MONTANA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

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

23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

In the reporting period, the Montana Department of Transportation (MDT) successfully utilized MDT's allotted Highway Safety Improvement Program (HSIP) funds on public roads in Montana. All 2017 sites were approved by the Transportation Commission within the reporting period (State Fiscal Year) and the remaining projects are being processed for programming from FHWA at this time. MDT identified potential locations using its Safety Performance Functions (SPF's) and diagnostic norms in connection with its Roadway Departure Study. MDT's newer Safety Information Management System (SIMS) continues to provide an effective and efficient tool to identify, analyze and track HSIP projects.

Montana continues to improve the accuracy of the database as new screening options are investigated. This includes tying all intersection data to an intersection specific geonode allowing for easier intersection crash identification as well as working with the Montana Highway Patrol to continue and improve the data being transferred to MDT's crash database (SIMS).

Overall, fatalities and serious injuries were both down in 2017. Nonetheless, MDT continues efforts to cut fatal and serious injury crashes in half by 2030 by addressing crash clusters on all public roads.

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 HSIP Program is a centrally administered program through the Safety Engineering Section which is within MDT's Traffic and Safety Bureau.

Each year, the Safety Engineering Section develops criteria to identify potential hot-spot crash locations for review. The Section also identifies potential systemic improvements for longer roadway segments and/or corridors. Sites are then reviewed through an established process which includes reviewing Montana Highway Patrol crash records, completing an office review and usually a field review. The last step is completing a benefit cost for a potential safety countermeasure that addresses the identified crash trend.

The sites that meet the minimum benefit cost threshold established by FHWA and are within the HSIP available funding, are nominated as HSIP Funded Safety 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.

The Highway Safety Improvement Program is administered centrally by the MDT Traffic and Safety Bureau within the Engineering 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.

All crashes investigated by the Montana Highway Patrol (MHP), or submitted to the MHP by a local enforcement agency, are available to MDT. In 2014 MDT implemented a new crash database system. This system allows MDT staff to query local road crash data by route and reference post as well as spatially via GIS tools. Fatal crash data is available for the Tribal reservations; however, other crashes investigated by the Tribal enforcement agencies or Bureau of Indian Affairs are not consistently submitted. MDT solicits participation from local and Tribal agencies, who can submit documentation of sites to be evaluated and prioritized under the Highway Safety Improvement Program. A nomination/application for HSIP projects is included on the MDT internet page at: http://www.mdt.mt.gov/publications/docs/forms/hsip_application.pdf .

Potential HSIP projects on local and Tribal roads are currently evaluated using the same methodologies as are applied to potential projects on the state owned system.

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

Design
Planning
Maintenance
Operations
Districts/Regions
Governors Highway Safety Office
Other-District Personnel
Other-Motor Carriers

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

Describe coordination with internal partners.

The MDT Planning Division coordinates the safety activities and administers the Comprehensive Highway Safety Plan (CHSP). The CHSP has recently undergone an update. The CHSP update was completed in May 2015. The updated CHSP is available at: http://www.mdt.mt.gov/visionzero/docs/chsp/current_chsp.pdf

The Highway Safety Improvement Program is administered centrally by the MDT Traffic and Safety Bureau. Crash clusters are identified by roadway system and by various criteria. Enforcement agencies identify locations and request site reviews. Local and Tribal agencies can forward potential safety projects or request MDT evaluate areas of interest. MDT District Offices also submit sites for investigation and participate in the engineering study to determine crash trends and countermeasure selection. Project selection is currently based on the benefit/cost ratio method. MDT has advanced some systemic improvements (curve signing and centerline rumble strips - as examples) based on the strategies outlined in the CHSP.

Appropriate entities within MDT are invited to participate in Corridor Safety Audits (CSA's). These entities include, but may not be limited to, the State Highway Traffic Safety Section, Planning Division, Motor Carrier Services, Road Design, Traffic Operations, Maintenance, and District personnel.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Local Government Agency
Other-Tribes
Other-Law Enforcement

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

Describe coordination with external partners.

MDT routinely receives requests for specific sites identified for review from law enforcement, local government entities and tribal governments. MDT coordinates with these governments during the field review process to gather additional input for addressing the crash trends. MDT coordinates with the MPO's in the same manner; however, the coordination is done through MDT's District and Planning Division Offices rather than the Traffic and Safety Bureau.

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.

Since 2006 Montana has had a Traffic Records Coordinating Committee (TRCC). The TRCC has representation from State agencies involved with safety records and Federal agencies for oversight and input. They meet regularly and attempt to coordinate and share projected record upgrades, new projects and pertinent records among participants. As the systems mature, the TRCC may include MPO and Tribal representation.

Starting September 2008, the Montana Highway Patrol (MHP) implemented the CTS America Public Safety System dispatch-crash-record systems, including a MMUCC based crash reporting form. MHP investigates approximately 50% of all statewide crashes. This CTS America System is presently only used by the MHP via a mobile client in each patrol unit; however, a web-based crash reporting system has been developed and is being used by several local agencies. This web based system allows local enforcement agencies to input crash information via the internet, if they choose to participate. The project is starting with the eight largest local Police Departments. These eight departments report about 80% of all local crashes.

In 2014, MDT implemented an upgrade to the safety database and analysis tools. This new software, referred to as the Safety Information Management System (SIMS), has been deployed and is now in production at MDT. This new system allows MDT to access the MMUCC compliant crash data being collected by the

Montana Highway Patrol. The SIMS system also has access to many roadway data elements including many of the Fundamental Data Elements identified by FHWA. Additionally, MDT has access to the MHP crash investigator's reports, if additional detail on the particular crash is required. The new system also allowed MDT to begin utilizing MHP citation data.

The Traffic and Safety Bureau is actively involved in the implementation of the CHSP. Traffic and Safety is taking the lead in the areas of roadway departure crashes and intersection crashes.

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.

Although MDT has an outdated Safety Manual, MDT has a clearly defined and documented HSIP process in place. The existing MDT Safety Manual is currently being re-written for use by the Traffic and Safety Bureau and is anticipated to be complete by December 2018. This Safety Manual will include formal documentation of the HSIP Process from project selection through implementation and project evaluation.

Select the programs that are administered under the HSIP.

Intersection
Horizontal Curve
Roadway Departure
HRRR
Other-Hot Spot

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

Program: Horizontal Curve

Date of Program Methodology: 1/1/2015

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

Addresses SHSP priority or emphasis area
Other-Systemic Improvement

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

Competes with all projects

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

Crashes	Exposure	Roadway
		Horizontal curvature

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

Other-Ball Bank Threshold
Other-Road Classification

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

No

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

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

How are projects under this program advanced for implementation?

Other-By District

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).

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

MDT Traffic is currently designing the last two MDT District curve signing construction plans. These projects are being delivered through a Job Order Contracting Process.

Program: HRRR

Date of Program Methodology: 1/1/2015

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

Other-HRRR Special Rule

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only		

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

Level of service of safety (LOSS)

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

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).

Relative Weight in Scoring

Ranking based on B/C : 100

Total Relative Weight : 100

Program: Intersection

Date of Program Methodology: 1/1/2015

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

2018 Montana Highway Safety Improvement Program

Addresses SHSP priority or emphasis area

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	
Fatal and serious injury crashes only	Volume	

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

Level of service of safety (LOSS)

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.
LOSS Intersection Models for local intersections have been developed. Phase II of the Intersection Safety Study will produce results from a statewide network screening list. It is anticipated to include state and local intersections of interest.

How are projects under this program advanced for implementation?

Other-Benefit Cost

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

Program: Roadway Departure

Date of Program Methodology: 1/1/2015

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

Addresses SHSP priority or emphasis area
FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Volume	

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

Level of service of safety (LOSS)

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.
LOSS models are not developed for local roads. Local road roadway departure crashes can be identified using other parameters and thresholds including collision type.

How are projects under this program advanced for implementation?

Other-Benefit Cost

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

Program: Other-Hot Spot

Date of Program Methodology: 10/1/1989

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

Other-All public roads

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Volume	

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

Other-Requests - Areas to be investigated as requested by any agency or individual
Other-See additional description provided in question #15.

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.
LOSS is not available for local roads. For the 2017 HSIP, local road projects were identified via request.

How are projects under this program advanced for implementation?

Other-Projects are evaluated and ranked on a benefit/cost system.

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

Rank of Priority Consideration

Ranking based on B/C : 1

Other-MDT has advanced some systemic projects (curve signing as an example) based on the strategies outlined in the CHSP without calculating a benefit/cost. : 1

What percentage of HSIP funds address systemic improvements?

15

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

Cable Median Barriers
Rumble Strips
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Horizontal curve signs
Wrong way driving treatments
Other-Flashing Yellow Arrows
Other-Reflective Backplates

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

Systemic projects may be stand-alone projects across a District (District curve signing or centerline rumble strips) or along a corridor (signing, striping, delineation, rumble strips, etc).

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
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.

MDT is currently completing a research project to determine the appropriate method to utilize in developing Local Road Safety Plans. During this process, MDT will coordinate with Montana's LTAP Office and other Stakeholders.

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.

As these technologies continue to evolve, the HSIP program may consider appropriate applications to address safety on Montana's roadways. However, at this time, the HSIP Program doesn't consider these technologies.

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.

MDT developed its Roadway Departure Study using Montana specific Safety Performance Functions (SPF) and Levels of Service of Safety (LOSS). These SPF's and LOSS's were developed based on methodologies in the Highway Safety Manual. The Intersection Safety Study is also being developed based on similar methodology.

MDT's Road Design is also beginning to integrate the HSM methodologies into their design process. To assist in this endeavor, FHWA is providing training to MDT Staff and Consultants through their Resource Center. This is currently scheduled for September 2018 at MDT's Headquarters Building.

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?

Yes

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

To identify potential locations for development of the 2018 HSIP, MDT has elected to screen the network using the following initial criteria: 1) Crashes involving bicyclists and/or pedestrians; 2) Road departure crashes occurring for injury and fatal crashes; 3) Intersections identified by the Bureau and/or District where new analysis models were available to use; 4) Requested Sites (By an Agency, District, Public Citizen, Safety Section).

Once the sites are identified, a preliminary office review identifies the sites where there are near-term reconstruction projects, currently programmed safety projects, or sites that were recently field reviewed. After the preliminary office review, further review establishes the sites that need on-site field reviews. The sites showing no crash trend are not field reviewed. The field review team establishes crash causations and contributing factors. The team members debate potential countermeasures. Conceptual designs are developed with cost estimates.

The project prioritization process is based on a benefit-cost analysis. The costs are the annualized cost of construction over the service life of the proposed improvement plus the annual increase in operation and maintenance costs due to the improvement. The benefits are the anticipated annualized cost reductions due to a lower number of crashes and lower crash severity. The projects with the highest benefit-cost ratios are nominated for improvements.

MDT has initiated several state-wide systemic projects including horizontal curve signing, interstate wrong-way signing upgrades and centerline rumble strips. These three projects are being installed on a large district-wide scale and are in various levels of design and/or construction. MDT is also looking at other large scale systemic projects including interstate median barrier and developing local road safety plans.

MDT has also completed development of a Roadway Departure Study. This study included development of Safety Performance Functions (SPFs), Level of Service of Safety (LOSS), and diagnostic norms for rural on-system routes. MDT is using these tools and methodologies for evaluation of the HSIP as well as analysis of other agency projects.

MDT has recently developed SPF's and diagnostic norms for intersections. These intersection tools are being used in the development of the 2018 HSIP List. They will also be utilized in analysis for other agency projects and future HSIP Lists.

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.

Montana's State Fiscal Year 2018 is the reporting period (July 1, 2017 through June 30, 2018)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$18,788,639	$18,788,639	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$2,068,138	$2,068,138	100%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$8,216,157	$8,216,157	100%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$4,517,778	$4,517,778	100%
State and Local Funds	$0	$0	0%
Totals	$33,590,712	$33,590,712	100%

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?

