IOWA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2017 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?

Engineering

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

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 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 just 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?

Yes

Describe HSIP program administration practices that have changed since the last reporting period.

2017 Iowa Highway Safety Improvement Program
Iowa recently published its very first HSIP manual which documents how the HSIP program is to be administered, starting with the 2019 state fiscal year. The manual describes the purpose of the program, suggests methods for selecting good projects, outlines the application procedures, and explains methods of evaluation.

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.

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

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

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

What percentage of HSIP funds address systemic improvements?

99

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

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, as well as developing state-specific SPFs. 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, likely 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)	$30,492,449	$26,922,526	88.29%
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%
Incentive Funds (Section 406)	$175,000	$175,000	100%
Totals	$30,667,449	$27,097,526	88.36%

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

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

$2,376,000

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

$2,047,467

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

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

$175,000

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

$175,000

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 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

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-001-2(33)--3L-51	Shoulder treatments	Pave existing shoulders	10.8	Miles	$1198010	$1332172	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	2,664	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-002-6(45)--3L-93	Shoulder treatments	Pave existing shoulders	12.1	Miles	$1413804	$6463833	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Minor Arterial	2,064	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-003-5(79)--3L-35	Shoulder treatments	Pave existing shoulders	8.9	Miles	$916923	$1018803	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	2,220	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-003-6(64)--3L-09	Shoulder treatments	Pave existing shoulders	12.2	Miles	$1449725	$6086613	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial - Other	2,400	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-006-4(165)--3L-77	Shoulder treatments	Pave existing shoulders	3.9	Miles	$343124	$5457963	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban Principal Arterial - Other	26,900	45	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-020-4(53)--3L-40	Shoulder treatments	Pave existing shoulders	12.6	Miles	$1405834	$4208003	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial - Other	9,300	65	State Highway Agency	Other	Lane Departure	Shoulder treatments
IHSIPX-029-4(106)62--08-78	Roadside	Barrier - cable	13.8	Miles	$1198593	$1331770	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	20,300	70	State Highway Agency	Systemic	Lane Departure	Cable barrier
HSIPX-034-2(61)--3L-69	Shoulder treatments	Pave existing shoulders	9.9	Miles	$1099202	$1221335	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	5,900	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
IHSIPX-035-5(105)125--08-85	Roadside	Barrier - cable	9.3	Miles	$711206	$790229	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Interstate	21,600	70	State Highway Agency	Systemic	Lane Departure	Cable barrier
HSIPX-052-2(110)--3L-49	Shoulder treatments	Pave existing shoulders	10.1	Miles	$1301754	$1492596	HSIP (23 U.S.C. 148)	Rural Minor Arterial	3,100	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-052-2(140)--3L-31	Shoulder treatments	Pave existing shoulders	1.5	Miles	$329165	$1491037	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial - Other	4,380	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-061-3(59)--3L-58	Shoulder treatments	Pave existing shoulders	11.3	Miles	$1433345	$22281748	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial - Other	6,136	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-063-4(40)--3L-79	Shoulder treatments	Pave existing shoulders	4.8	Miles	$657165	$3397352	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial - Other	1,400	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-063-4(46)--3L-79	Shoulder treatments	Pave existing shoulders	14.6	Miles	$1953680	$2511876	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	3,220	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-064-2(57)--3L-49	Shoulder treatments	Pave existing shoulders	11.3	Miles	$1122801	$4540258	State and Local Funds	Rural Minor Arterial	1,400	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-065-1(31)--3L-93	Shoulder treatments	Pave existing shoulders	9.8	Miles	$1925594	$2255049	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	1,840	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-067-2(64)--3L-23	Shoulder treatments	Pave existing shoulders	5.4	Miles	$1171027	$1301141	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	4,460	55	State Highway Agency	Other	Lane Departure	Shoulder treatments

													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-071-3(55)--3L-15	Shoulder treatments	Pave existing shoulders	10.4	Miles	$1488352	$1653724	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	2,640	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-071-6(50)--3L-81	Shoulder treatments	Pave existing shoulders	7.7	Miles	$1095255	$1227450	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	3,030	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-071-6(51)--3L-81	Shoulder treatments	Pave existing shoulders	9.9	Miles	$1196519	$1329465	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	2,135	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIPX-092-5(52)--3L-91	Shoulder treatments	Pave existing shoulders	6.7	Miles	$1463981	$1626645	HSIP (23 U.S.C. 148)	Rural Principal Arterial - Other	3,745	55	State Highway Agency	Other	Lane Departure	Shoulder treatments
HSIP-S-C010(95)--6C-10	Shoulder treatments	Pave existing shoulders	3.5	Miles	$351000	$868689	State and Local Funds	Rural Major Collector	2,650	55	County Highway Agency	Other	Lane Departure	Shoulder treatments
HSIP-S-C025(104)--6C-25	Shoulder treatments	Pave existing shoulders	2.7	Miles	$294791	$2728404	State and Local Funds	Rural Major Collector	2,930	55	County Highway Agency	Other	Lane Departure	Shoulder treatments
HSIP-S-C025(107)--6C-25	Shoulder treatments	Pave existing shoulders	0.2	Miles	$49925	$710869	State and Local Funds	Rural Major Collector	6,400	55	County Highway Agency	Other	Lane Departure	Shoulder treatments
HSIP-S-C026(95)--6C-26	Roadway delineation	Roadway delineation - other	31.2	Miles	$140278	$155864	HSIP (23 U.S.C. 148)	Rural Major Collector	1,470	55	County Highway Agency	Other	Lane Departure	Delineation
HSIP-S-C026(99)--6C-26	Roadway delineation	Roadway delineation - other	34.7	Miles	$189947	$211052	HSIP (23 U.S.C. 148)	Rural Major Collector	2,950	55	County Highway Agency	Other	Lane Departure	Delineation
HSIP-S-C038(98)--6C-38	Roadway signs and traffic control	Roadway signs and traffic control - other	2	Intersections	$19042	$21158	HSIP (23 U.S.C. 148)	Rural Major Collector	750	55	County Highway Agency	Other	Intersections	Intersection improvements
HSIP-S-C059(75)--6C-59	Roadway delineation	Roadway delineation - other	51.4	Miles	$236000	$296192	HSIP (23 U.S.C. 148)	Rural Major Collector	1,000	55	County Highway Agency	Other	Lane Departure	Delineation
HSIP-S-C069(60)--6C-69	Roadway delineation	Roadway delineation - other	19.4	Miles	$102346	$113718	HSIP (23 U.S.C. 148)	Rural Major Collector	870	55	County Highway Agency	Other	Lane Departure	Delineation
HSIP-S-C074(100)--6C-74	Shoulder treatments	Pave existing shoulders	4.9	Miles	$389042	$432269	HSIP (23 U.S.C. 148)	Rural Major Collector	2,140	55	County Highway Agency	Other	Lane Departure	Shoulder treatments
HSIP-S-C075(149)--6C-75	Shoulder treatments	Pave existing shoulders	6.2	Miles	$275096	$3563579	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Major Collector	640	55	County Highway Agency	Other	Lane Departure	Shoulder treatments
SBIN(015)	Non-infrastructure	Educational efforts	1	Numbers	$175000	$175000	Other Federal-aid Funds (i.e. STBG, NHPP)		0				Education	Deliver safety messages

