drive and Po | Roadway | Pavement surface – high friction surface | 1.3 | Miles | $420000 | $14898000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other Freeways & Expressways | 18,900 | 65 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 5S3317 - Pavement resurfacing and add rumblestripes from I-70 to Rte. 94. $1,857,000 Open Container funds. | Shoulder treatments | Widen shoulder – paved or other (includes add shoulder) | 10 | Miles | $1857000 | $3380000 | Penalty Funds (23 U.S.C. 154) | Rural | Major Collector | 578 | 55 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| 5P3328 - Pavement resurfacing and add rumblestripes from Rte. 5 to Rte. 133, Rte. 133 from Rte. 7 to south of Rte. 7 in Richland and Rte. 52 from Rte. | Roadway | Rumble strips – edge or shoulder | 38.5 | Miles | $4651000 | $7587000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 2,051 | 55 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| 5I3252 - Pavement resurfacing from Saline County line to 0.4 mile west of Boone County line. High Friction Surface Treatment 1 mile east of Rte. K in | Roadway | Pavement surface – high friction surface | 0.9 | Miles | $455000 | $13126000 | Penalty Funds (23 U.S.C. 154) | Rural | Principal Arterial-Interstate | 17,685 | 70 | State Highway Agency | Spot | Distracted Driving | Lane Departures |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CD0002 - Striping upgrades in Cooper, Boone and Callaway Counties. | Roadway delineation | Longitudinal pavement markings - remarking | 156 | Miles | $628000 | $628000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Interstate | 18,941 | 70 | State Highway Agency | Systemic | Distracted Driving | Lane Departures |
| 5S3346 - Pavement resurfacing from Rte. 19 to I-44 includes adding rumblestripes from Rte. P to I-44. | Roadway | Rumble strips – edge or shoulder | 8.5 | Miles | $852000 | $1782000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 1,723 | 60 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| CD0001 - Striping upgrades in Laclede, Pulaski, Phelps and Crawford Counties. | Roadway delineation | Longitudinal pavement markings - remarking | 224 | Miles | $13000 | $863000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Interstate | 14,699 | 70 | State Highway Agency | Systemic | Distracted Driving | Lane Departures |
| 5P3407 - On-call work zone enforcement at various locations in the Central District. | Miscellaneous | Work zone enforcement | 1 | Locations | $63000 | $63000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 1 | 1 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |
| 5S3356 - Pavement resurfacing and add rumblestripes from Rte. 8 to Rte. C and Rte. O from Rte. 8 to the end of state maintenance. | Roadway | Rumble strips – edge or shoulder | 16.6 | Miles | $804000 | $2635000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 1,087 | 55 | State Highway Agency | Systemic | Impaired Driving | Lane Departures |
| 6P3242B - Add center turn lane from Christopher Parkway to Tree Ridge | Intersection geometry | Add/modify auxiliary lanes | 0.7 | Miles | $1241000 | $1241000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 12,045 | 55 | State Highway Agency | Spot | Occupant Protection | Intersections |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trail in Hillsboro. | | | | | | | | | | | | | | | |
| 6S3433 - Add center turn lanes, guardrail upgrades and signal replacements from Rte. 231 to Richardson Road. | Intersection geometry | Add/modify auxiliary lanes | 0.5 | Miles | $1365000 | $1934000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 16,974 | 50 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 6I3485 - Install curve-related warning signs and flashers on S curve between Wentzville Parkway and Rte. Z (Church Street) interchanges at the railroa | Roadway signs and traffic control | Curve-related warning signs and flashers | 0.9 | Miles | $369000 | $369000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 70,991 | 65 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 6P3482 - Median barrier repair and upgrades over I-64 between on and off ramps. Project involves bridge A6120. $200,000 Open Container funds. | Roadside | Barrier – concrete | 1 | Miles | $200000 | $200000 | Penalty Funds (23 U.S.C. 154) | Urban | Principal Arterial-Other Freeways & Expressways | 34,791 | 45 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 6P3307 - Pavement resurfacing from Lincoln County line to I-70 in Wentzville. | Roadway | Pavement surface – high friction surface | 0.1 | Miles | $84000 | $5152000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other Freeways & Expressways | 46,716 | 60 | State Highway Agency | Spot | Distracted Driving | Lane Departures |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6I3471 - Add signage and striping for wrong way counter-measures at various ramp locations throughout the St. Louis District. $500,000 Open Container | Roadway signs and traffic control | Roadway signs and traffic control - other | 38.8 | Miles | $500000 | $500000 | Penalty Funds (23 U.S.C. 154) | Urban | Principal Arterial-Interstate | 135,094 | 60 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 6S3437 - Pavement resurfacing from I-270 to Halls Ferry Circle. | Intersection geometry | Add/modify auxiliary lanes | 3 | Approaches | $230000 | $4233000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other Freeways & Expressways | 23,497 | 45 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 6P3637 - Add guard cable from 0.8 miles south of the Missouri River to Arrow Point Drive. | Roadside | Barrier – cable | 1 | Miles | $192000 | $192000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other Freeways & Expressways | 20,364 | 55 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 6P3465 - On-call work zone enforcement at various locations in the St. Louis District. $750,000 Open Container funds. | Miscellaneous | Work zone enforcement | 5 | Locations | $750000 | $1000000 | Penalty Funds (23 U.S.C. 154) | Urban | Multiple/Varies | 1 | 1 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |
| 6P3478 - Upgrade signage and signals at various locations in the St. Louis District. $125,000 Open Container funds. | Intersection traffic control | Systemic improvements – signal-controlled | 1 | Intersections | $125000 | $125000 | Penalty Funds (23 U.S.C. 154) | Urban | Principal Arterial-Other | 1 | 1 | State Highway Agency | Spot | Occupant Protection | Intersections |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8P3206 - High friction surface treatment from west of Carroll Road to west of Hilltop Court and at Richwood Road. | Roadway | Pavement surface – high friction surface | 2 | Miles | $218000 | $218000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 4,193 | 45 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 7P3210 - Pavement resurfacing, add turn lanes, and add high friction surface treatment to curves from 0.4 mile north of Rte. EE to 0.8 mile north of R | Roadway | Roadway widening - add lane(s) along segment | 16.2 | Miles | $2600000 | $10248000 | Penalty Funds (23 U.S.C. 154) | Rural | Principal Arterial-Other Freeways & Expressways | 29,701 | 65 | State Highway Agency | Systemic | Occupant Protection | Intersections |
| 7P3389 - High friction surface treatment on routes in Newton, Taney and Webster Counties. Includes I-44, Rtes. 160, 76 and 60. | Roadway | Pavement surface – high friction surface | 1 | Miles | $604000 | $604000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 30,667 | 70 | State Highway Agency | Spot | Distracted Driving | Lane Departures |
| 7P3387 - Pavement resurfacing from Rte. 76 to 0.5 mile north of Rte. 165. | Roadway | Rumble strips – other | 3 | Miles | $16000 | $532000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 4,328 | 45 | State Highway Agency | Systemic | Distracted Driving | Lane Departures |
| 7I3418 - On-call work zone enforcement at various locations in the rural | Miscellaneous | Work zone enforcement | 1 | Locations | $100000 | $100000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Interstate | 33,810 | 70 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Southwest District. | | | | | | | | | | | | | | | |
| 8I3184 - On-call work zone enforcement at various locations in the urban Southwest District. | Miscellaneous | Work zone enforcement | 8.8 | Locations | $201000 | $201000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 66,663 | 70 | State Highway Agency | Spot | Speed and Aggressive Driving | Work Zones |
| 7S3293B - Pavement resurfacing and add shoulders at various locations from Rte. 38 to Rte. 60 and pavement resurfacing on Rte. K from Rte. 60 to Rte. | Shoulder treatments | Pave existing shoulders | 27.9 | Miles | $464000 | $2703000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 4,137 | 55 | State Highway Agency | Systemic | Distracted Driving | Lane Departures |
| 9S3600 - Add rumblestripes from Rte. 412 to Arkansas State line. | Shoulder treatments | Pave existing shoulders | 1.2 | Miles | $1722000 | $1722000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 2,133 | 55 | State Highway Agency | Spot | Impaired Driving | Lane Departures |
| 9P3598 - Install J-turn at Rte. H. | Access management | Median crossover - relocate/close crossover | 4.06 | Crossovers | $954000 | $954000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other Freeways & Expressways | 14,524 | 60 | State Highway Agency | Spot | Occupant Protection | Intersections |
| 9S3449 - Add rumblestripes from Rte. 61 to Rte. N. | Shoulder treatments | Pave existing shoulders | 7.4 | Miles | $936000 | $936000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 2,963 | 55 | State Highway Agency | Spot | Impaired Driving | Lane Departures |
| 9P3649 - Add lights or conversion to low profile islands in various locations throughout the Southeast District (Phase I). $2,197,000 | Lighting | Intersection lighting | 1 | Intersections | $2197000 | $2197000 | Penalty Funds (23 U.S.C. 154) | Urban | Multiple/Varies | 1 | 1 | State Highway Agency | Systemic | Occupant Protection | Intersections |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Open Container f | | | | | | | | | | | | | | | |
| 9P3657 - On-call work zone enforcement at various locations in the Southeast District. | Miscellaneous | Work zone enforcement | 1 | Locations | $40000 | $40000 | HSIP (23 U.S.C. 148) | Urban | Multiple/Varies | 1 | 1 | State Highway Agency | Systemic | Speed and Aggressive Driving | Work Zones |

