



IOWA

HIGHWAY SAFETY IMPROVEMENT PROGRAM 2018 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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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. 409 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 state's HSIP funds are distributed amongst three different pots: statewide, secondary, and districts. Statewide projects are identified by central office staff based on research/study results, and can involve a mixture of hot-spot and systemic improvements. Secondary projects are identified by county engineers, based on their judgment or the results of a safety study, such as their Local Road Safety Plan. District projects are identified by the districts, based on their judgment or the results of a safety study, such as their District Road Safety Plan. All projects are selected for funding by central office staff, however secondary projects consider input from a selection committee. District and secondary projects are typically designed in-house, but the majority of statewide projects are designed by an outside consultant. All projects are tracked by central office staff, including crashes, costs, and construction dates. Crashes for 3 to 5 years pre-construction are compared 3 to 5 years of post-construction crashes, and a benefit-cost analysis is conducted for all projects.

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 state's HSIP funds are distributed amongst three different pots: statewide, secondary, and districts. Statewide projects are identified by central office staff based on research/study results, and can involve a mixture of hot-spot and systemic improvements. Secondary projects are identified by county engineers, based on their judgment or the results of a safety study, such as their Local Road Safety Plan. District projects are identified by the districts, based on their judgment or the results of a safety study, such as their District Road Safety Plan. All projects are selected for funding by central office staff, however secondary projects consider input from a selection committee. District and secondary projects are typically designed in-house, but the majority of statewide projects are designed by an outside consultant. All projects are tracked by central office staff, including crashes, costs, and construction dates. Crashes for 3 to 5 years pre-construction are compared 3 to 5 years of post-construction crashes, and a benefit-cost analysis is conducted for all projects.

Where is HSIP staff located within the State DOT?

Operations

Enter additional comments here to clarify your response for this question or add supporting information.

HSIP staff are located in the Office of Traffic & Safety, which is located in the Operations Bureau of the Iowa DOT's Highway Division.

How are HSIP funds allocated in a State?

Formula via Districts/Regions

Enter additional comments here to clarify your response for this question or add supporting information.

HSIP-Secondary, the state's replacement program for HRRR, receives a \$2 million set-aside off the top. Beginning with the adoption of a new HSIP manual in 2017, twenty percent of the remaining funds are allocated to statewide initiatives spearheaded by central office staff. The remaining 80 percent of funds are

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allocated to each of the six districts based on the relative proportion of serious injury and fatal crashes occurring in that district.

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

Iowa's HSIP addresses local roads through the HSIP-Secondary program. This program was established in 2013 as a \$2 million yearly set-aside out of Iowa's HSIP to address safety issues on the secondary (county-owned) roadway system. This program is focused on providing funding for projects that incorporate systemic, low-cost safety improvements, typically costing less than \$10,000 per mile. Typical countermeasures include rumble strips, grooved-in pavement markings, paved shoulders, improved signage, and guardrail updates.

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

Other-Districts

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with internal partners.

Iowa DOT districts are typically charged with developing and overseeing HSIP projects, so they are consulted early and often in the HSIP planning process. HSIP projects are chosen that align with SHSP emphasis areas, typically intersections and lane departures. A large majority of funding goes toward addressing lane departure crashes through shoulder improvements, most commonly shoulder paving. District Road Safety Plans have been completed, so the districts are beginning to utilize the project recommendations that resulted from the data-driven, risk-based plans, either by submitting these as HSIP candidate projects, or by addressing locations with their own forces.

Identify which external partners are involved with HSIP planning.

Other-None.

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

None.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

No

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

To upload a copy of the State processes, attach files below.

File Name:

[HSIP Manual FINAL FY 19.pdf](#)

Select the programs that are administered under the HSIP.

Local Safety

Enter additional comments here to clarify your response for this question or add supporting information.

"Local Safety" refers to the HSIP-Secondary Program.

Program: Local Safety

Date of Program Methodology: 2/26/2013

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes

Exposure

Roadway

All crashes

Volume

Horizontal curvature
Functional classification
Roadside features
Other-County roads

What project identification methodology was used for this program? [Check all that apply]

Other-Collaboration with county engineers

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?

No

Describe the methodology used to identify local road projects as part of this program.

County engineers identify projects for potential funding based on their knowledge of their system's performance, or from their Local Road Safety Plan.

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

Cost Effectiveness : 2

What percentage of HSIP funds address systemic improvements?

61

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Cable Median Barriers

Rumble Strips

Pavement/Shoulder Widening

Install/Improve Pavement Marking and/or Delineation

Upgrade Guard Rails

Clear Zone Improvements

Safety Edge

Enter additional comments here to clarify your response for this question or add supporting information.

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study

Crash data analysis

SHSP/Local road safety plan

Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)

Enter additional comments here to clarify your response for this question or add supporting information.

Does the State HSIP consider connected vehicles and ITS technologies?

No

Enter additional comments here to clarify your response for this question or add supporting information.

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.

Iowa is in the early stages of implementing the HSM. The foundation for increased usage is being laid by calibrating the SPFs in HSM to local conditions. The SPFs will be used to screen the system for locations that could benefit from a safety improvement. Although the state has been using CMFs for years, the number of CMFs available on the CMF clearinghouse has grown exponentially, yet there remains many countermeasures for which a good CMF does not exist - especially for those countermeasures that typically occur simultaneously (such as paving shoulders and adding rumble strips). Therefore, the need for state-specific CMFs was identified, and a consultant has been brought on board to aid in selecting appropriate CMFs and values. In addition, the consultant will be developing a state-specific framework for conducting safety evaluations consistent with HSM methods, via a spreadsheet tool. It is envisioned that this tool will exist in different forms in order to accommodate evaluations at different points during the project development timeline.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

No

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

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

| FUNDING CATEGORY | PROGRAMMED | OBLIGATED | % OBLIGATED/PROGRAMMED |
|--|---------------------|---------------------|------------------------|
| HSIP (23 U.S.C. 148) | \$41,023,650 | \$39,251,633 | 95.68% |
| HRRR Special Rule (23 U.S.C. 148(g)(1)) | \$0 | \$0 | 0% |
| Penalty Funds (23 U.S.C. 154) | \$0 | \$0 | 0% |
| 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 | \$0 | \$0 | 0% |
| Totals | \$41,023,650 | \$39,251,633 | 95.68% |

Enter additional comments here to clarify your response for this question or add supporting information.

Three projects that were scheduled to be let in FY 2018 were delayed, and moved to the next fiscal year.

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

\$2,144,250

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

\$1,799,419

Enter additional comments here to clarify your response for this question or add supporting information.

Lettings for 2 out of the 8 local projects were delayed, and moved to the next fiscal year.

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

0%

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

0%

Enter additional comments here to clarify your response for this question or add supporting information.

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

Enter additional comments here to clarify your response for this question or add supporting information.

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

Impediments to fully obligating programmed HSIP funds include proper estimating and long development timelines. Initial cost estimates tend to be high in order to account for project uncertainties and to avoid having to ask for more money at a later time. Project development timelines can be affected by multiple external forces including coordination, clearances, and unforeseen circumstances. Our goal is to work with project sponsors and project managers to improve the accuracy of cost estimates and to minimize time delays in order to obligate HSIP funds to the fullest extent.

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

No

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General Listing of Projects

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

| | | | | | | | | | | | | | RELATIONSHIP TO SHSP | |
|--------------------------|------------------------------|--|---------|---------------|-----------------------|------------------------|----------------------|---|--------|-------|----------------------|---------------------------|----------------------|---|
| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST(\$) | TOTAL PROJECT COST(\$) | FUNDING CATEGORY | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | EMPHASIS AREA | STRATEGY |
| HSIPX-000-S(895)--3L-00 | Intersection traffic control | Intersection flashers - remove existing | 14 | Intersections | \$383798 | \$426442 | HSIP (23 U.S.C. 148) | No Functional System | 0 | 0 | Varies | Systematic | Intersections | Traffic Signal Modifications |
| HSIPX-000-S(896)--3L-00 | Intersection traffic control | Intersection flashers - remove existing | 15 | Intersections | \$270574 | \$300638 | HSIP (23 U.S.C. 148) | No Functional System | 0 | 0 | Varies | Systematic | Intersections | Traffic Signal Modifications |
| HSIPX-000-S(897)--3L-00 | Intersection traffic control | Intersection flashers - remove existing | 18 | Intersections | \$392251 | \$435834 | HSIP (23 U.S.C. 148) | No Functional System | 0 | 0 | Varies | Systematic | Intersections | Traffic Signal Modifications |
| HSIPX-002-5(48)-3L-27 | Shoulder treatments | Pave existing shoulders | 9.6 | Miles | \$4235410 | \$5194007 | HSIP (23 U.S.C. 148) | Rural Minor Arterial | 1,850 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-006-6(54)-3L-48 | Shoulder treatments | Pave existing shoulders | 2.7 | Miles | \$444376 | \$493751 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other Freeways and Expressways | 3,550 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-006-7(88)-3L-52 | Shoulder treatments | Pave existing shoulders | 2.9 | Miles | \$1072487 | \$1240556 | HSIP (23 U.S.C. 148) | Urban Principal Arterial (UPA) - Other | 9,000 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-013-1(66)-3L-57 | Shoulder treatments | Pave existing shoulders | 7.4 | Miles | \$1746657 | \$1948605 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 5,540 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-014-4(66)-3L-50 | Roadway | Rumble strips - center | 8.6 | Miles | \$26598 | \$29553 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 1,230 | 55 | State Highway Agency | Systemic | Lane Departure | Rumble Strips |
| HSIPX-022-4(78)-3L-70 | Shoulder treatments | Pave existing shoulders | 14.9 | Miles | \$1724469 | \$1923726 | HSIP (23 U.S.C. 148) | Rural Minor Arterial | 2,000 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-030-3(51)-3L-37 | Roadway | Rumble strips - center | 30.5 | Miles | \$70214 | \$78015 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 3,560 | 55 | State Highway Agency | Systemic | Lane Departure | Rumble Strips |
| HSIPX-034-1(95)-3L-65 | Shoulder treatments | Pave existing shoulders | 8.6 | Miles | \$1126049 | \$1251166 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 3,830 | 55 | State Highway Agency | Systemic | Lane Departure | Rumble Strips |
| IHSIPX-035-5(106)--08-40 | Roadside | Barrier - cable | 8.7 | Miles | \$1079786 | \$1199762 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Interstate | 20,000 | 70 | State Highway Agency | Systemic | Lane Departure | Median Cable Barrier |
| HSIPX-048-1(32)-3L-73 | Shoulder treatments | Pave existing shoulders | 14.3 | Miles | \$2038532 | \$2265035 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 1,850 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-051-1(17)-3L-03 | Shoulder treatments | Pave existing shoulders | 7.4 | Miles | \$1081388 | \$1201542 | HSIP (23 U.S.C. 148) | Rural Minor Arterial | 1,690 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-058-1(92)-3L-07 | Interchange design | Convert at-grade intersection to interchange | 1 | Interchanges | \$14250000 | \$24180312 | HSIP (23 U.S.C. 148) | Urban Principal Arterial (UPA) - Other | 24,200 | 55 | State Highway Agency | Spot | Intersections | Multilane Urban Intersection Improvements |