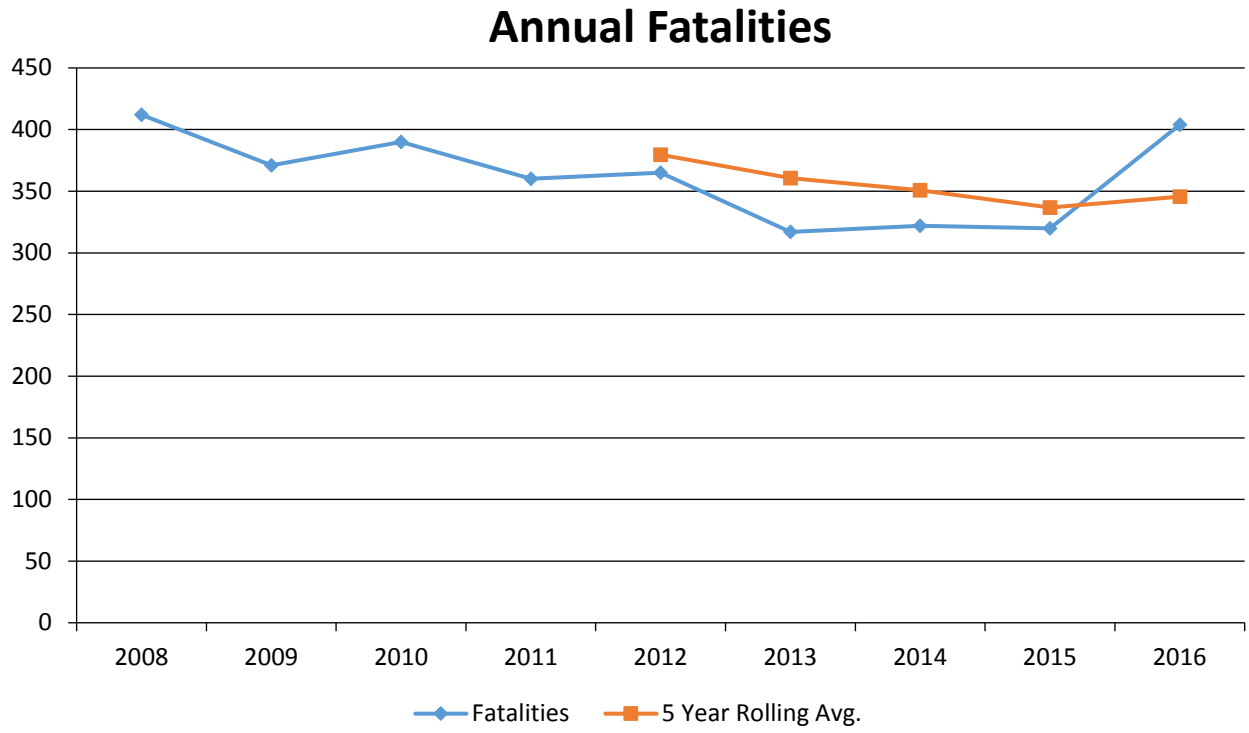
Enter additional comments here to clarify your response for this question or add supporting information.