$5,248,616

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

$5,248,616

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?

$1,489,950

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

2018 Montana Highway Safety Improvement Program
$1,489,950

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

The HSIP Administration Project, HSIP STWD (626), is a yearly project that funds the HSIP Planning Process for MDT. The funds identified above are for the FY 2019 HSIP Program (July 1, 2018 - June 30, 2019)

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.

The inability to utilize HSIP funding for non-infrastructure projects impedes MDT's HSIP Program. NHTSA has determined that 94% of crashes can be tied back to human error or bad decisions. By only focusing on infrastructure improvements, we are focusing on mitigating the result of the crash but not necessarily the contributing human factor cause to the crash (drinking, cell-phone usage, inattentiveness, distraction, occupant protection, etc). In order to move towards Vision Zero, drivers need continued awareness of their actions and how these actions are contributing to vehicular crashes.

In addition, MDT is required to participate in fall and spring media campaigns for occupant protection and seat belts. There is no additional funding available to provide media at other times of the year. However, Montana experiences its highest number of fatalities during the summer months and MDT has no active campaign during that time period.

M DT is striving to improve public outreach to assist in this process. A new program has been implemented to increase public awareness during our construction projects. The intent is to send a consistent message of what is being constructed and in many cases how that benefits the traveling public's safety (for example, promoting the benefits of centerline rumble strips during the actual construction of those safety improvements).

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

Yes

Describe any other aspects of the State’s progress in implementing HSIP projects on which the State would like to elaborate.

Historically, MDT has been very successful in utilizing HSIP Funds and has strong support for the program from MDT Management.

MDT is currently developing a Safety Manual to (1) evaluate and document MDT's current process for development of HSIP projects; (2) evaluate and document the current Fundamental Data Elements (FDE) contained in MDT's Safety Information Management System (SIMS); (3) review and update, if necessary, MDT's current process guidelines for completion of Road (Corridor) Safety Audits; (4) review, enhance, and consolidate current analytical processes, practices, and procedures for incorporation of safety enhancements into non-HSIP projects; (5) develop documentation and processes which combines documentation from the recently completed SIMS project, with the analytical tools developed as part of the Road Departure Study and the Intersection Study; and (6) prepare one chapter containing guidelines for inclusion of pedestrian safety countermeasures. The anticipated completion date for this manual is December 2018.

MDT recently completed Phase I of its Intersection Safety Study. This study included development of Safety Performance Functions (SPF's), Level of Service of Safety (LOSS), and diagnostic norms for urban and rural 3 or 4 legged intersections. Over twenty SPF's were developed and are currently being utilized in developing the 2018 HSIP Project List. Phase II is currently wrapping up and includes network screening of Montana's intersections for potential for crash reduction. This is anticipated to be complete in December 2018.

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**
2018 SFTY UTILITY FAST PROCESS	Roadway	Roadway - other			$45000	$50000	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency		Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
2018-RAILROAD SAFETY PROGRAM	Non-infrastructure	Transportation safety planning			$172960	$192177.777777778	HSIP (23 U.S.C. 148)	Non-Infrastructure	0		State Highway Agency			
SAFETY MANAGEMENT PROGRAM (19)	Non-infrastructure	Transportation safety planning			$1489950	$1655500	HSIP (23 U.S.C. 148)	Non-Infrastructure	0		State Highway Agency			
SF109-GR NE OF BOZEMAN	Roadway	Roadway - other	5	Locations	$270000	$300000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,194	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF109-GR NE OF BOZEMAN	Roadway	Roadway - other	5	Locations	$431153	$479058.888888889	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,194	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF109-GR NE OF BOZEMAN	Roadway	Roadway - other	5	Locations	$24117	$24117	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,194	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF119-INT IMP-GRASS RANGE	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$328491.32	$364990.355555556	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	1,173	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF119-INT IMP-GRASS RANGE	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$177709.64	$177709.64	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial (RPA) - Other	1,173	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF119-INT IMP-GRASS RANGE	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$114000	$114000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	1,173	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.

													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**
SF 129-GTFLS HRZNTAL CRV SIGNG	Roadway signs and traffic control	Curve-related warning signs and flashers	1	District	$361028	$361028	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF129-BILLINGS HRZNTL CRV SIGN	Roadway signs and traffic control	Curve-related warning signs and flashers	1	District	$269920	$269920	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 129 -SLOPE FLTTNNG BELGRADE	Shoulder treatments	Shoulder treatments - other	1.9	Miles	$2537054	$2930300.3003003	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Minor Arterial	6,514	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 129 -SLOPE FLTTNNG BELGRADE	Shoulder treatments	Shoulder treatments - other	1.9	Miles	$59000	$59000	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Minor Arterial	6,514	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 129 -SLOPE FLTTNNG BELGRADE	Shoulder treatments	Shoulder treatments - other	1.9	Miles	$2250000	$2250000	Penalty Funds (23 U.S.C. 164)	Rural Minor Arterial	6,514	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 129 -SLOPE FLTTNNG BELGRADE	Shoulder treatments	Shoulder treatments - other	1.9	Miles	$279000	$310000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	6,514	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 129 -SLOPE FLTTNNG BELGRADE	Shoulder treatments	Shoulder treatments - other	1.9	Miles	$37301	$41445.5555555556	HSIP (23 U.S.C. 148)	Rural Minor Arterial	6,514	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
I-15 BRIDGES (RP 218-221)	Roadway	Pavement surface - high friction surface	3	Miles	$0	$0	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Interstate	4,420	75	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
I-15 BRIDGES (RP 218-221)	Roadway	Pavement surface - high friction surface	3	Miles	$484700	$538555.555555556	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	4,420	75	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

													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**
SF 139 - COTTONWOOD & STUCKY	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$713211.06	$713211.06	HSIP (23 U.S.C. 148)	Rural Major Collector	3,538	50	Other Local Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - COTTONWOOD & STUCKY	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1840644.94	$1840644.94	HSIP (23 U.S.C. 148)	Rural Major Collector	3,538	50	Other Local Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - COTTONWOOD & STUCKY	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$500000	$500000	Penalty Funds (23 U.S.C. 164)	Rural Major Collector	3,538	50	Other Local Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - COTTONWOOD & STUCKY	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1127095	$1127095	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	3,538	50	Other Local Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - COTTONWOOD & STUCKY	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$367388	$367388	HSIP (23 U.S.C. 148)	Rural Major Collector	3,538	50	Other Local Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - HLN FLTS INTERSECTION	Intersection traffic control	Intersection traffic control - other	1	Intersections	$311198.39	$311198.39	HSIP (23 U.S.C. 148)	Rural Minor Arterial	12,284	55	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - HLN FLTS INTERSECTION	Intersection traffic control	Intersection traffic control - other	1	Intersections	$635307.61	$635307.61	HSIP (23 U.S.C. 148)	Rural Minor Arterial	12,284	55	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - LAUREL GRD RAIL	Roadside	Barrier end treatments (crash cushions, terminals)	1	Locations	$51211	$51211	HSIP (23 U.S.C. 148)	Rural Major Collector	852		State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - SHANE CR RD SFTY	Roadway	Roadway - other	4.2	Miles	$330837	$367596.666666667	HSIP (23 U.S.C. 148)	Rural Major Collector	393		Other Local Agency	Request	Roadway Departure	Reduce and mitigate roadway

													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**
														departure crashes through data-driven problem identification.
SF 139 - SHANE CR RD SFTY	Roadway	Roadway - other	4.2	Miles	$220665	$245183.333333333	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	393		Other Local Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - SHANE CR RD SFTY	Roadway	Roadway - other	4.2	Miles	$5980	$5980	HSIP (23 U.S.C. 148)	Rural Major Collector	393		Other Local Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - SHANE CR RD SFTY	Roadway	Roadway - other	4.2	Miles	$42000	$42000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	393		Other Local Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - SHANE CR RD SFTY	Roadway	Roadway - other	4.2	Miles	$18000	$20000	HSIP (23 U.S.C. 148)	Rural Major Collector	393		Other Local Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - GREGSON BRDG REMOVAL	Roadway	Roadway - other	2	Crossovers	$32317	$35907.7777777778	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Interstate	11,026	80	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 139 - SUN PRAIRIE TURN LANE	Roadway	Roadway widening - add lane(s) along segment	1	Intersections	$760666	$760666	Penalty Funds (23 U.S.C. 164)	Rural Major Collector	7,258	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - MISSOULA SIGNALS SFTY	Intersection traffic control	Systemic improvements - signal-controlled	2	Urban Routes	$83950	$83950	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139 - MISSOULA SIGNALS SFTY	Intersection traffic control	Systemic improvements - signal-controlled	2	Urban Routes	$40291	$40291	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.

													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**
SF 139-TURN LANES NW OF POLSON	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$1582105	$1582105	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	4,412	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
MT3-ZIMMERMAN TR INTRSCT IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$0	$0	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Other	11,098	50	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
MT3-ZIMMERMAN TR INTRSCT IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$673417.06	$777797.482097482	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Other	11,098	50	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
MT3-ZIMMERMAN TR INTRSCT IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$1700000	$1700000	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial (RPA) - Other	11,098	50	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF-149 S-201 SFTY IMPRV	Roadway delineation	Delineators post-mounted or on barrier	30	Miles	$6263.54	$6263.54	HSIP (23 U.S.C. 148)	Rural Major Collector	302	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-149 S-201 SFTY IMPRV	Roadway delineation	Delineators post-mounted or on barrier	30	Miles	$53900	$53900	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	302	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-149 ROUNDUP SFTY IMPRV	Roadway	Rumble strips - unspecified or other	1	Curves	$18436	$18436	HSIP (23 U.S.C. 148)	Rural Minor Arterial	536	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-149 BIG TIMBER SFTY IMPRV	Roadway delineation	Delineators post-mounted or on barrier	0.5	Miles	$25353.64	$25353.64	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,996	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-149 BLGS SOUTH SFTY IMPRV	Intersection traffic control	Intersection flashers - add advance intersection	1	Intersections	$102946	$102946	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	3,919	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven

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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**
		warning sign-mounted												problem identification.
SF 149 S OF HOT SPRINGS SLP FL	Shoulder treatments	Shoulder grading	1	Miles	$412226	$412226	HSIP (23 U.S.C. 148)	Rural Major Collector	431	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 STOCKETT SFTY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Curves	$223571	$248412.222222222	HSIP (23 U.S.C. 148)	Rural Major Collector	1,273	70	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 STOCKETT SFTY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Curves	$48705	$48705	HSIP (23 U.S.C. 148)	Rural Major Collector	1,273	70	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 STOCKETT SFTY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Curves	$270000	$300000	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	1,273	70	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 DUCK LK FENCING	Roadside	Fencing	7.5	Miles	$281989	$281989	HSIP (23 U.S.C. 148)	Rural Major Collector	981	55	State Highway Agency	Spot	Domestic Animal	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 DUCK LK FENCING	Roadside	Fencing	7.5	Miles	$354478	$354478	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural Major Collector	981	55	State Highway Agency	Spot	Domestic Animal	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149 - YORK RD ROUNDABOUT	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$150000	$150000	HSIP (23 U.S.C. 148)	Rural Major Collector	2,749	60	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 149 - YORK RD ROUNDABOUT	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$82678.97	$82678.97	HSIP (23 U.S.C. 148)	Rural Major Collector	2,749	60	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 149 - YORK RD ROUNDABOUT	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$683894.03	$683894.03	HSIP (23 U.S.C. 148)	Rural Major Collector	2,749	60	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through

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														data-driven problem identification.
SF 149-KING INTCH SFTY IMPRV	Intersection traffic control	Systemic improvements - signal-controlled	1	Interchanges	$8050	$8050	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	25,570	35	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 149-KING INTCH SFTY IMPRV	Intersection traffic control	Systemic improvements - signal-controlled	1	Interchanges	$30688	$30688	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	25,570	35	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 149-COLUMBUS SFTY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	2	Curves	$23401.34	$23401.34	HSIP (23 U.S.C. 148)	Rural Major Collector	770	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149-WOLF POINT SFTY IMPRV	Roadway signs and traffic control	Curve-related warning signs and flashers	1.2	Miles	$28766	$28766	HSIP (23 U.S.C. 148)	Rural Minor Arterial	251	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BROADUS SFTY IMPRV	Intersection traffic control	Intersection flashers - add advance intersection warning sign-mounted	2	Intersections	$89000	$89000	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Other	2,287	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 159 BROADUS SFTY IMPRV	Intersection traffic control	Intersection flashers - add advance intersection warning sign-mounted	2	Intersections	$230950	$230950	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	2,287	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 159 BADGER CREEK S FENCING	Roadside	Fencing	7	Miles	$103000	$103000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	1,166	70	State Highway Agency	Spot	Domestic Animal	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 DUCK LAKE INTX SFTY IMP	Roadway signs and traffic control	Curve-related warning signs and flashers	1	Curves	$64800	$64800	HSIP (23 U.S.C. 148)	Rural Minor Arterial	2,187	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.