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| | | | | | | | | | | | | | RELATIONSHIP TO SHSP | |
|-------------------------|----------------------|--|---------|-------------|-----------------------|------------------------|----------------------|--|-------|-------|-----------------------|---------------------------|----------------------|-------------------------|
| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST(\$) | TOTAL PROJECT COST(\$) | FUNDING CATEGORY | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | EMPHASIS AREA | STRATEGY |
| HSIPX-063-5(49)-3L-86 | Shoulder treatments | Pave existing shoulders | 18.3 | Miles | \$2472774 | \$3025093 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 5,300 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-063-9(25)-3L-45 | Shoulder treatments | Pave existing shoulders | 5.4 | Miles | \$1048855 | \$1165394 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 3,270 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-071-5(76)-3L-14 | Shoulder treatments | Pave existing shoulders | 6.6 | Miles | \$1055887 | \$1173208 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 2,820 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-144-1(7)--3L-25 | Shoulder treatments | Pave existing shoulders | 7.9 | Miles | \$1928105 | \$2404466 | HSIP (23 U.S.C. 148) | Rural Minor Arterial | 2,130 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIPX-151-1(32)-3L-48 | Shoulder treatments | Pave existing shoulders | 7.4 | Miles | \$1004004 | \$1115560 | HSIP (23 U.S.C. 148) | Rural Principal Arterial (RPA) - Other | 4,540 | 55 | State Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIP-S-C025(110)--6C-25 | Shoulder treatments | Pave existing shoulders | 3 | Miles | \$266837 | \$296486 | HSIP (23 U.S.C. 148) | Rural Major Collector | 290 | 55 | County Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIP-S-C026(103)--6C-26 | Shoulder treatments | Pave existing shoulders | 2.1 | Miles | \$156476 | \$173862 | HSIP (23 U.S.C. 148) | Rural Major Collector | 1,150 | 55 | County Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIP-S-C026(104)--6C-26 | Roadway delineation | Roadway delineation - other | 14.8 | Miles | \$122254 | \$135838 | HSIP (23 U.S.C. 148) | Rural Major Collector | 740 | 55 | County Highway Agency | Spot | Lane Departure | Delineation |
| HSIP-S-C026(105)--6C-26 | Shoulder treatments | Pave existing shoulders | 4 | Miles | \$386633 | \$429593 | HSIP (23 U.S.C. 148) | Rural Major Collector | 470 | 55 | County Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIP-S-C033(130)--6C-33 | Roadway delineation | Roadway delineation - other | 49.5 | Miles | \$280800 | \$350485 | HSIP (23 U.S.C. 148) | Rural Minor Collector | 0 | 55 | County Highway Agency | Spot | Lane Departure | Delineation |
| HSIP-S-C054(111)--6C-54 | Roadside | Removal of roadside objects (trees, poles, etc.) | 5.3 | Miles | \$39452 | \$82740 | HSIP (23 U.S.C. 148) | Rural Major Collector | 800 | 55 | County Highway Agency | Spot | Lane Departure | Shoulder Treatments |
| HSIP-S-C054(112)--6C-54 | Shoulder treatments | Pave existing shoulders | 6.4 | Miles | \$483770 | \$537522 | HSIP (23 U.S.C. 148) | Rural Major Collector | 900 | 55 | County Highway Agency | Spot | Lane Departure | Clear Zone Improvements |
| HSIP-S-C063(129)--6C-63 | Roadside | Barrier- metal | 4 | Locations | \$63197 | \$70219 | HSIP (23 U.S.C. 148) | Rural Major Collector | 1,720 | 55 | County Highway Agency | Spot | Lane Departure | Clear Zone Improvements |

Enter additional comments here to clarify your response for this question or add supporting information.

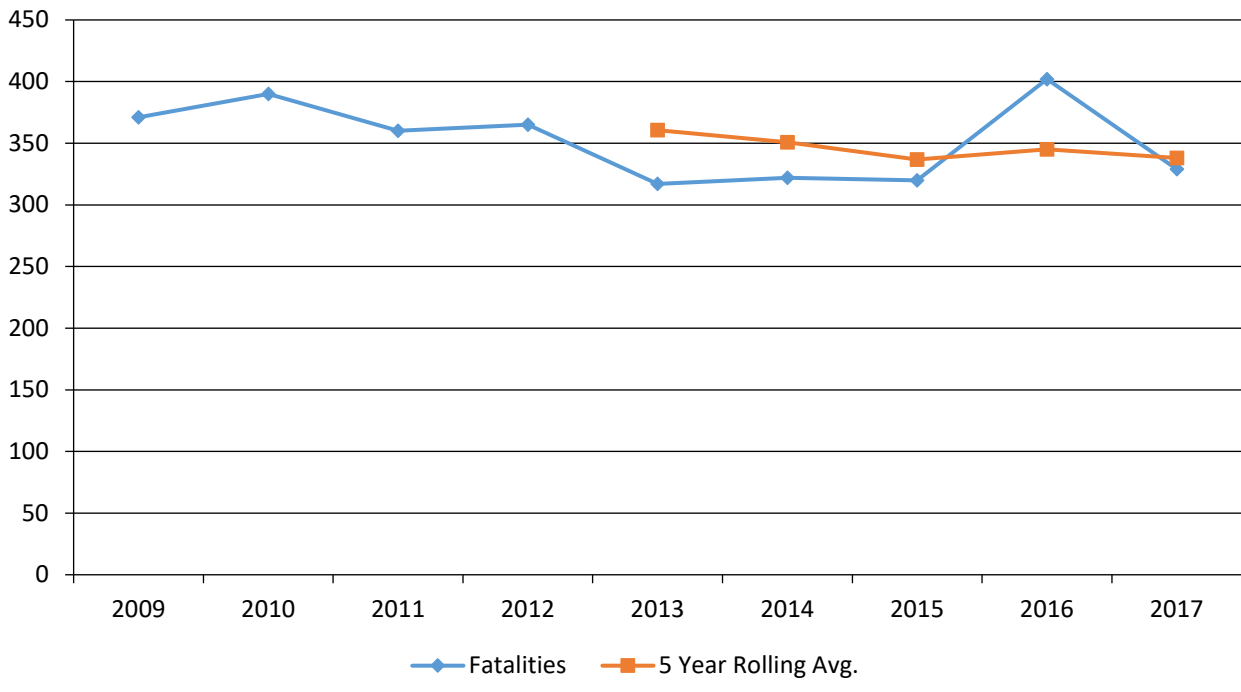
Safety Performance

General Highway Safety Trends

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

| PERFORMANCE MEASURES | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Fatalities | 371 | 390 | 360 | 365 | 317 | 322 | 320 | 402 | 329 |
| Serious Injuries | 1,615 | 1,644 | 1,501 | 1,629 | 1,545 | 1,509 | 1,470 | 1,510 | 1,460 |
| Fatality rate (per HMVMT) | 1.186 | 1.235 | 1.146 | 1.156 | 1.005 | 0.996 | 0.967 | 1.210 | 0.975 |
| Serious injury rate (per HMVMT) | 5.161 | 5.206 | 4.779 | 5.158 | 4.898 | 4.667 | 4.440 | 4.540 | 4.326 |
| Number non-motorized fatalities | 25 | 28 | 31 | 25 | 23 | 25 | 32 | 31 | 29 |
| Number of non-motorized serious injuries | 123 | 126 | 126 | 124 | 115 | 101 | 121 | 134 | 121 |