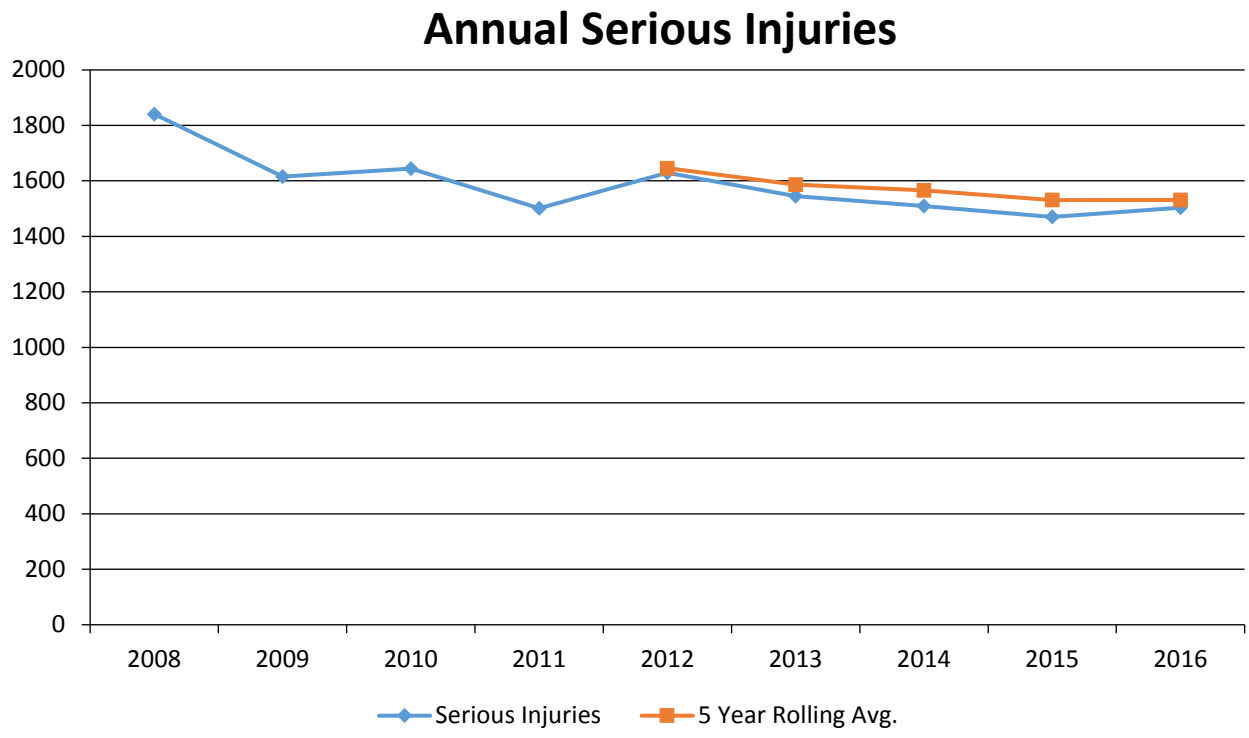
Safety Performance

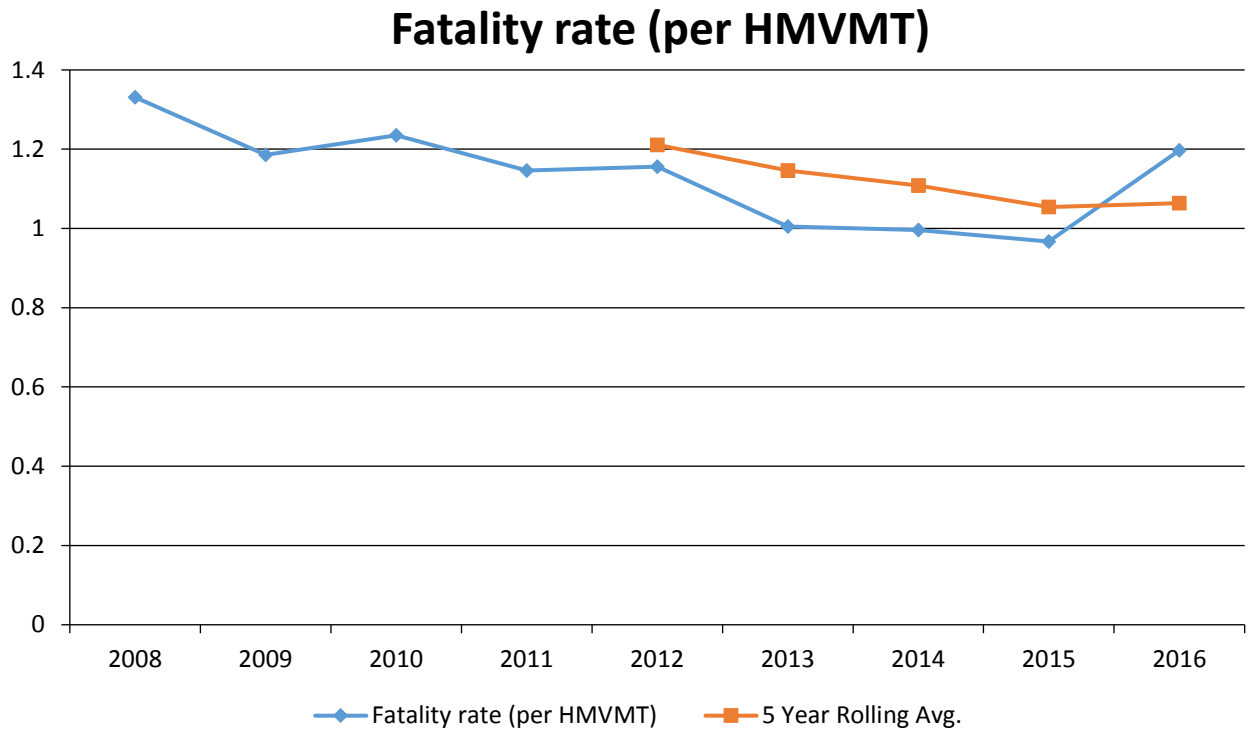
General Highway Safety Trends

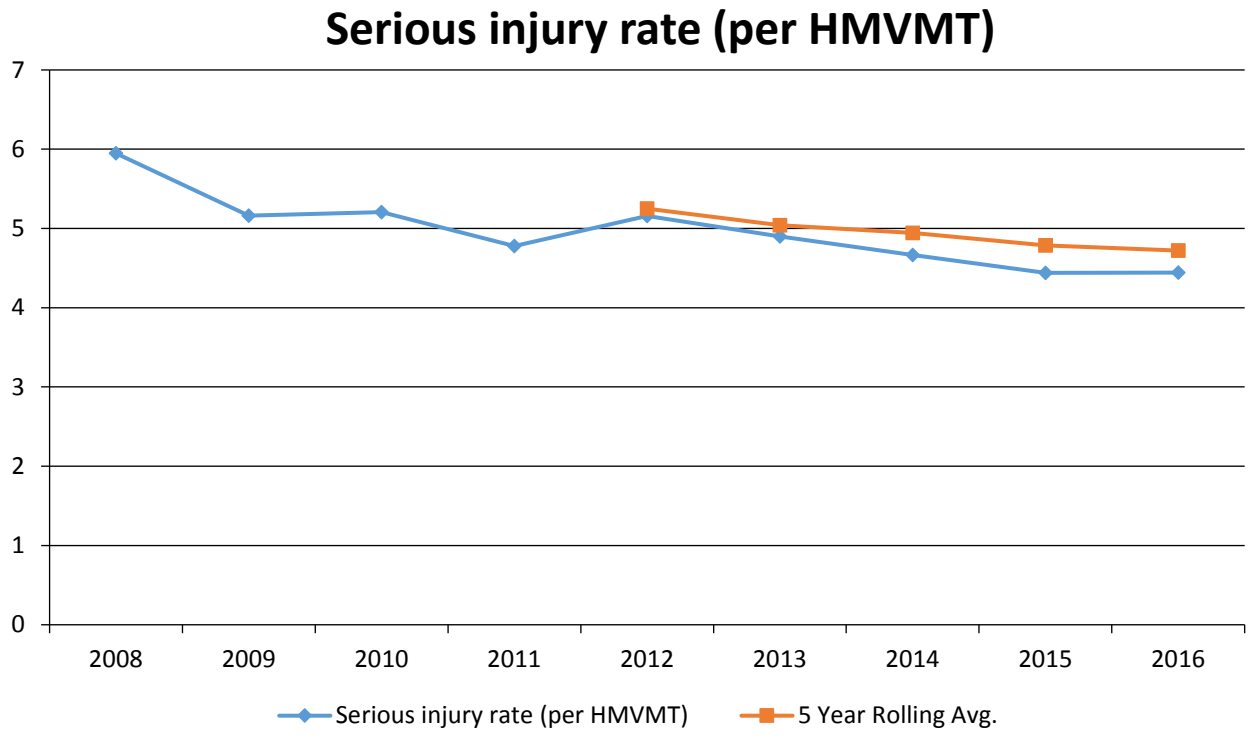
Present data showing the general highway safety trends in the State for the past five years.

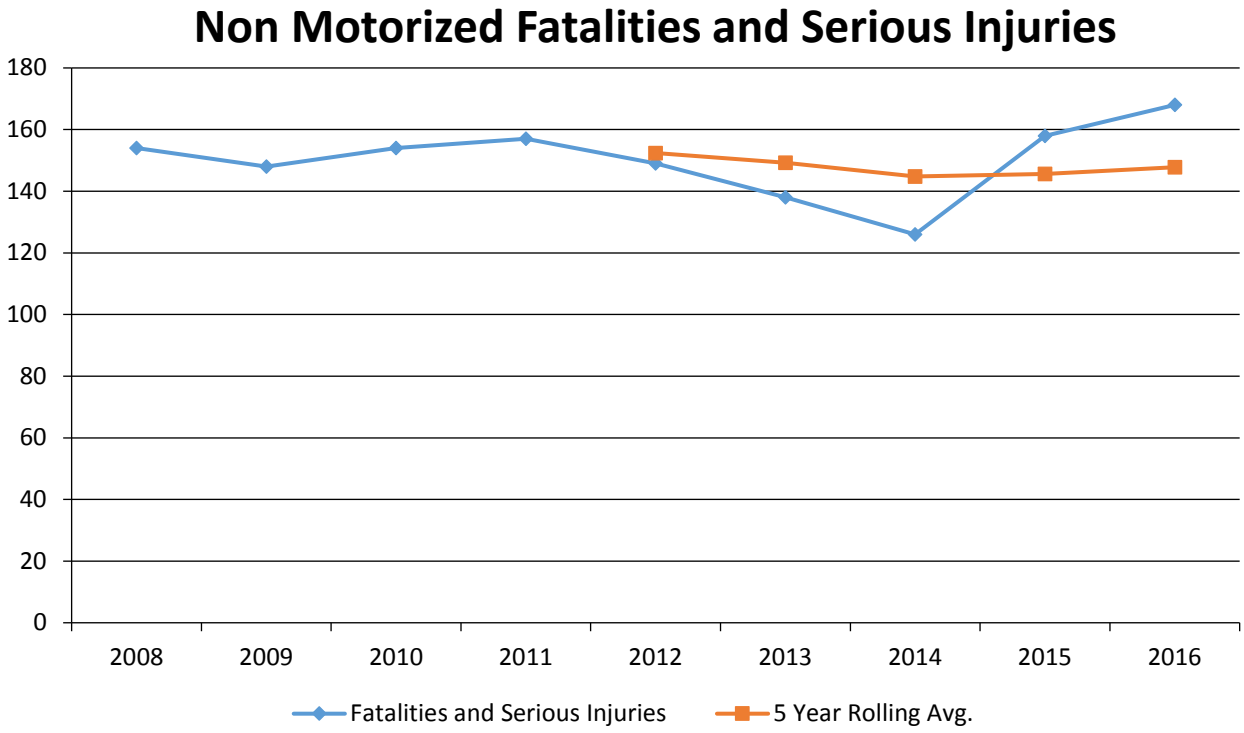
PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	412	371	390	360	365	317	322	320	404
Serious Injuries	1,841	1,615	1,644	1,501	1,629	1,545	1,509	1,470	1,504
Fatality rate (per HMVMT)	1.331	1.186	1.235	1.146	1.156	1.005	0.996	0.967	1.197
Serious injury rate (per HMVMT)	5.948	5.161	5.206	4.779	5.158	4.898	4.667	4.440	4.444
Number non-motorized fatalities	25	25	28	31	25	23	25	37	35
Number of non-motorized serious injuries	129	123	126	126	124	115	101	121	133


Annual Fatalities
450
400
350
300
250
200
150
100
50
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
7
6
5
4
3
2
1
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



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

Describe fatality data source.

State Motor Vehicle Crash Database

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.