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SF 159 GREAT FALLS DIST ELEC	Roadway signs and traffic control	Roadway signs (including post) - new or updated	2	Locations	$89680	$89680	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 GREAT FALLS DIST ELEC	Roadway signs and traffic control	Roadway signs (including post) - new or updated	2	Locations	$62816	$62816	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 HELENA REFLCT BACKPLATE	Intersection traffic control	Systemic improvements - signal-controlled	11	Intersections	$47500	$47500	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		Other Local Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 159 HELENA REFLCT BACKPLATE	Intersection traffic control	Systemic improvements - signal-controlled	11	Intersections	$15738	$15738	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	0		Other Local Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 159 S OF ROGERS PASS SAFETY	Shoulder treatments	Shoulder grading	1	Locations	$50000	$50000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	1,568	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 S OF ROGERS PASS SAFETY	Shoulder treatments	Shoulder grading	1	Locations	$43965	$43965	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	1,568	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 SO CUT BANK SFTY IMPRV	Roadway	Roadway - other	3	Miles	$63800	$63800	HSIP (23 U.S.C. 148)	Rural Major Collector	274	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 GREAT FALLS DIST SIGN	Roadway	Roadway - other	4	Locations	$53520	$53520	Penalty Funds (23 U.S.C. 164)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 HAVRE SFTY IMPRV	Roadway	Roadway - other	5	Locations	$93032	$93032	Penalty Funds (23 U.S.C. 164)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

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SF 159 SW MONT SFTY IMPRV	Roadway	Roadway - other	3	Locations	$75690	$84100	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 SW MONT SFTY IMPRV	Roadway	Roadway - other	3	Locations	$47000	$47000	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 GALLATIN SFTY IMPRV	Roadway	Roadway - other	4	Locations	$103040	$103040	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BUTTE DISTRICT DELINEAT	Roadway	Roadway - other	6	Locations	$58410	$58410	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BUTTE DISTRICT DELINEAT	Roadway	Roadway - other	6	Locations	$33773	$33773	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BIGFORK SFTY IMPRV	Roadway	Roadway - other	2	Locations	$123889	$123889	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BITTERROOT SFTY IMPRV	Roadway	Roadway - other	3	Locations	$28980	$32200	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 BITTERROOT SFTY IMPRV	Roadway	Roadway - other	3	Locations	$47000	$47000	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 FLATHEAD SFTY IMPRV	Roadway	Roadway - other	6	Locations	$131149	$131149	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

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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**
SF 159 LAKE SANDERS SFTY IMPRV	Roadway	Roadway - other	6	Locations	$113300	$113300	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 SANDERS CO SFTY IMPRV	Roadway	Roadway - other	5	Locations	$143086	$143086	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 HELENA SFTY IMPRV	Roadway	Roadway - other	2	Locations	$348659	$348659	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-169 N24 CLRS SFTY IMPRV	Roadway	Rumble strips - center	32	Miles	$235155	$235155	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	4,495	70	State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$384070	$426744.444444444	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$86580	$100000	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$1072727	$1239000.92400092	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$324540	$360600	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$4000	$4000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

													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**
SF 169 E HELENA BARRIER SKID	Roadside	Barrier - other	2.5	Miles	$2267000	$2267000	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
E HELENA BARRIER SKID CONCRETE	Roadside	Barrier - other	2.5	Miles	$414229	$414229	Penalty Funds (23 U.S.C. 164)	Rural Principal Arterial (RPA) - Other	21,485	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 GLENDIVE NORTH CLRS	Roadway	Rumble strips - center	375	Miles	$235155	$235155	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 GLENDIVE SOUTH SFTY	Roadway	Rumble strips - center	265	Miles	$235155	$235155	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 W OF WHITEFISH SFTY	Shoulder treatments	Widen shoulder - paved or other	1	Miles	$122486	$136095.555555556	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	3,419	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 MSLA CNTY SFTY IMPRV	Roadway signs and traffic control	Roadway signs (including post) - new or updated	8	Locations	$19557	$19557	HSIP (23 U.S.C. 148)	Various Roads	0		Other Local Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 FLATHEAD CNTY SFTY	Roadway signs and traffic control	Roadway signs (including post) - new or updated	12	Locations	$105118	$105118	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BLGS AREA SFTY IMPRV	Roadway signs and traffic control	Roadway signs (including post) - new or updated	9	Locations	$21314	$21314	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 I90 W KING AVE LIGHTING	Lighting	Continuous roadway lighting	2	Miles	$44799	$44799	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Interstate	31,872	65	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

													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**
SF 169 N57 SLDR WID & SLP FLAT	Shoulder treatments	Widen shoulder - paved or other	2	Curves	$212430	$236033.333333333	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	1,698	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BLGS DISTRIC SFTY IMPRV	Roadway	Roadway - other	9	Locations	$31434	$31434	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 HELENA SFTY IMPRV	Roadway	Roadway - other	6	Locations	$68411	$68411	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 GT FALLS SFTY IMPRV	Roadway	Roadway - other	5	Locations	$99540	$99540	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 CASCADE CNTY SFTY IMPRV	Roadway	Roadway - other	4	Locations	$35674	$35674	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BUTTE DIST SFTY	Roadway signs and traffic control	Roadway signs and traffic control - other	5	Locations	$28029	$28029	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BZMN SFTY IMPRV	Roadway	Roadway - other	5	Locations	$46947	$46947	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BUTTE DIST DELIN	Roadway	Roadway - other	2	Locations	$13025	$13025	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 GLENDIVE HRZNTL CRV SIG	Roadway signs and traffic control	Curve-related warning signs and flashers	1	District	$137781	$137781	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

													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**
SF 179 GLENDIVE HRZNTL CRV SIG	Roadway signs and traffic control	Curve-related warning signs and flashers	1	District	$116600	$116600	HSIP (23 U.S.C. 148)	Various Roads	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

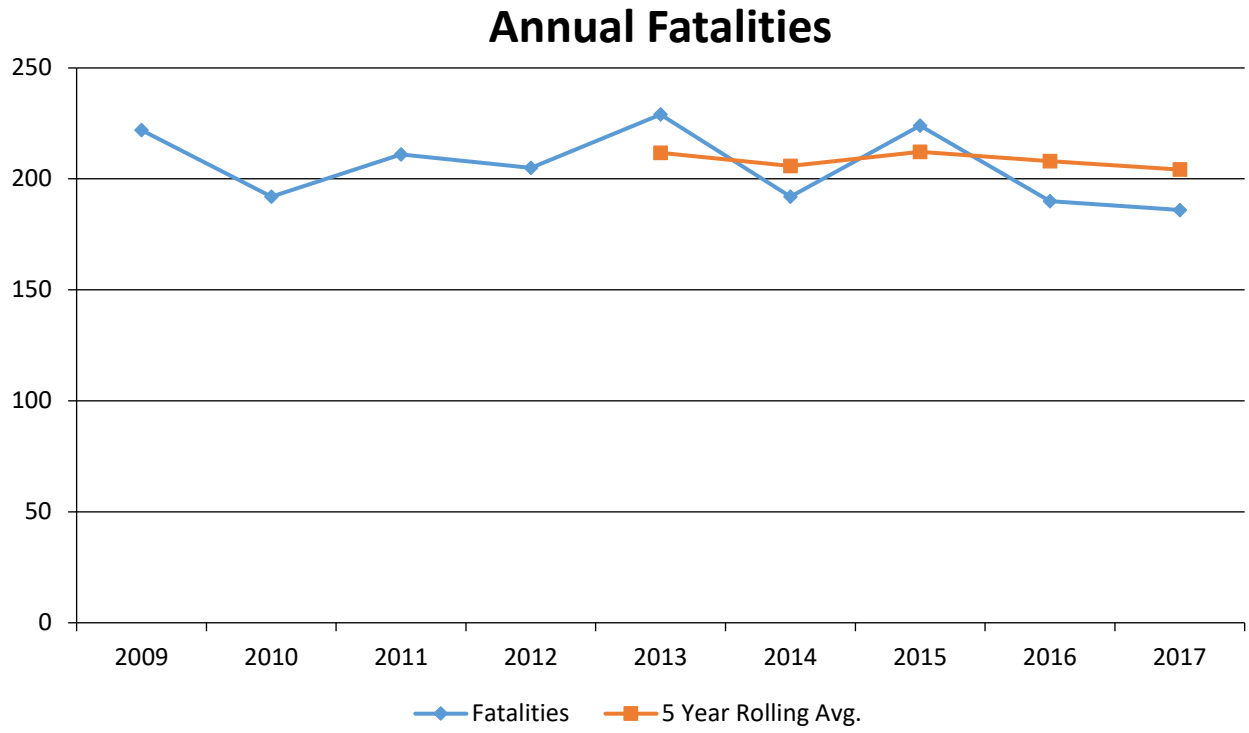
Enter additional comments here to clarify your response for this question or add supporting information.