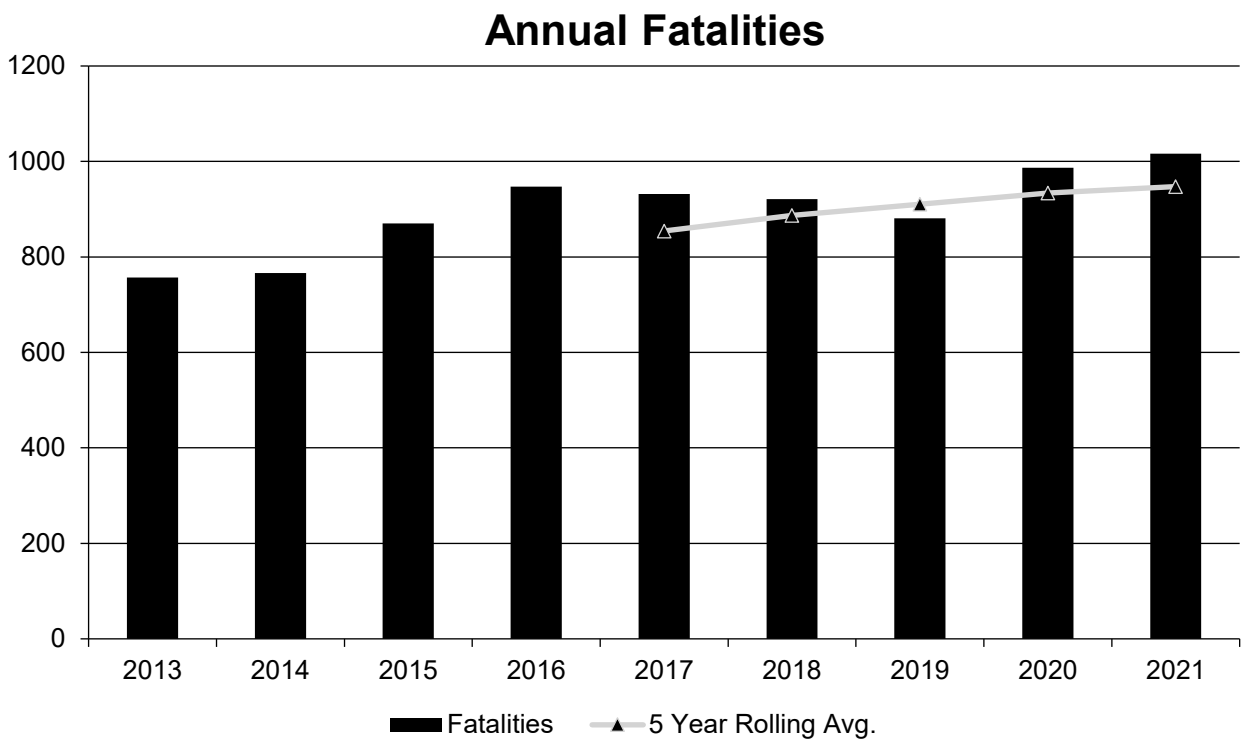
On the projects that included various routes the AADT and Speed are listed as one for consistency.