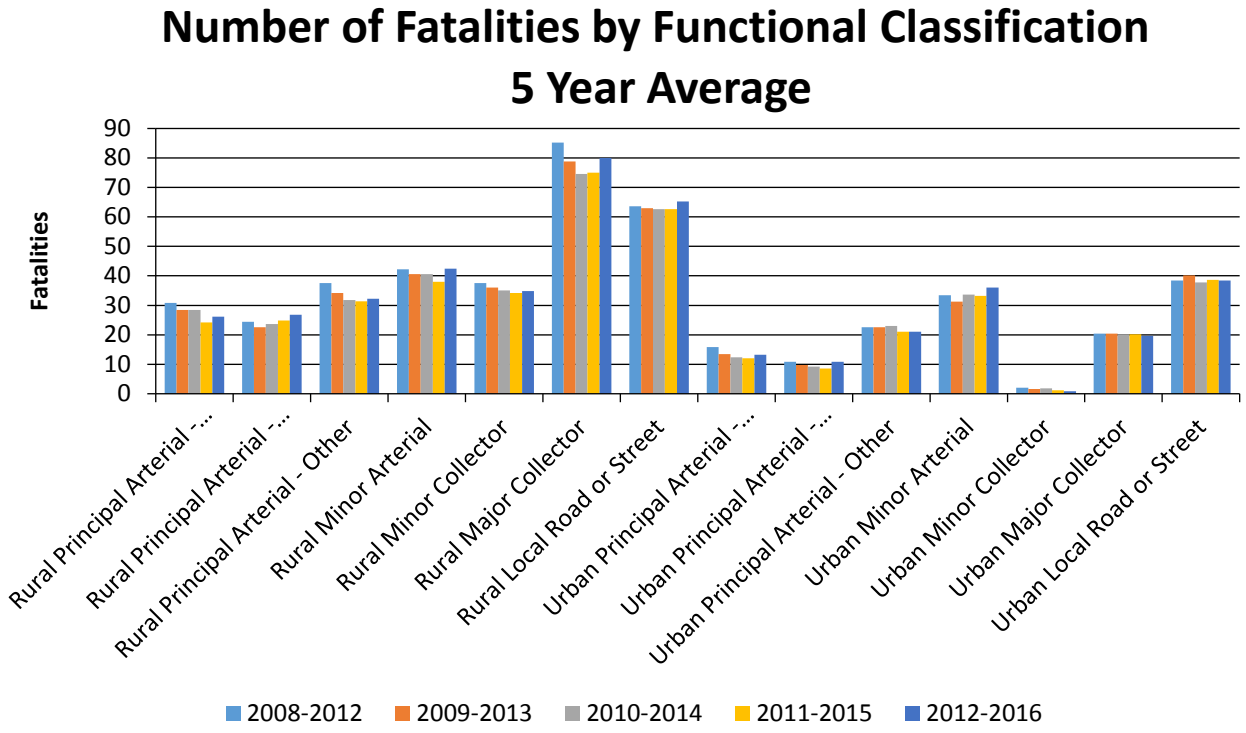
Year 2016

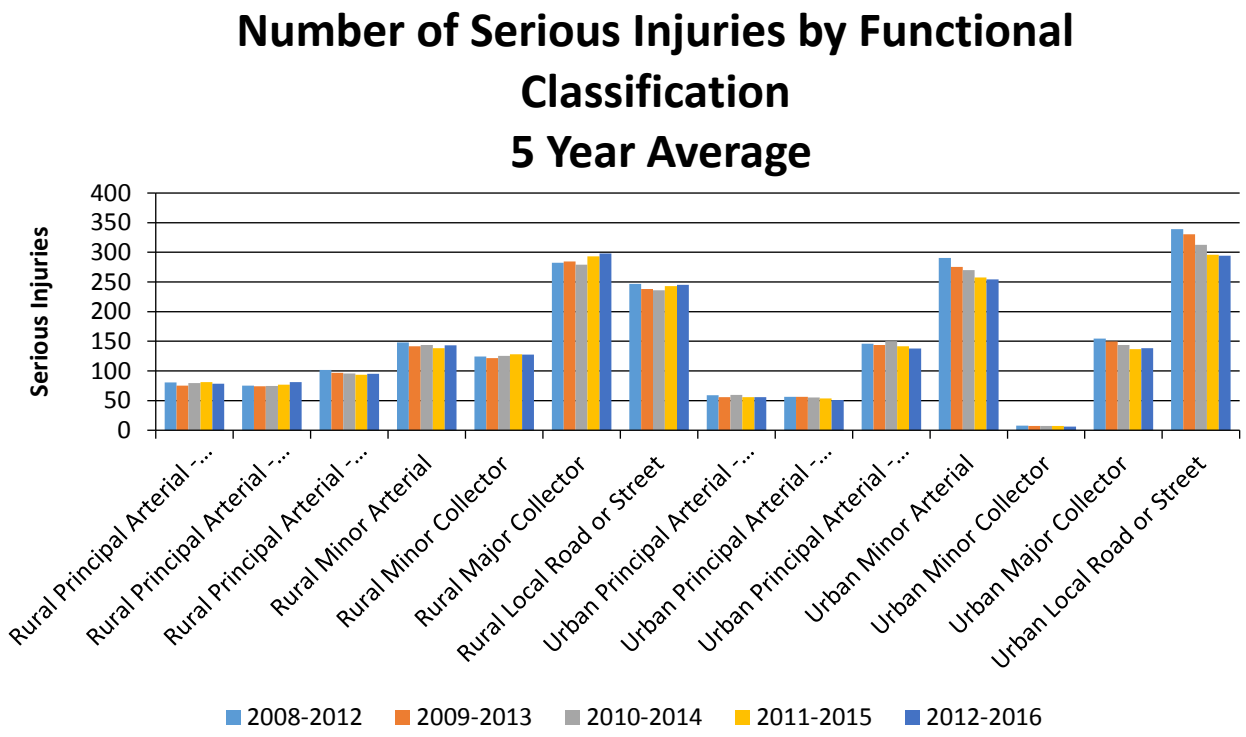
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Interstate	26.2	78.4	0.5	1.5
Rural Principal Arterial - Other Freeways and Expressways	26.8	81.2	0.51	1.55
Rural Principal Arterial - Other	32.2	95.4	0.62	1.82
Rural Minor Arterial	42.4	143	1.72	5.82

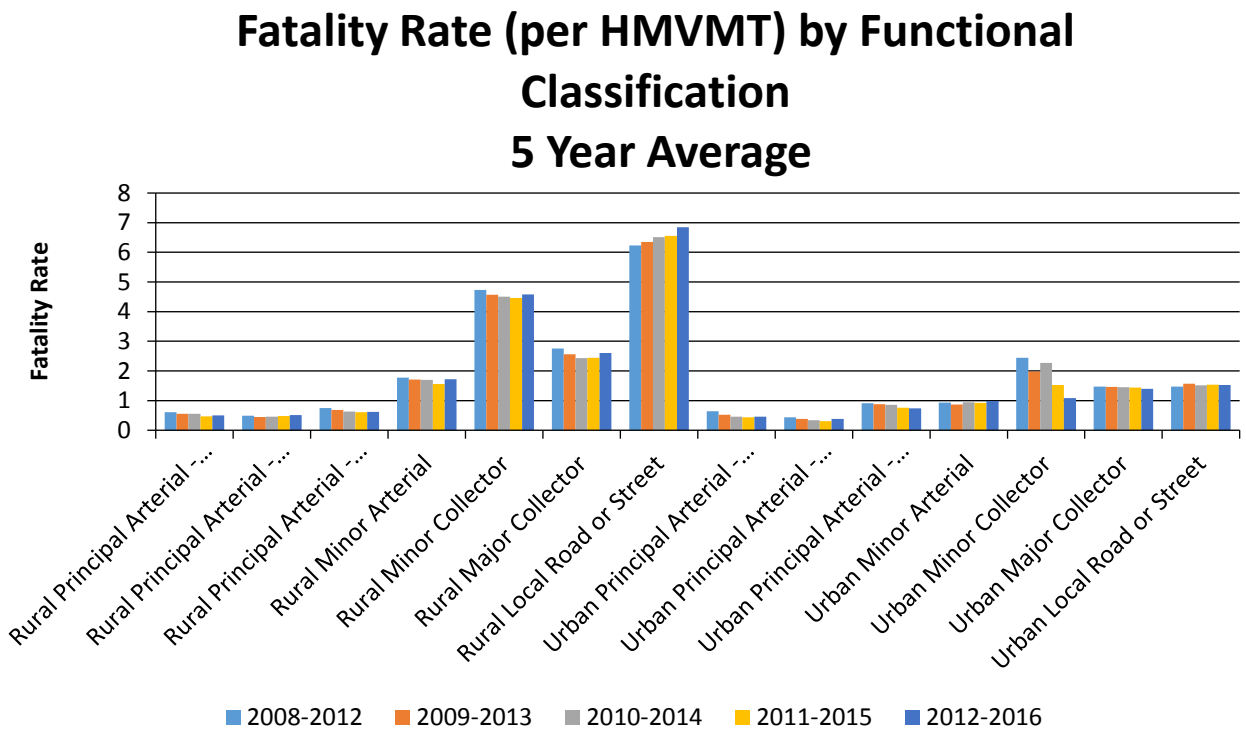
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	34.8	127.6	4.58	16.83
Rural Major Collector	80	298.2	2.6	9.7
Rural Local Road or Street	65.2	245	6.85	25.72
Urban Principal Arterial - Interstate	13.2	55.6	0.46	1.98
Urban Principal Arterial - Other Freeways and Expressways	10.8	51.2	0.38	1.82
Urban Principal Arterial - Other	21	137.6	0.74	4.9
Urban Minor Arterial	36	254.4	0.99	7.03
Urban Minor Collector	0.8	6	1.08	8.03
Urban Major Collector	19.6	138.4	1.4	9.88
Urban Local Road or Street	38.4	294.4	1.53	11.75

