NORTH DAKOTA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

Table of Contents

Table of Contents 2
Disclaimer 3
Executive Summary 4
Introduction 5
Program Structure 5
  Program Administration 5
  Program Methodology 8
Project Implementation 12
  Funds Programmed 12
  General Listing of Projects 14
Safety Performance 17
  General Highway Safety Trends 17
  Safety Performance Targets 30
  Applicability of Special Rules 31
Evaluation 33
  Program Effectiveness 33
  Effectiveness of Groupings or Similar Types of Improvements 34
Year 2017 34
  Project Effectiveness 38
Compliance Assessment 39

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 North Dakota Highway Safety Improvement Program (HSIP) is administered through the NDDOT's Programming Division. This year continues the increasing emphasis on projects that are chosen through "systemic" process. On both the local and state network, sites have been identified through a risk analysis to determine the best locations for widespread low-cost countermeasures.

Project evaluation was conducted on some of the safety projects done in 2013. Even though only a simple before and after analysis was done, the safety projects did appear to have some success in reducing the overall number of crashes.

In the last year the North Dakota HSIP program has been integrated into a new initiative called "Vision Zero". This initiative's mission is to eliminate fatalities and serious injuries caused by motor vehicle crashes. For 2017, North Dakota has seen some positive trends--the 5-year rolling average for both fatalities and serious injuries declined for the second year in a row. In addition, the fatality rate and serious injury rate has also decreased for the second year in a row.

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 NDDOT solicits state and local agencies to submit safety project applications each year. Potential projects are identified through the traditional "reactive" approach that address high crash locations, fatal crash locations or areas where road safety reviews took place. Projects are also developed using a "systemic" approach that apply low-cost treatments over a large area. The NDDOT central office reviews applications and selects and prioritizes projects based on the state's SHSP emphasis areas: l ane departure, unbelted vehicle occupants, alcohol-related, excessive speed/aggressive driving, intersection, and "involving driver under 21".

Most HSIP projects primarily address the lane departure or intersection emphasis areas. After projects are programmed, they get designed and implemented with the same process as regular federally funded transportation projects. The NDDOT has evaluated some past projects with simple before-after crash comparisons.

Where is HSIP staff located within the State DOT?

Other-Programming

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

The Office of Transportation Programs at NDDOT has HSIP staff within the "Programming" division.

How are HSIP funds allocated in a State?

Central Office via Statewide Competitive Application Process

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

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

The NDDOT addresses safety on local roads through the Local Road Safety Program (LRSP). Local public agencies can also submit applications for non-LRSP safety projects each year during the solicitation period. Selection of local and tribal road projects use the same methodology as State roads.

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

Traffic Engineering/Safety
Design
Planning
Districts/Regions
Local Aid Programs Office/Division
Governors Highway Safety Office
Other-Safety Division, Local Government

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

Describe coordination with internal partners.

Design

The Design Division is included in the distribution of the high crash listings. All road safety reviews require at least one member of the Design Division. Their participation and review of at-risk locations helps in the development of potential project countermeasures.

Planning

The Planning Division provides data for the development of the HSIP. Roadway features are collected and maintained in the Planning Division include: traffic volume, truck volumes, traffic projections, roadway features, roadway viewer (for state highways) and mapping. The Planning Division is also included in the distribution of the high crash listings.

Safety Highway Safety Office (SHSO)

The SHSO is the lead entity for the State's Strategic Highway Safety Plan (SHSP) and involves law enforcement and other partners in the process. In North Dakota, the behavioral strategies in the SHSP are largely funded through the National Highway Traffic Safety Administration (NHTSA) funds with funding going to various traffic safety partners including law enforcement agencies statewide for overtime enforcement of traffic safety laws. The SHSP process drives HSIP project priorities. Infrastructure strategies in the North Dakota SHSP are largely funded through HSIP and deployed through the State's Local Road Safety Program (LRSP) and State Road Safety Program (SRSP). These programs identify proven, low-cost road safety strategies and prioritize the road safety strategies for implementation at identified at-risk locations on the local and state road systems.

Local Government

Members of the Local Government Division provide project development through city, county and tribal agencies. The local government assists in the solicitation of safety projects. They also participate in road safety reviews.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Local Technical Assistance Program
Local Government Agency
Tribal Agency
Law Enforcement Agency
Academia/University
FHWA
Other-and other traffic safety advocates/partners

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

Describe coordination with external partners.

All the entities are involved at SHSP at some level (Executive Leadership Team, SHSP Steering Committee, SHSP Implementation Team or general SHSP stakeholder).

Regional Planning Organizations: North Dakota has 3 MPO's that must approve any HSIP applications that are submitted by their respective cities. The MPO's were also included in the team that developed the ND Local Road Safety Program (LRSP).

Local Government Agency, Tribal Agency: The cities, counties, and tribal agencies are solicited each year for potential safety projects. They are encouraged to submit projects directly from the LRSP or at high crash locations.

Law Enforcement Agency: Law enforcement and HSIP personnel are extensively involved in North Dakota's SHSP process. The Programming Division Director serves on the SHSP Steering Committee and as chairperson for two SHSP emphasis area teams (Lane Departure and Intersection implementation Teams). Law enforcement serve at all levels of the SHSP including the SHSP Executive Leadership Team, the SHSP Steering Committee and SHSP Implementation Teams.

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?

Yes

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

Schedule for HSIP requests:

- Fall – send out HSIP solicitation letter and high crash location lists/maps, HSIP application forms (SFN 59959) are due by the end of the year
- Winter – NDDOT analysis of HSIP requests and Draft HSIP project listing
- Spring – verify the construction year for previously approved projects
- Summer – finalize HSIP project listing, send responses out on approvals (or non-approvals) for the HSIP applications
- August 31st – Final HSIP project list due to FHWA, HSIP online reporting due

Program Methodology

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

No

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

File Name:

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

NDDOT is working towards a future HSIP manual.

Select the programs that are administered under the HSIP.

HSIP (no subprograms)

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

Program: HSIP (no subprograms)

Date of Program Methodology: 3/1/2017

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]

2018 North Dakota Highway Safety Improvement Program
Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	Horizontal curvature

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

Crash frequency
Equivalent property damage only (EPDO Crash frequency)
Other-Systemic

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

Yes

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

Yes

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

How are projects under this program advanced for implementation?

Competitive application process
selection committee

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

Rank of Priority Consideration

Available funding : 1

What percentage of HSIP funds address systemic improvements?

70

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

Rumble Strips

2018 North Dakota Highway Safety Improvement Program
Traffic Control Device Rehabilitation
Pavement/Shoulder Widening
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Install/Improve Lighting
Add/Upgrade/Modify/Remove Traffic Signal
Horizontal curve signs

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
Road Safety Assessment
Crash data analysis
SHSP/Local road safety plan
Stakeholder input
Other-National Cooperative Highway Research Program (NCHRP) and other evidence-based practices

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?

Yes

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

The NDDOT has implemented the ITS technology of ICWS (Intersection Conflict Warning Systems).

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

No

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

NDDOT is currently working on integrating the HSM into its HSIP process.

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.

Federal 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)	$9,825,476	$20,508,899	208.73%
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	$9,825,476	$20,508,899	208.73%

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

Notes:
All amounts shown are Federal
Programmed from STIP Export of 2018 on 8/7/18 including one amendment (ND 22 Dickinson)
Section 164 penalty funds ended in 2016 for ND
Obligated amount is from FMIS as of 8/7/18 (ZZ provided safety status)
Obligated amount of projects not yet bid are from 2018 construction year spreadsheet as of 8/2/18
Did not assume State and Local funds were "match" dollars for the federal funds

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

$3,770,000

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

$2,620,000

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?

$0

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.

None

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**
Grand Forks citywide school sign replacement	Roadway signs and traffic control	Roadway signs (including post) - new or updated	808	Signs	$32000	$35000	HSIP (23 U.S.C. 148)	Varies	0		City of Municipal Highway Agency	Spot	Intersections	
Bismarck Signals - LRSP	Intersection traffic control	Systemic improvements - signal-controlled	109	Intersections	$478000	$550000	HSIP (23 U.S.C. 148)	Varies	0		City of Municipal Highway Agency	Spot	Intersections	
Exit 161 Right Turn Lane	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Intersections	$211000	$234000	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		State Highway Agency	Spot	Intersections	
Statewide Pavement Marking	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$7591000	$7591000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Lane Departure	
Devils Lake District SRSP	Intersection traffic control	Intersection signing - add enhanced advance warning (double-up and/or oversize)	91	Intersections	$735000	$661000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Intersections	
Grand Forks District SRSP	Intersection traffic control	Intersection signing - add enhanced advance warning (double-up and/or oversize)	63	Intersections	$645000	$717000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Intersections	
Cavalier County Road Projects from LRSP	Roadway delineation	Longitudinal pavement markings - new	23	Miles	$33000	$37000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	
US 52 Logan Intersection - Left turn lane	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$503000	$558000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
US 83 / ND 5	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$363000	$404000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Spot	Intersections	
ND 22 - Signals at 34th, 33rd, 32nd	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	3	Intersections	$58000	$64000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
Walsh County Road Projects from LRSP	Roadway delineation	Longitudinal pavement markings - new	64	Miles	$98000	$109000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	
Williams County Projects from LRSP	Shoulder treatments	Pave existing shoulders	36	Miles	$399000	$443000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	