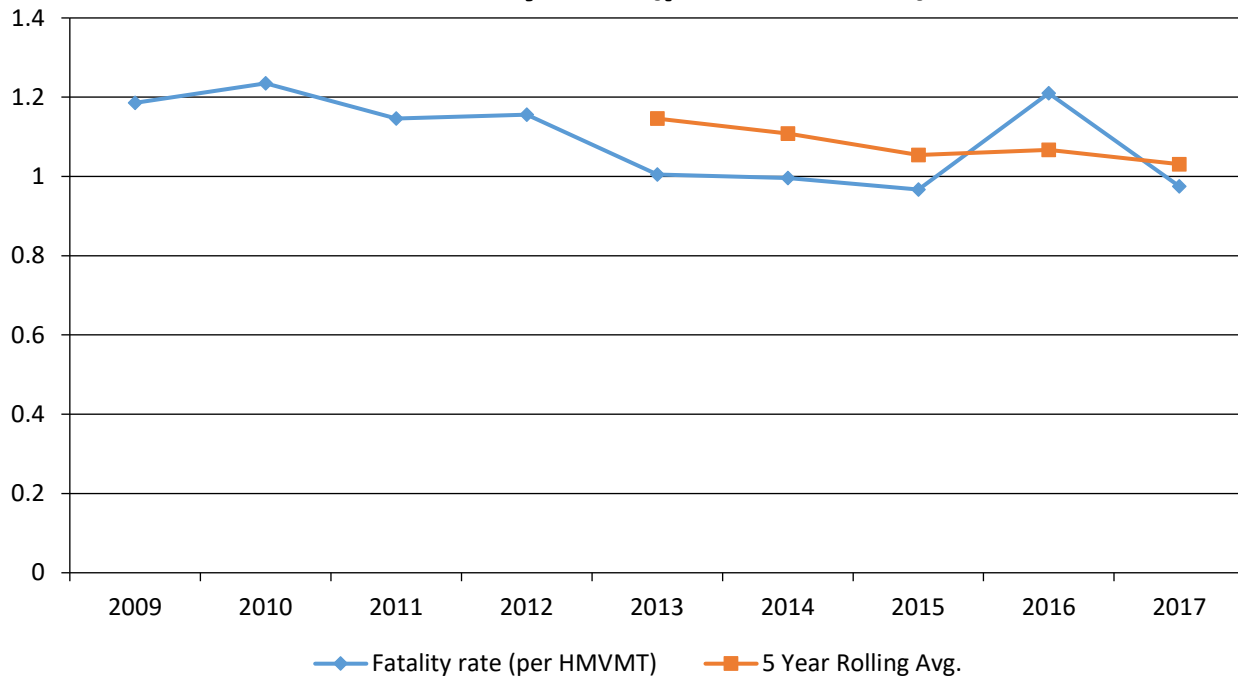
Annual Fatalities



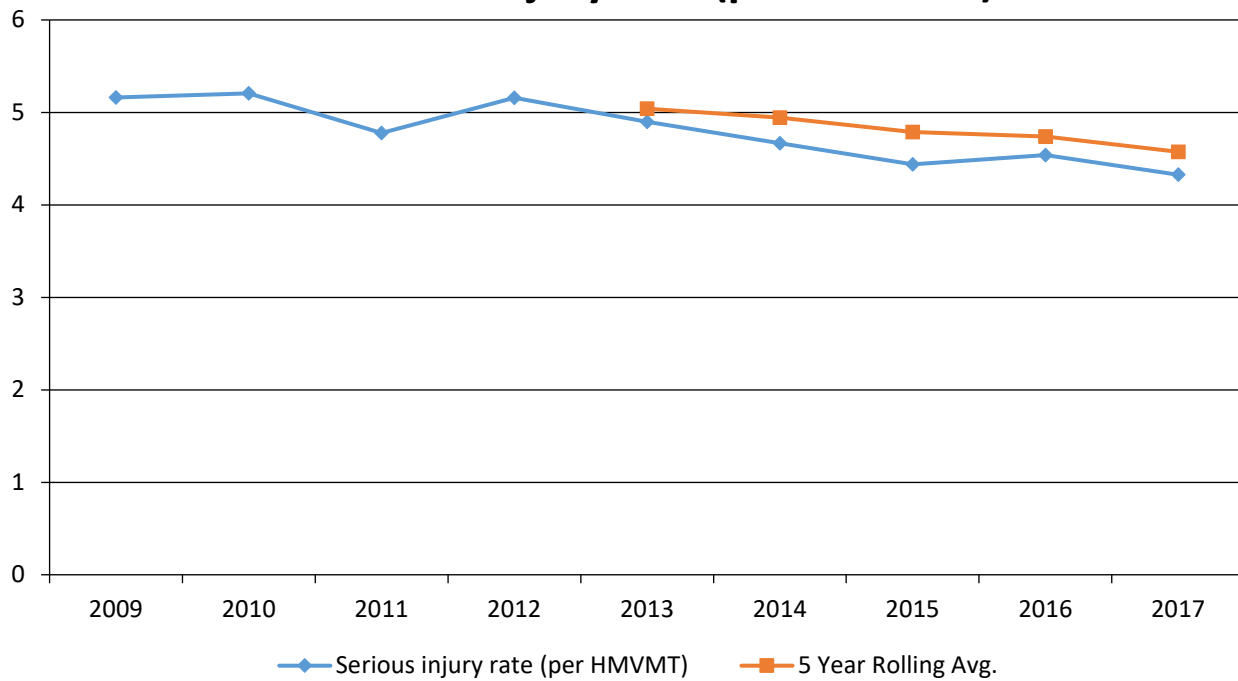
Annual Serious Injuries



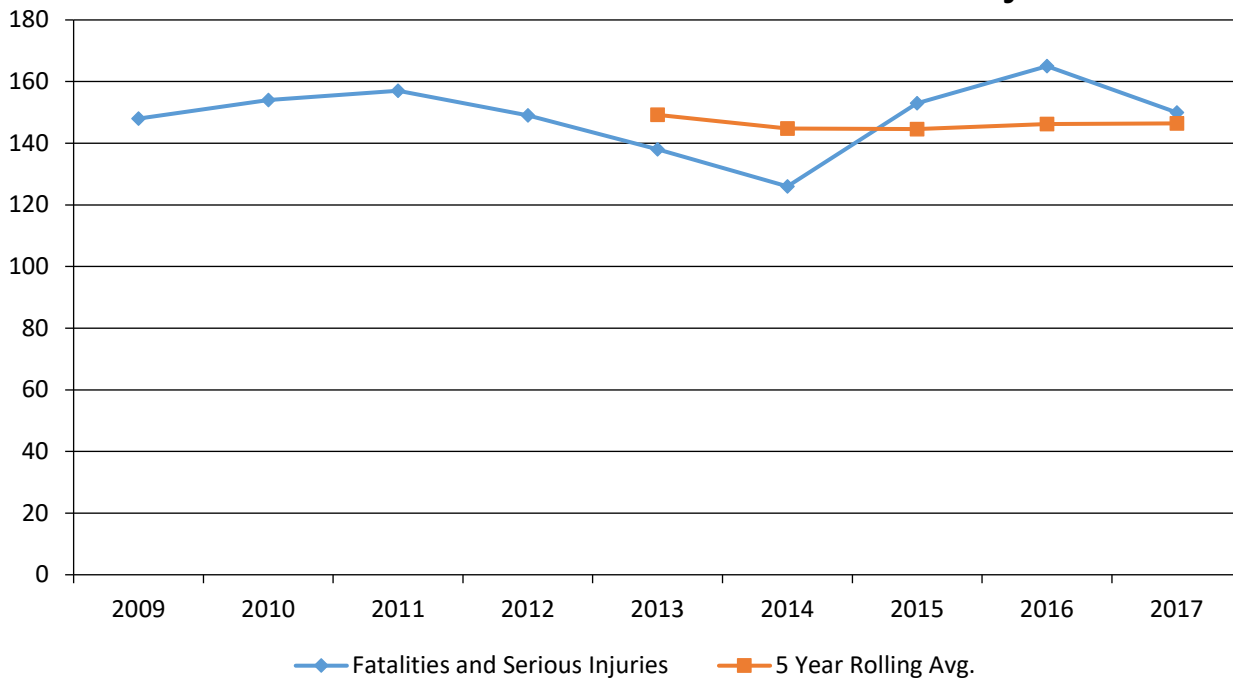
Fatality rate (per HMVMT)



Serious injury rate (per HMVMT)



Non Motorized Fatalities and Serious Injuries



Enter additional comments here to clarify your response for this question or add supporting information.

Describe fatality data source.

FARS

Enter additional comments here to clarify your response for this question or add supporting information.