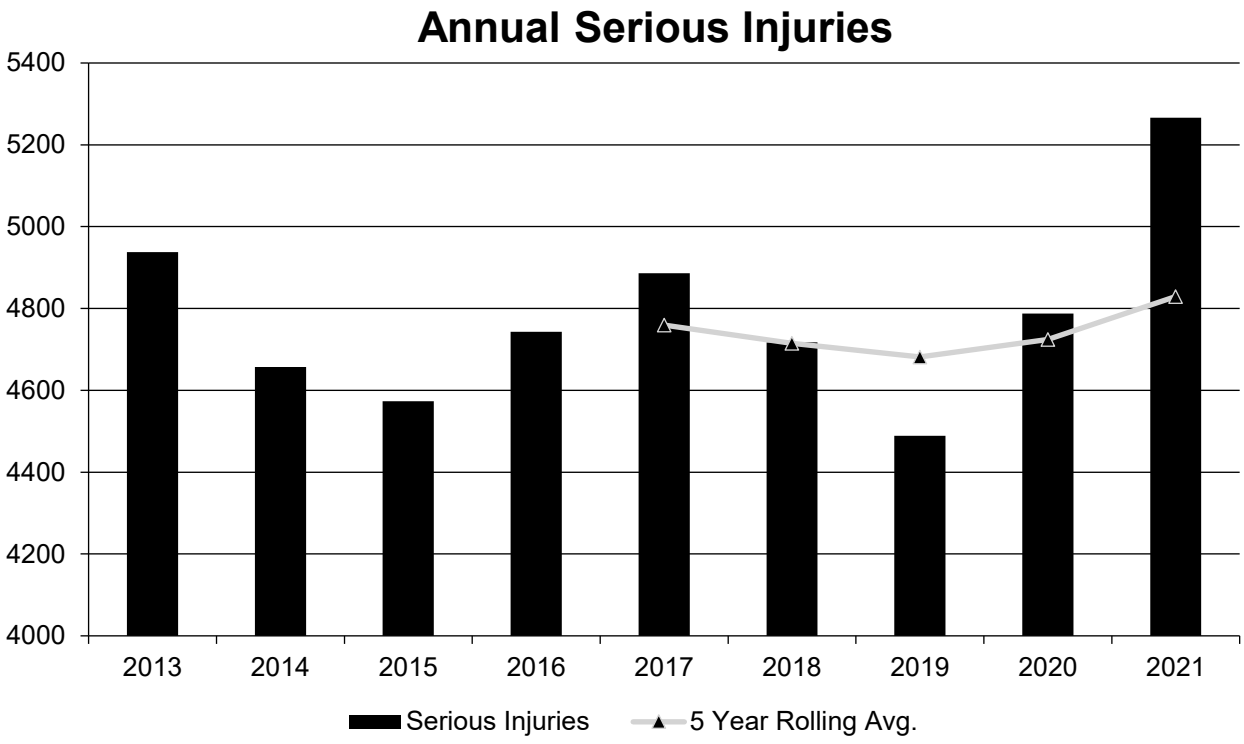
# Safety Performance

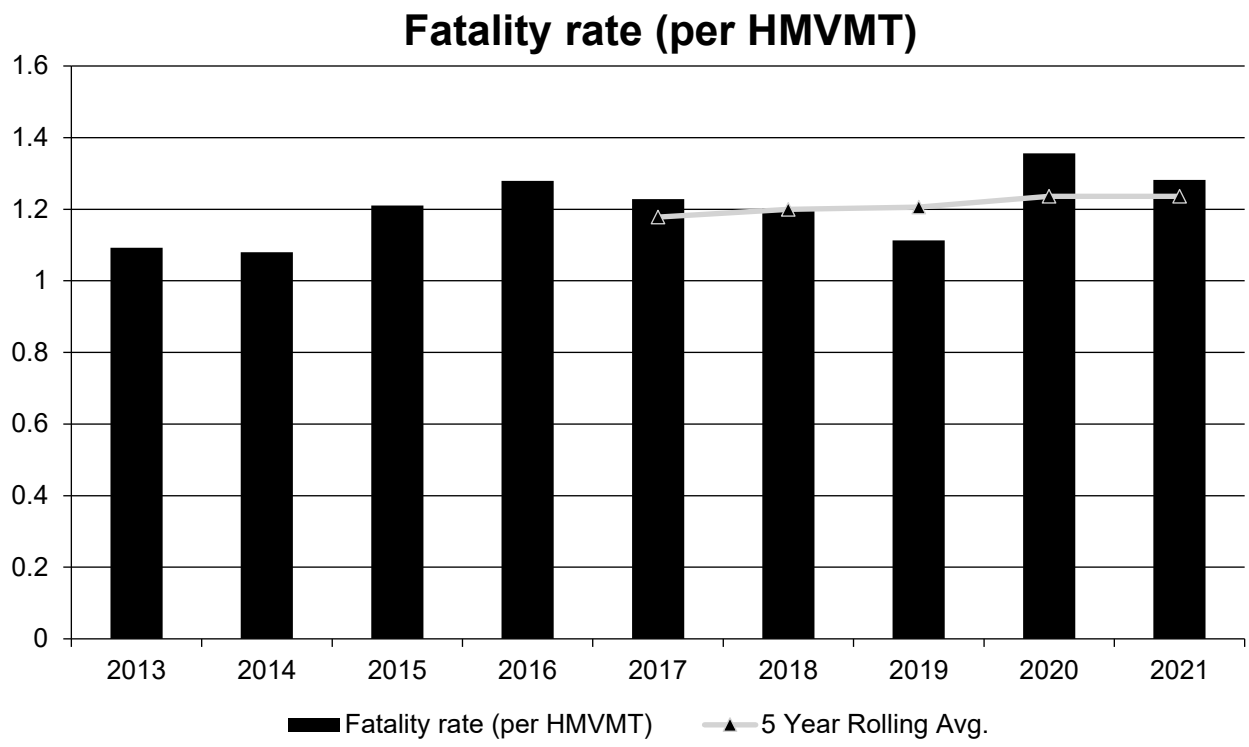
## *General Highway Safety Trends*

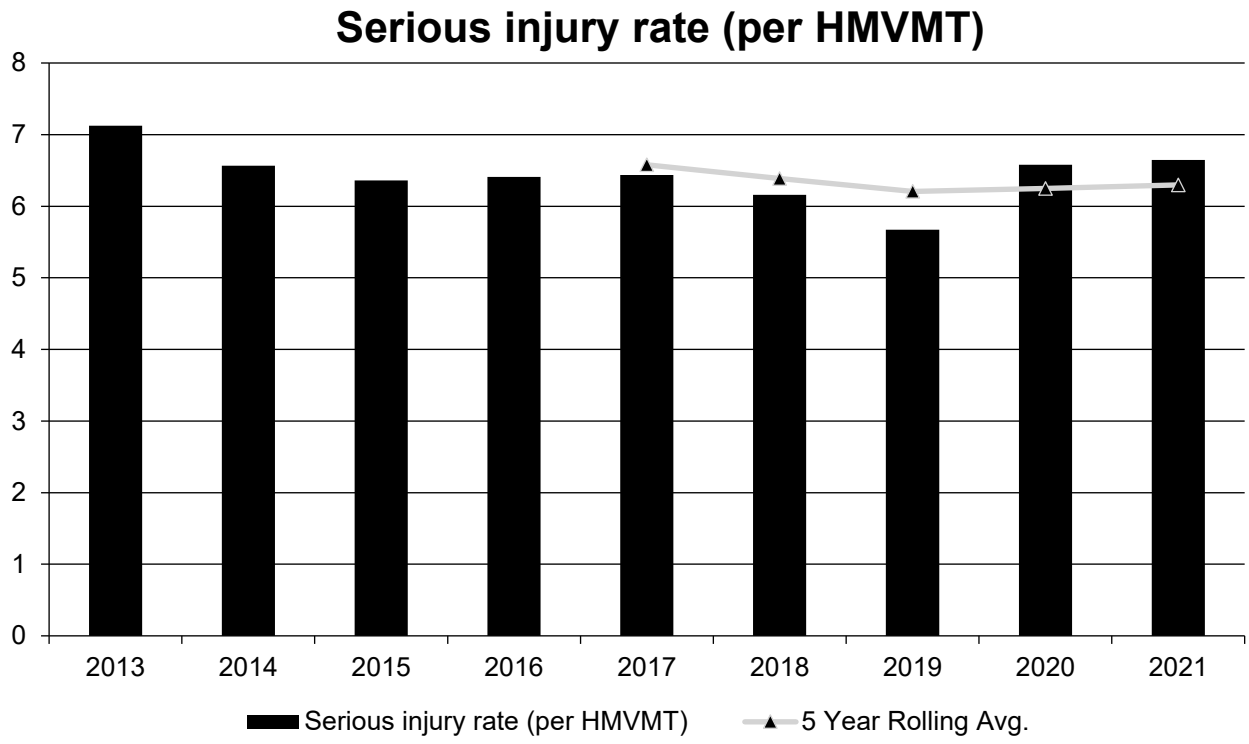
### Present data showing the general highway safety trends in the State for the past five years.