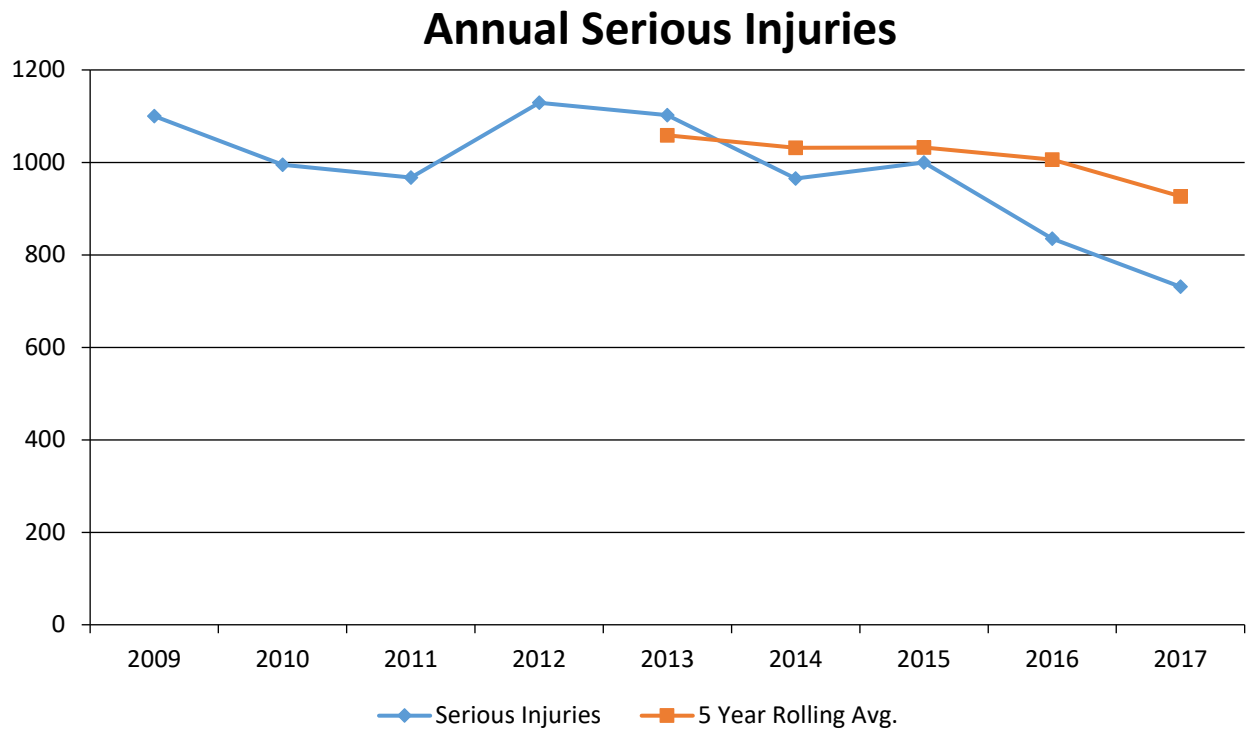
Safety Performance

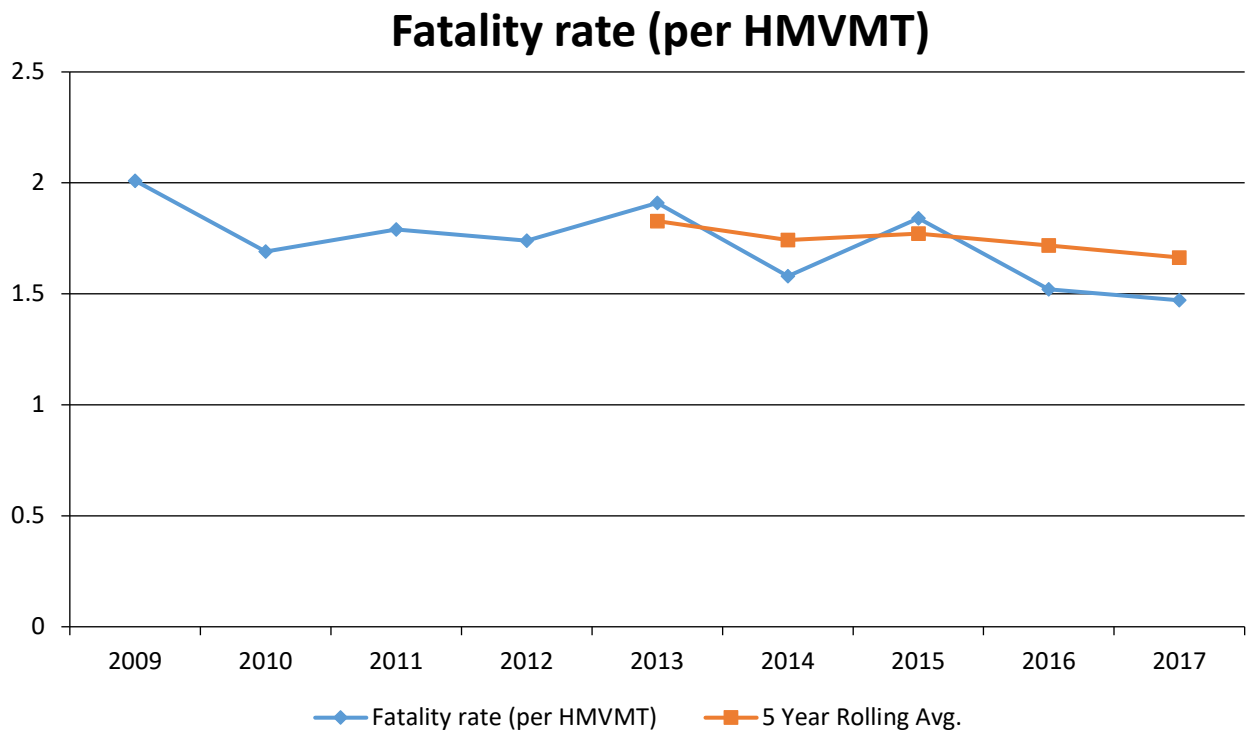
General Highway Safety Trends

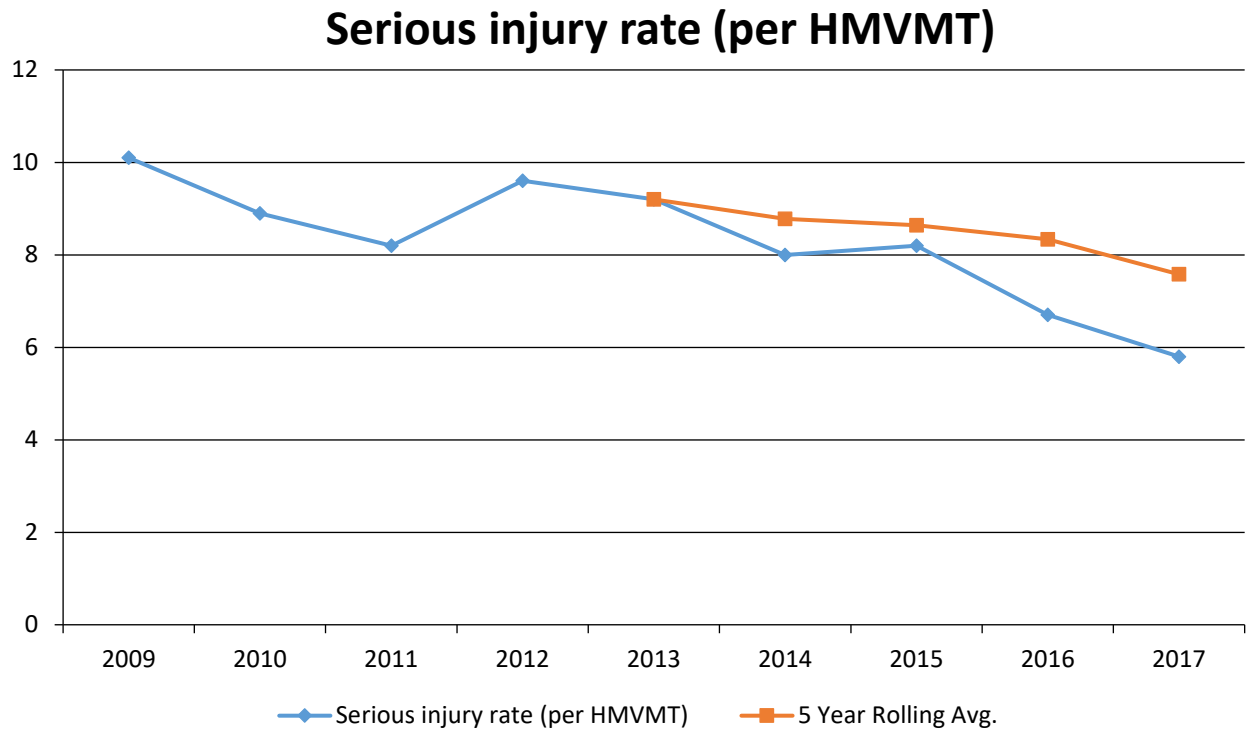
Present data showing the general highway safety trends in the State for the past five years.

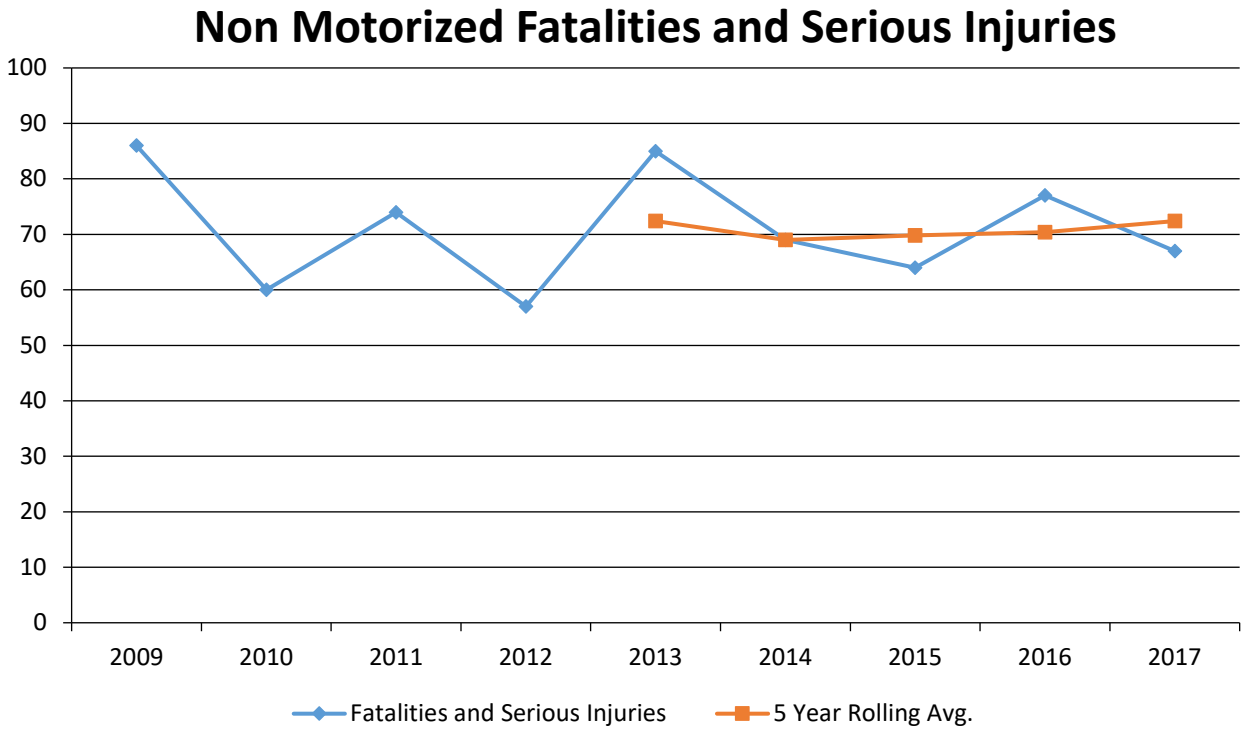
PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	222	192	211	205	229	192	224	190	186
Serious Injuries	1,100	995	967	1,129	1,102	965	1,000	835	731
Fatality rate (per HMVMT)	2.010	1.690	1.790	1.740	1.910	1.580	1.840	1.520	1.471
Serious injury rate (per HMVMT)	10.100	8.900	8.200	9.600	9.200	8.000	8.200	6.700	5.800
Number non-motorized fatalities	16	10	16	9	24	12	15	14	15
Number of non-motorized serious injuries	70	50	58	48	61	57	49	63	52


Annual Fatalities
250
200
150
100
50
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
1200
1000
800
600
400
200
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2.5
2
1.5
1
0.5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
12
10
8
6
4
2
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.

The 2016 Serious Injury Rate was updated to reflect the correct rate (based on 835 serious injuries).

Describe fatality data source.