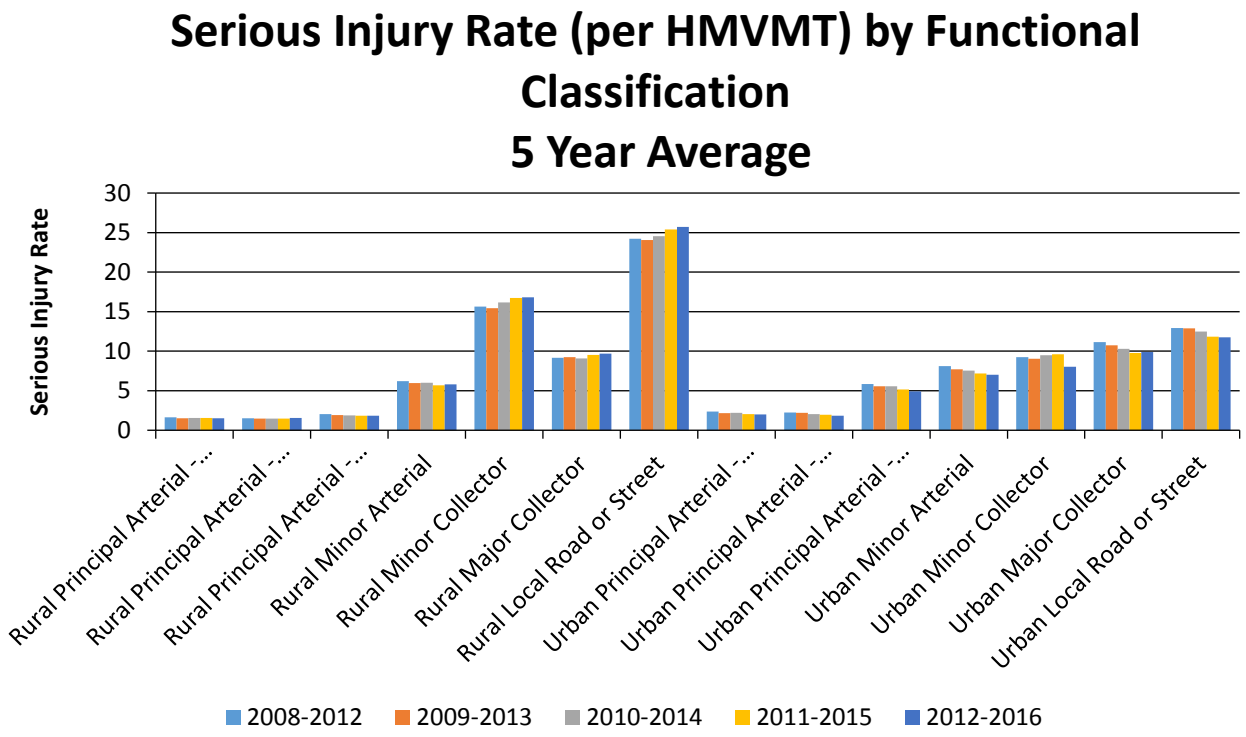
Year 2016

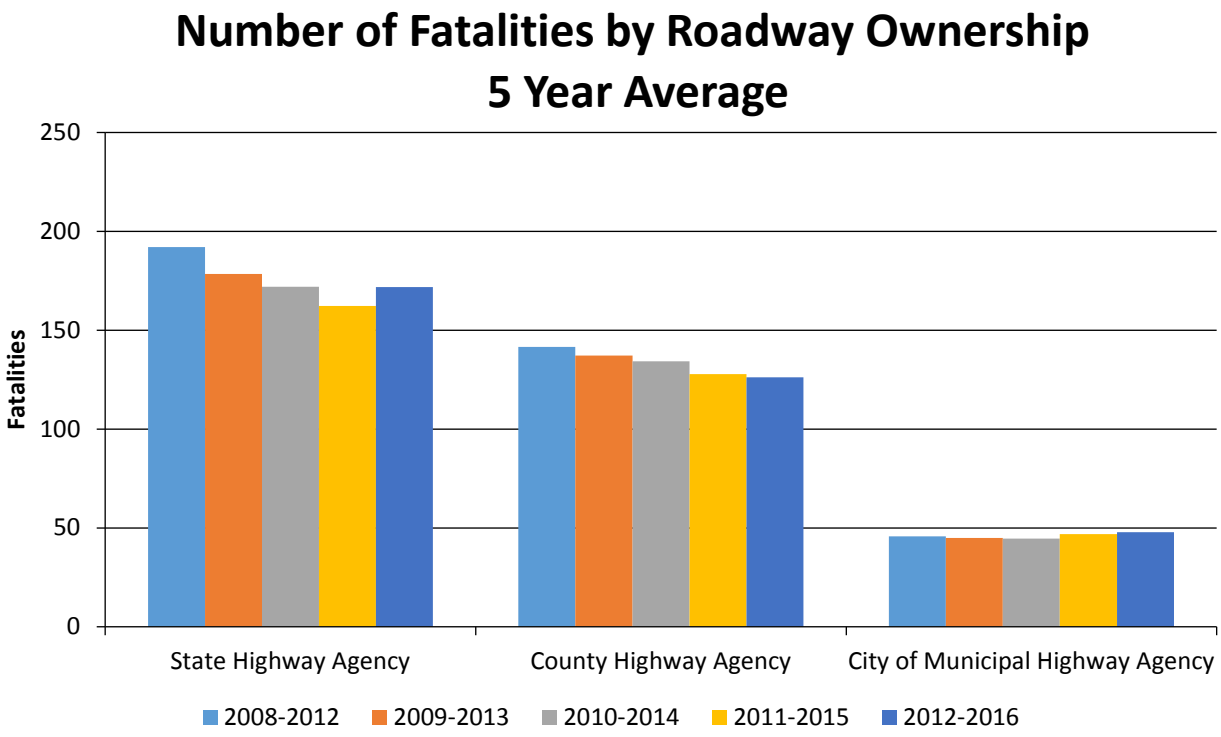
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	171.8	697.6	0.52	2.12
County Highway Agency	126.2	478.2	0.68	2.56
Town or Township Highway Agency				
City of Municipal Highway Agency	47.8	361.2	0.34	2.55
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				

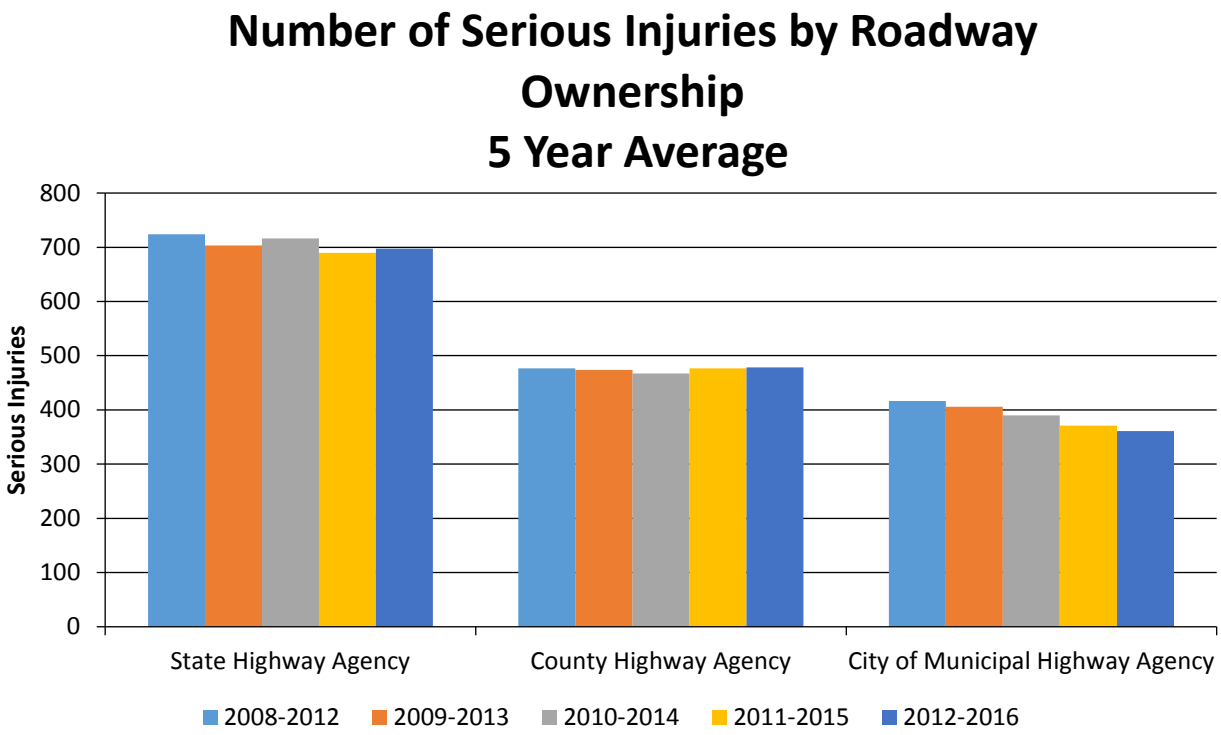

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
90
80
70
60
50
40
30
20
10
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

