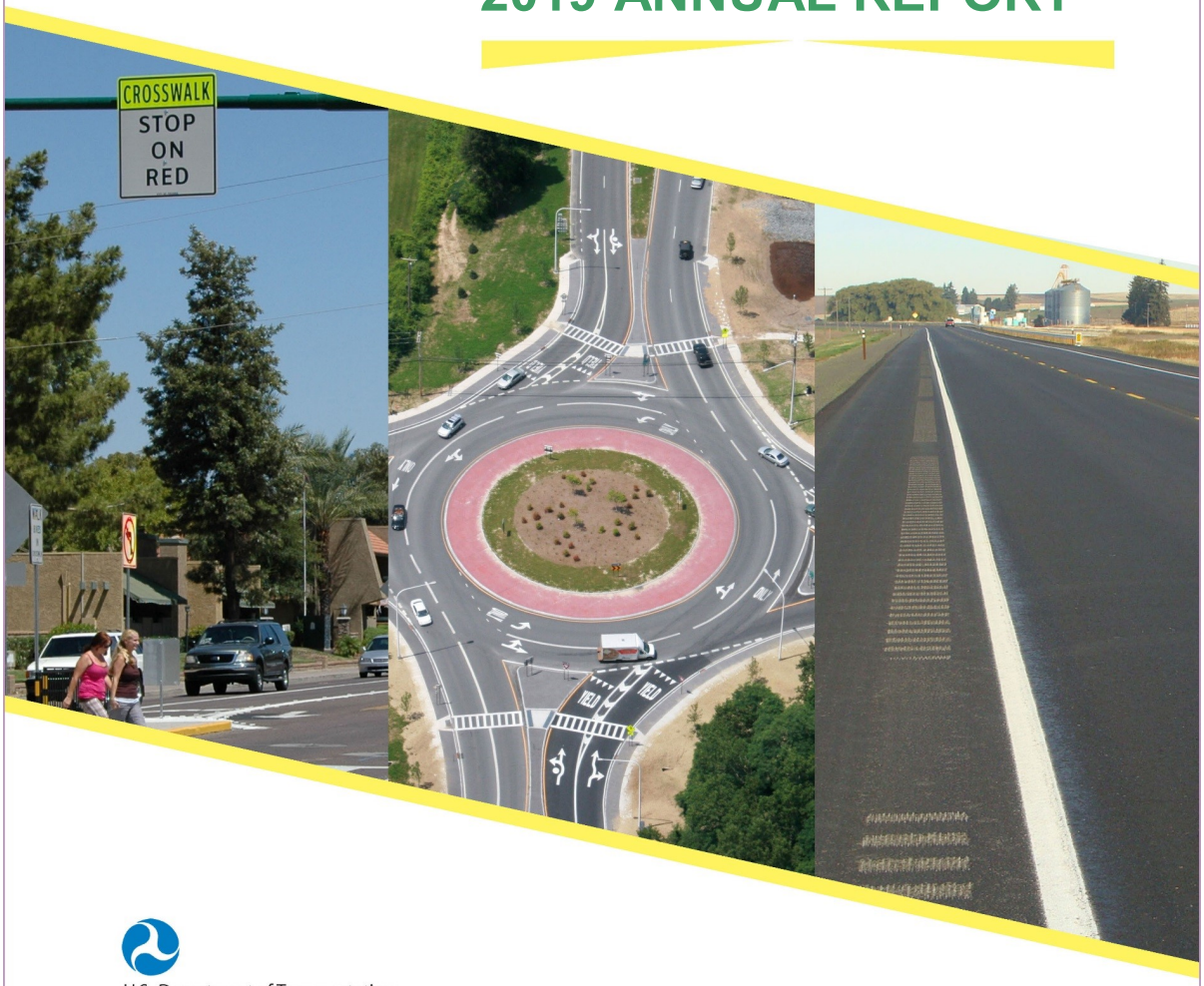
MONTANA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

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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

Over the past five (5) years, MDT's Safety Program has made significant strides towards improving safety on Montana's Transportation Network. This has been a result of several factors:

- Increased HSIP Funding;
- MDT's Safety Information Management System (SIMS) to identify, analyze and track HSIP projects;
- MDT's Roadway Departure and Intersection Plans to identify locations for further analysis and potential safety improvements;
- MDT's systemic application of multiple safety countermeasures (centerline rumble strips, wrong-way interstate signing, horizontal curve signing, median cable barrier, reflective backplates, etc);
- Identifying more substantial projects on non state-owned roadways;
- Researching methodologies to determining how to apply HSIP Funding to low volume roads with minimal crash data availability,
- Developing Median Cable Barrier Warrants
- Educating the public on benefits of controversial/contentious safety improvements. This is done through MDT's new Public Information Process on many projects, including HSIP projects;

Over these past five years, Montana has seen a decrease in traffic fatalities. MDT will continue its efforts to cut fatal and serious injury crashes in half by 2030 by addressing crash clusters on all public roads.

One of MDT's challenges is the inability to use HSIP Funding towards behavioral type campaigns. Behavior plays a recurring role in fatal/serious injury crashes and MDT is hampered by the inability to address this need.

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

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

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. For future HSIP projects, other data-driven tools are being developed to assist with identifying potential projects on the local and Tribal roads. Those tools are anticipated to be usable in late 2020.

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

Describe coordination with internal partners.

The MDT Planning Division administers the Comprehensive Highway Safety Plan (CHSP) and Highway Safety Plan while MDT's Engineering Division manages the HSIP Program. There is significant coordination between the two Divisions and their corresponding CHSP Emphasis Areas. In addition, both Divisions are represented on the Traffic Records Coordinating Committee (TRCC). MDT's CHSP is currently being updated and coordination for that Plan will continue to be required between the two Divisions. The CHSP's last update was completed in May 2015. This new update will be completed in 2020. The most current 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. Coordination with MDT's District Staff, Environmental Staff, Maintenance and other engineering disciplines is on-going with the program. This takes place as sites are analyzed and as projects are identified, designed and constructed.

Identify which external partners are involved with HSIP planning.

- Local Government Agency

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

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.

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

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 early 2020. 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.

- Horizontal Curve
- HRRR
- Intersection
- Roadway Departure
- Other-Hot Spot

Program: Horizontal Curve

Date of Program Methodology:1/1/2015

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- Other-Systemic Improvement

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
		Horizontal curvature

What project identification methodology was used for this program?

- 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?

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).

This is a systemic project to upgrade curve signing on state-owned facilities. This project was initiated to meet

guidelines/requirements set forth in the Manual on Uniform Traffic Control Devices (MUTCD). One (1) to two (2) Districts were nominated each year and the overall project is approximately 75% complete.

Program: HRRR

Date of Program Methodology:1/1/2015

What is the justification for this program?

- Other-HRRR Special Rule

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only		

What project identification methodology was used for this program?

- 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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- 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 has produced results from a statewide network screening list. It has identified both state and local intersections of interest for further review.

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).

Intersections are being identified through the Intersection Safety Plan for potential safety improvements. This is a multi-year process and projects are prioritized based on their benefit-cost ratio.

Program: Roadway Departure

Date of Program Methodology:1/1/2015

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- 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).

The Roadway Departure Plan guides the development of potential safety improvements for both systemic and hot-spot locations. This is a multi-year project and potential projects are identified using MDT Specific Safety Performance Functions developed within the Roadway Departure Plan. These projects are programmed based on their benefit-cost ratio.

2019 Montana Highway Safety Improvement Program
Program: Other-Hot Spot

Date of Program Methodology:10/1/1989

What is the justification for this program?

- Other-All public roads

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- 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 2018 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?

10

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

- Cable Median Barriers
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Other-Flashing Yellow Arrows
- Rumble Strips

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). The past several years MDT has been implementing these type of projects on an annual basis. These applications provide a pro-active approach to safety.

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan

MDT is currently completing a research project to determine an appropriate methodology for identifying and implementing Low Cost Safety Improvements on Low Volume Roads. During this process, MDT is coordinating with Montana's LTAP Office and other Stakeholders.

Does the State HSIP consider connected vehicles and ITS technologies?

No

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 was also 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 recently provided training to MDT Staff and Consultants through their Resource Center.