FARS

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

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

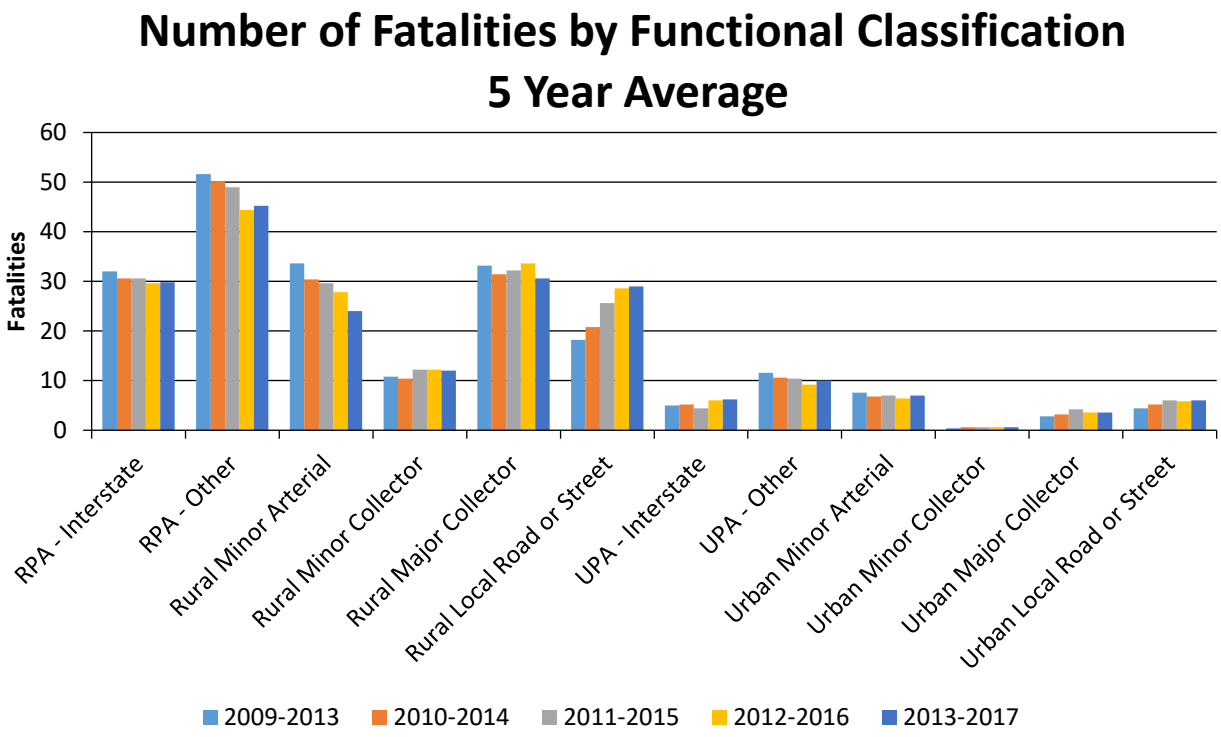
Year 2017

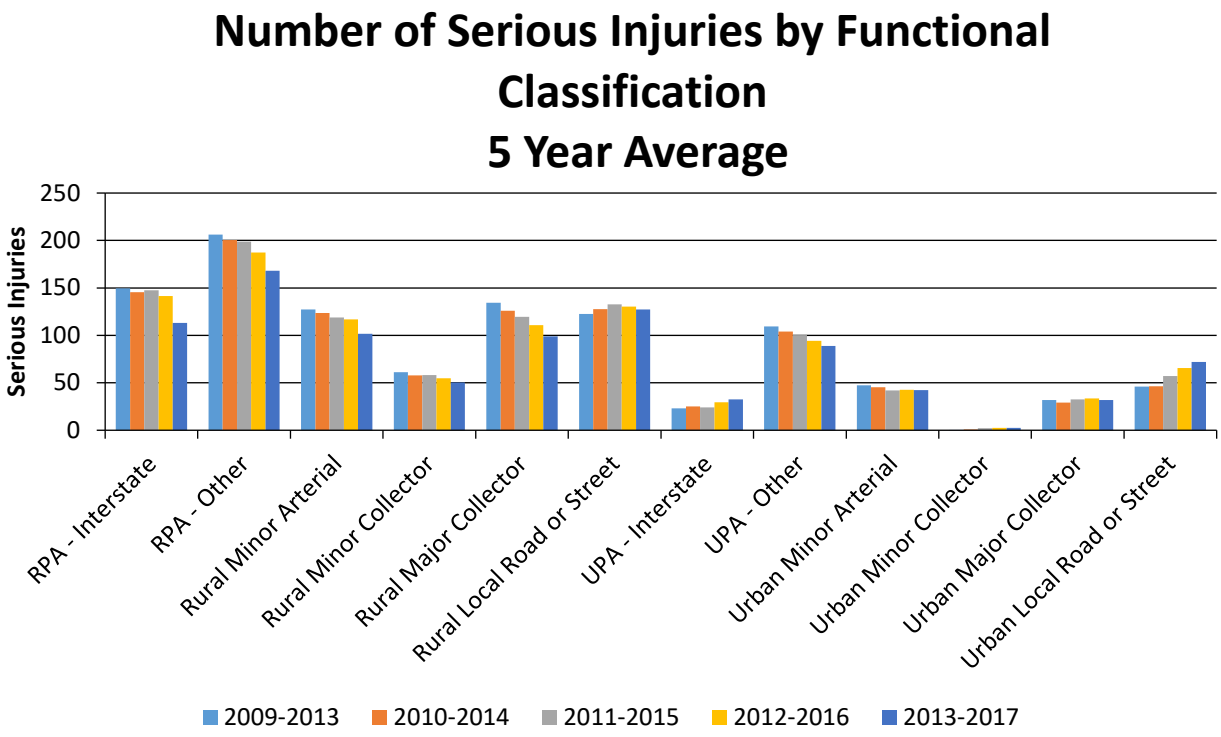
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	29.8	113.2	1.18	4.52
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	45.2	168	1.87	6.97
Rural Minor Arterial	24	101.8	2.25	9.54

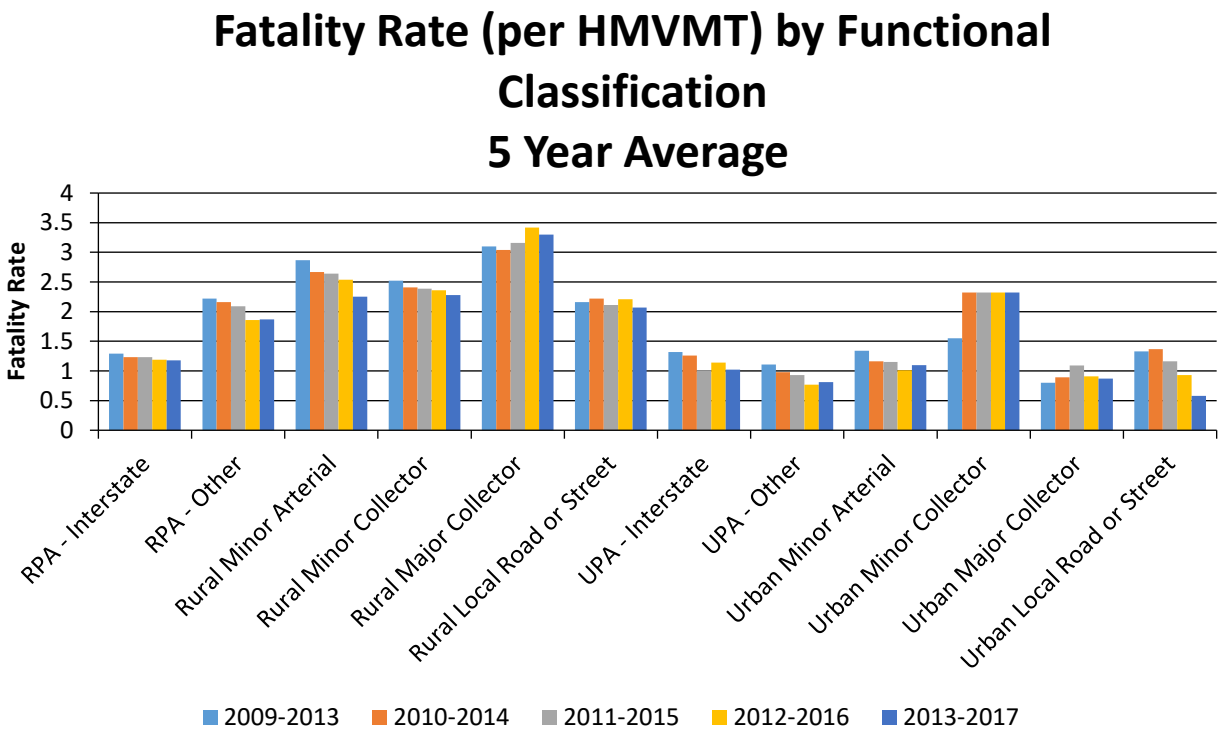
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	12	50.4	2.28	10.12
Rural Major Collector	30.6	99	3.3	10.7
Rural Local Road or Street	29	127.2	2.07	9.38
Urban Principal Arterial (UPA) - Interstate	6.2	32.4	1.02	5.43
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other	10	89	0.81	7.2
Urban Minor Arterial	7	42.4	1.1	6.67
Urban Minor Collector	0.6	2.6	2.32	8.68
Urban Major Collector	3.6	31.8	0.87	7.74
Urban Local Road or Street	6	72	0.58	7.05