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

Year 2017

| 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 | 26.2 | 80.2 | 0.49 | 1.51 |
| Rural Principal Arterial (RPA) - Other Freeways and Expressways | 26.2 | 82.4 | 0.49 | 1.55 |
| Rural Principal Arterial (RPA) - Other | 30.8 | 101 | 0.58 | 1.9 |
| Rural Minor Arterial | 44 | 145.4 | 1.76 | 5.84 |
| Rural Minor Collector | 34.2 | 132.2 | 4.54 | 17.55 |
| Rural Major Collector | 74.8 | 296.2 | 2.43 | 9.62 |

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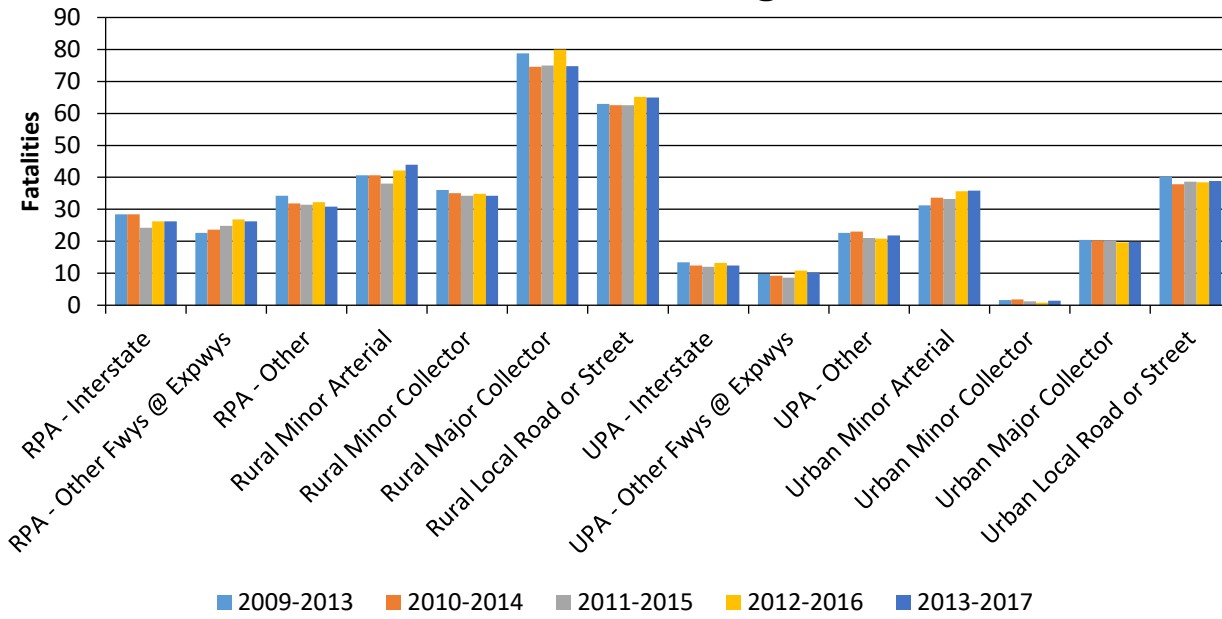
| Functional Classification | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|------------------------------------|---|--|--|
| Rural Local Road or Street | 65 | 245.4 | 6.85 | 25.86 |
| Urban Principal Arterial (UPA) - Interstate | 12.4 | 52.2 | 0.43 | 1.82 |
| Urban Principal Arterial (UPA) - Other Freeways and Expressways | 10.2 | 50.2 | 0.35 | 1.75 |
| Urban Principal Arterial (UPA) - Other | 21.8 | 131.8 | 0.76 | 4.59 |
| Urban Minor Arterial | 35.8 | 235.2 | 0.98 | 6.47 |
| Urban Minor Collector | 1.4 | 5.6 | 2.06 | 8.08 |
| Urban Major Collector | 19.8 | 131.6 | 1.41 | 9.35 |
| Urban Local Road or Street | 38.8 | 285 | 1.55 | 11.36 |

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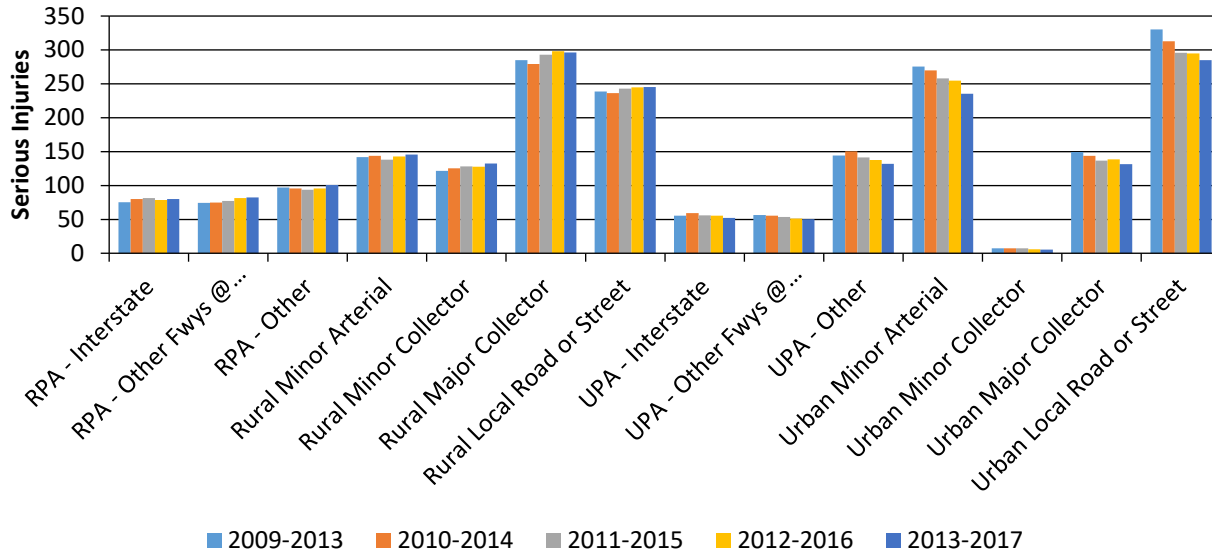
Year 2017

| 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 | 169.6 | 690.8 | 0.51 | 2.09 |
| County Highway Agency | 120.6 | 466.2 | 0.63 | 2.43 |
| Town or Township Highway Agency | | | | |
| City of Municipal Highway Agency | 47.6 | 342 | 0.34 | 2.46 |
| 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 | | | | |

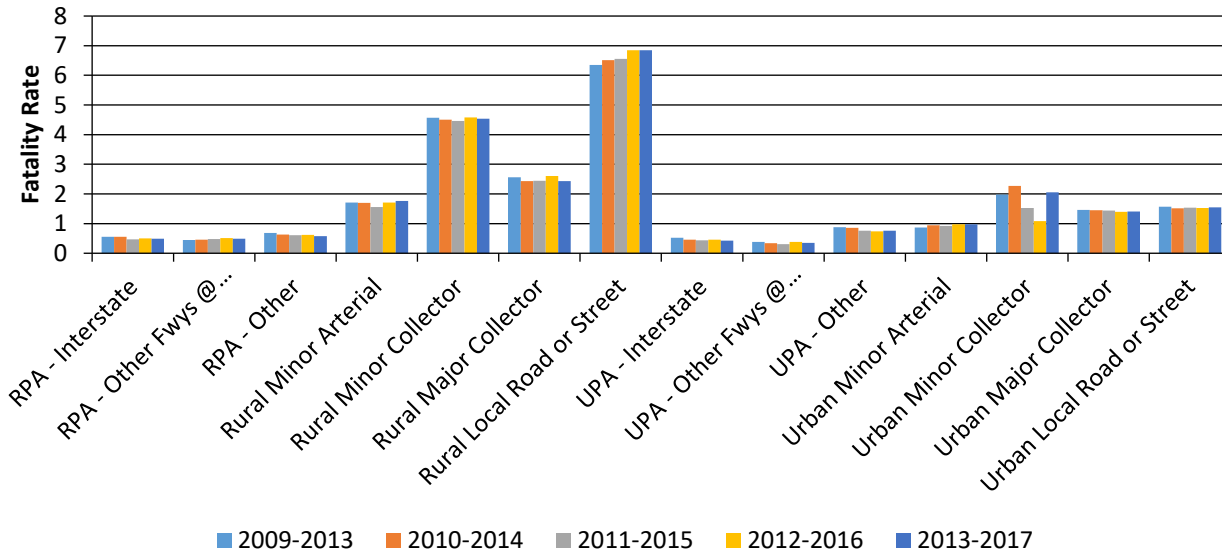
Number of Fatalities by Functional Classification 5 Year Average