													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**
McLean County Road Projects from LRSP	Roadway signs and traffic control	Roadway signs (including post) - new or updated	102	Miles	$302000	$335000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	
Divide County Projects from LRSP	Roadway	Rumble strips - edge or shoulder	47	Miles	$189000	$210000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	
Fargo area FYA retrofit	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	2	Intersections	$26000	$29000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Spot	Intersections	
Cass County Safety Projects from LRSP	Roadway signs and traffic control	Roadway signs (including post) - new or updated	11	Locations	$267000	$297000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Intersections	
Mountrail County Road Projects from LRSP	Roadway signs and traffic control	Roadway signs (including post) - new or updated	23	Locations	$41000	$45000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Intersections	
Curves on ND 18 at RP 16.76, 17.76	Intersection geometry	Intersection geometrics - modify skew angle	2	Locations	$643000	$714000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
Curve on ND 18 at RP 111.8	Intersection geometry	Intersection geometrics - modify skew angle	1	Locations	$486000	$540000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0		State Highway Agency	Spot	Intersections	
Richland County Road Projects from LRSP	Roadway signs and traffic control	Roadway signs (including post) - new or updated	31	Locations	$844000	$937000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Intersections	
Sargent County Road Projects from LRSP	Roadway signs and traffic control	Roadway signs (including post) - new or updated	11	Locations	$304000	$338000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		County Highway Agency	Systemic	Lane Departure	
Valley City District SRSP	Intersection traffic control	Intersection signing - add basic advance warning	58	Intersections	$947000	$1052000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Intersections	
Fargo District SRSP	Intersection traffic control	Intersection signing - add basic advance warning	58	Intersections	$755000	$838000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Intersections	
Standing Rock Reservation Road Projects from LRSP	Roadway	Rumble strips - edge or shoulder	7	Locations	$301000	$301000	HSIP (23 U.S.C. 148)	Rural Major Collector	0		State Park, Forest, or Reservation Agency	Systemic	Roadway Departure	
Valley City signal revisions from LRSP	Intersection traffic control	Systemic improvements - signal-controlled	6	Intersections	$130000	$144000	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		State Highway Agency	Systemic	Intersections	
Var Loc - Statewide - Individual	Non-infrastructure	Non-infrastructure - other			$1619000	$2000000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	N/A	Intersections	
SHSP Planning and Implementation	Non-infrastructure	Transportation safety planning			$45000	$50000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	N/A	Intersections	
Small Scale Improvements	Non-infrastructure	Non-infrastructure - other			$100000	$111000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	N/A	Intersections	

													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**
Statewide crash report evaluation	Non-infrastructure	Data/traffic records			$225000	$250000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	N/A	Data	
Highway Safety Improvements	Non-infrastructure	Non-infrastructure - other			$113000	$125000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	N/A	Intersections	
Curve delineation - Statewide	Roadway signs and traffic control	Curve-related warning signs and flashers			$135000	$150000	HSIP (23 U.S.C. 148)	Varies	0		State Highway Agency	Systemic	Roadway Departure	

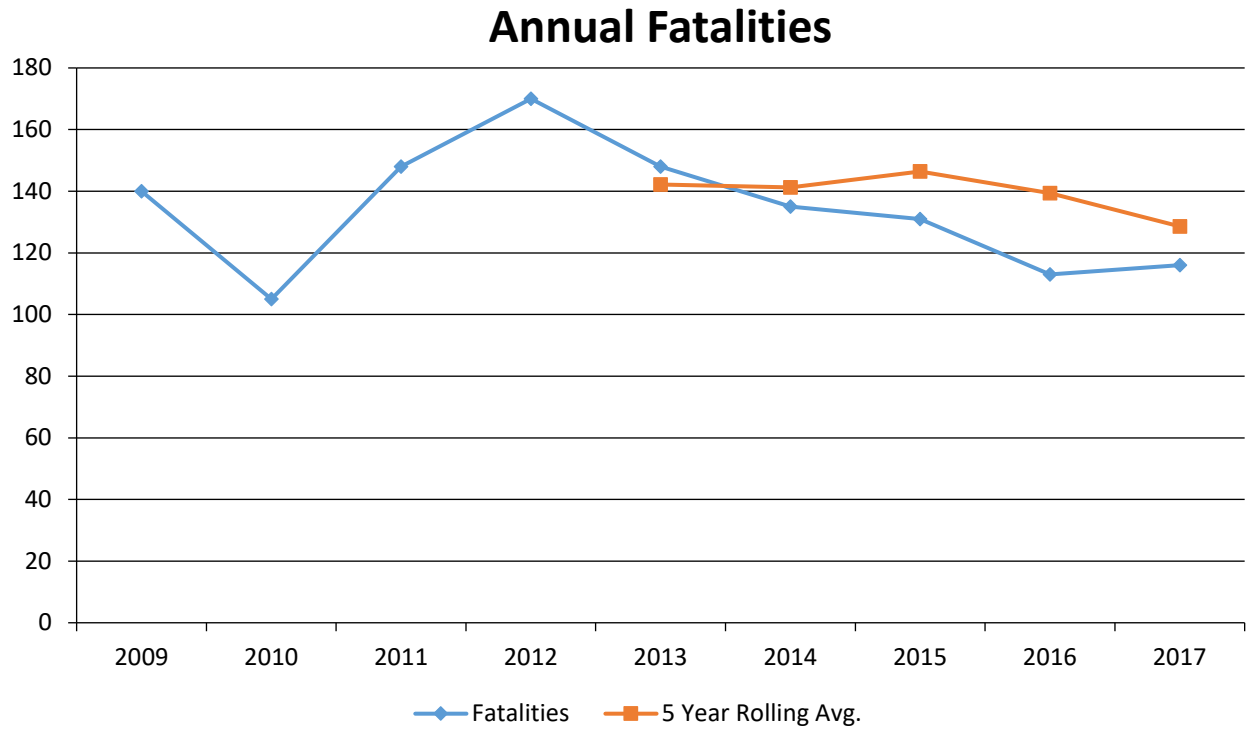
Enter additional comments here to clarify your response for this question or add supporting information.