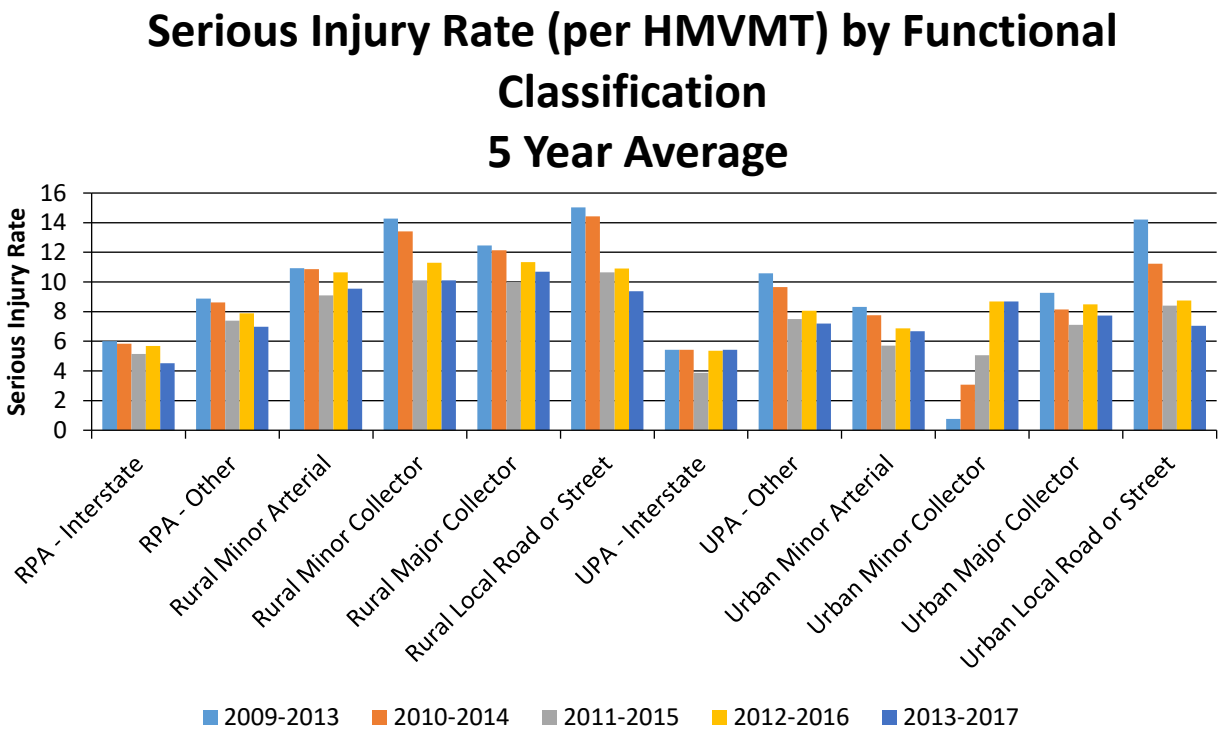
Year 2017

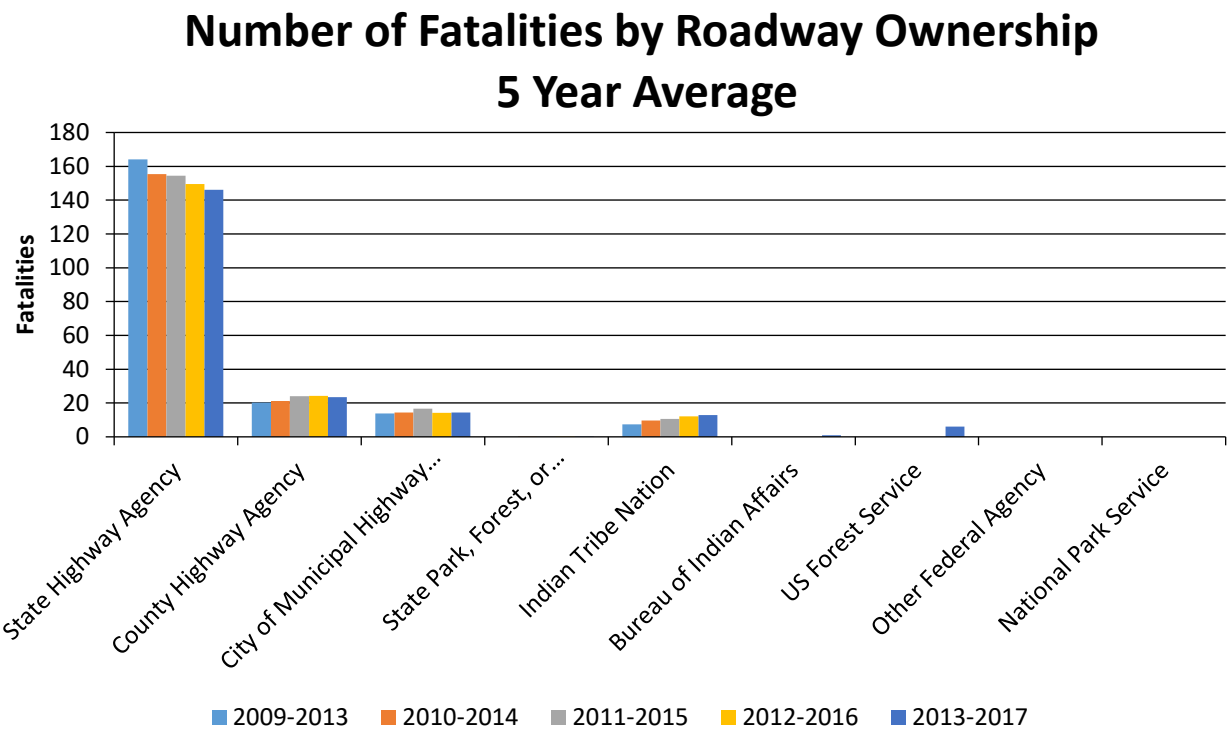
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	146.2	606.2	1.67	6.94
County Highway Agency	23.4	120.6	1.62	8.47
Town or Township Highway Agency				
City of Municipal Highway Agency	14.4	142.4	0.72	7.28
State Park, Forest, or Reservation Agency	0.25	2.75	2.86	29.05
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	12.8	23.8	7.14	13.7
Bureau of Indian Affairs	1	2.6	8.36	17.82
US Forest Service	6	31.8	1.79	9.84
Other Federal Agency	0	0.5	0	1.09
National Park Service	0	0	0	0

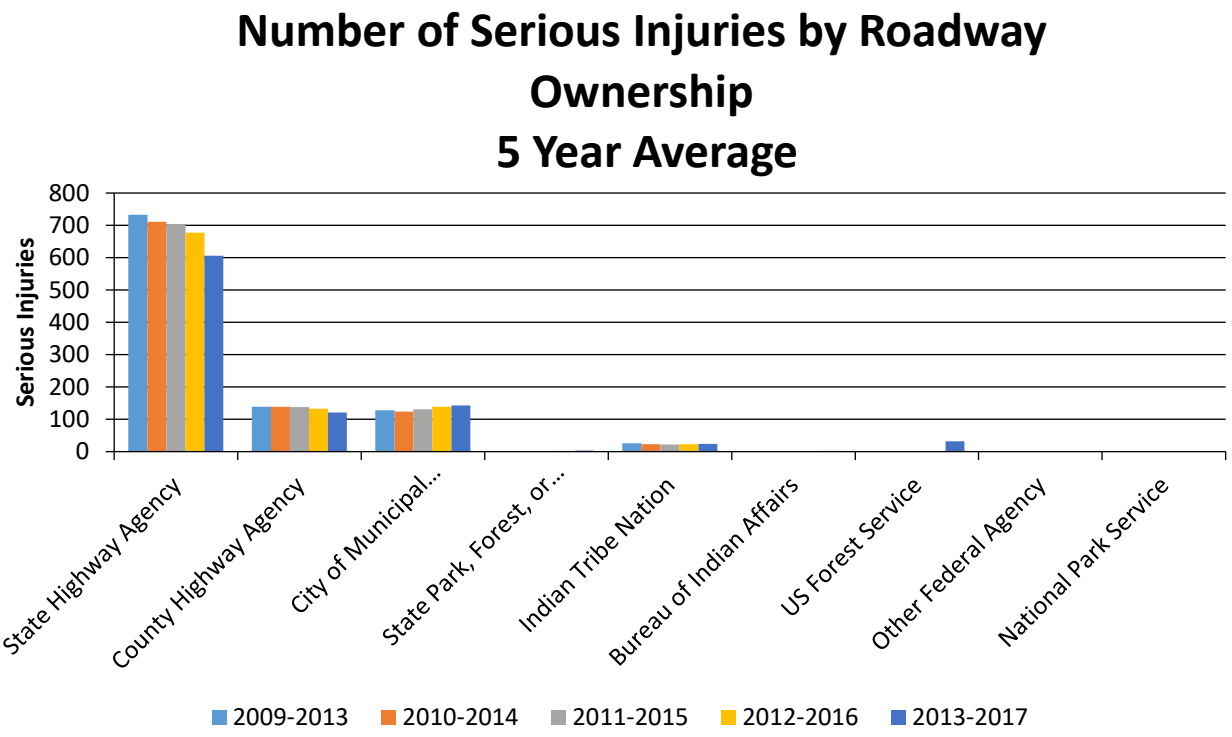

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
60
50
40
30
20
10
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

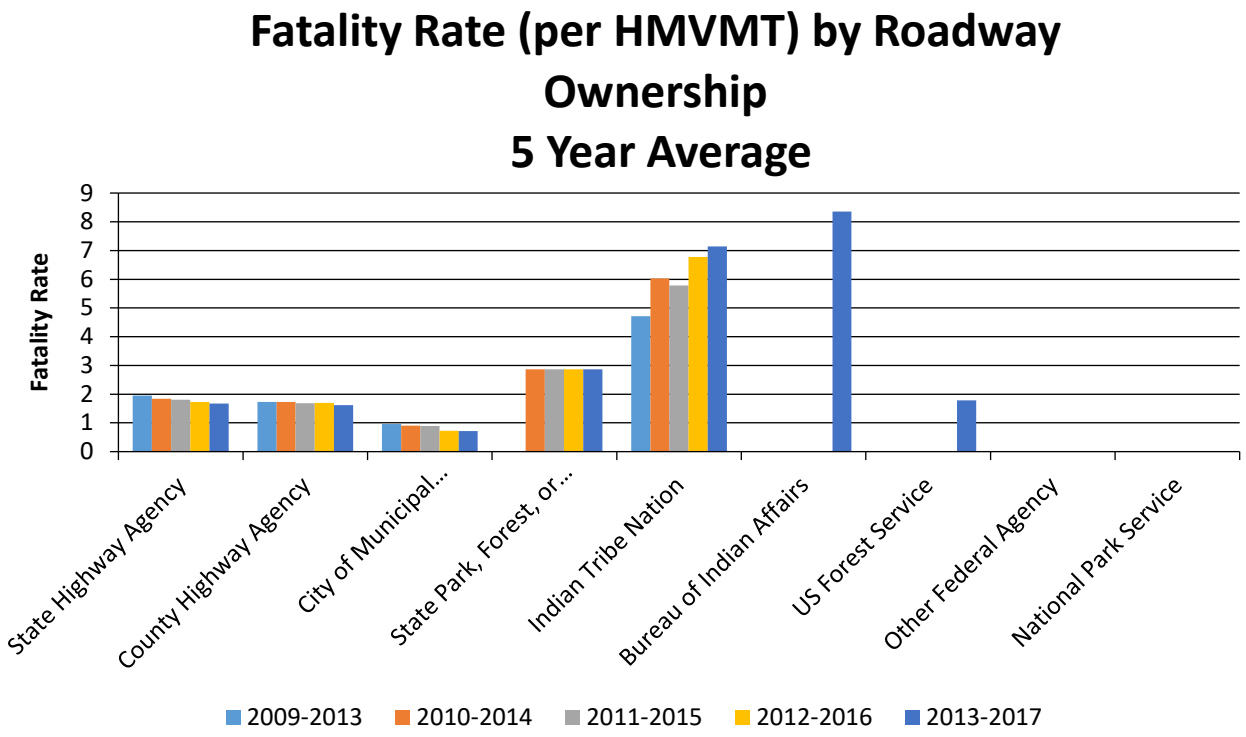

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
250
200
150
100
50
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

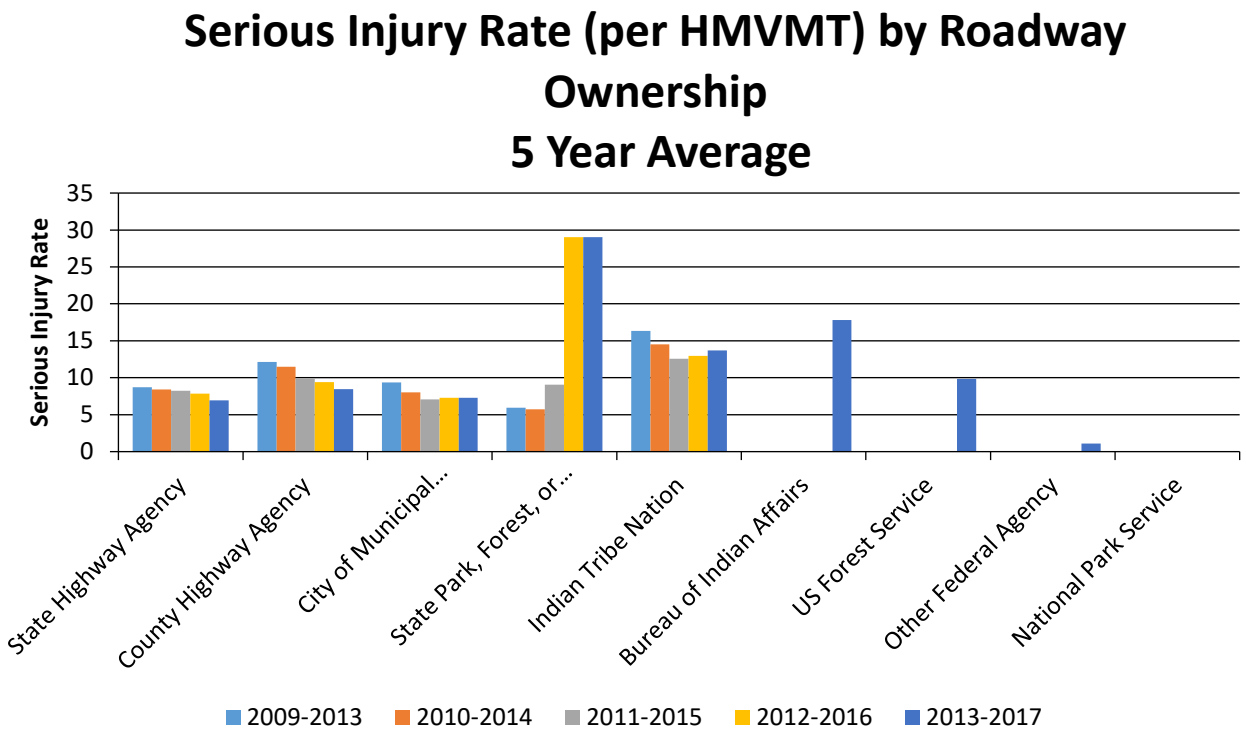

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
4
3.5
3
2.5
2
1.5
1
0.5
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Minor Collector
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
16
14
12
10
8
6
4
2
0
RPA - Interstate
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other
Urban Minor Arterial
Urban Minor Collector
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
180
160
140
120
100
80
60
40
20
0
State Highway Agency
County Highway Agency
City of Municipal Highway...
State Park, Forest, or ...
Indian Tribe Nation
Bureau of Indian Affairs
US Forest Service
Other Federal Agency
National Park Service
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


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...
State Park, Forest, or...
Indian Tribe Nation
Bureau of Indian Affairs
US Forest Service
Other Federal Agency
National Park Service
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
9
8
7
6
5
4
3
2
1
0
State Highway Agency
County Highway Agency
City of Municipal...
State Park, Forest, or...
Indian Tribe Nation
Bureau of Indian Affairs
US Forest Service
Other Federal Agency
National Park Service
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 187.4

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

The 2019 Target is based on the 5-year rolling average using historical trends. This supports the SHSP (known as the Comprehensive Highway Safety Plan (CHSP) in Montana) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 1,705 in 2007 to 852 in 2030.