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

To identify potential locations for the 2019 HSIP, criteria being used to screen the network are as follows: 1) Fatal and Serious Injury Roadway departure crashes; 2) Intersections identified by Bureau and/or District and/or Intersection Safety Plan; 3) Crashes involving non-motorized vulnerable users including bicyclists and/or pedestrians. 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 is currently updating its Roadway Departure Safety Performance Functions (SPFs), Levels of Service of Safety (LOSS), and diagnostic norms. Once updated in 2020, MDT will replace the current tools for continued 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 2019 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

Montana's State Fiscal Year 2019 is the reporting period (July 1, 2018 through June 30, 2019)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$13,640,152	$13,640,152	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$1,395,182	$1,395,182	100%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$3,549,597	$3,549,597	100%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$9,319,635	$9,319,635	100%
State and Local Funds	$0	$0	0%
Totals	$27,904,566	$27,904,566	100%

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

$3,696,122

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

$3,696,122

Currently a few large scale local road projects are delayed due to right of way challenges. These are not reflected in the obligated funds.

In addition, MDT is working towards identifying more safety improvements on local and tribal roads, in particular low volume roads and high severity crash types. Due to minimal crash data available on low volume roads, MDT has started a research project in conjunction with Montana's Local Technical Assistant Program (LTAP) Office and the Western Transportation Institute at Montana State University. The research project titled " Developing a Methodology for Implementing Safety Improvements on Low-Volume Roads in Montana" is in the early phases and completion is anticipated in late 2020.

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

$1,489,995

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

$1,489,995

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 2020 HSIP Program (July 1, 2019 - June 30, 2020)

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

0%

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

0%

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

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.

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 recently completed its Median Cable Barrier Study. This study included developing MDT-specific median cable rail guidelines and warrants for installation. This study has been utilized in developing HSIP projects in the 2018 HSIP List and will continue to be used in future lists.

MDT recently completed its Intersection Safety Study. Phase I of this study included development of Safety Performance Functions (SPF's), Level of Service of Safety (LOSS), and diagnostic norms for urban/rural - 3 or 4 legged intersections. Phase II included network screening of Montana's intersections for potential for crash reduction. MDT is now utilizing the SPF's and results of Phase II to identify locations for further analysis in the HSIP Program.

MDT is currently finalizing a 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 January 2020.