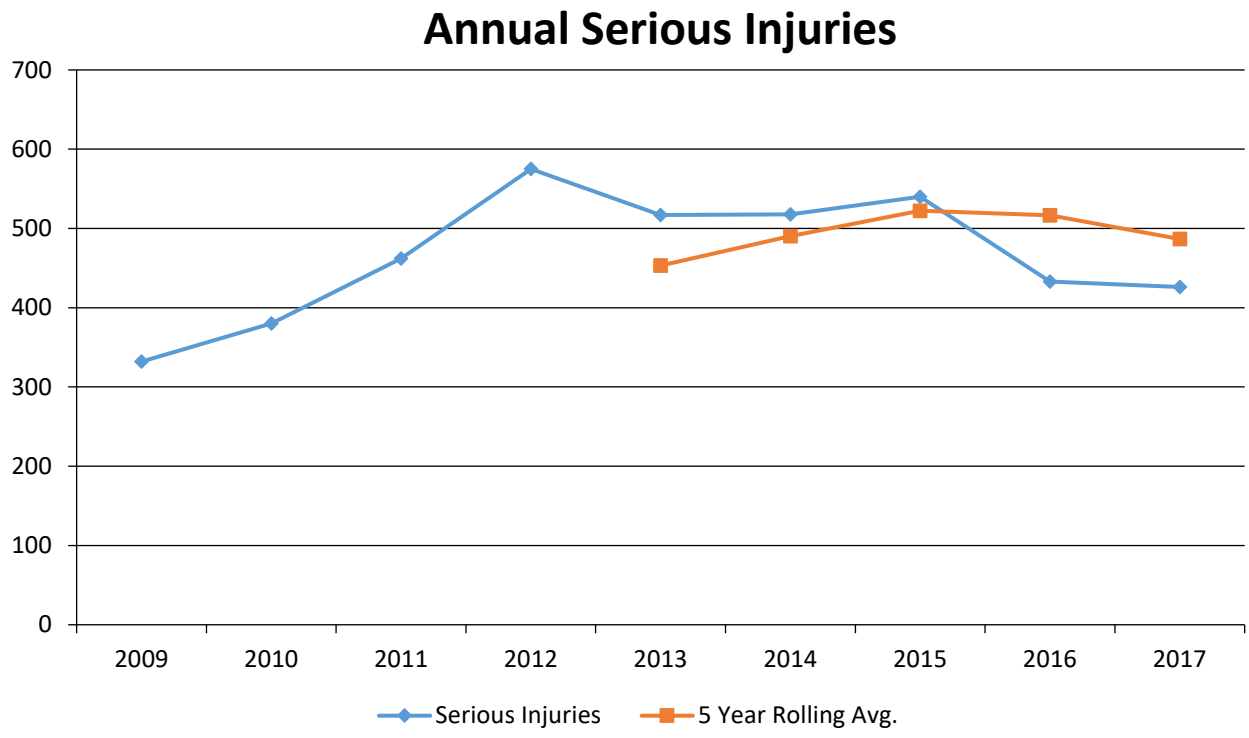
Safety Performance

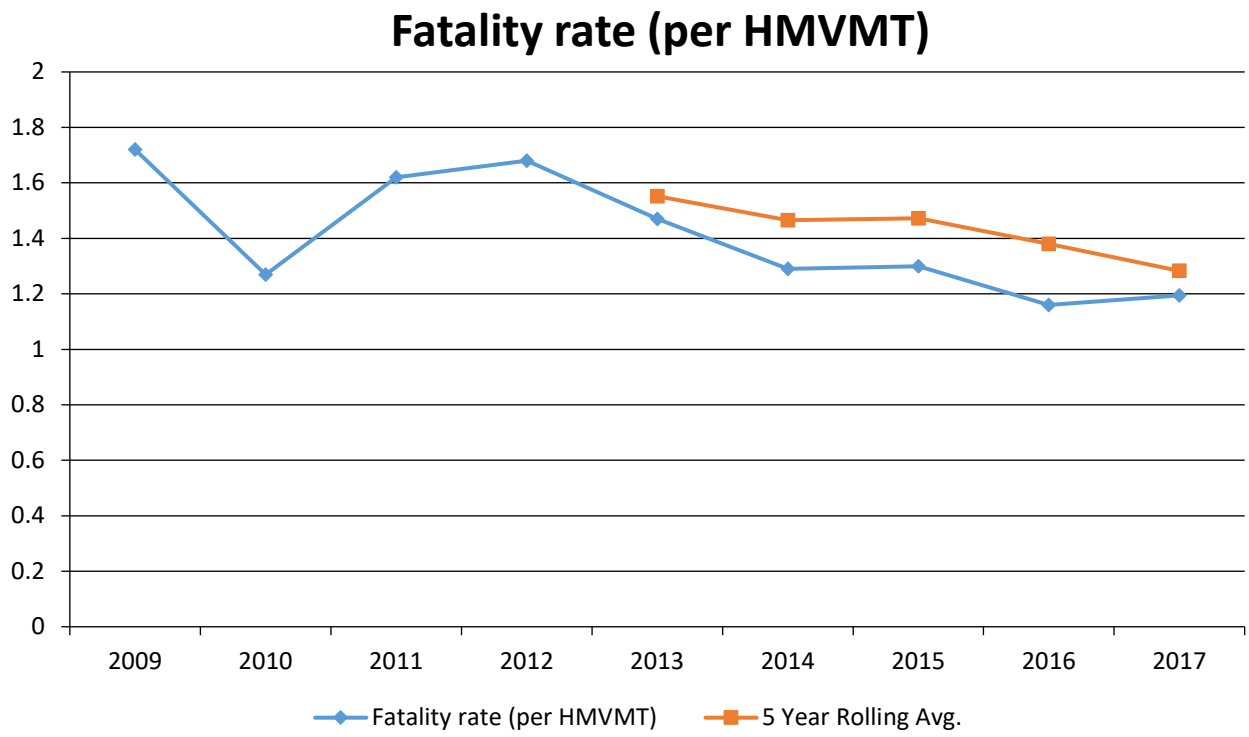
General Highway Safety Trends

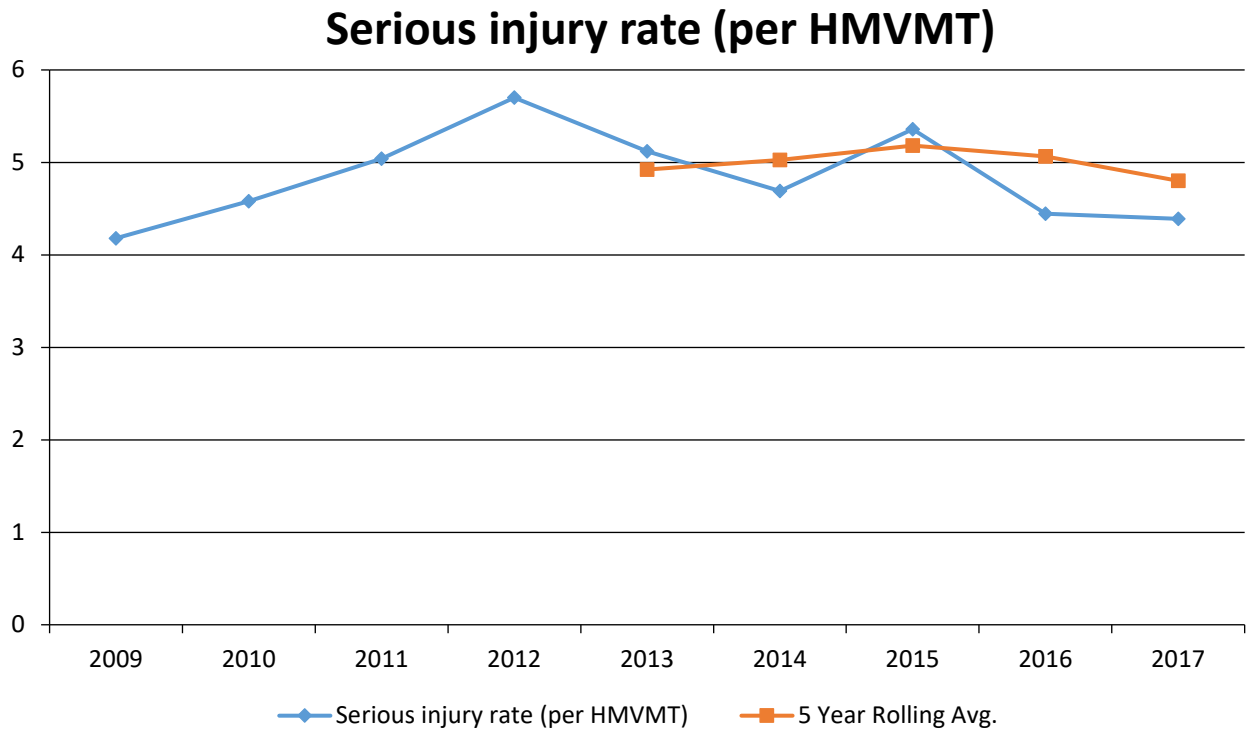
Present data showing the general highway safety trends in the State for the past five years.

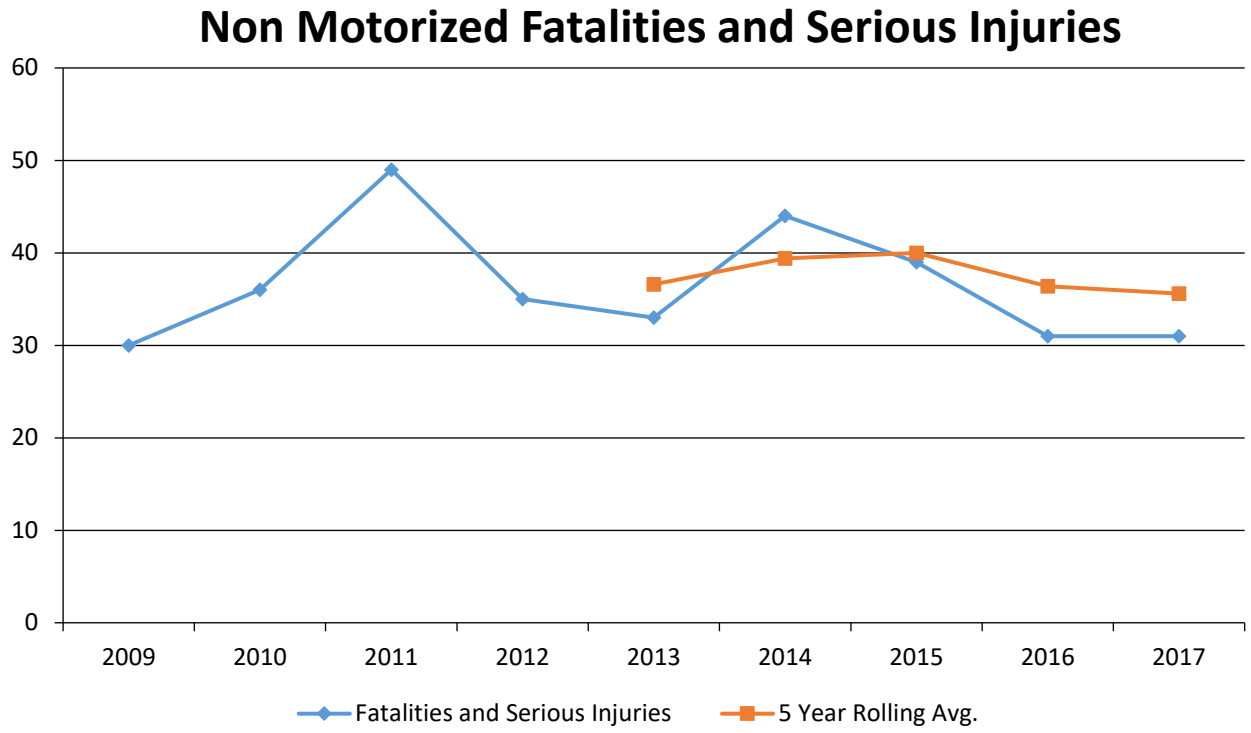
PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	140	105	148	170	148	135	131	113	116
Serious Injuries	332	380	462	575	517	518	540	433	426
Fatality rate (per HMVMT)	1.720	1.270	1.620	1.680	1.470	1.290	1.300	1.160	1.195
Serious injury rate (per HMVMT)	4.180	4.580	5.040	5.700	5.120	4.690	5.360	4.446	4.390
Number non-motorized fatalities	5	9	10	10	3	12	8	10	7
Number of non-motorized serious injuries	25	27	39	25	30	32	31	21	24


Annual Fatalities
180
160
140
120
100
80
60
40
20
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
700
600
500
400
300
200
100
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
6
5
4
3
2
1
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
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.