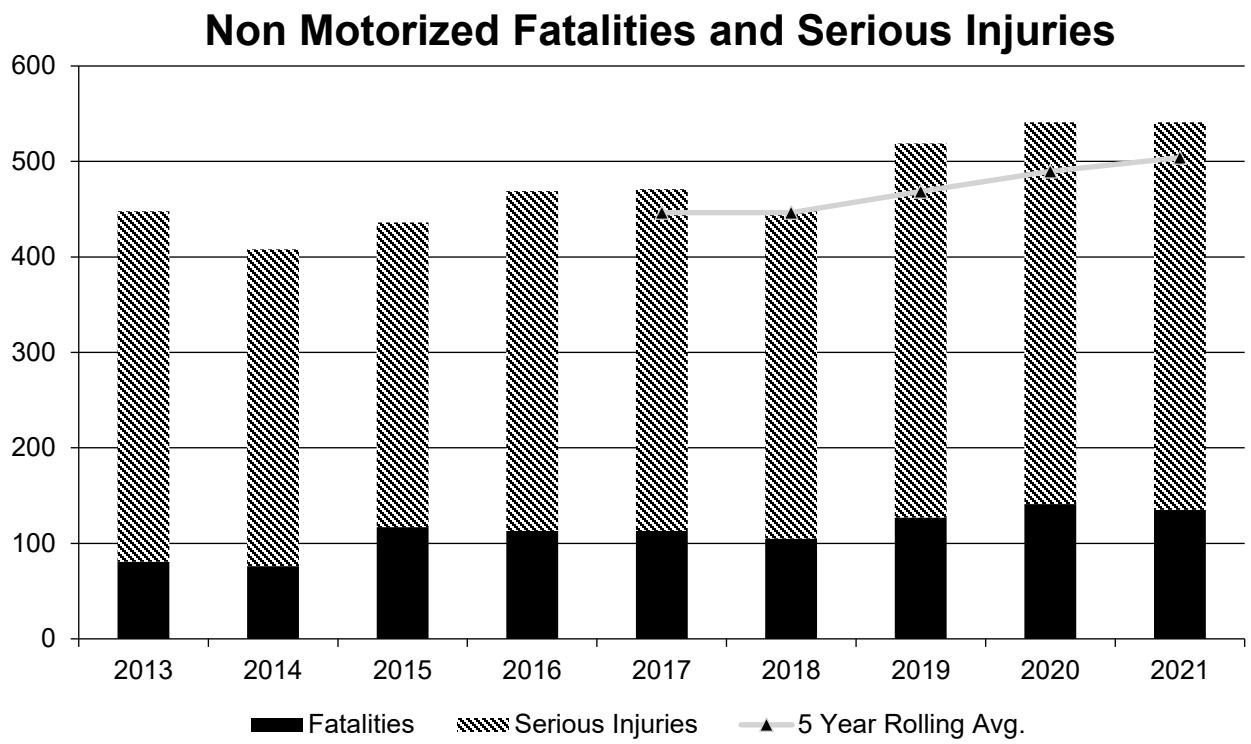
| PERFORMANCE MEASURES | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|
| Fatalities | 757 | 766 | 870 | 947 | 932 | 921 | 881 | 987 | 1,016 |
| Serious Injuries | 4,938 | 4,657 | 4,573 | 4,743 | 4,886 | 4,717 | 4,489 | 4,788 | 5,266 |
| Fatality rate (per HMVMT) | 1.092 | 1.080 | 1.210 | 1.279 | 1.228 | 1.202 | 1.113 | 1.356 | 1.282 |
| Serious injury rate (per HMVMT) | 7.123 | 6.565 | 6.360 | 6.408 | 6.436 | 6.158 | 5.670 | 6.577 | 6.646 |
| Number non-motorized fatalities | 81 | 76 | 117 | 113 | 113 | 105 | 127 | 141 | 135 |
| Number of non-motorized serious injuries | 367 | 332 | 319 | 356 | 358 | 343 | 392 | 400 | 406 |


Annual Fatalities
1200
1000
800
600
400
200
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
5400
5200
5000
4800
4600
4400
4200
4000
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
8
7
6
5
4
3
2
1
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious injury rate (per HMVMT)
5 Year Rolling Avg.




In previous reports, low power electric bicycles were not included in the non-motorized fatalities and serious injuries. These motorized bikes that do not meet motorcycle status (such as mopeds) are now included in the non-motorized totals starting in the 2016 data. Data for this report was compiled in August 2022.

## Describe fatality data source.

State Motor Vehicle Crash Database

## To the maximum extent possible, present this data by functional classification and ownership.

**Year 2021**

| Functional Classification | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|---|---|---|---|
| Rural Principal Arterial (RPA) - Interstate | 45 | 160.8 | 0.63 | 2.28 |
| Rural Principal Arterial (RPA) - Other Freeways and Expressways | 48.2 | 192.8 | 0.94 | 3.75 |
| Rural Principal Arterial (RPA) - Other | 63.8 | 234.8 | 1.97 | 7.24 |
| Rural Minor Arterial | 91.6 | 364.2 | 2.52 | 9.99 |

| Functional Classification | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|---|---|---|---|
| Rural Minor Collector | 21.2 | 92.2 | 3.06 | 13.28 |
| Rural Major Collector | 141.6 | 591.6 | 2.8 | 11.69 |
| Rural Local Road or Street | 75.8 | 400 | 0.84 | 4.46 |
| Urban Principal Arterial (UPA) - Interstate | 97 | 435.6 | 0.7 | 3.16 |
| Urban Principal Arterial (UPA) - Other Freeways and Expressways | 53.2 | 240.4 | 0.99 | 4.45 |
| Urban Principal Arterial (UPA) - Other | 113.4 | 689 | 2.07 | 12.52 |
| Urban Minor Arterial | 107.4 | 715 | 1.7 | 11.3 |
| Urban Minor Collector | 2.6 | 26.6 | 1.24 | 12.84 |
| Urban Major Collector | 39 | 281 | 1.32 | 9.54 |
| Urban Local Road or Street | 47 | 398 | 0.58 | 4.88 |

**Year 2021**

| Roadways | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|---|---|---|---|
| State Highway Agency | | | | |
| County Highway Agency | | | | |
| Town or Township Highway Agency | | | | |
| City or Municipal Highway Agency | | | | |
| State Park, Forest, or Reservation Agency | | | | |
| Local Park, Forest or Reservation Agency | | | | |
| Other State Agency | | | | |
| Other Local Agency | | | | |
| Private (Other than Railroad) | | | | |
| Railroad | | | | |
| State Toll Authority | | | | |
| Local Toll Authority | | | | |
| Other Public Instrumentality (e.g. Airport, School, University) | | | | |
| Indian Tribe Nation | | | | |
| State System | 675.2 | 3,028.6 | 1.33 | 5.97 |
| City & County | 272.2 | 1,800.6 | 1.06 | 7.04 |
| City & County | | | | |

Sample size may be an issue with some of the rates due to low VMT for the functional classification.