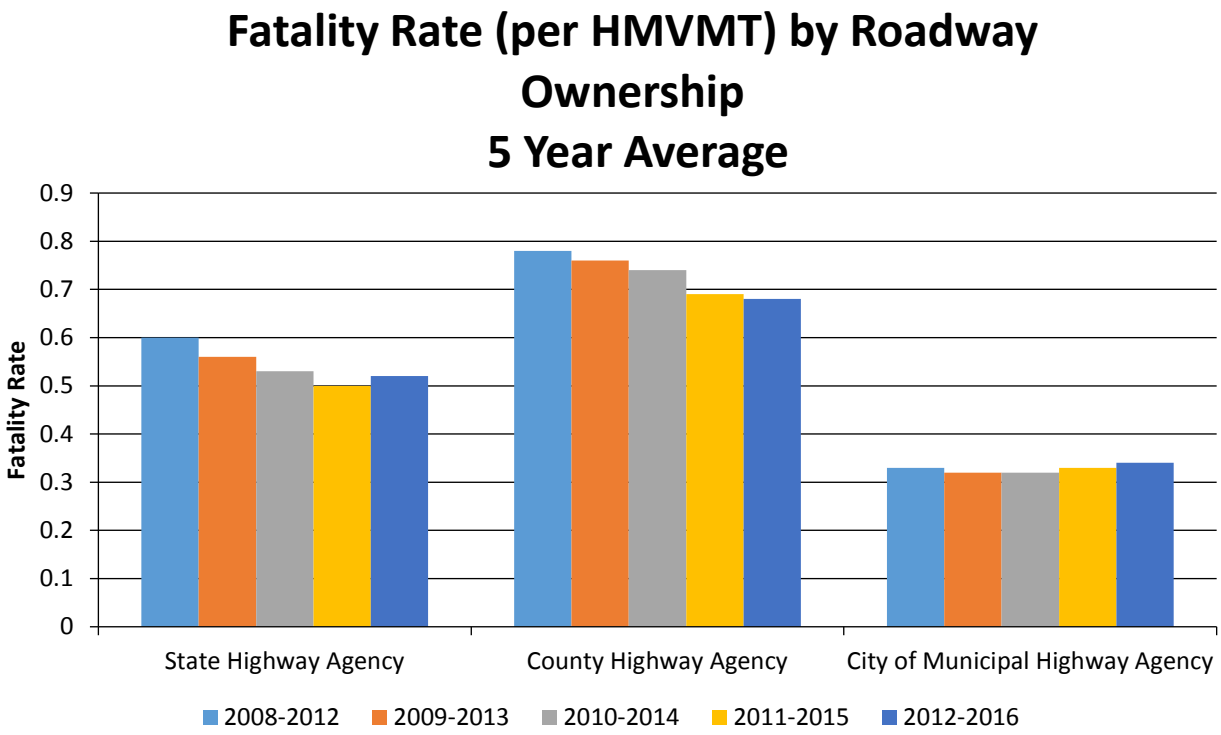

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
400
350
300
250
200
150
100
50
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

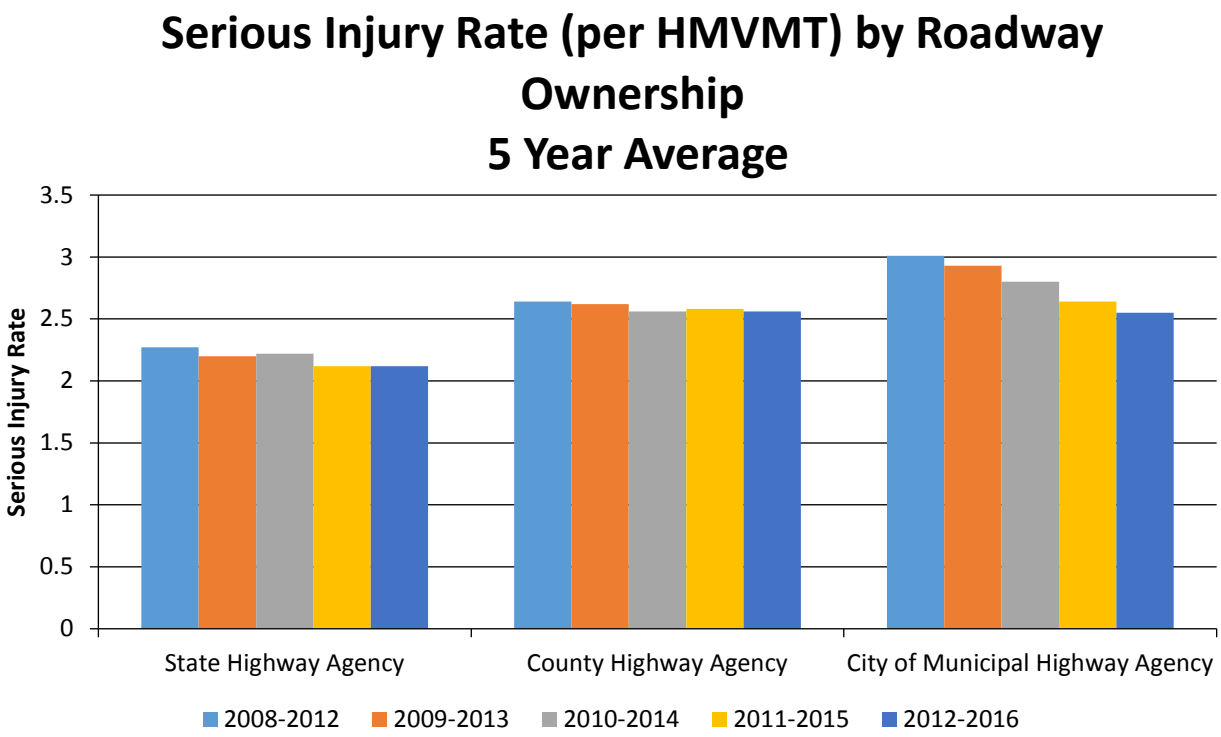

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
8
7
6
5
4
3
2
1
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
30
25
20
15
10
5
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
250
200
150
100
50
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
800
700
600
500
400
300
200
100
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016



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 2018 Targets *

Number of Fatalities	367.9

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.

Number of Serious Injuries 1562.2

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.

Fatality Rate 1.080

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 HMVMT by 2020.

Serious Injury Rate 4.587

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 HMVMT by 2020.

Total Number of Non-Motorized Fatalities and Serious Injuries 150.7

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.

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.

We formed an Iowa Department of Transportation/Department of Public Safety working group to discuss methodology and coordinate with stakeholders. Staff include representatives from Governor's Traffic Safety Bureau, Traffic & Safety, Systems Planning, and Organizational Improvement. Discussion items included crash data, road improvements, driver distraction, seat belt usage, fuel prices, and vehicle safety.

These targets were presented at the March 29th MPO/RPA Quarterly Meeting, the April 6th Transportation Asset Management team meeting, and the May 4th Strategic Highway Safety Plan team meeting. The working group reviewed all comments received.