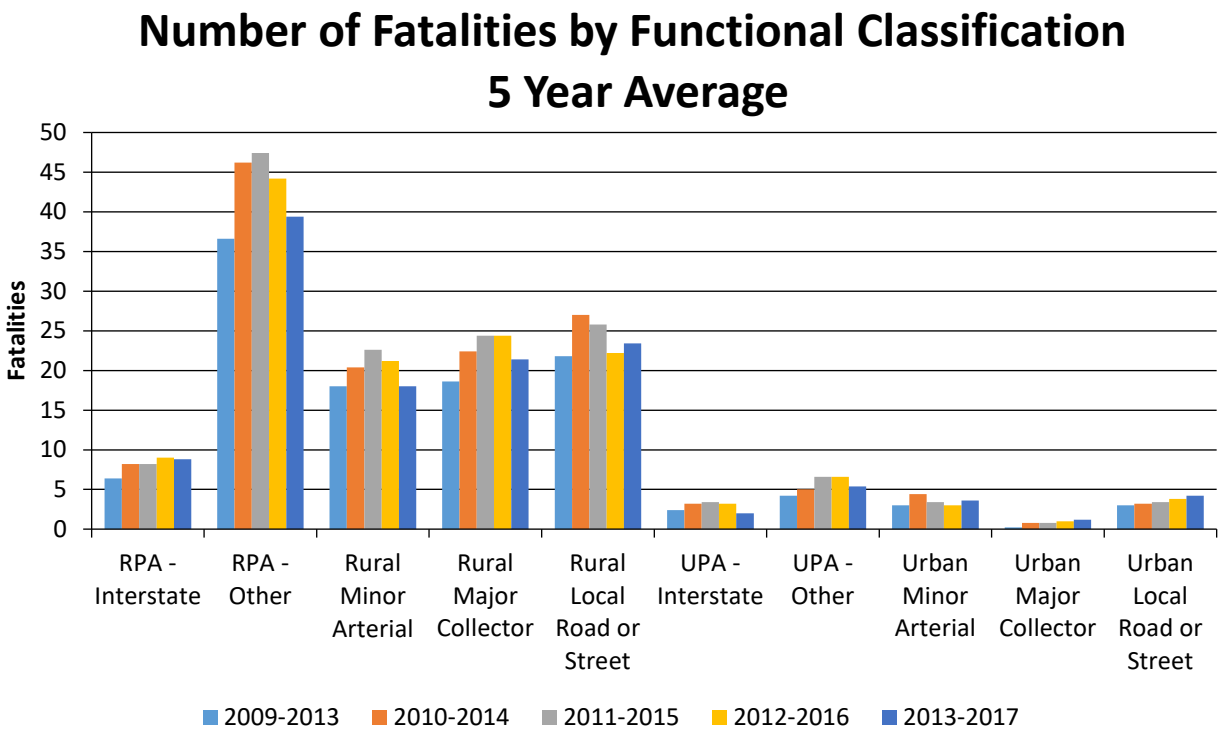
Year 2017

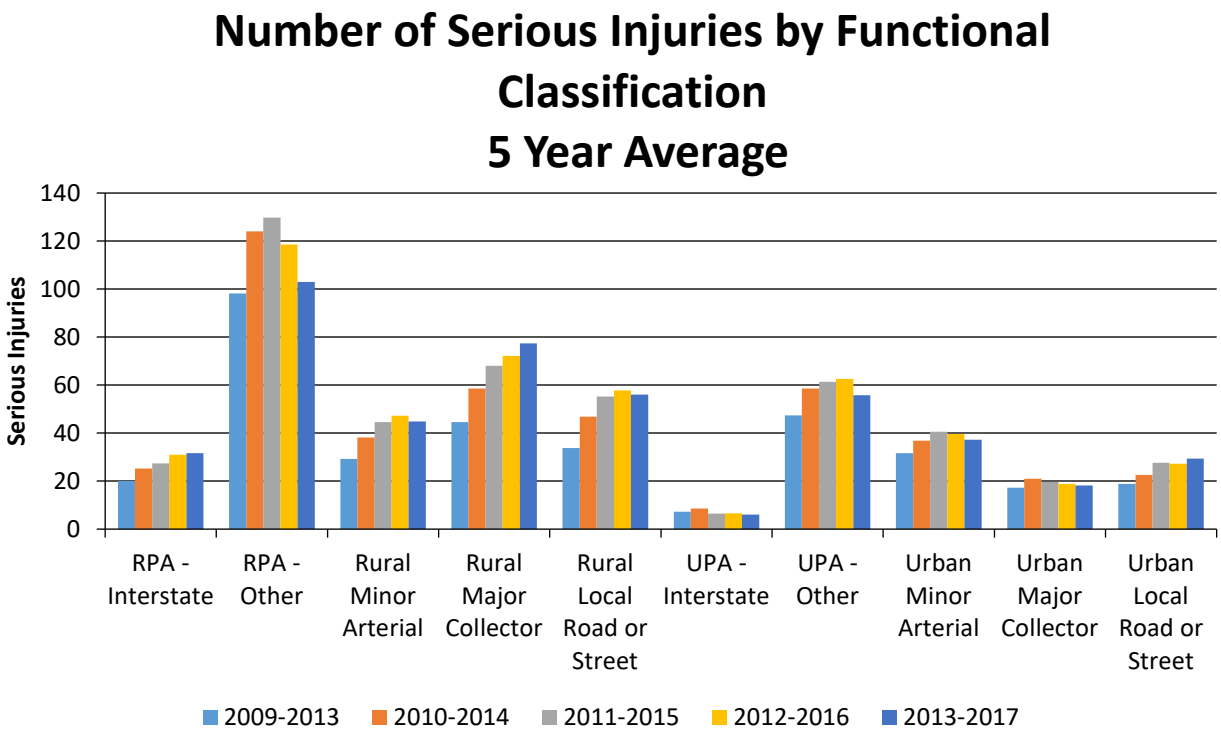
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	8.8	31.6	0.54	1.95
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	39.4	103	1.57	4.1
Rural Minor Arterial	18	44.8	2.08	5.17
Rural Minor Collector				

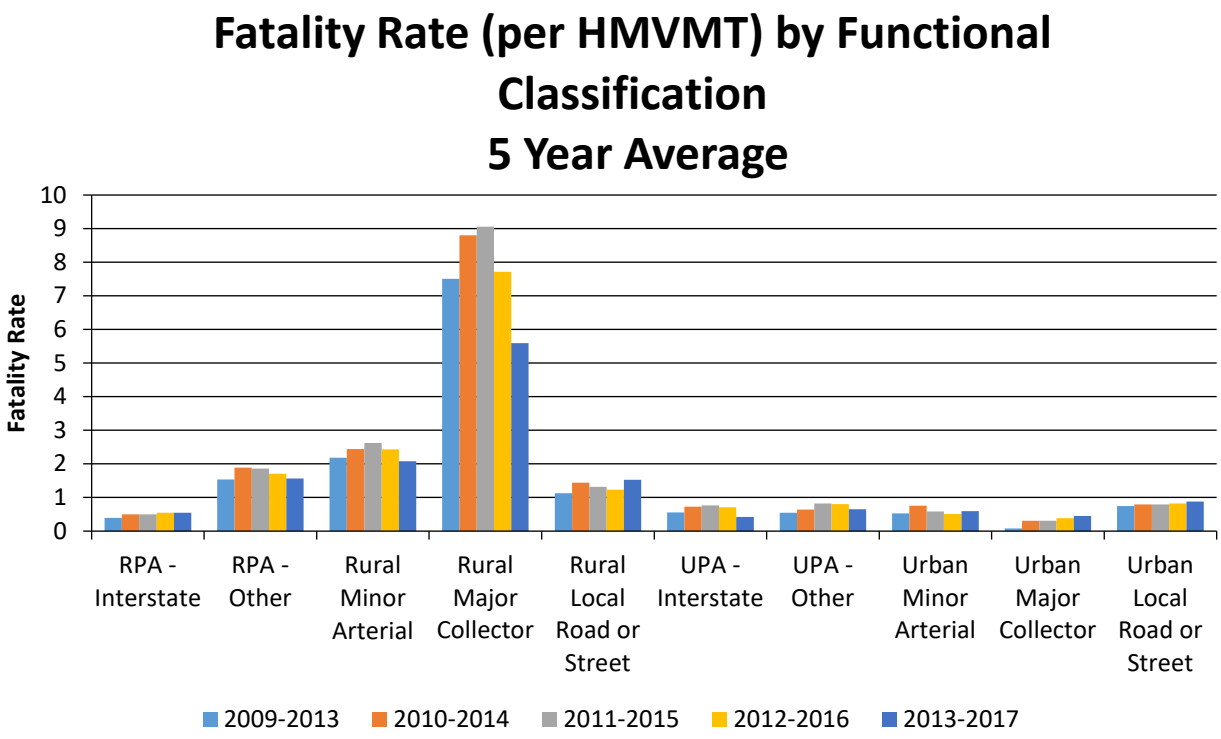
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Major Collector	21.4	77.4	5.59	19.7
Rural Local Road or Street	23.4	56	1.53	3.39
Urban Principal Arterial (UPA) - Interstate	2	6	0.43	1.27
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other	5.4	55.8	0.65	6.76
Urban Minor Arterial	3.6	37.2	0.59	6.13
Urban Minor Collector				
Urban Major Collector	1.2	18.2	0.45	6.82
Urban Local Road or Street	4.2	29.4	0.88	6.15