Number of Serious Injuries 892.8

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

The 2019 Target is based on the 5-year rolling average using historical trends. This supports the SHSP (known as the Comprehensive Highway Safety Plan (CHSP) in Montana) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 1,705 in 2007 to 852 in 2030.

Fatality Rate	1.462

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

The 2019 Target is based on the 5-year rolling average using historical trends. This supports the SHSP (known as the Comprehensive Highway Safety Plan (CHSP) in Montana) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 1,705 in 2007 to 852 in 2030.

Serious Injury Rate	6.968

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

The 2019 Target is based on the 5-year rolling average using historical trends. This supports the SHSP (known as the Comprehensive Highway Safety Plan (CHSP) in Montana) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 1,705 in 2007 to 852 in 2030.

Total Number of Non-Motorized Fatalities and Serious Injuries	73.2

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

The 2019 Target is based on the 5-year rolling average using historical trends. This supports the SHSP (known as the Comprehensive Highway Safety Plan (CHSP) in Montana) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 1,705 in 2007 to 852 in 2030.

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.

Montana's Safety Performance Target Setting is a collaborative effort between MDT Engineering, the 3 MPO's and the State Highway Traffic Office. Representatives from each group met in the spring of 2018 to establish the 2019 Safety Performance Targets. For the final step, these targets were then advanced to the CHSP Advisory Committee to vote their concurrence.

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?

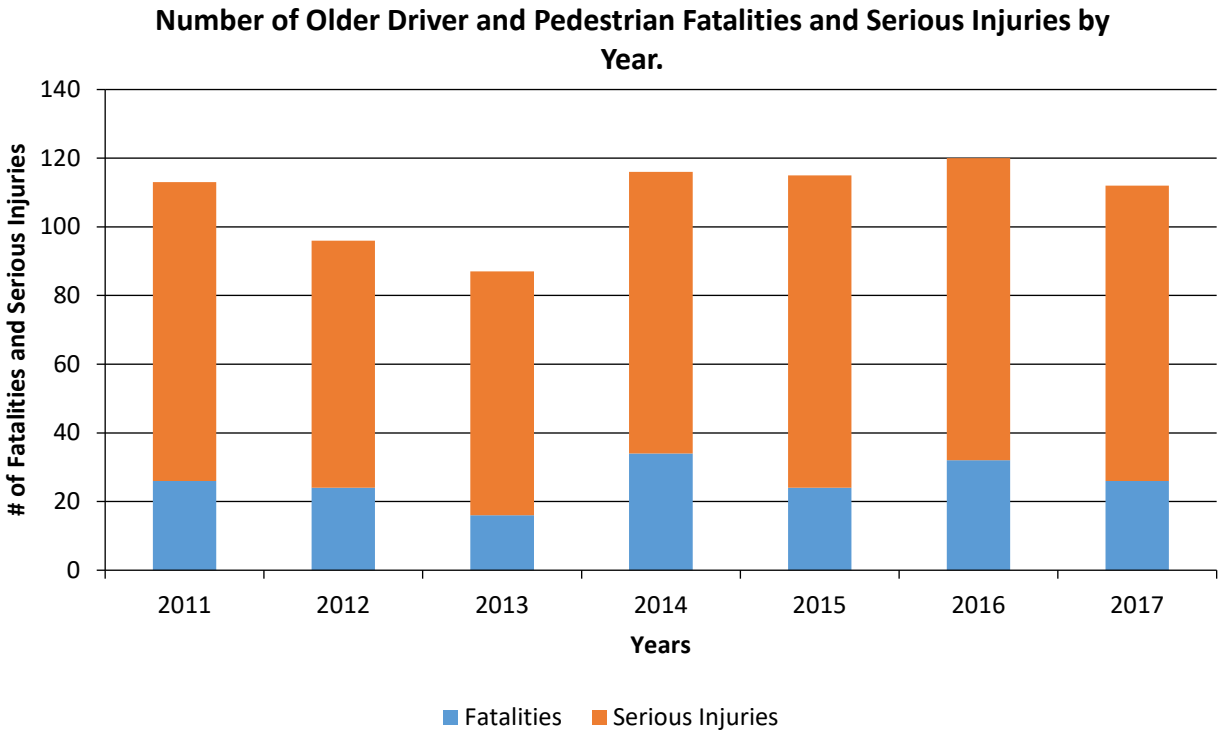
Yes

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

For the 2017 HSIP List, the Montana definition of High-Risk Rural Roads is: any roadway functionally classified as a rural major or minor collector or a local road with significant safety risks. Per §23 USC 148(d)(2), MDT's definition of significant safety risk is "information gathered through means such as field reviews, safety assessments, road safety audits, and local knowledge and experience." Using information from observations in the field can identify high-risk locations that may not be identified through data analysis or by identifying roadway characteristics.

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	26	24	16	34	24	32	26
Number of Older Driver and Pedestrian Serious Injuries	87	72	71	82	91	88	86



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?

Other-Observational before/after studies

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

MDT utilizes observational before/after studies to evaluate the effectiveness of a particular safety improvement or groups of improvements. An observational before/after study requires crash data and volume data from both before and after the installation of a safety improvement.

MDT has elected to evaluate the HSIP based on groups of similar projects on an annual basis. At this time, the evaluation process focuses on nominated projects having a construction and construction engineering (CN+CE) cost exceeding $100,000. Additional evaluations or site specific evaluations are completed on a case-by-case basis. Typically, a minimum of 5-years of after data is used for the treatment sites.

The following steps highlight the process for MDT's annual evaluation of safety improvements. It is not meant to be all encompassing and is meant to be a living process. Modifications to the following process will be made as additional data sets and analysis tools are available.

1. Identify completed projects with a construction plus construction engineering (CN+CE) cost of greater than $100,000 and which have sufficient crash data following completion of the project.
2. Group the projects completed in the identified year by improvement type. The following project groups are identified to guide the evaluation:
3. Geometric improvements at a specific location (curve realignment or shoulder widening as examples);
4. Slope flattening or elimination of roadside hazards;
5. Signing, striping and delineation including the installation of warning flashers;
6. Installation of guardrail;

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

This method of program level evaluation is new to MDT with only a couple of years actual results. With MDT's recent Roadway Departure Study and newly implemented Intersection Safety Study, the program level evaluation will continue to be improved upon each year. One challenge of this form of program level evaluation is for low volume roads where 10 years of data is needed to determine a crash trend and ultimately a project being constructed. In addition, MDT's evaluation is based on 5 years "before" and "after" data which may not correspond with the original trend identification due to the regression to the mean. Consequently, the naïve before/after study may not produce results that are consistent with the anticipated CMF that was used.

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

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.

Another method MDT uses to indicate the HSIP Program's Success is the ability to identify and obligate HSIP Funds to address safety needs throughout the state on all public roads. MDT's HSIP Funding has grown over the last several years which has allowed MDT to identify and fund more significant size safety projects. This has included large infrastructure type projects, including several roundabouts on non-MDT routes (local road safety).

The HSIP Program's success has also increased the awareness of safety within the agency as a whole. This has translated into more collaboration between bureaus as other projects are designed and implemented benefiting both the safety program and ultimately the traveling public.