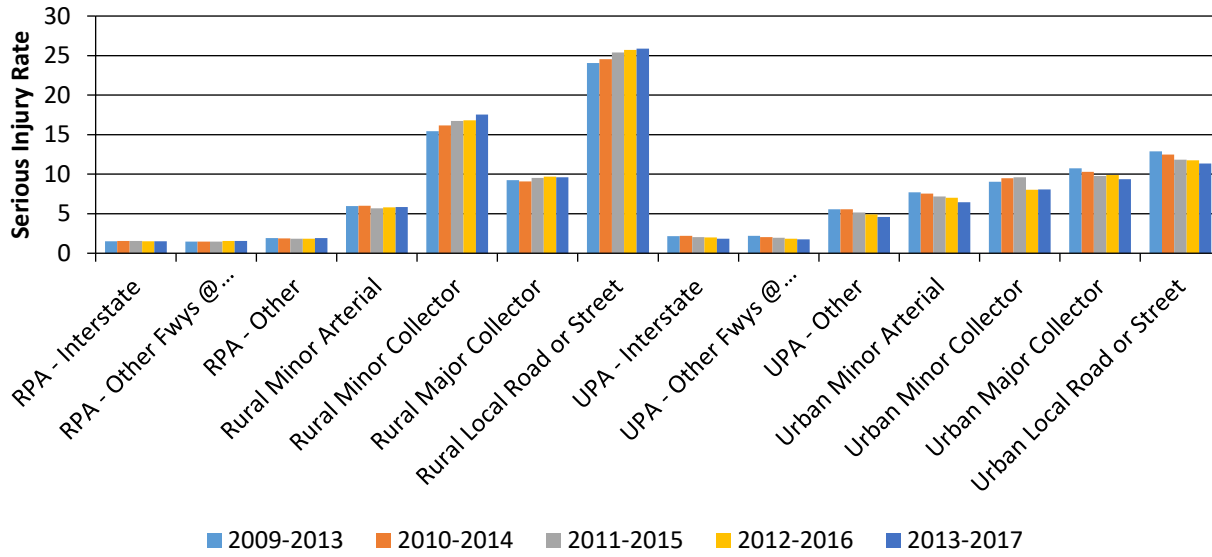
Number of Serious Injuries by Functional Classification 5 Year Average



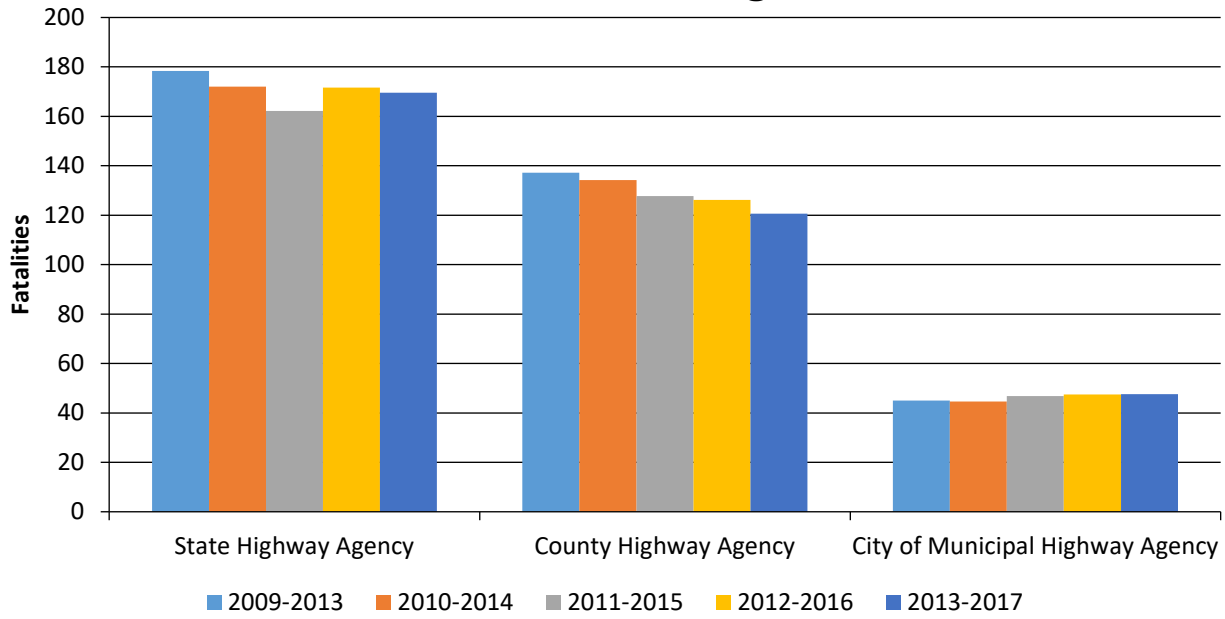
Fatality Rate (per HMVMT) by Functional Classification 5 Year Average



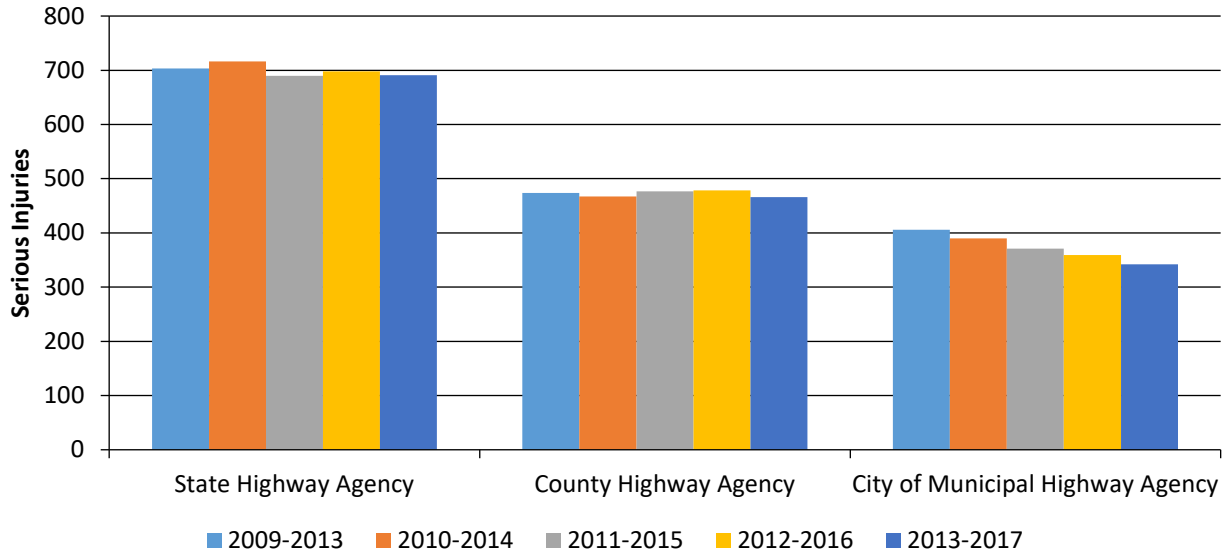
Serious Injury Rate (per HMVMT) by Functional Classification 5 Year Average



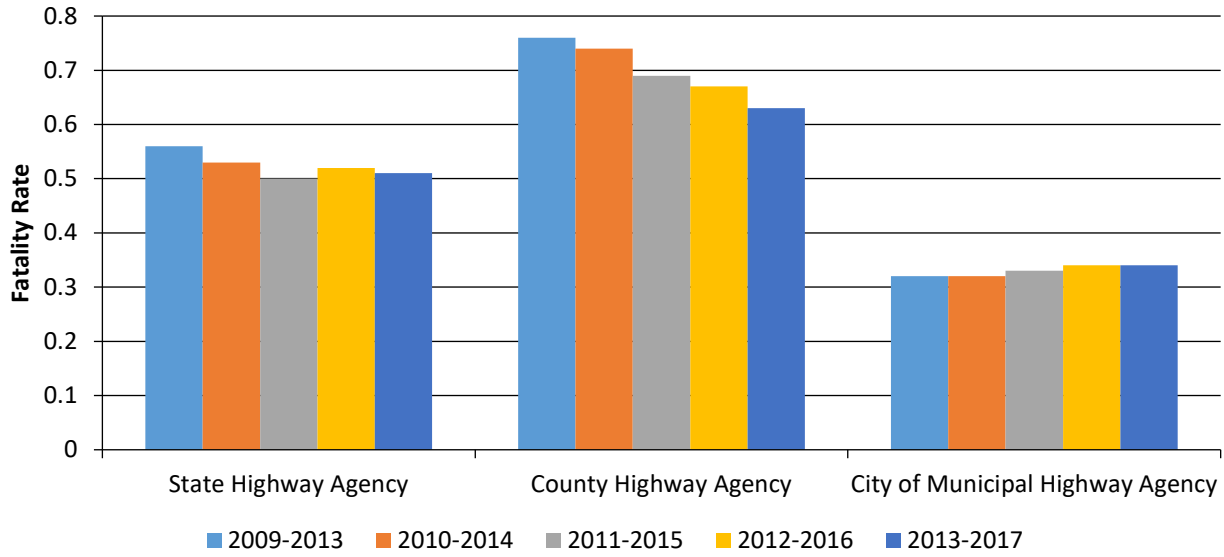
Number of Fatalities by Roadway Ownership 5 Year Average