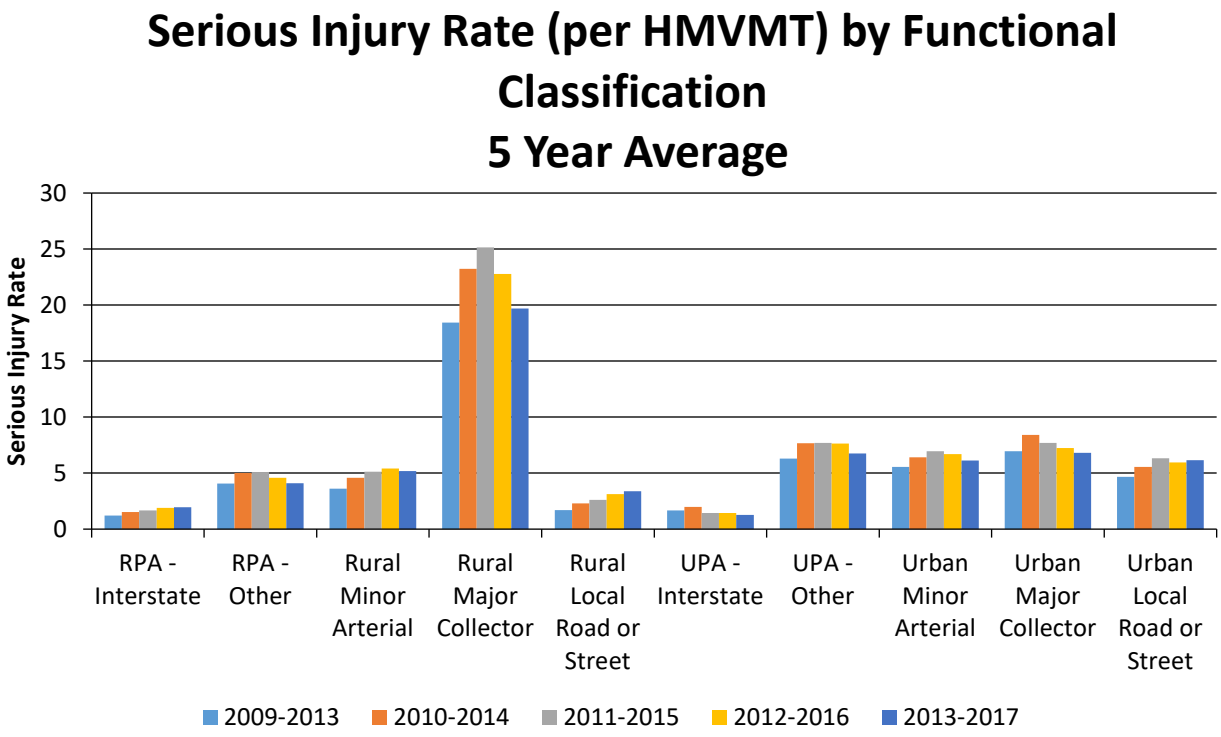
Year 2017

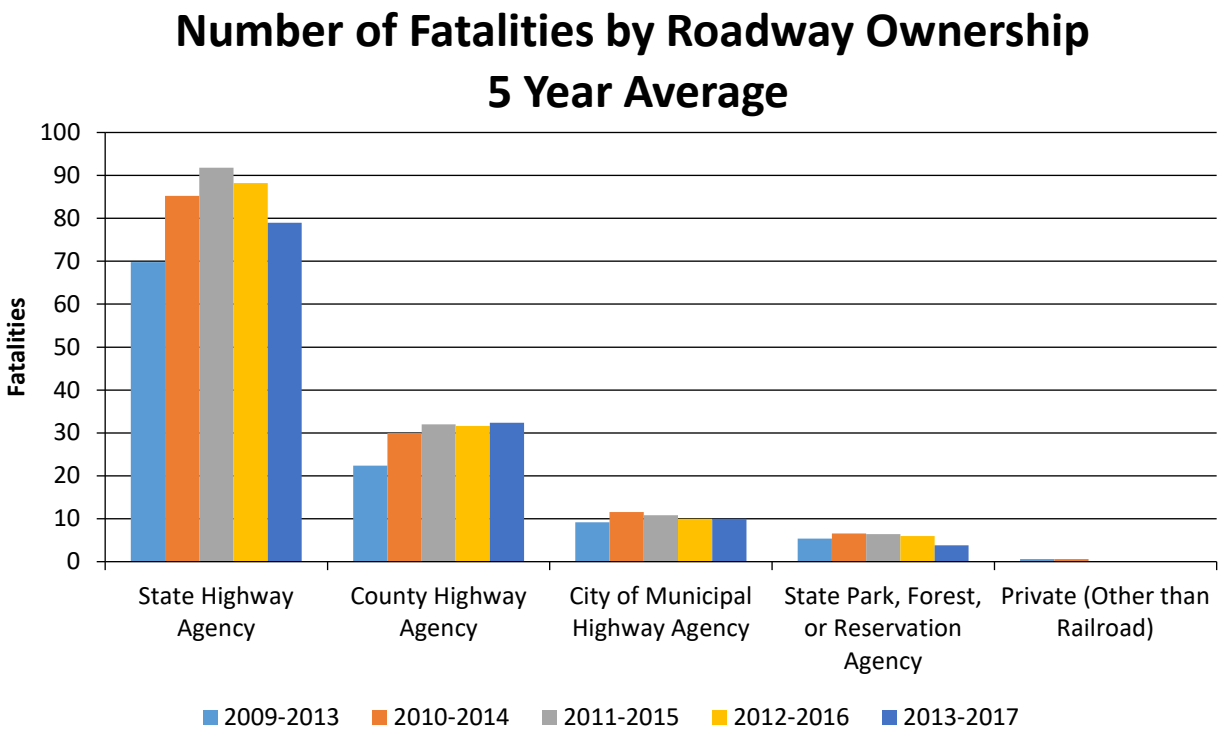
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	79	260.2	0.71	2.31
County Highway Agency	32.4	111.6	0.92	3.22
Town or Township Highway Agency				
City of Municipal Highway Agency	10	85.6	0.79	7.63
State Park, Forest, or Reservation Agency	3.8	2		
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				

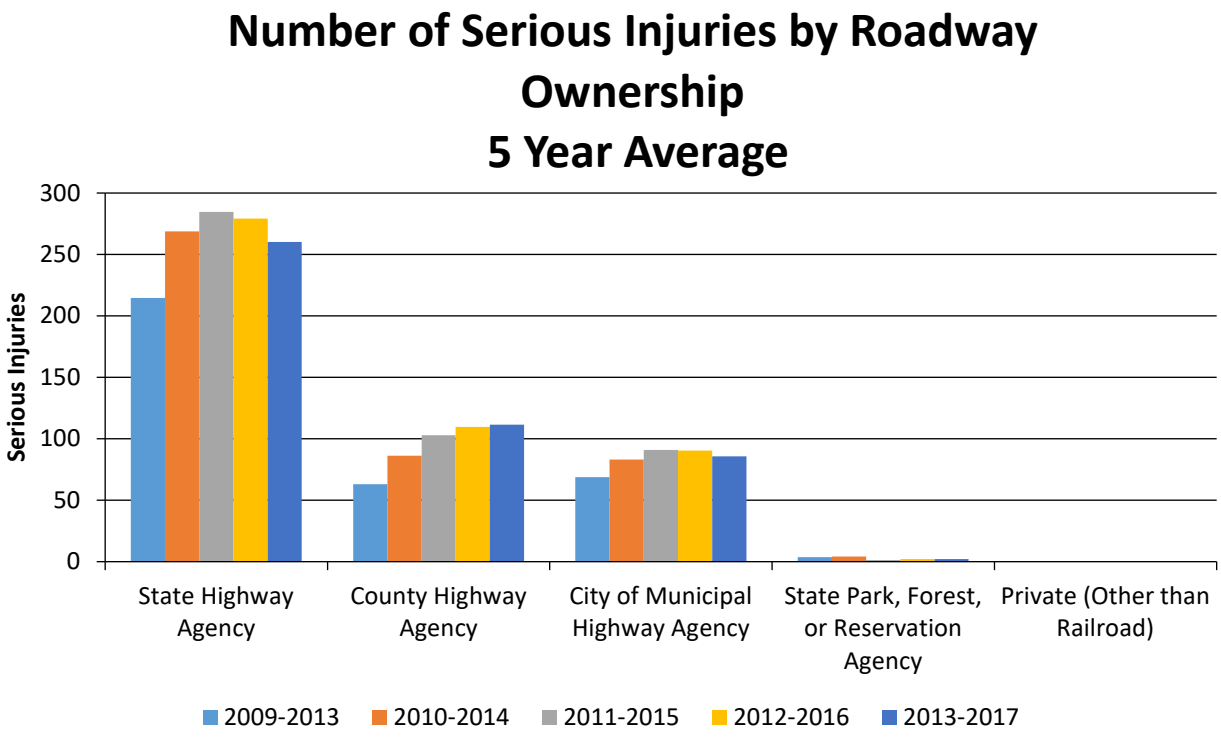

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
50
45
40
35
30
25
20
15
10
5
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