Data for this report was compiled in August 2022.

MO Crash data does not indicate these levels of detail in ownership of roadways at crash locations. MoDOT can only identify State or Other ownership.

### Provide additional discussion related to general highway safety trends.

While Missouri had been making progress in reducing the number of fatalities and serious injuries over the last few years, last two years saw a significant spike in severe crashes. The impact of the COVID-19 pandemic likely had an influence on this increase, particularly as is relates to speeding and aggressive driving.

There have been over 100 non-motorized fatalities each year, over the last 6 years and last year alone Missouri experienced 135 fatalities. MoDOT has partnered with FHWA to organize Safe Transportation for Every Pedestrian (STEP) workshops to promote pedestrian safety initiatives.

## *Safety Performance Targets*

### Safety Performance Targets

## Calendar Year 2023 Targets *

### *Number of Fatalities:948.2*

### *Describe the basis for established target, including how it supports SHSP goals.*

Targets are based on an annual reduction needed to reach Zero fatalities by 2030. This reduction assumes larger decreases in future years as new safety technologies are implemented, such as autonomous vehicles. This target is in line with the SHSP to reduce the number of fatalities on Missouri's roadways.

### *Number of Serious Injuries:4848.7*

### *Describe the basis for established target, including how it supports SHSP goals.*

Targets are based on an annual reduction needed to reach Zero serious injuries by 2040. This target is in line with the SHSP to reduce the number of serious injuries on Missouri's roadways.

### *Fatality Rate:1.212*

### *Describe the basis for established target, including how it supports SHSP goals.*

The fatality rate was calculated by taking a 5-year rolling average of historical and forecasted annual fatality rates. Historical fatality rates were derived from observed fatality totals and estimated Annual Vehicle Miles Traveled (VMT). Forecasted rates were determined by using the number of fatalities performance target and dividing by the estimated Annual VMT. The VMT dropped significantly in 2020, by nearly 10%. In 2021 the VMT rebounded more than anticipated such that it is just slightly higher than 2019. It is anticipated that the typically estimated 1% growth per year will be sufficient moving forward. This target is in line with the SHSP to reduce the number of fatalities on Missouri's roadways.

### *Serious Injury Rate:6.205*

### *Describe the basis for established target, including how it supports SHSP goals.*

The serious injury rate was calculated by taking a 5-year rolling average of historical and forecasted annual serious injury rates. Historical serious injury rates were derived from observed serious injury totals and estimated Annual Vehicle Miles Traveled (VMT). Forecasted rates were determined by using the number of serious injuries performance target and dividing by the estimated Annual VMT. The VMT dropped significantly in 2020, by nearly 10%. In 2021 the VMT rebounded more than anticipated such that it is just slightly higher than 2019. It is anticipated that the typically estimated 1% growth per year will be sufficient moving forward. This target is in line with the SHSP to reduce the number of serious injuries on Missouri's roadways.

### *Total Number of Non-Motorized Fatalities and Serious Injuries:499.2*

### *Describe the basis for established target, including how it supports SHSP goals.*

The non-motorized fatalities and serious injuries performance target was based on the performance targets for number of fatalities (Zero by 2030) and number of serious injuries (Zero by 2040). An exception is made for instances where the baseline 5-year rolling average (2017-2021) is less than the calculated target. In this instance, the baseline is less than the calculated performance target, and so the baseline was used as the target. This target is in line with the SHSP to reduce the number of fatalities and serious injuries on Missouri's roadways.

Performance Measures for Fatalities, Fatality Rate, and Serious Injuries were set based on what was reported in the Highway Safety Plan.

Performance Measures for Serious Injury Rate and Non-Motorized Fatalities and Serious Injuries were set based on crash data available in August 2022 for use in the Highway Safety Improvement Program Annual Report.

## Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

Missouri's Highway Safety Office is located within MoDOT which promotes a collaborative environment between engineering and safety staff. MoDOT updated its Strategic Highway Safety Plan (SHSP) using a collaborative, team approach. The team included external partners from emergency management, FHWA, FMCSA, hospitals, law enforcement, Missouri Department of Revenue, MPOs, NHTSA, Regional Planning Commissions (RPCs), and universities. Revisions to the SHSP were shared periodically with the MPOs and RPCs.

Extensive coordination occurred between FHWA, MoDOT, MPO, and NHTSA staff when setting the Safety Targets. Missouri safety data was reviewed for trends, along with assumptions and challenges. MoDOT conducts monthly calls with planning stakeholders. In 2016, a target coordinating process was presented with feedback and consensus from the MPOs. In March, MoDOT calculated statewide and MPO data trends for each safety performance measure. This information was shared and discussed with MoDOT's Executive Team, MPOs FHWA, and NHTSA. After review of feedback from partner groups, the methods and assumptions used to develop the performance targets were finalized in April. MoDOT then applied the agreed upon methodology to develop the safety performance targets and communicated them with the partners.

## Does the State want to report additional optional targets?

No

### Describe progress toward meeting the State's 2022 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

| PERFORMANCE MEASURES | TARGETS | ACTUALS |
|---|---|---|
| **Number of Fatalities** | 871.6 | 947.4 |
| **Number of Serious Injuries** | 4463.9 | 4829.2 |
| **Fatality Rate** | 1.119 | 1.236 |
| **Serious Injury Rate** | 5.829 | 6.297 |
| **Non-Motorized Fatalities and Serious Injuries** | 462.2 | 504.0 |

Based on the data available at the time of reporting, the actual 2021 performance was worse than the 2021 targets, for each of the safety performance targets. This is primarily due to an increase in fatalities and serious injuries which occurred within the 5 year average reporting period. This is consistent with what was experienced nationally during this timeframe, meaning there were external factors, beyond the HSIP program, that were influencing the increase in fatalities. One of the major external factors is that of the COVID-19 pandemic.

Although the last two years (2020 and 2021) saw increases in fatalities and serious injuries the trend is looking to be more positive this year (2022), as Missouri is currently seeing a decrease in sever crashes. However, this has still not recovered to the point that the severe crashes are below what was seen before 2020. These still elevated numbers, most likely, can be attributed to the increase in speeding and aggressive driving observed throughout the state. Additionally, Missouri's Fall 2020 state legislature repealed a helmet law for motorcyclists, which can be correlated to an increase in motorcycle fatalities.

MoDOT will continue to work with the Missouri Coalition for Roadway Safety to attempting to change the safety culture of Missouri's motorists, specifically as it relates to the 4 emphasis areas identified in Missouri's SHSP: Occupant Protection, Distracted Driving, Speed and Aggressive Driving, and Impaired Driving.

## *Applicability of Special Rules*

### Does the HRRR special rule apply to the State for this reporting period?

No

### Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

| PERFORMANCE MEASURES | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|
| Number of Older Driver and Pedestrian Fatalities | 137 | 154 | 135 | 143 | 121 | 148 | 153 |
| Number of Older Driver and Pedestrian Serious Injuries | 361 | 367 | 369 | 426 | 378 | 368 | 432 |

Data for this was compiled in August 2022.