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

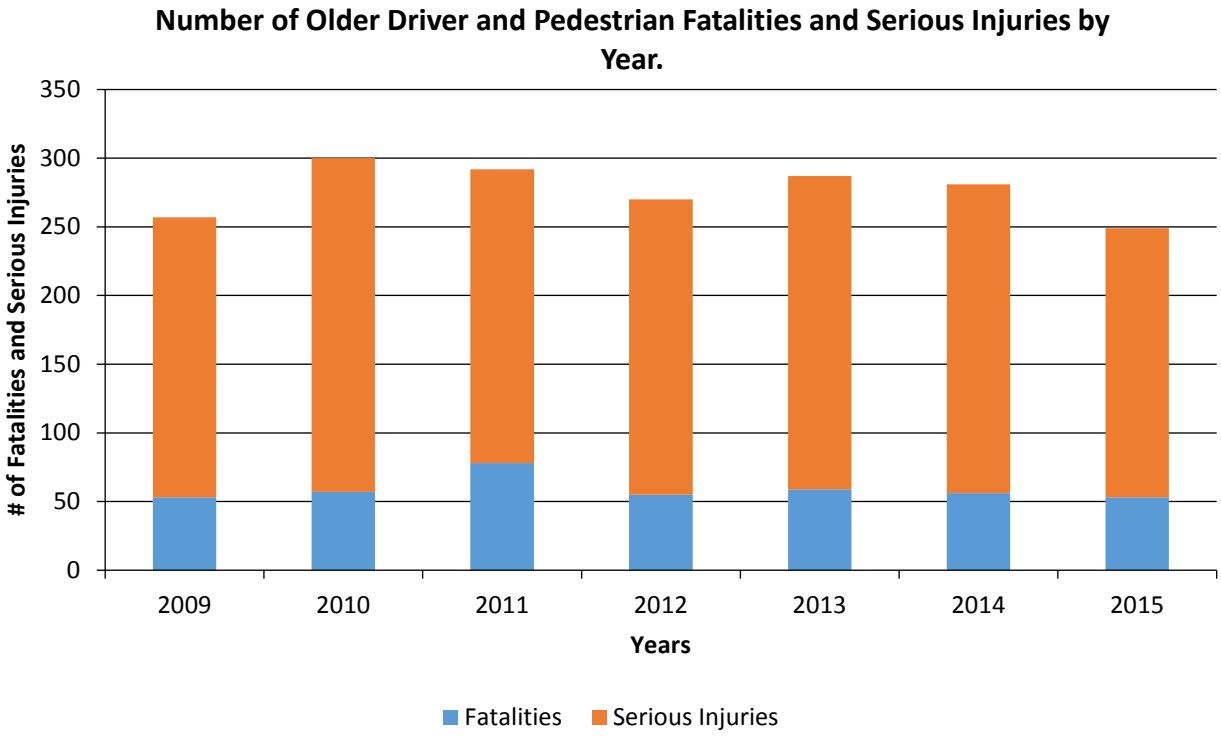
Does the HRRR special rule apply to the State for this reporting period?

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 for the past seven years.

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	53	57	78	55	59	56	53
Number of Older Driver and Pedestrian Serious Injuries	204	243	214	215	228	225	196



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

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 state fiscal year 2001, the state's HSIP expenditures have resulted in a benefit-cost ratio of approximately 6. 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

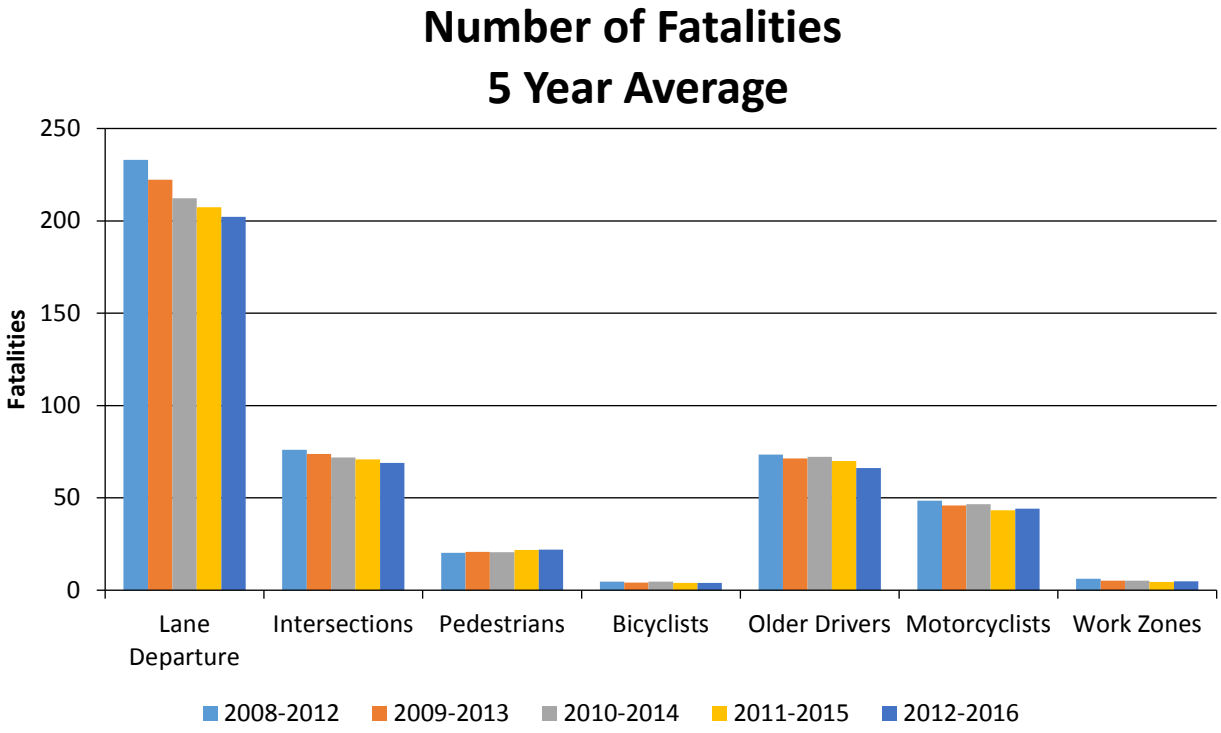
Effectiveness of Groupings or Similar Types of Improvements

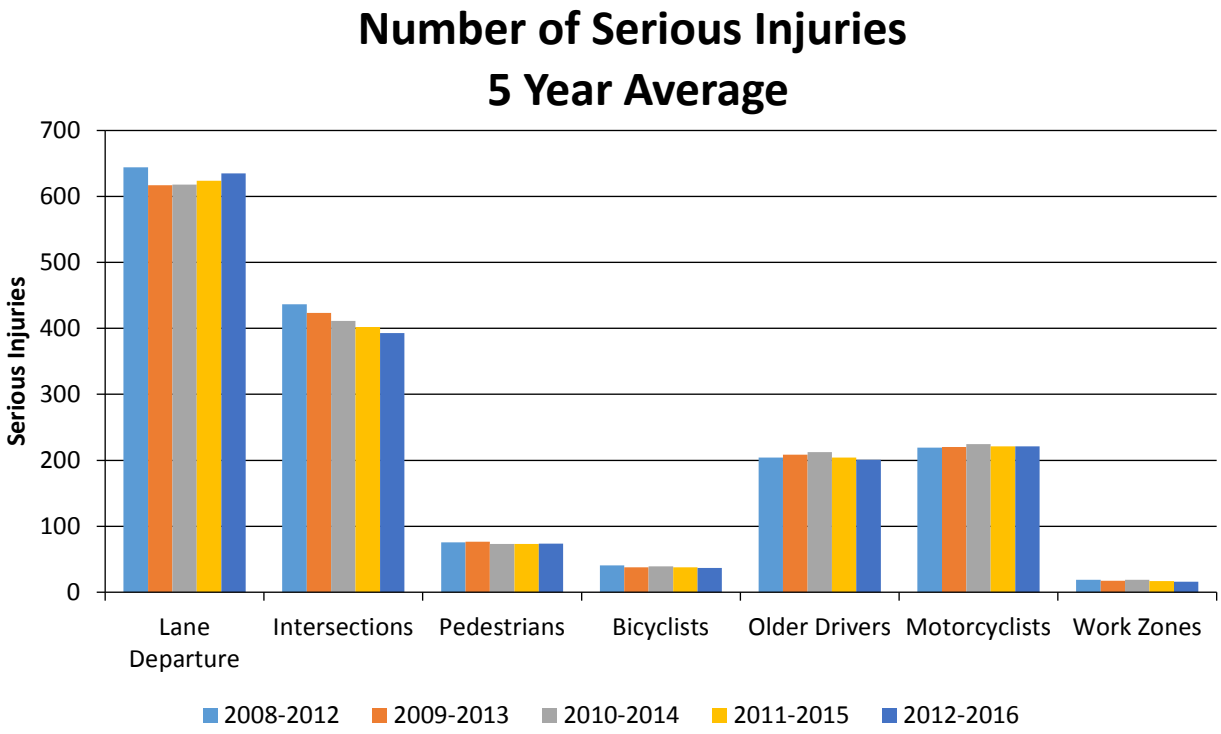
Present and describe trends in SHSP emphasis area performance measures.