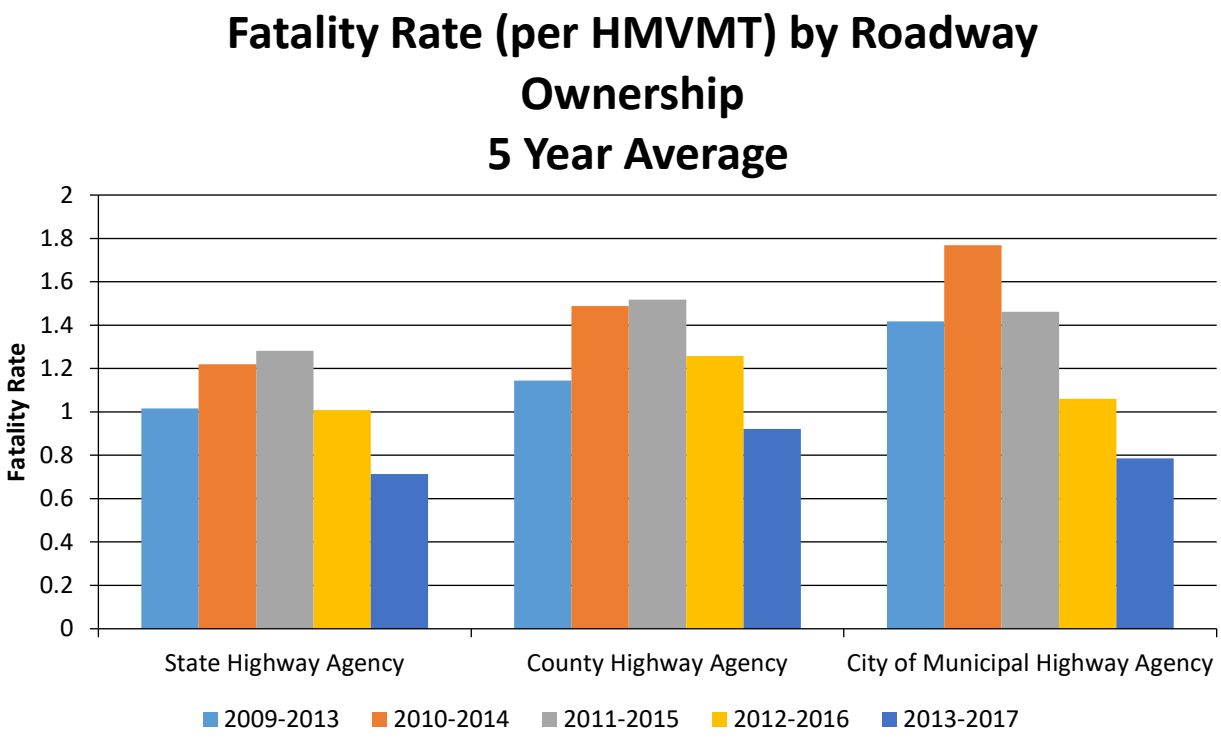

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
140
120
100
80
60
40
20
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

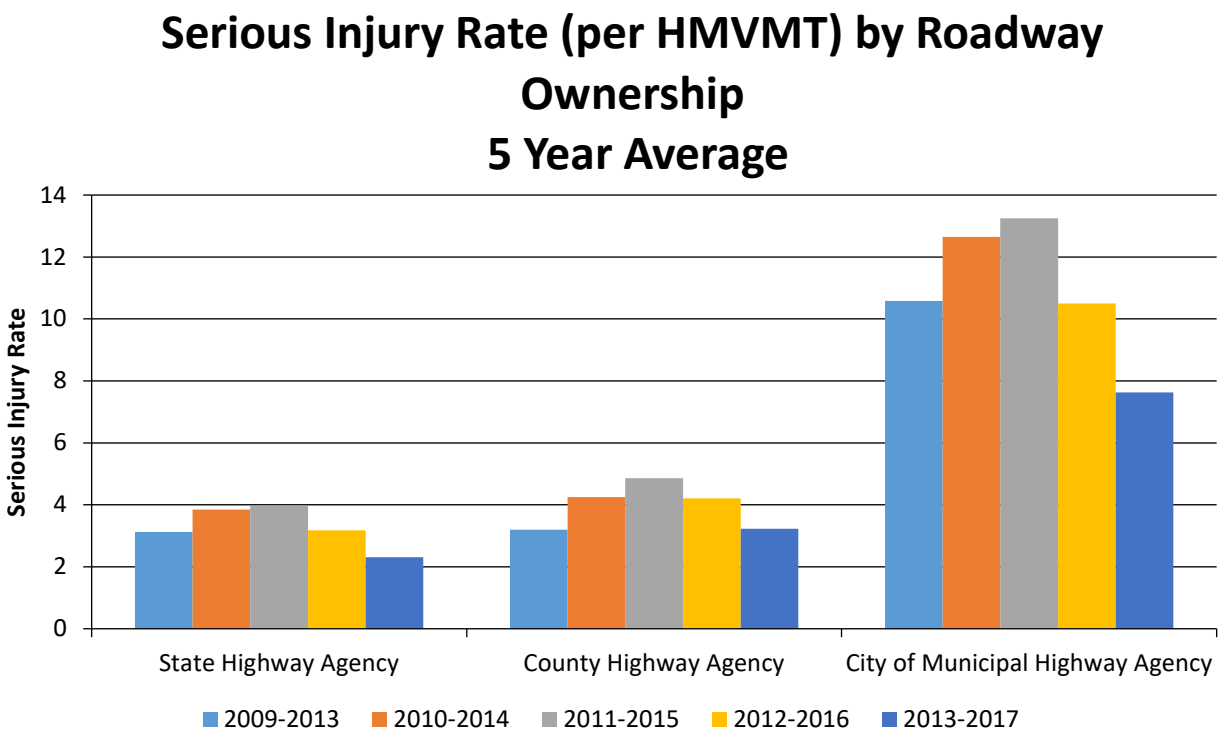

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
10
9
8
7
6
5
4
3
2
1
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
30
25
20
15
10
5
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
100
90
80
70
60
50
40
30
20
10
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
State Park, Forest, or Reservation Agency
Private (Other than Railroad)
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
300
250
200
150
100
50
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
State Park, Forest, or Reservation Agency
Private (Other than Railroad)
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
State Highway Agency
County Highway Agency
City of Municipal Highway Agency
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017



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 127.3

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

Review of historical data and expert group input.

Number of Serious Injuries 486.2

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

Review of historical data and expert group input.

Fatality Rate	1.271

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

Review of historical data and expert group input.

Serious Injury Rate	4.848

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

Review of historical data and expert group input.

Total Number of Non-Motorized Fatalities and Serious Injuries	34.6

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

Review of historical data and expert group input.

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

The long-term goal of the North Dakota SHSP is to move toward zero deaths. Targets were established with consideration of this long term goal but also considering SMART objectives. The targets were considered specific, measurable, achievable, relevant and time-oriented.

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

The State Highway Safety Office (SHSO) resides in the NDDOT. The SHSO (i.e., the NDDOT Safety Division) and other NDDOT Divisions including Local Government, Programming and planning/Asset Management review performance measure data and define the method to set the targets. Proposed targets are then shared by the NDDOT at a regular meeting between NDDOT and the MPOs. Safety performance targets will be shared with SHSP stakeholders at regional workshops scheduled for 2017-2018. Feedback obtained from those workshops will be used to inform subsequent target setting strategies.

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

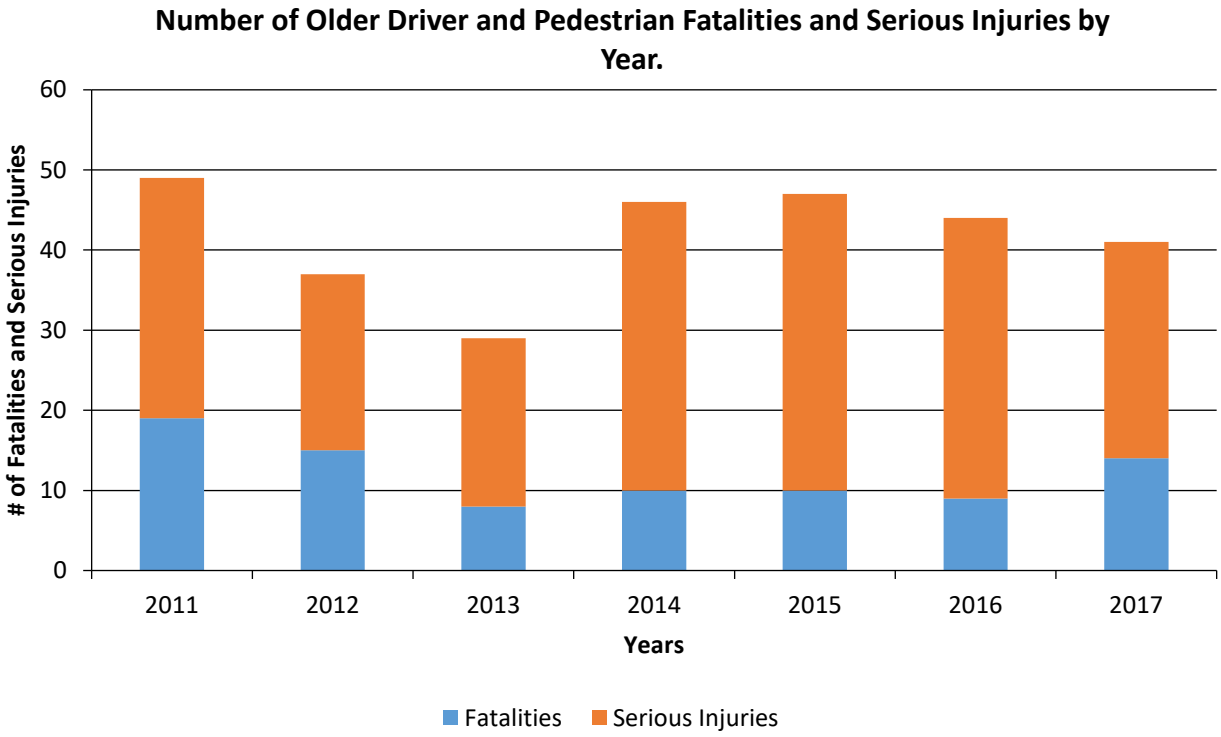
Does the HRRR special rule apply to the State for this reporting period?