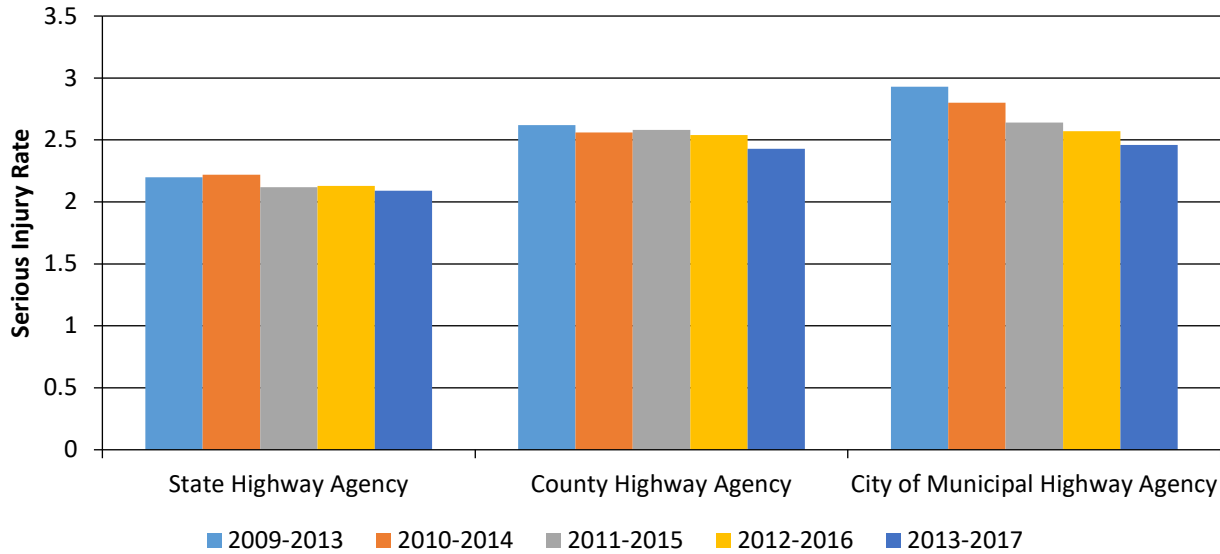
Number of Serious Injuries by Roadway Ownership 5 Year Average



Fatality Rate (per HMVMT) by Roadway Ownership 5 Year Average



Serious Injury Rate (per HMVMT) by Roadway Ownership Ownership 5 Year Average



Enter additional comments here to clarify your response for this question or add supporting information.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

No

Safety Performance Targets
Safety Performance Targets

Calendar Year 2019 Targets *

Number of Fatalities 353.6

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

A simple trend analysis of historical fatality data was performed. An integrated moving average model was run to estimate how much risk would be associated with each set of predictions. Our working group settled on using a 75% confidence level. This means we are at least 75% confident the actual 5-year rolling average will be less than the target. A slight error in the process that was used last year was discovered and corrected for this year. This change had a very minor impact on the actual targets selected.

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Number of Serious Injuries 1483.7

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

A simple trend analysis of historical serious injury data was performed. An integrated moving average model was run to estimate how much risk would be associated with each set of predictions. Our working group settled on using a 75% confidence level. This means we are at least 75% confident the actual 5-year rolling average will be less than the target. A slight error in the process that was used last year was discovered and corrected for this year. This change had a very minor impact on the actual targets selected.

Fatality Rate 1.047

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

A simple trend analysis of historical fatality data was performed. An integrated moving average model was run to estimate how much risk would be associated with each set of predictions. Our working group settled on using a 75% confidence level. This means we are at least 75% confident the actual 5-year rolling average will be less than the target. This target supports the SHSP goal of continuing to reduce the fatality rate to 1.000 per HVMVT by 2020. A slight error in the process that was used last year was discovered and corrected for this year. This change had a very minor impact on the actual targets selected.

Serious Injury Rate 4.391

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

A simple trend analysis of historical serious injury data was performed. An integrated moving average model was run to estimate how much risk would be associated with each set of predictions. Our working group settled on using a 75% confidence level. This means we are at least 75% confident the actual 5-year rolling average will be less than the target. This target supports the SHSP goal of continuing to reduce the serious injury rate to 4.300 per HVMVT by 2020. A slight error in the process that was used last year was discovered and corrected for this year. This change had a very minor impact on the actual targets selected.

Total Number of Non-Motorized Fatalities and Serious Injuries 149.8

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

A simple trend analysis of historical non-motorized fatality and serious injury data was performed. An integrated moving average model was run to estimate how much risk would be associated with each set of predictions. Our working group settled on using a 75% confidence level. This means we are at least 75% confident the actual 5-year rolling average will be less than the target. A slight error in the process that was used

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last year was discovered and corrected for this year. This change had a very minor impact on the actual targets selected.

Enter additional comments here to clarify your response for this question or add supporting information.

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

The DOT's safety target working group established the methodology for setting the performance targets, using essentially the same process as last year. The chosen targets and a description of the methodology were shared with representatives from the Governor's Traffic Safety Bureau for comment. None were received. The chosen targets were then shared with the MPOs on March 21, 2018 as part of a quarterly meeting presentation. The following day, a draft safety memo outlining the chosen targets and methodology was sent to all MPOs in the state. A final version of the memo was sent out on May 22, 2018 with a request for comments by June 4, 2018. No substantive comments regarding the targets or the methodology were received during the comment period.

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Applicability of Special Rules

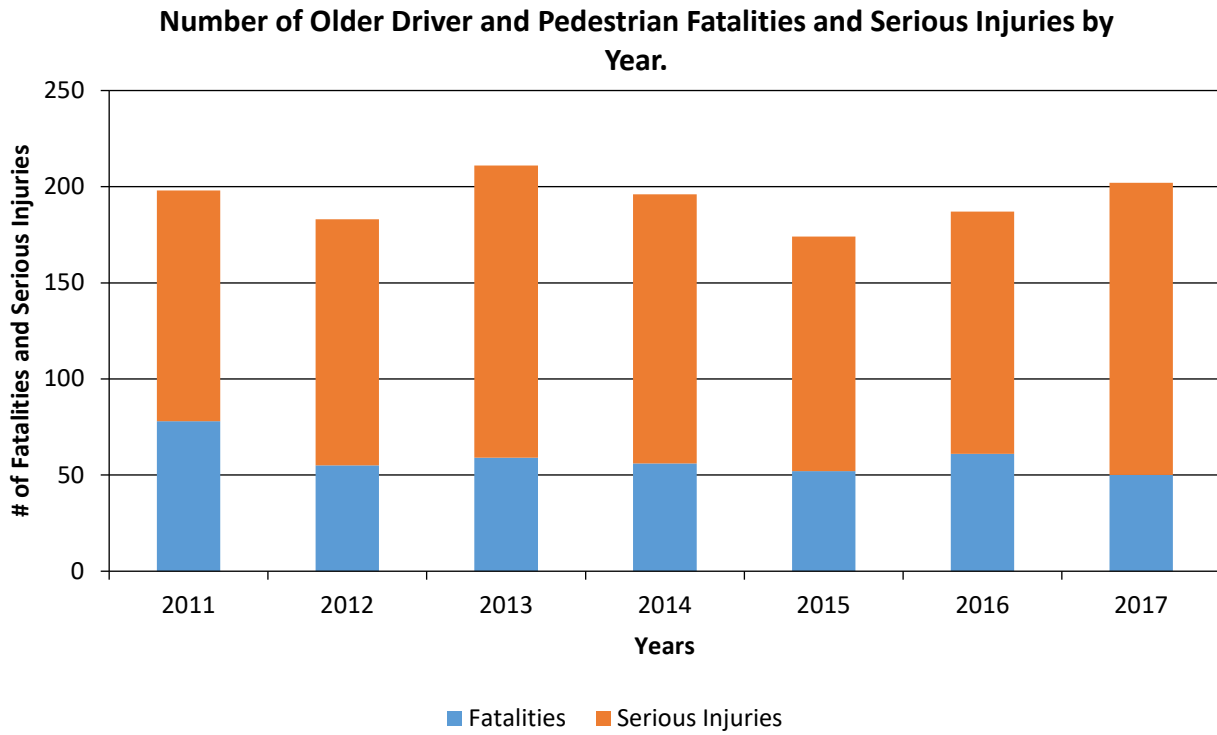
Does the HRRR special rule apply to the State for this reporting period?

No

Enter additional comments here to clarify your response for this question or add supporting information.

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 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--|------|------|------|------|------|------|------|
| Number of Older Driver and Pedestrian Fatalities | 78 | 55 | 59 | 56 | 52 | 61 | 50 |
| Number of Older Driver and Pedestrian Serious Injuries | 120 | 128 | 152 | 140 | 122 | 126 | 152 |



Enter additional comments here to clarify your response for this question or add supporting information.

Historical data (2011-2016) provided in this year's report for number of fatalities and serious injuries differs from what was provided in previous years' reports. An error in the selection methodology was discovered and fixed, which resulted in the more accurate counts provided here.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Benefit/Cost Ratio

Enter additional comments here to clarify your response for this question or add supporting information.

Crash data for the project area is collected for a minimum of three, to a maximum of five, years before and after the project was completed. Crash data for the year of construction is ignored.

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

Overall since fiscal year 2001, the state's HSIP expenditures have resulted in a benefit-cost ratio of approximately 6 to 1. Some of the highest B-C ratios resulted from roadway signs, lighting, and roadside improvements.

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

Policy change
Increased awareness of safety and data-driven process
Increased focus on local road safety
HSIP Obligations

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any significant programmatic changes that have occurred since the last reporting period?