# Evaluation

## *Program Effectiveness*

### How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries
- Lives saved
- Other-Evaluation of individual HSIP projects and programs

MoDOT reports on the safety benefits, such as benefit/cost ratio and lives saved, for all projects utilizing HSIP funds as part of an internal assessment of their HSIP program. This assessment is used as part of a vetting process for planned safety projects to be incorporated into the State Transportation Improvement Program.

### Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

MoDOT will evaluate specific HSIP projects to assess their effectiveness at reducing fatal and serious injury crashes. This information is then used to promote or discourage the use of a particular safety countermeasure. For systemic improvements, MoDOT tracks the change in the number of fatalities as the amount of a safety improvement is further deployed. This allows MoDOT to monitor the safety benefits returned on its continued investment of a systemic strategy. One systemic strategy evaluated was the implementation of chevrons on curves where advisory speeds are at least 15 mph less than posted speeds. Between 2014 and 2019, horizontal curve fatalities and serious injuries on minor roads decreased from 622 to 474.

### What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

- HSIP Obligations

MoDOT's planning office tracks the programming of safety funds to ensure they do not lapse on HSIP funds. There are other success indicators that MoDOT has seen some improvement, but they are not currently being reported on. These indicators include:

· Increased awareness of safety and data-driven process

· Increased focus on local road safety

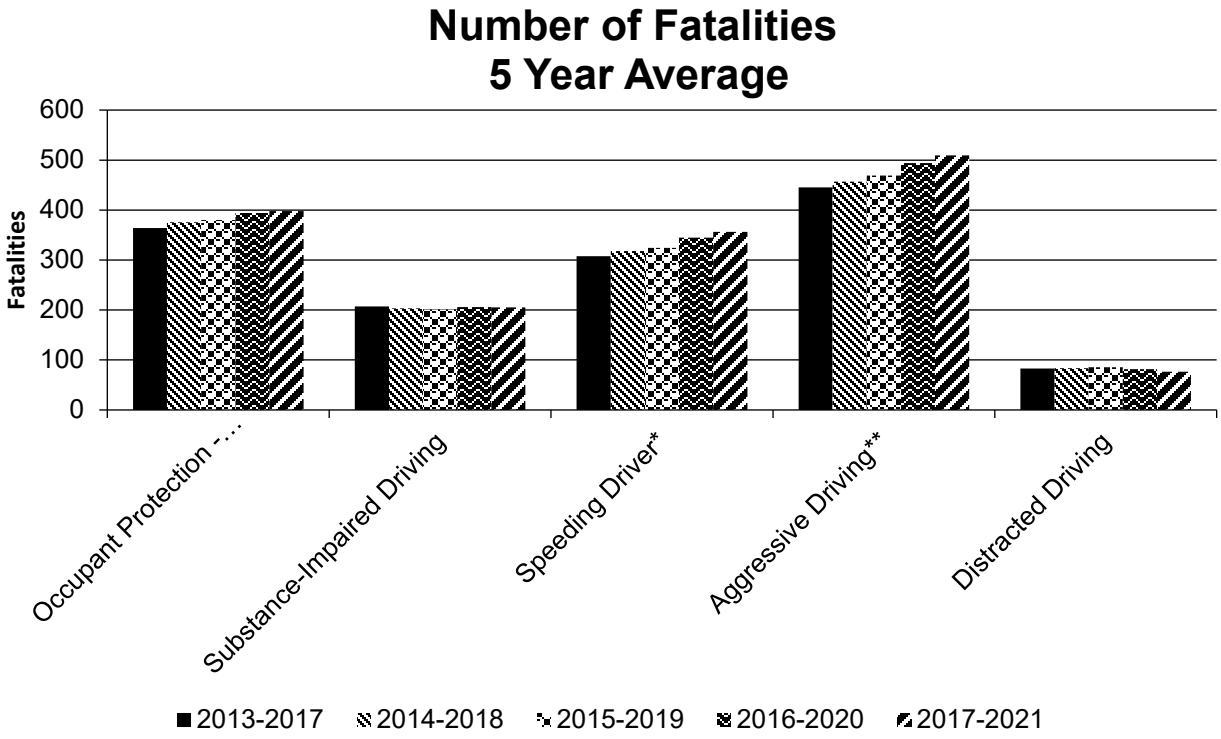
· More systemic programs

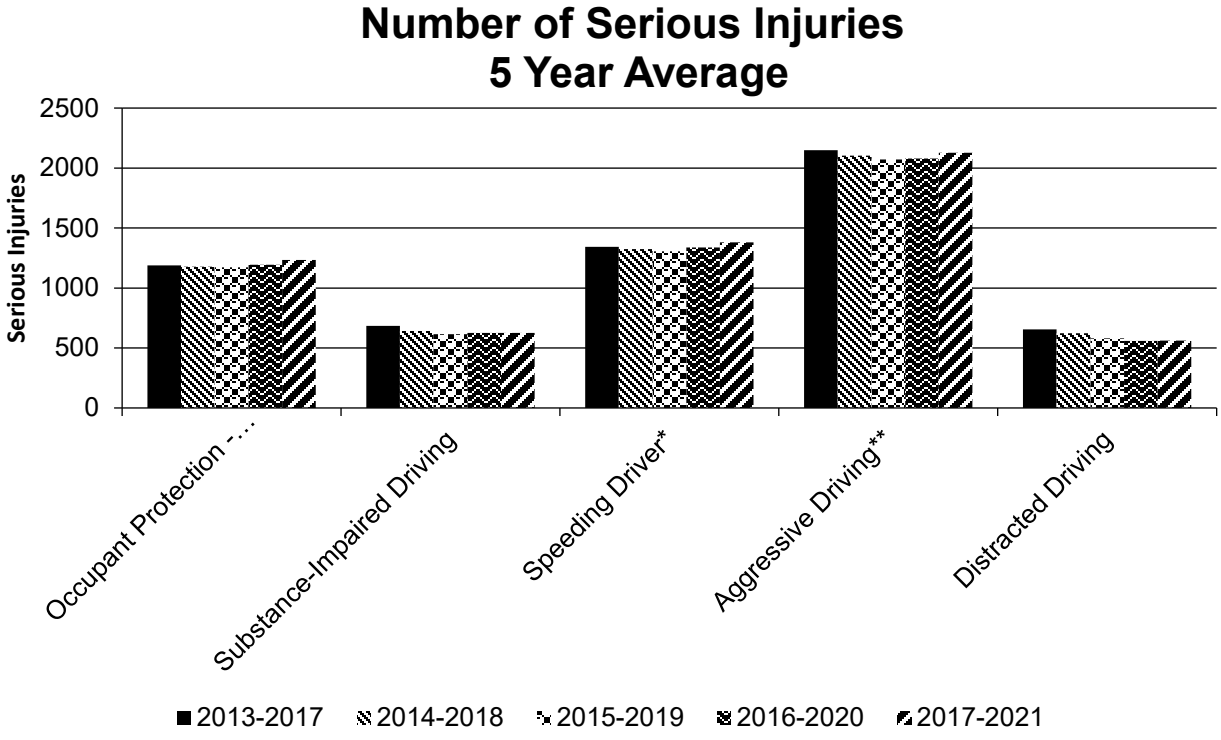
## *Effectiveness of Groupings or Similar Types of Improvements*