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	19	15	8	10	10	9	14
Number of Older Driver and Pedestrian Serious Injuries	30	22	21	36	37	35	27



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?

Change in fatalities and serious injuries

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

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

There was a slight increase in the number of fatalities from 2016 to 2017. The number of serious injuries has decreased. The NDDOT took a look at some of the HSIP projects done in 2013 and conducted a simple before/after evaluation of crashes. Crash data was collected within the project areas for three calendar years before and after 2013. Note that all crashes that occurred within the project area were included, even if the crash was not related to the type of improvement.
ND 200, Pick City to Riverdale
Before (2010-2012) = 12 crashes
After (2014-2016) = 9 crashes
This project was a minor rehabilitation HBP overlay with sliver grading and safety options to improve curve superelevations on Garrison Dam. A radial-T was built at 45 Ave NW and an EB left turn lane was added at the intersection of ND 48.

Bismarck District Rumble Strips
Before (2010-2012) = 279 crashes
After (2014-2016) = 195 crashes
This project installed rumble strips along various highways in the Bismarck District.

Devils Lake District Rumble Strips
Before (2010-2012) = 221 crashes
After (2014-2016) = 133 crashes
This project installed rumble strips along various highways in the Devils Lake District.

ND 13 and Main St Intersection - Milnor
Before (2010-2012) = 1 crash
After (2014-2016) = 0 crashes
This project eliminated the slip-ramp on the east side of Milnor and updated turn lanes at ND 13 & Main St.

I-29 State Line North to Jct ND 13
Before (2010-2012) = 68 crashes
After (2014-2016) = 49 crashes
This project updated all the roadway signs to current standards. The project included northbound and southbound roadways including all ramps and overheads.

Western ND County Road Safety Program
Before (2010-2012) = 250 crashes
After (2014-2016) = 278 crashes

2018 North Dakota Highway Safety Improvement Program
This project involved installing enhanced signing for road curves, upgrade signing/markings to improve visibility of intersections, larger regulatory or warning signs, intersection rumble strips.

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

More systemic programs

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

This year continues increasing emphasis on systemic projects. The 2017 construction season will include several districtwide safety projects that involve lighting, signing, and marking at multiple intersections over a widespread area.

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

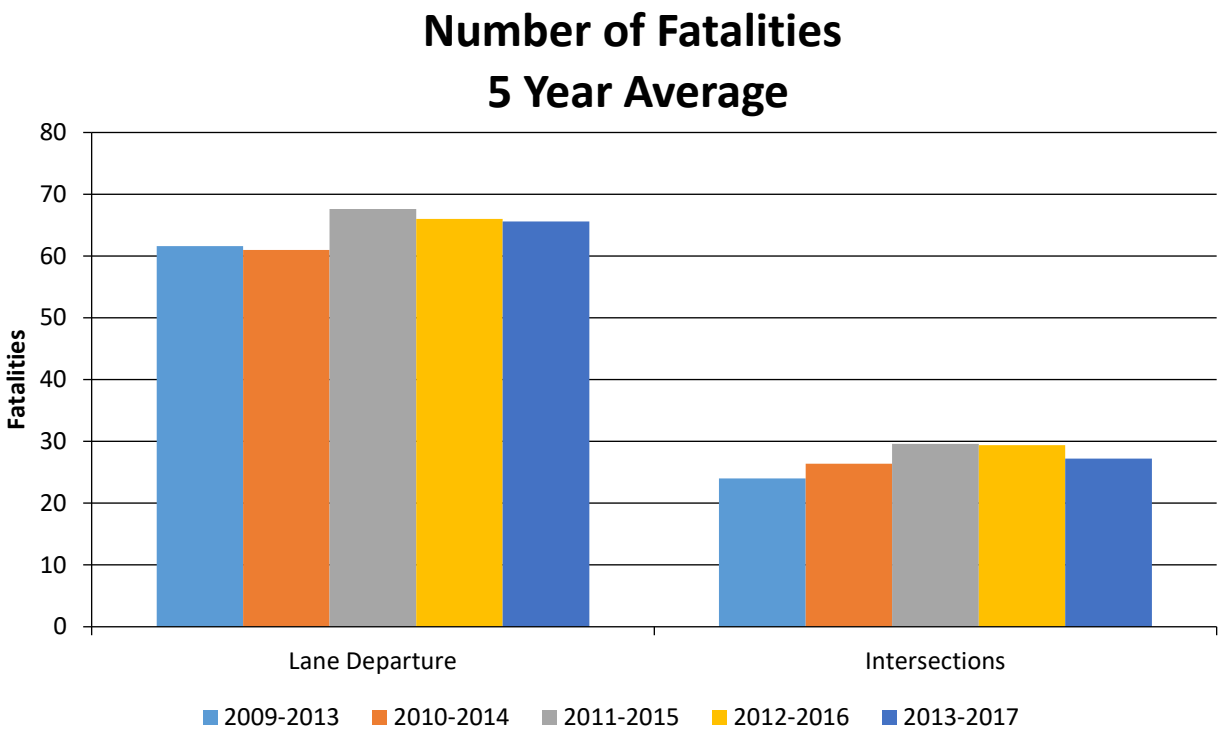
No

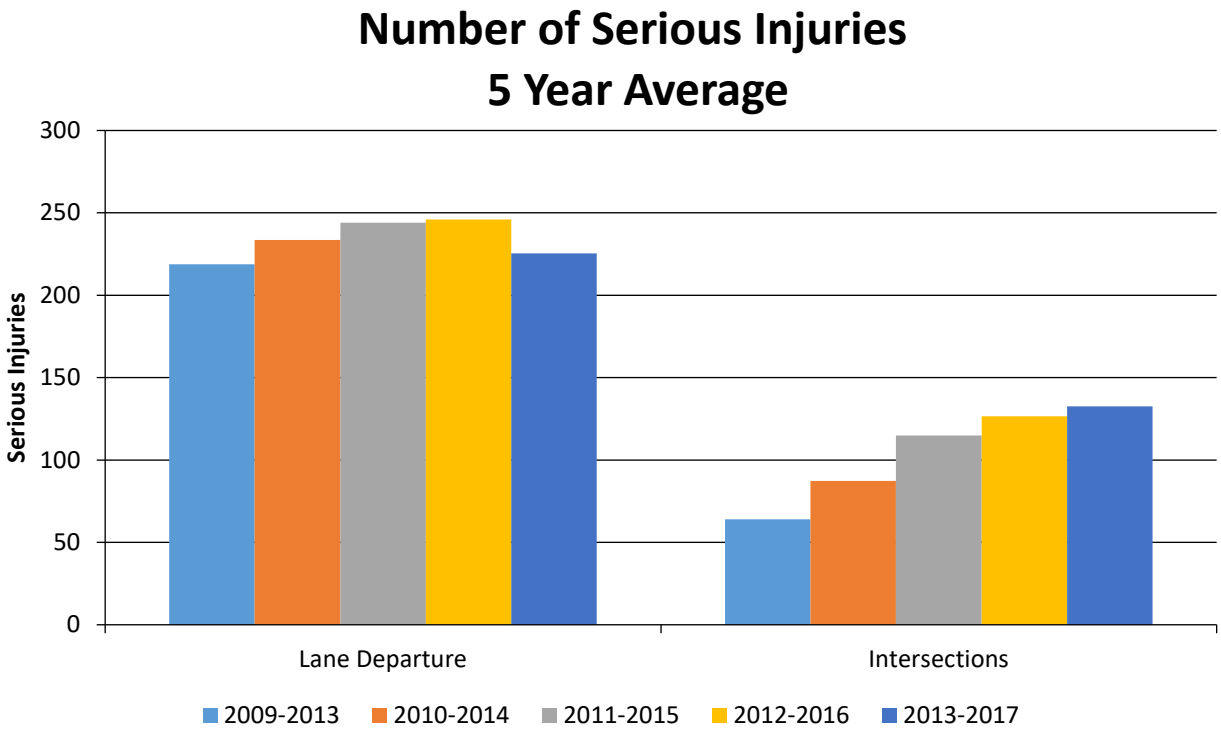
Effectiveness of Groupings or Similar Types of Improvements