No

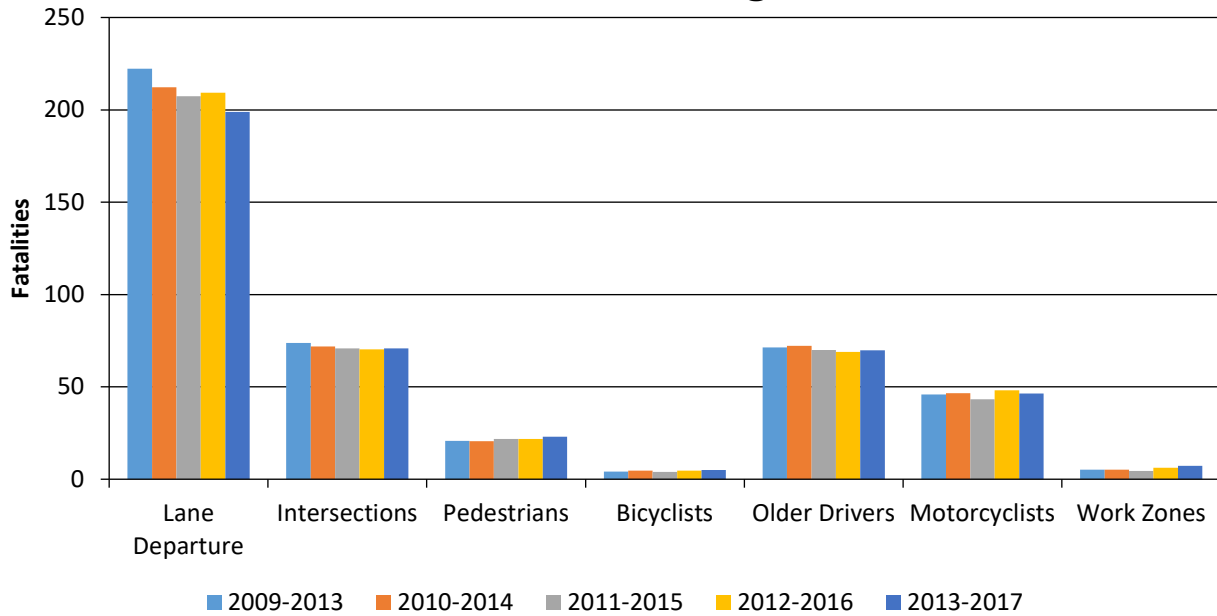
Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

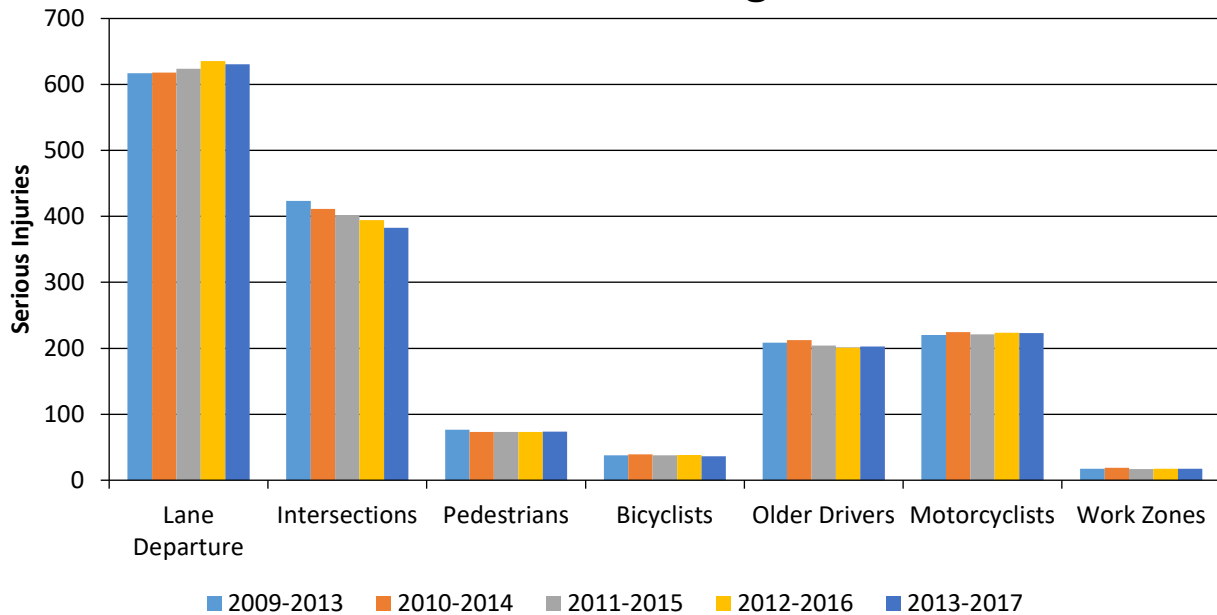
Year 2017

| 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) | Other 1 | Other 2 | Other 3 |
|--------------------|---------------------|---------------------------------|---------------------------------------|--------------------------------------|--|---------|---------|---------|
| Lane Departure | | 198.8 | 630.4 | 0.6 | 1.9 | 0 | 0 | 0 |
| Intersections | | 70.8 | 382.6 | 0.21 | 1.15 | 0 | 0 | 0 |
| Pedestrians | | 23 | 73.6 | 0.07 | 0.22 | 0 | 0 | 0 |
| Bicyclists | | 5 | 36.2 | 0.01 | 0.11 | 0 | 0 | 0 |
| Older Drivers | | 69.8 | 202.6 | 0.21 | 0.61 | 0 | 0 | 0 |
| Motorcyclists | | 46.4 | 223 | 0.14 | 0.67 | 0 | 0 | 0 |
| Work Zones | | 7.2 | 17.2 | 0.02 | 0.05 | 0 | 0 | 0 |

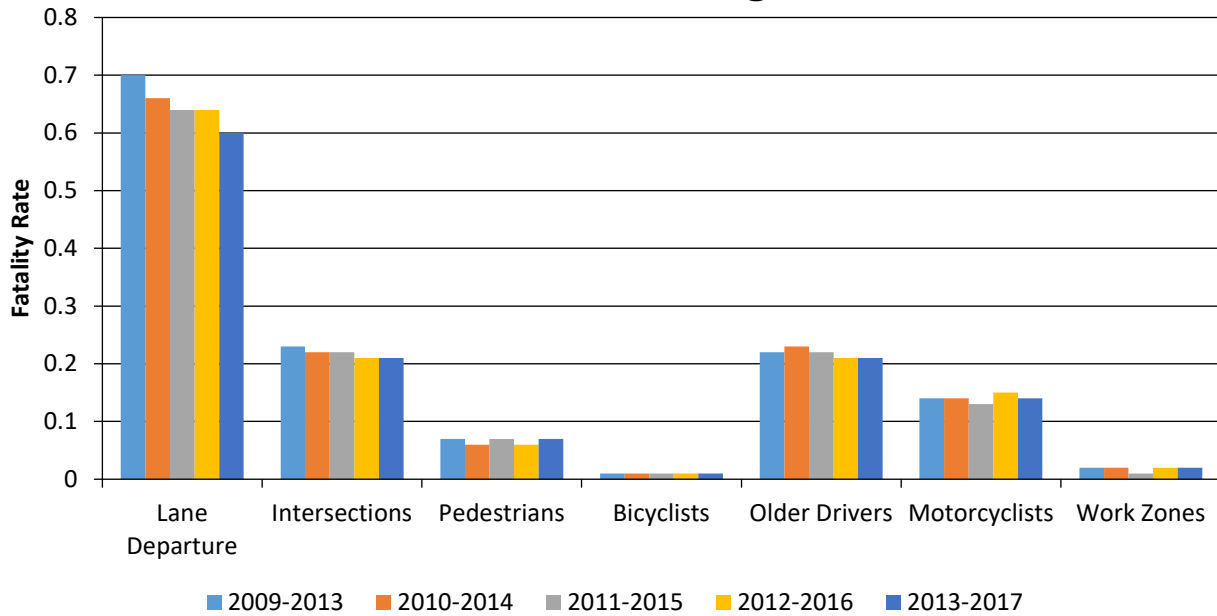
Number of Fatalities 5 Year Average



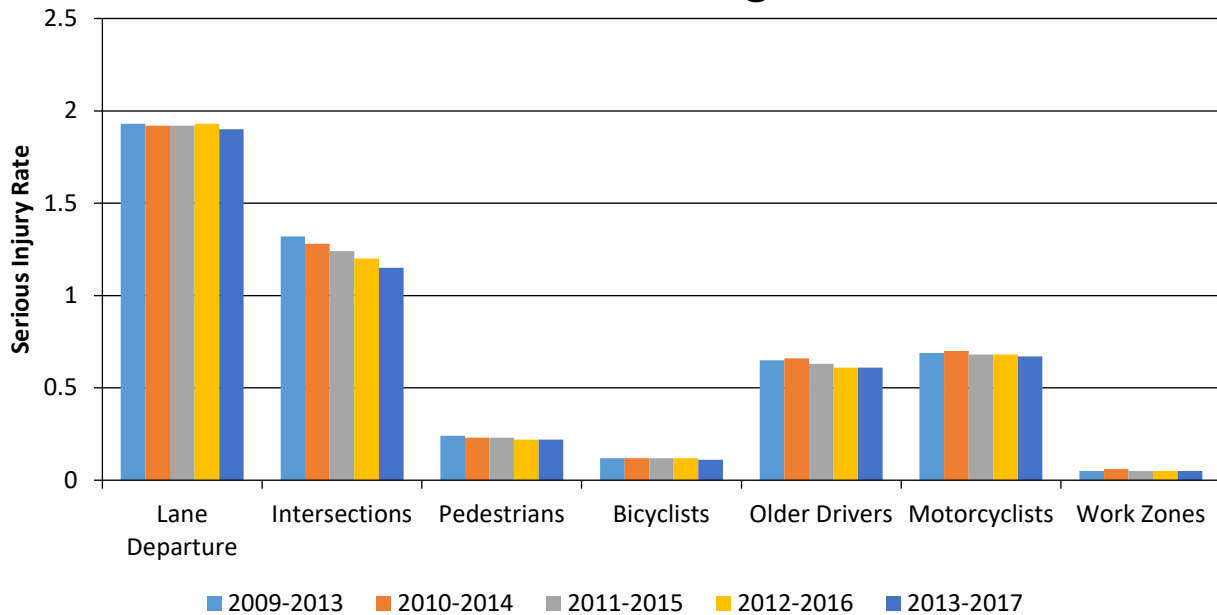
Number of Serious Injuries 5 Year Average



Fatality Rate (per HMVMT) 5 Year Average



Serious Injury Rate (per HMVMT) 5 Year Average



Enter additional comments here to clarify your response for this question or add supporting information.