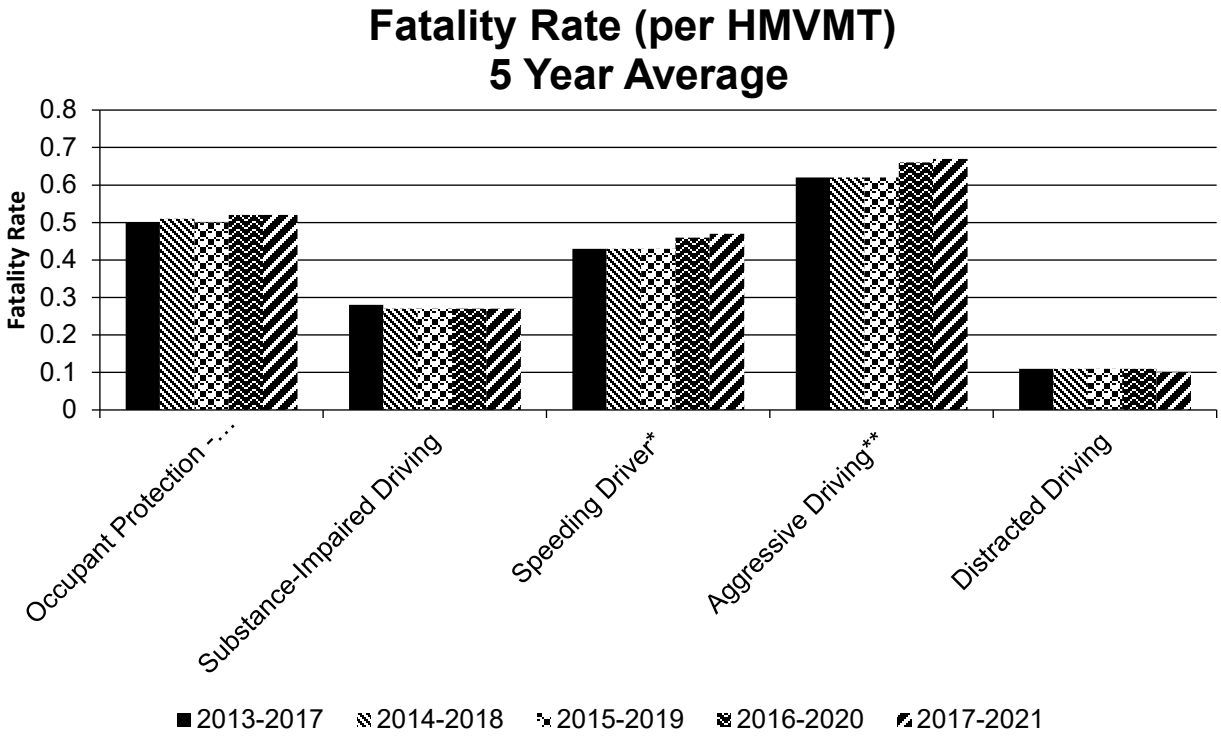
### Present and describe trends in SHSP emphasis area performance measures.

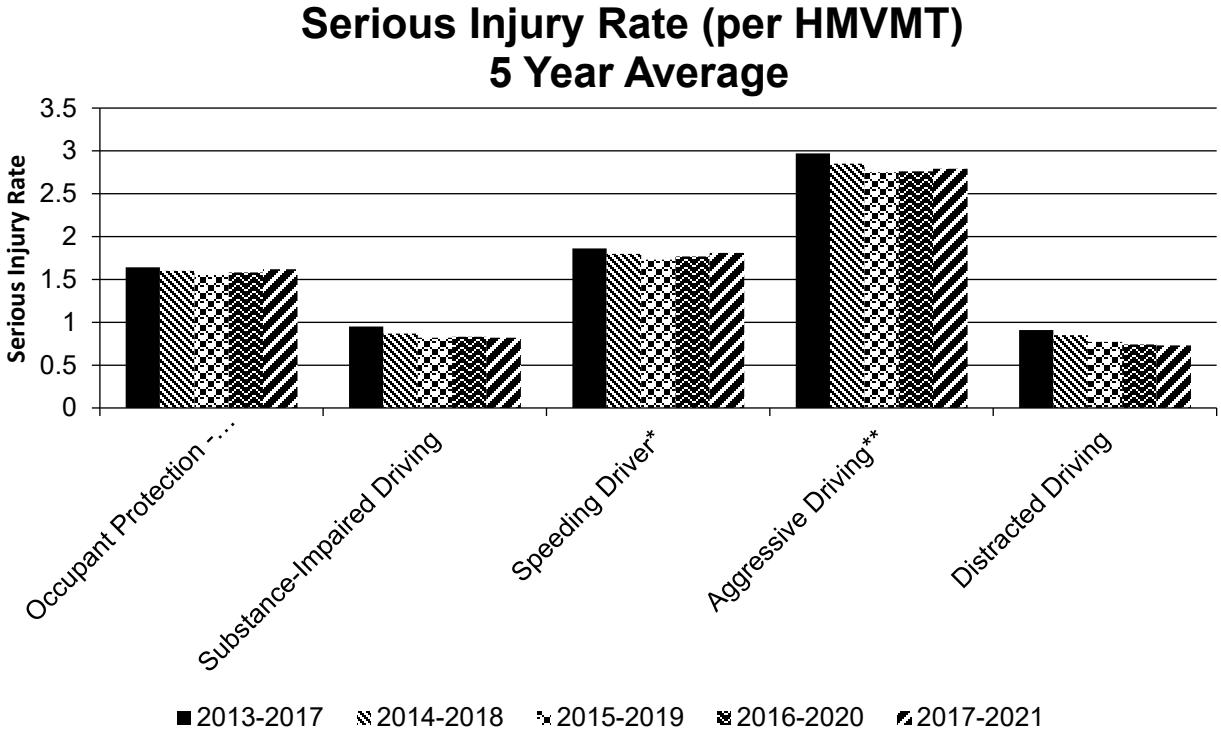
**Year 2021**

| SHSP Emphasis Area | Targeted Crash Type | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|---|---|---|---|---|
| Occupant Protection - Unbelted Vehicle Occupants | | 398 | 1,233.6 | 0.52 | 1.62 |
| Substance-Impaired Driving | | 205 | 625 | 0.27 | 0.82 |
| Speeding Driver* | | 356 | 1,380.8 | 0.47 | 1.81 |
| Aggressive Driving** | | 509.4 | 2,127.2 | 0.67 | 2.79 |
| Distracted Driving | | 76.4 | 561.8 | 0.1 | 0.73 |


Number of Fatalities
5 Year Average
Fatalities
600
500
400
300
200
100
0
Occupant Protection -…
Substance-Impaired Driving
Speeding Driver*
Aggressive Driving**
Distracted Driving
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Number of Serious Injuries
5 Year Average
Serious Injuries
2500
2000
1500
1000
500
0
Occupant Protection -…
Substance-Impaired Driving
Speeding Driver*
Aggressive Driving**
Distracted Driving
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021




*Speeding driving includes the contributing circumstances: speed exceeded limit and too fast for conditions.