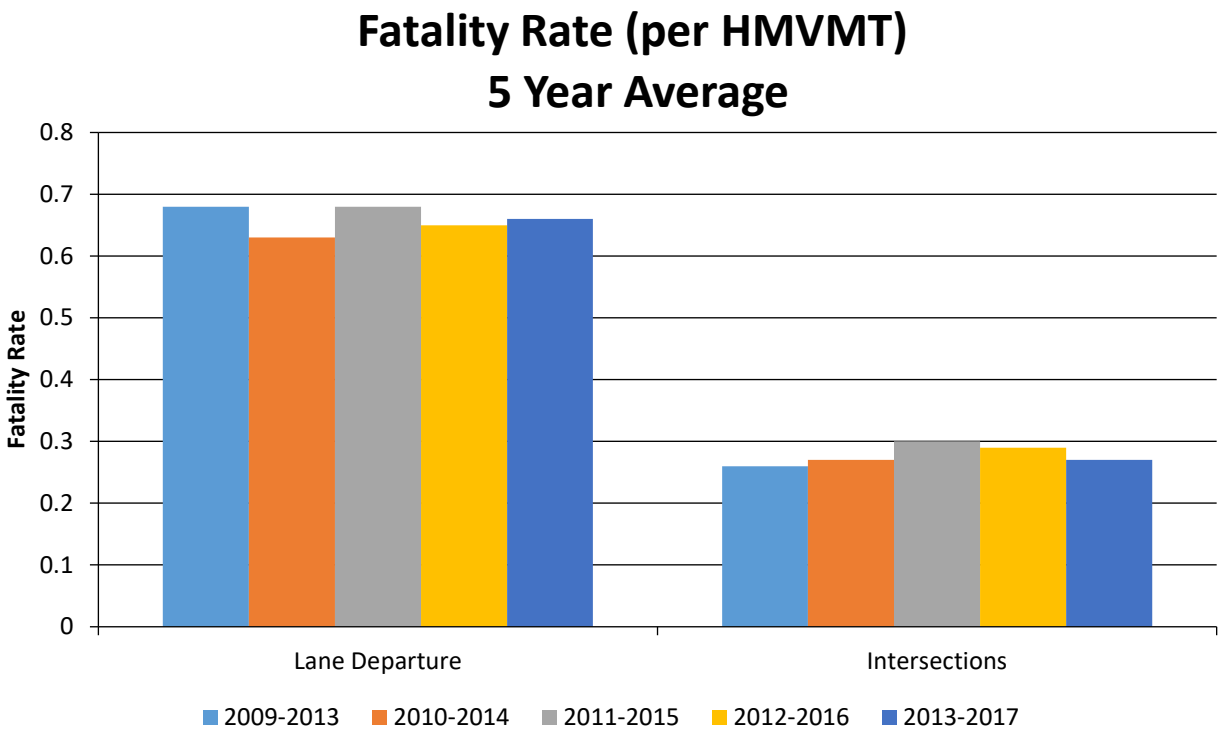
Present and describe trends in SHSP emphasis area performance measures.

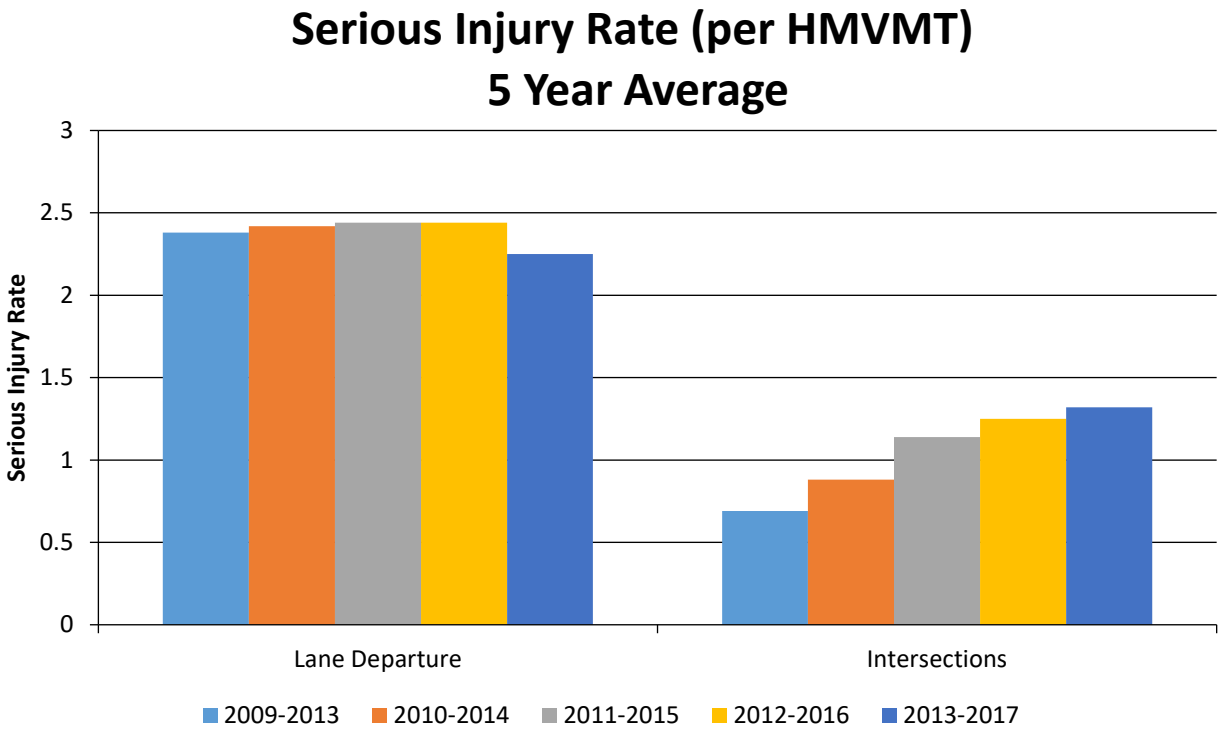
Year 2017

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	All	65.6	225.4	0.66	2.25	0	0	0
Intersections	All	27.2	132.6	0.27	1.32	0	0	0


Number of Fatalities
5 Year Average
Fatalities
80
70
60
50
40
30
20
10
0
Lane Departure
Intersections
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries
5 Year Average
Serious Injuries
300
250
200
150
100
50
0
Lane Departure
Intersections
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017





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

Lane departure crash data based on new definition in draft SHSP plan.

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

2018 North Dakota 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 OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
ND 200, Pick City to Riverdale	Rural Principal Arterial (RPA) - Other	Roadway	Roadway widening - curve	10.00	8.00	2.00					1.00	12.00	9.00	
Bismarck District Rumble Strips	Varies	Roadway	Rumble strips - edge or shoulder	190.00	125.00	11.00	9.00	15.00	15.00	63.00	46.00	279.00	195.00	
Devils Lake District Rumble Strips	Varies	Roadway	Rumble strips - edge or shoulder	147.00	81.00	3.00	7.00	13.00	8.00	58.00	37.00	221.00	133.00	
ND 13 and Main St Intersection - Milnor	Rural Principal Arterial (RPA) - Other	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1.00								1.00		
I-29, State Line North to Jct ND 13	Rural Principal Arterial (RPA) - Interstate	Roadway signs and traffic control	Roadway signs (including post) - new or updated	48.00	32.00	2.00	1.00		6.00	18.00	10.00	68.00	49.00	
Western ND County Road Safety Program	Varies	Roadway signs and traffic control	Roadway signs and traffic control - other	143.00	163.00	11.00	8.00	28.00	27.00	68.00	80.00	250.00	278.00	

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?

10/02/2013

What are the years being covered by the current SHSP?

From: 2013 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.

North Dakota anticipates completing its next SHSP update by September 1, 2018.

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)	0	0								
Rural/Urban Designation (20)	0	0					0	0		
Surface Type (23)	33	1					0	0		
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)	0	0								
Functional Class (19)	100	100					100	100	100	100
Median Type (54)	0	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
Access Control (22)	33	1								
One/Two Way Operations (91)	0	0								
Number of Through Lanes (31)	33	0					100	0		
Average Annual Daily Traffic (79)	100	0					0	0		
AADT Year (80)	0	0								
Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			100	0						
AADT Year (80)			0	0						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					0	0				
Location Identifier for Roadway at Ending Ramp Terminal (201)					0	0				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					0	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)					0	0				
Interchange Type (182)					0	0				
Ramp AADT (191)					100	0				
Year of Ramp AADT (192)					0	0				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	**55.50**	**44.56**	**12.50**	**0.00**	**36.36**	**27.27**	**66.67**	**55.56**	**100.00**	**100.00**

*Based on Functional Classification

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.

The Department will continue to collect required MIRE FDE elements already required by HPMS. In addition, the accessibility of HPMS Data for safety analysis will be investigated. The Department will continue its efforts implementing Data Governance, and will develop a comprehensive plan for closing the gap between available data and required MIRE data elements by 2026.

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	2=Suspected Serious Injury/Incapacitating	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	2. Suspected Serious Injury/Incapacitating	Yes	A suspected serious injury is any injury other than fatal which results in one or more of the following:	Yes	a. Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood. b. Broken or distorted extremity (arm or leg) c. Crush injuries d. Suspected skull, chest or abdominal injury other than bruises or minor lacerations e. Significant burns (second or third degree burns over 10 percent or more of the body) f. Unconsciousness when taken from the crash scene g. Paralysis	Yes
Crash Database	Occ_Injury_Class	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Occ_Injury_Class	Yes	N/A	Yes	N/A	Yes

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

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.

2019

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

The state began an assessment in 2018 with expected completion in 2019. The assessment is scheduled to occur immediately following the SHSP update. A safety expert consultant has been hired to facilitate the process.

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average	means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).
Emphasis area	means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.
Highway safety improvement project	means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.
HMVMT	means hundred million vehicle miles traveled.
Non-infrastructure projects	are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.
Older driver special rule	applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.
Performance measure	means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.
Programmed funds	mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.
Roadway Functional Classification	means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.
Strategic Highway Safety Plan (SHSP)	means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.
Systematic	refers to an approach where an agency deploys countermeasures at all locations across a system.
Systemic safety improvement	means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.
Transfer	means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.