Has the State completed any countermeasure effectiveness evaluations during the reporting period?

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

| | |
|---------------------------------|--|
| CounterMeasures: | Median Cable Barrier |
| Description: | Interstate median cable barrier in Iowa |
| Target Crash Type: | Other (define) |
| Number of Installations: | |
| Number of Installations: | |
| Miles Treated: | 330 |
| Years Before: | |
| Years After: | |
| Methodology: | Regression cross-section Reduces fatal crashes by 62% Reduces major injury crashes by 31% Reduces minor injury crashes by 26% |
| Results: | Increases possible injury crashes by 11% Increases PDO crashes by 108% Overall benefit/cost ratio = 16.1 : 1 |
| File Name: | Iowa_median_cable_barrier_eval_w_cvr.pdf |

Project Effectiveness

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

| LOCATION | FUNCTIONAL CLASS | IMPROVEMENT CATEGORY | IMPROVEMENT TYPE | PDO BEFORE | PDO AFTER | FATALITY BEFORE | FATALITY AFTER | SERIOUS INJURY BEFORE | SERIOUS INJURY AFTER | ALL OTHER INJURY BEFORE | ALL OTHER INJURY AFTER | TOTAL BEFORE | TOTAL AFTER | EVALUATION RESULTS (BENEFIT/COST RATIO) |
|----------|------------------|----------------------|------------------|------------|-----------|-----------------|----------------|-----------------------|----------------------|-------------------------|------------------------|--------------|-------------|---|
| Optional | | | | | | | | | | | | | | |

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

No

Compliance Assessment

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

11/30/2016

What are the years being covered by the current SHSP?

From: 2017 To: 2018

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

2018

Enter additional comments here to clarify your response for this question or add supporting information.

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

| 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) | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| Route Number (8) | 100 | 100 | | | | | | | | |
| Route/Street Name (9) | 100 | 100 | | | | | | | | |
| Federal Aid/Route Type (21) | 100 | 100 | | | | | | | | |
| Rural/Urban Designation (20) | 100 | 100 | | | | | 100 | 100 | | |
| Surface Type (23) | 100 | 100 | | | | | 100 | 100 | | |
| Begin Point Segment Descriptor (10) | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| End Point Segment Descriptor (11) | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| Segment Length (13) | 100 | 100 | | | | | | | | |
| Direction of Inventory (18) | 100 | 100 | | | | | | | | |
| Functional Class (19) | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| Median Type (54) | 100 | 100 | | | | | | | | |
| Access Control (22) | 100 | 100 | | | | | | | | |

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| 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 |
| One/Two Way Operations (91) | 100 | 100 | | | | | | | | |
| Number of Through Lanes (31) | 100 | 100 | | | | | 100 | 100 | | |
| Average Annual Daily Traffic (79) | 100 | 100 | | | | | 100 | 100 | | |
| AADT Year (80) | 100 | 100 | | | | | | | | |
| Type of Governmental Ownership (4) | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| INTERSECTION | | | | | | | | | | |
| Unique Junction Identifier (120) | | | 100 | 100 | | | | | | |
| Location Identifier for Road 1 Crossing Point (122) | | | 100 | 100 | | | | | | |
| Location Identifier for Road 2 Crossing Point (123) | | | 100 | 100 | | | | | | |
| Intersection/Junction Geometry (126) | | | 100 | 100 | | | | | | |
| Intersection/Junction Traffic Control (131) | | | 100 | 100 | | | | | | |
| AADT for Each Intersecting Road (79) | | | 100 | 100 | | | | | | |
| AADT Year (80) | | | 100 | 100 | | | | | | |
| Unique Approach Identifier (139) | | | 100 | 100 | | | | | | |
| INTERCHANGE/RAMP | | | | | | | | | | |
| Unique Interchange Identifier (178) | | | | | 100 | 100 | | | | |
| Location Identifier for Roadway at Beginning of Ramp Terminal (197) | | | | | 100 | 100 | | | | |
| Location Identifier for Roadway at Ending Ramp Terminal (201) | | | | | 100 | 100 | | | | |
| Ramp Length (187) | | | | | 100 | 100 | | | | |
| Roadway Type at Beginning of Ramp Terminal (195) | | | | | 100 | 100 | | | | |
| Roadway Type at End Ramp Terminal (199) | | | | | 100 | 100 | | | | |

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| 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 |
| Interchange Type (182) | | | | | 100 | 100 | | | | |
| Ramp AADT (191) | | | | | 100 | 100 | | | | |
| Year of Ramp AADT (192) | | | | | 100 | 100 | | | | |
| Functional Class (19) | | | | | 100 | 100 | | | | |
| Type of Governmental Ownership (4) | | | | | 100 | 100 | | | | |
| Totals (Average Percent Complete): | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

*Based on Functional Classification

Enter additional comments here to clarify your response for this question or add supporting information.

It is understood that individual data elements may not be 100% accurate at all times due to reporting lags.

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.

No actions required - state is already compliant.

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

| CRITERIA | SUSPECTED SERIOUS INJURY IDENTIFIER(NAME) | MMUCC 4TH EDITION COMPLIANT * | SUSPECTED SERIOUS INJURY DEFINITION | MMUCC 4TH EDITION COMPLIANT * | SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS) | MMUCC 4TH EDITION COMPLIANT * |
|--------------------------------------|---|-------------------------------|--|-------------------------------|--|-------------------------------|
| Crash Report Form | Suspected serious/incapacitating | Yes | N/A | Yes | N/A | Yes |
| Crash Report Form Instruction Manual | Suspected serious/incapacitating | Yes | any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of before the injury occurred. This includes | Yes | severe lacerations (exposure of underlying tissues/muscle/organs or resulting in significant loss of blood); broken or distorted limbs (arm or leg); skull, chest injuries or abdominal injuries other than bruises or minor lacerations; crush injuries; significant burns (second and third degree burns over 10 percent or more of the body); unconsciousness at or when taken from the crash scene; and unable to leave the crash scene without assistance (paralysis). This does not include momentary unconsciousness. | Yes |
| Crash Database | Suspected serious/incapacitating | Yes | N/A | Yes | N/A | Yes |
| Crash Database Data Dictionary | Suspected serious/incapacitating | Yes | any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of before the injury occurred. This includes | Yes | severe lacerations (exposure of underlying tissues/muscle/organs or resulting in significant loss of blood); broken or distorted limbs (arm or leg); skull, chest injuries or abdominal | Yes |

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| CRITERIA | SUSPECTED SERIOUS INJURY IDENTIFIER(NAME) | MMUCC 4TH EDITION COMPLIANT * | SUSPECTED SERIOUS INJURY DEFINITION | MMUCC 4TH EDITION COMPLIANT * | SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS) | MMUCC 4TH EDITION COMPLIANT * |
|----------|---|-------------------------------|-------------------------------------|-------------------------------|--|-------------------------------|
| | | | | | injuries other than bruises or minor lacerations; crush injuries; significant burns (second and third degree burns over 10 percent or more of the body); unconsciousness at or when taken from the crash scene; and unable to leave the crash scene without assistance (paralysis). This does not include momentary unconsciousness. | |

Enter additional comments here to clarify your response for this question or add supporting information.

The above form was filled out conservatively last year, noting that many of the items did not follow MMUCC 4th Edition verbatim. Iowa questioned the "verbatim" requirement in the response's comments section, asking for clarification from FHWA on whether the state was indeed non-compliant. Hearing no response on this subject over the last year, the state assumes its assertion to be true - that they are considered to be generally compliant with MMUCC 4th Edition. Therefore, the responses in the forms this year were changed to "compliant," though no changes have been made to Iowa's crash report form, crash report form instruction manual, crash database, or crash database data dictionary to address the "verbatim" requirement.

Did the State conduct an HSIP program assessment during the reporting period?

No

When does the State plan to complete it's next HSIP program assessment.

2020

Enter additional comments here to clarify your response for this question or add supporting information.

Optional Attachments

Program Structure:

[HSIP Manual FINAL FY 19.pdf](#)

Project Implementation:

Safety Performance:

Evaluation:

[Iowa median cable barrier eval w cvr.pdf](#)

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. |