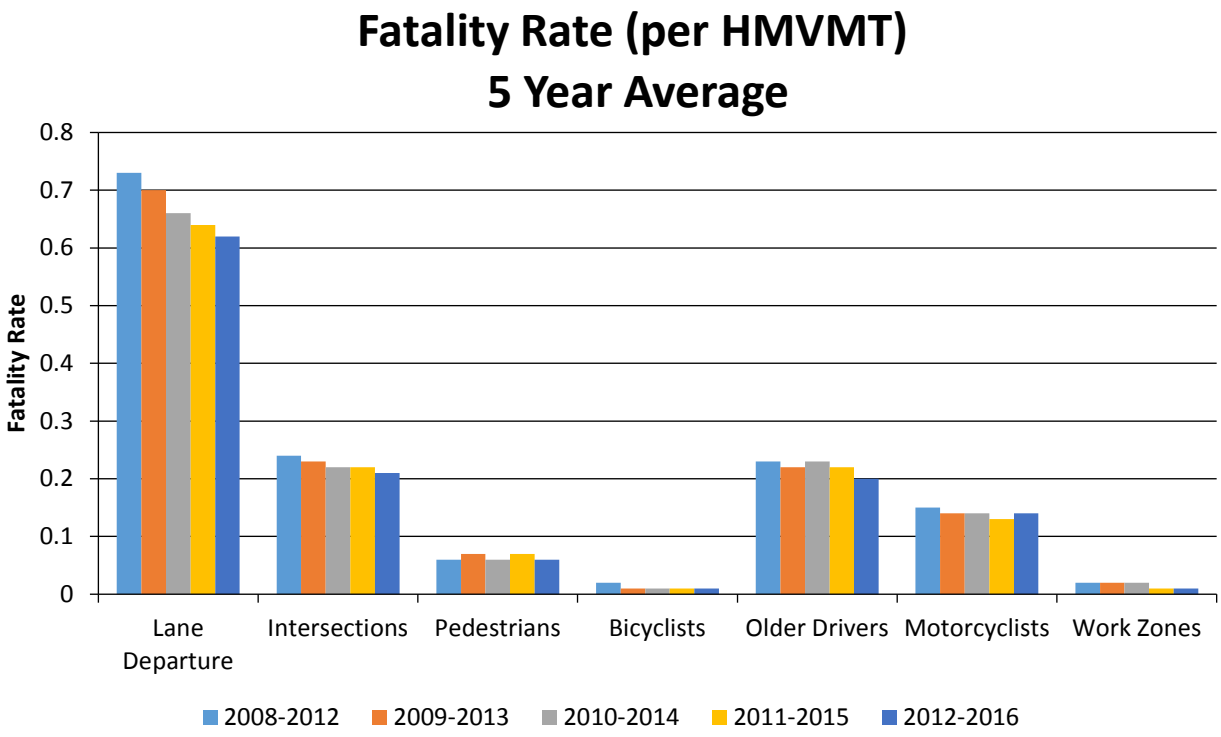
Year 2016

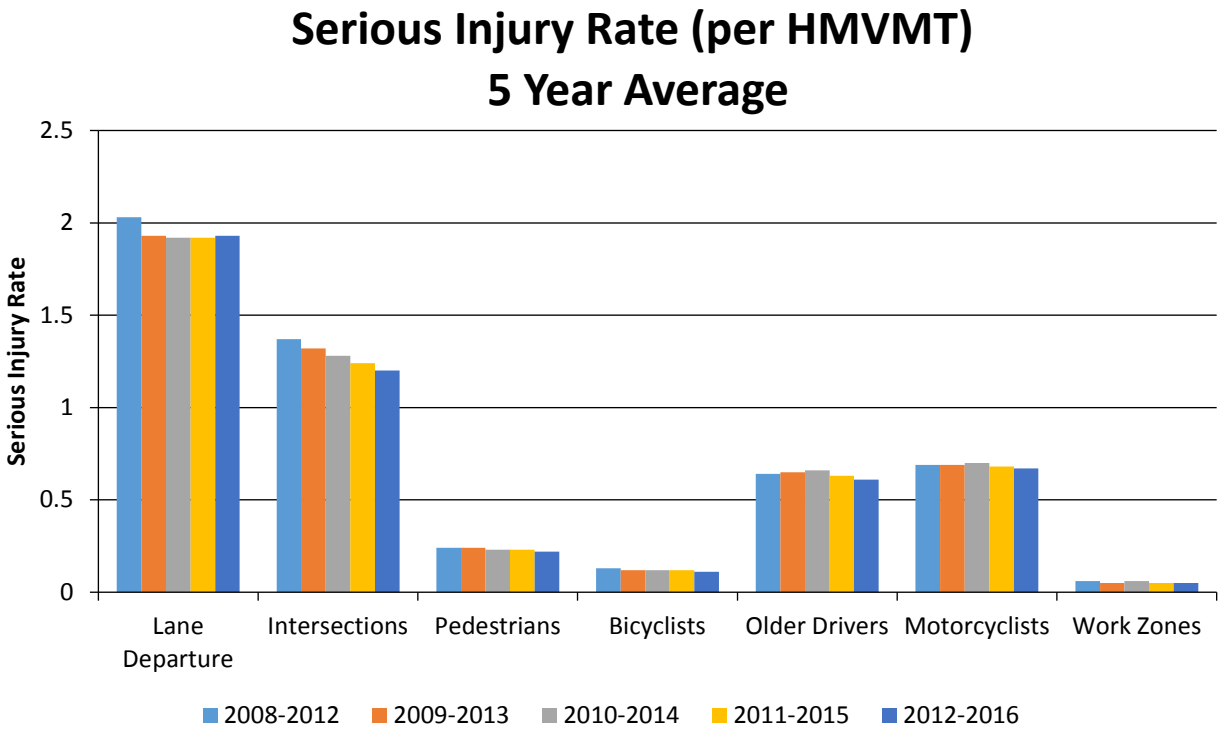
2017 Iowa Highway Safety Improvement Program

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		202.2	634.8	0.62	1.93			
Intersections		69	392.8	0.21	1.2			
Pedestrians		22	73.6	0.06	0.22			
Bicyclists		4	36.6	0.01	0.11			
Older Drivers		66.2	200.8	0.2	0.61			
Motorcyclists		44.2	221.2	0.14	0.67			
Work Zones		4.8	16	0.01	0.05			


Number of Fatalities
5 Year Average
Fatalities
250
200
150
100
50
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016





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?

2017 Iowa Highway Safety Improvement Program

No

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

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 INJURY BEFORE	ALL 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.

	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
MIRE NAME (MIRE NO.)	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								

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
Access Control (22)	100	100								
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)					97	97				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					97	97				
Location Identifier for Roadway at Ending Ramp Terminal (201)					97	97				
Ramp Length (187)					99	99				
Roadway Type at Beginning of Ramp Terminal (195)					97	0				

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 Type at End Ramp Terminal (199)					97	0				
Interchange Type (182)					97	0				
Ramp AADT (191)					99	99				
Year of Ramp AADT (192)					99	99				
Functional Class (19)					99	98				
Type of Governmental Ownership (4)					99	98				
Totals (Average Percent Complete):	**100.00**	**100.00**	**100.00**	**100.00**	**97.91**	**71.27**	**100.00**	**100.00**	**100.00**	**100.00**

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

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.

Iowa is currently moving forward with collecting interchange/ramp elements as part of our implementation of ESRI's Roads and Highways. The segment elements have been collected for years, and they will also be in Roads and Highways. Intersection elements have been collected over the past few years and cover state and full MIRE requirements. Maintenance of these elements has yet to be determined, but is being discussed. Iowa is working toward full MIRE implementation across the board. Horizontal curve elements are in progress and a reassessment of gaps is needed.

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	No	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Suspected serious/incapacitating	No	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	No	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.	No
Crash Database	Suspected serious/incapacitating	No	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Suspected serious/incapacitating	No	any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the	No	severe lacerations (exposure of underlying tissues/muscle/organs or resulting in significant	No

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 *
			activities the person was capable of before the injury occurred. This includes		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.	

Please describe the actions the State is taking to become compliant by April 15, 2019.
If FHWA confirms that Iowa DOT is indeed non-compliant, the state will work with the developers of the crash reporting system and database in order to modify the identifiers, definitions, and attributes to be compliant with MMUCC 4th Edition before April 15, 2019.

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

Historically, Iowa DOT has been told by FHWA that its identifiers, definitions, and attributes are generally compliant with MMUCC 4th Edition. This new requirement utilizes the term "verbatim", so it brings into question whether Iowa is compliant or not. The form above was filled out conservatively, noting that these items do not follow MMUCC verbatim. However, if FHWA could provide additional clarification of (and perhaps the reasoning behind) the "verbatim" requirement, it is possible that Iowa could consider itself compliant without having to make any changes.

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:

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.