**Aggressive driving includes the following contributing circumstances: speed exceeded limit, too fast for conditions, improper passing, following too close, and improper lane usage/change.

## *Project Effectiveness*

**Provide the following information for previously implemented projects that the State evaluated this reporting period.**

## Compliance Assessment

**What date was the State's current SHSP approved by the Governor or designated State representative?**

09/29/2020

**What are the years being covered by the current SHSP?**

From: 2021 To: 2025

**When does the State anticipate completing it's next SHSP update?**

2025

Missouri's Strategic Highway Safety Plan, Show-Me ZERO, can be found on the Missouri Coalition for Roadway Safety's website. https://www.savemolives.com/mcrs/show-me-zero

**Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.**

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

| ROAD TYPE | *MIRE NAME (MIRE NO.) | NON LOCAL PAVED ROADS - SEGMENT | | NON LOCAL PAVED ROADS - INTERSECTION | | NON LOCAL PAVED ROADS - RAMPS | | LOCAL PAVED ROADS | | UNPAVED ROADS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE |
| ROADWAY SEGMENT | Segment Identifier (12) [12] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| | Route Number (8) [8] | 100 | 100 | | | | | | | | |
| | Route/Street Name (9) [9] | 100 | 100 | | | | | | | | |
| | Federal Aid/Route Type (21) [21] | 100 | 100 | | | | | | | | |
| | Rural/Urban Designation (20) [20] | 100 | 100 | | | | | 100 | 100 | | |
| | Surface Type (23) [24] | 100 | 90 | | | | | 100 | 40 | | |
| | Begin Point Segment Descriptor (10) [10] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| | End Point Segment Descriptor (11) [11] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| | Segment Length (13) [13] | 100 | 100 | | | | | | | | |
| | Direction of Inventory (18) [18] | 100 | 100 | | | | | | | | |

| ROAD TYPE | *MIRE NAME (MIRE NO.) | NON LOCAL PAVED ROADS - SEGMENT | | NON LOCAL PAVED ROADS - INTERSECTION | | NON LOCAL PAVED ROADS - RAMPS | | LOCAL PAVED ROADS | | UNPAVED ROADS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE |
| | Functional Class (19) [19] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| | Median Type (54) [55] | 30 | 30 | | | | | | | | |
| | Access Control (22) [23] | 100 | 50 | | | | | | | | |
| | One/Two Way Operations (91) [93] | 100 | 80 | | | | | | | | |
| | Number of Through Lanes (31) [32] | 100 | 90 | | | | | 100 | 40 | | |
| | Average Annual Daily Traffic (79) [81] | 100 | 100 | | | | | 100 | 20 | | |
| | AADT Year (80) [82] | 100 | 100 | | | | | | | | |
| | Type of Governmental Ownership (4) [4] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| **INTERSECTION** | Unique Junction Identifier (120) [110] | | | 100 | 100 | | | | | | |
| | Location Identifier for Road 1 Crossing Point (122) [112] | | | 100 | 100 | | | | | | |
| | Location Identifier for Road 2 Crossing Point (123) [113] | | | 100 | 100 | | | | | | |
| | Intersection/Junction Geometry (126) [116] | | | 100 | 100 | | | | | | |
| | Intersection/Junction Traffic Control (131) [131] | | | 100 | 80 | | | | | | |
| | AADT for Each Intersecting Road (79) [81] | | | 100 | 80 | | | | | | |
| | AADT Year (80) [82] | | | 100 | 80 | | | | | | |
| | Unique Approach Identifier (139) [129] | | | 100 | 100 | | | | | | |
| **INTERCHANGE/RAMP** | Unique Interchange Identifier (178) [168] | | | | | 100 | 100 | | | | |

| ROAD TYPE | *MIRE NAME (MIRE NO.) | NON LOCAL PAVED ROADS - SEGMENT | | NON LOCAL PAVED ROADS - INTERSECTION | | NON LOCAL PAVED ROADS - RAMPS | | LOCAL PAVED ROADS | | UNPAVED ROADS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE |
| | Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187] | | | | | 100 | 100 | | | | |
| | Location Identifier for Roadway at Ending Ramp Terminal (201) [191] | | | | | 100 | 100 | | | | |
| | Ramp Length (187) [177] | | | | | 100 | 100 | | | | |
| | Roadway Type at Beginning of Ramp Terminal (195) [185] | | | | | 100 | 100 | | | | |
| | Roadway Type at End Ramp Terminal (199) [189] | | | | | 100 | 100 | | | | |
| | Interchange Type (182) [172] | | | | | 100 | 100 | | | | |
| | Ramp AADT (191) [181] | | | | | 100 | 100 | | | | |
| | Year of Ramp AADT (192) [182] | | | | | 100 | 100 | | | | |
| | Functional Class (19) [19] | | | | | 100 | 100 | | | | |
| | Type of Governmental Ownership (4) [4] | | | | | 100 | 100 | | | | |
| **Totals (Average Percent Complete):** | | **96.11** | **91.11** | **100.00** | **92.50** | **100.00** | **100.00** | **100.00** | **77.78** | **100.00** | **100.00** |

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

### Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

MoDOT will use multiple methods over the next several years to meet the requirements for the collection of FDE's on all public roads. MoDOT will prioritize these needs by addressing the Non-Local Paved roads data gaps first.

Surface Type/Number of Lanes/one-two way operations/access control/Median Type – These data items will be addressed through the cooperative program we have with our local authorities that ensures we have complete and correct geospatial network. As we continue these reviews in the future, we will ask them to provide these additional four items. Also, much of this data can be collected through other sources such as aerial photography and video logging. The targeted completion data for the collection and storage of this data is December 31, 2023.

The second priority will be the Local Paved Roads.

Surface Type/Number of through lanes – These items will be collected at the same time they are collected on Non-Local Paved roads. Since geospatial reviews include all public roads, this data will have already been collected.

AADT – It is estimated that an additional 80,000 traffic count locations will be needed to fulfill this requirement. MoDOT has attempted to work with several local agencies to share traffic data, but there has been little success. Few agencies collect traffic data in a manner that allows the calculation of AADT. Local governments collect traffic data, often one time only, for specific purposes like signal timing. Local agencies do not have permanent sites or a history of short term counts available to create AADT data.

## Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

# Glossary

**5 year rolling average:** means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

**Emphasis area:** means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

**Highway safety improvement project:** means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

**HMVMT:** means hundred million vehicle miles traveled.

**Non-infrastructure projects:** are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

**Older driver special rule:** applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

**Performance measure:** means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

**Programmed funds:** mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

**Roadway Functional Classification:** means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

**Strategic Highway Safety Plan (SHSP):** means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

**Systematic:** refers to an approach where an agency deploys countermeasures at all locations across a system.

**Systemic safety improvement:** means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

**Transfer:** means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.