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

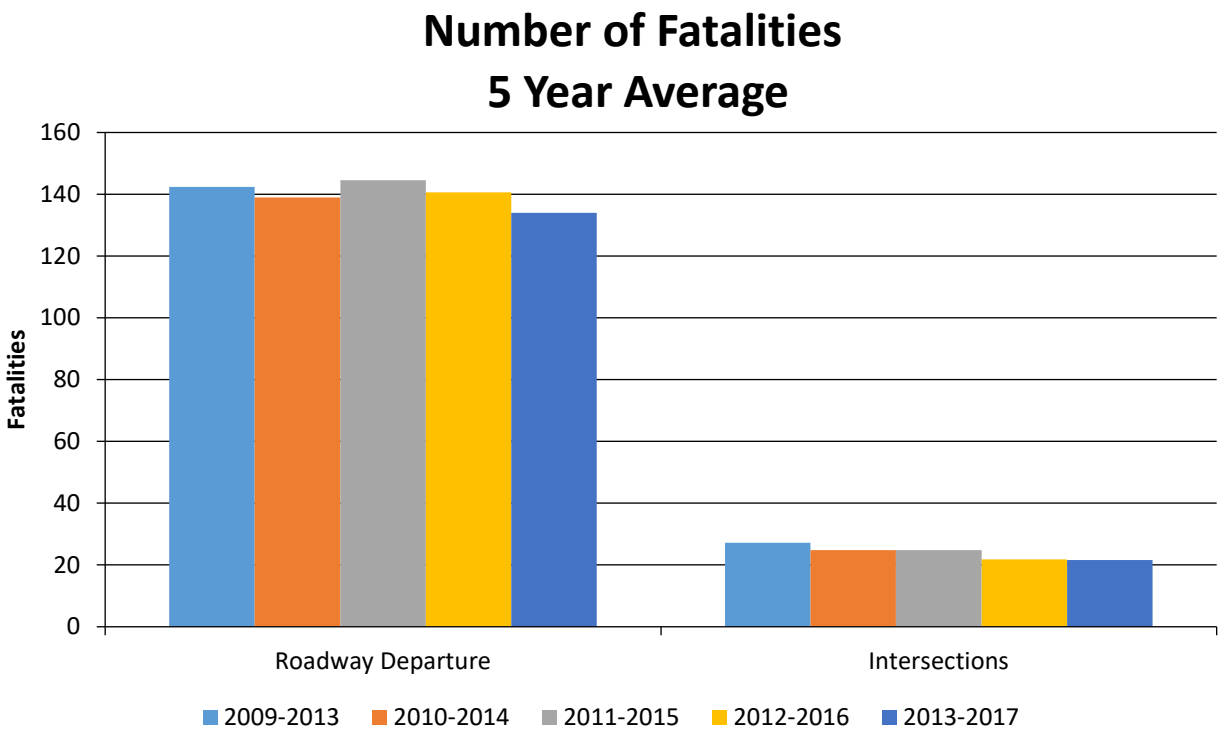
No

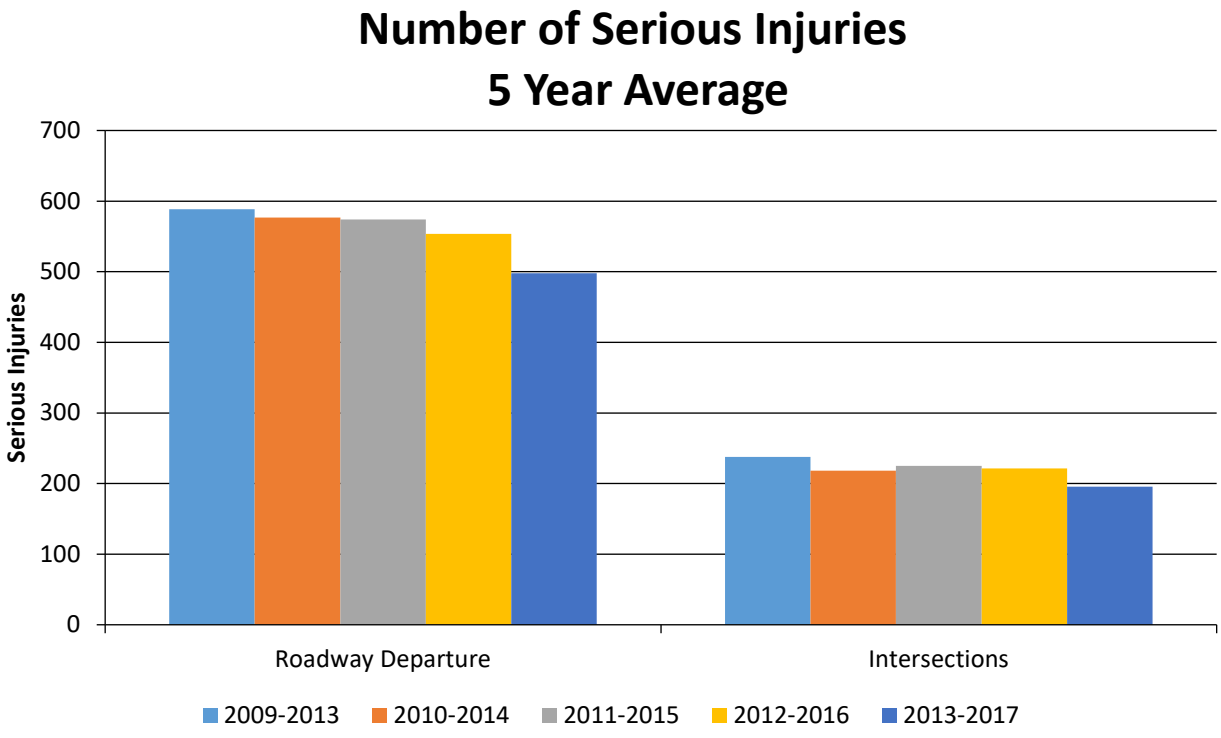
Effectiveness of Groupings or Similar Types of Improvements

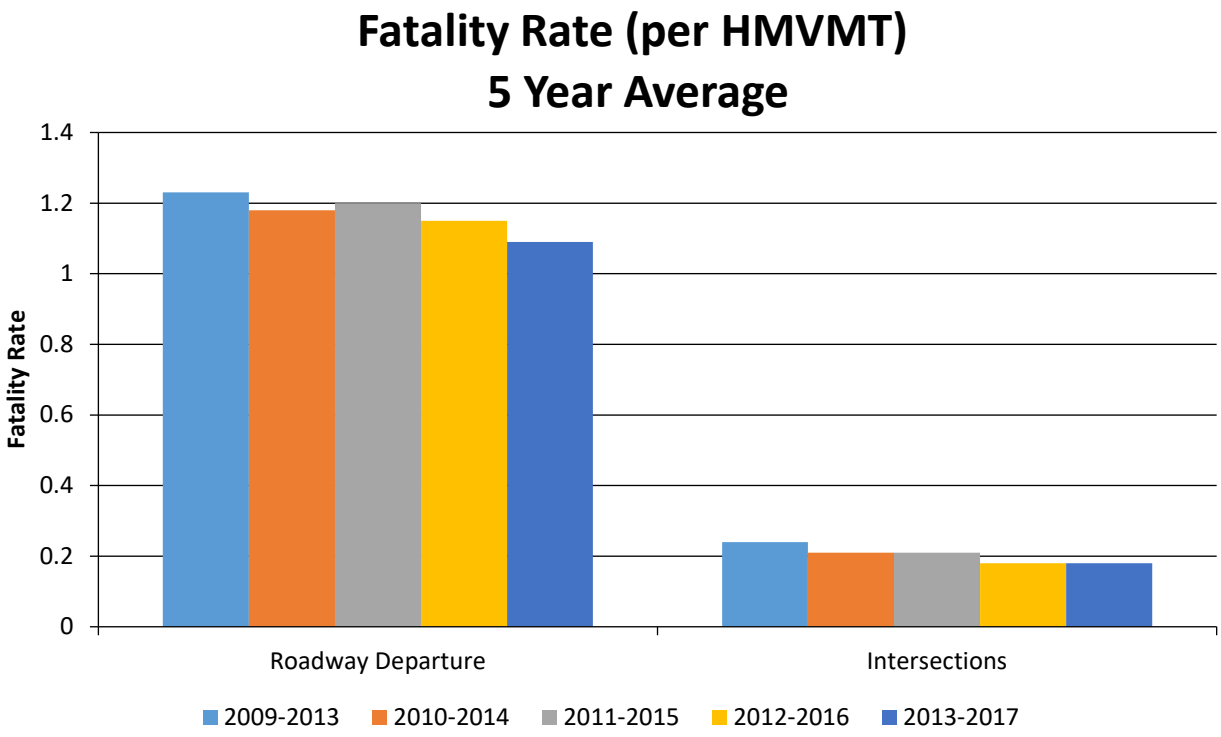
Present and describe trends in SHSP emphasis area performance measures.

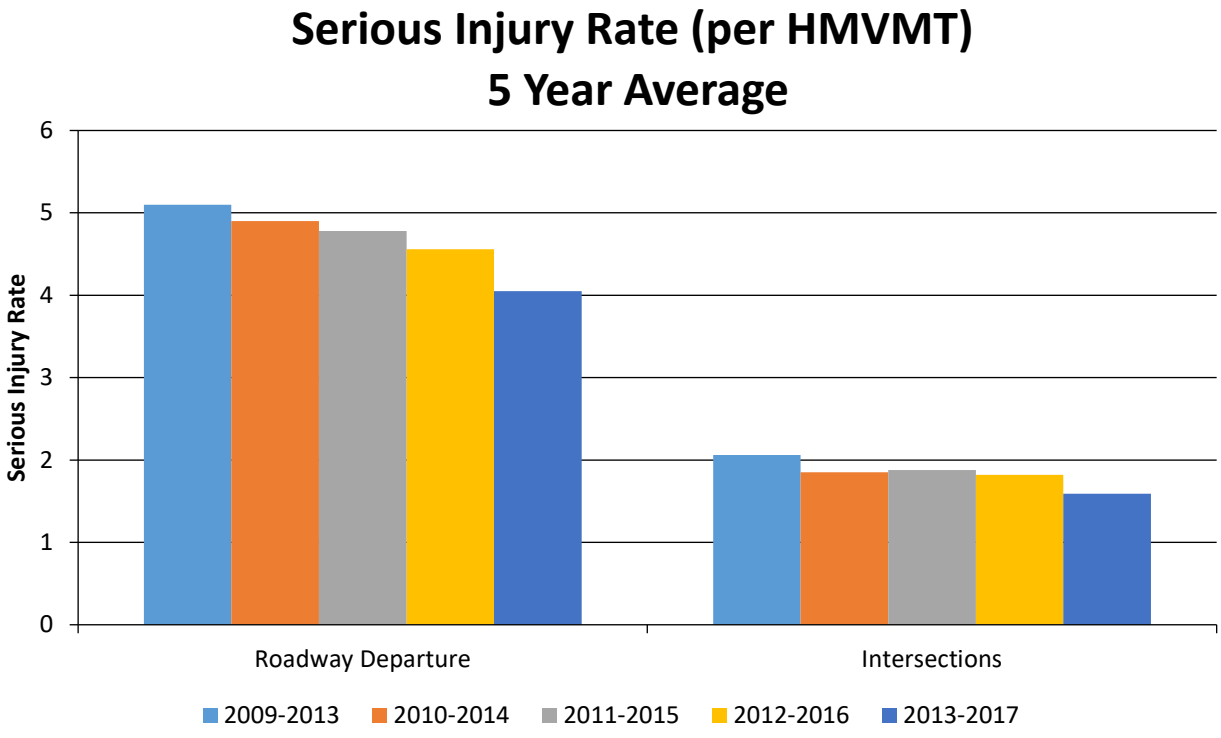
Year 2017

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)
Roadway Departure		134	498	1.09	4.05
Intersections		21.6	195.6	0.18	1.59


Number of Fatalities
5 Year Average
Fatalities
160
140
120
100
80
60
40
20
0
Roadway Departure
Intersections
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
Roadway 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.

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

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)
Geometric Improvements	Other	Roadway	Roadway - other	117.00	119.00	1.00	4.00	10.00	6.00	37.00	48.00	165.00	177.00	-6.12
Intersection Improvements	Other	Interchange design		55.00	58.00	2.00	1.00	9.00	4.00	37.00	24.00	103.00	87.00	17.18
Signing	Other	Roadway signs and traffic control		77.00	39.00	2.00	4.00	11.00	10.00	27.00	24.00	117.00	77.00	-71.31
Guardrail	Other	Roadside		9.00	7.00	1.00		3.00	3.00	2.00	1.00	15.00	11.00	26.89
Fencing	Other	Roadside	Fencing	15.00	7.00			1.00		5.00	1.00	21.00	8.00	1.76
Skid Treatment	Other	Roadway	Pavement surface - high friction surface	17.00	5.00	2.00		3.00		3.00	1.00	25.00	6.00	119.11

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

MDT has a process to evaluate safety projects. At this time, the 2018 evaluation has not been completed and therefore it not referenced or included in this report. MDT's 2017 evaluation results are included. These are for a simple before / after study using 5 years of before/after data. In addition, small projects with similar scope have been grouped together for analysis.

The challenge of completing a simple before/after study is that the 5-year before period may not be representative of the crashes that initiated the safety improvements or the data may be skewed due to the randomness of crashes on low volume roads.

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?

05/01/2015

What are the years being covered by the current SHSP?

From: 2015 To: 2020

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

2020

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

The SHSP (CHSP) was signed off in May 2015 by MDT Agency Director Mike Tooley.

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)			5	5						
AADT for Each Intersecting Road (79)			100	100						
AADT Year (80)			100	100						
Unique Approach Identifier (139)			100	100						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					100	100				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					100	100				

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)					100	100				
Interchange Type (182)					100	100				
Ramp AADT (191)					100	100				
Year of Ramp AADT (192)					100	100				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	**100.00**	**100.00**	**88.13**	**88.13**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

*Based on Functional Classification

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

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.

MDT performed analyses to determine the number and location of the intersections on Non-local paved roads in 2017

MDT developed a plan and guidance documentation to collect the data element in 2017

MDT will collect the data element using in-house roadway images, Google Street View and field observation efforts - by 12/31/2019

MDT will qa/qc the collected data, format and load into our MIRE database - by 12/31/2020

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	Incapacitating Injury	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Incapacitating Injury	Yes	Suspected Serious Injury - Any injury other than fatal which results in one or more of the following attributes:	Yes	- Severe laceration resulting in exposure of underlying tissues/muscle/organ resulting in significant loss of blood -Broken or distorted extremity (arm or leg) - crush injuries - Suspected skull, chest or abdominal injury other than bruises or minor lacerations - Significant burns (second and third degree burns over 10% or more of the body) - Unconsciousness when taken from the crash scene	Yes

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 *
					- Paralysis	
Crash Database	Incapacitating Injury	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Incapacitating Injury	Yes	Determined by officer / No changes in crash database	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?

Yes

Describe the purpose and outcomes of the State’s HSIP program assessment.

MDT's HSIP program assessment is currently underway. This assessment will result in the completion of the Montana Highway Safety Manual in December 2018.

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.