General Listing of Projects

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
HSIP PROGRAM JOC-BILLINGS	Roadway signs and traffic control	Roadway signs and traffic control - other	1	District-wide	$29543	$32826	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
HSIP PROGRAM JOC-BUTTE	Roadway signs and traffic control	Roadway signs and traffic control - other	1	District-wide	$186108.31	$206787	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
HSIP PROGRAM JOC-MISSOULA	Roadway signs and traffic control	Roadway signs and traffic control - other	1	District-wide	$85190	$94655	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SAFETY MANAGEMENT PROGRAM 20	Non-infrastructure	Transportation safety planning			$1489995	$1655550	HSIP (23 U.S.C. 148)	N/A	N/A	0					
SF 119-SLOPE FLATTEN S-206	Shoulder treatments	Shoulder grading	9.35	Miles	$1080000	$1200000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,854	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 119-SLOPE FLATTEN S-206	Shoulder treatments	Shoulder grading	9.35	Miles	$689296.5	$765885	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,854	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															problem identification.
SF139-6TH ST/NW BYPASS SFTY	Intersection geometry	Auxiliary lanes - modify left-turn lane offset	1	Intersections	$50000	$50000	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	13,256	35	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 139-GREGSON BRDG REMOVAL	Roadway	Roadway - other	2	Bridges	$3149594.1	$10498647	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	12,555	80	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-149 FORSYTH MEDIAN BARRIER	Roadside	Barrier - cable	1.6	Miles	$416342	$832684	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	4,711	80	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 149-BAXTER/LOVE SFTY IMPR	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$2877429	$2877429	Penalty Funds (23 U.S.C. 164)	Rural	Minor Collector	2,926	45	County Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF149-YORK RD ROUNDABOUT	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1395182	$1395182	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	2,442	60	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF149-YORK RD ROUNDABOUT	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1163293	$1163293	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,442	60	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															problem identification.
SF 159 BADGER CREEK S FENCING	Roadside	Fencing	7	Miles	$438717	$438717	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	963	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 HAVRE S-234 SLP FLTN CRV	Shoulder treatments	Widen shoulder - paved or other	2.2	Miles	$49500	$55000	HSIP (23 U.S.C. 148)	Rural	Major Collector	667	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 159 RESERVE ST BARRIER RAIL	Roadside	Barrier - concrete	0.5	Miles	$368259	$368259	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	38,864	45	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BZMN SFTY IMPRV	Roadway signs and traffic control	Curve-related warning signs and flashers	5	Locations	$29813	$29813	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 BZMN SFTY IMPRV	Roadway signs and traffic control	Curve-related warning signs and flashers	5	Locations	$110000	$110000	Penalty Funds (23 U.S.C. 164)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 GT FALLS SFTY IMPRV	Advanced technology and ITS	Advanced technology and ITS - other	5	Locations	$44489.36	$44489.36	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															departure crashes through data-driven problem identification.
SF 169 GT FALLS SFTY IMPRV	Advanced technology and ITS	Advanced technology and ITS - other	5	Locations	$211647.64	$211647.64	Penalty Funds (23 U.S.C. 164)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 169 N11 MURPHY INTX	Intersection traffic control	Intersection flashers - add advance intersection warning sign-mounted	1	Intersections	$203153	$203153	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,402	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 169 OVR HGHT DETECT SYS	Advanced technology and ITS	Over height vehicle detection	1	Locations	$65000	$65000	Penalty Funds (23 U.S.C. 164)	Rural	Minor Arterial	1,742	25	State Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF-169 VALLEY SPUR INTX IMPRV	Intersection traffic control	Intersection traffic control - other	1	Intersections	$36000	$40000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,645	50	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF-169 VALLEY SPUR INTX IMPRV	Intersection traffic control	Intersection traffic control - other	1	Intersections	$18000	$20000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,645	50	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SF 179 ASHLAND RABBITTOWN PATH	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	1.2	Miles	$316473	$351637	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,966	70	State Highway Agency	Request	Pedestrians	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 CURVE S OF CHURCHILL	Alignment	Horizontal and vertical alignment	1	Curves	$146734	$163038	HSIP (23 U.S.C. 148)	Rural	Major Collector	508	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 CURVE S OF DILLON	Alignment	Horizontal and vertical alignment	1	Curves	$115843	$128714	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,502	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 CURVE WIDEN N-24	Shoulder treatments	Widen shoulder - paved or other	0.6	Miles	$79867	$88741	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,737	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 CURVES S OF ROSCOE	Alignment	Horizontal curve realignment	1	Locations	$273808	$304231	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	710	65	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 D1 SFTY SIGNS GUARDRAIL	Roadside	Barrier - other	3	Locations	$92301	$184602	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															driven problem identification.
SF 179 D1 SIGNS RUMBLE STRIPS	Roadway	Rumble strips - unspecified or other	4	Locations	$30810	$34233	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 D2 SAFETY IMPROVEMENTS	Roadway signs and traffic control	Roadway signs (including post) - new or updated	8	Locations	$9072	$10080	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		County Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 D2 SAFETY SIGNING	Roadway signs and traffic control	Roadway signs (including post) - new or updated	3	Locations	$8104	$18008	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 D5 SIGNING DELINEATION	Roadway delineation	Roadway delineation - other	3	Locations	$38260	$38260	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 DURSTON RD CURVES	Alignment	Horizontal curve realignment	2	Curves	$208184	$231315	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,031	45	County Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SF 179 EUCLID AVE PED IMPRV	Pedestrians and bicyclists	Pedestrian warning signs - add/modify flashers	1	Intersections	$9581	$9581	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	17,013	45	State Highway Agency	Request	Pedestrians	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 GALLATIN CANYON VMS	Advanced technology and ITS	Dynamic message signs	2	Signs	$83030	$166060	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,126	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 HELENA INTX SAFETY	Advanced technology and ITS	Advanced technology and ITS - other	3	Intersections	$34614	$34614	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 HENDERSON CURVE SFTY	Roadway signs and traffic control	Curve-related warning signs and flashers	1	Locations	$17350	$17350	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	6,894	75	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 I-15 CURVE SFTY DILLON	Roadside	Barrier - other	1	Locations	$30860	$30860	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	3,651	80	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 INTX IMPROVEMENTS D4	Roadway	Roadway - other	2	Locations	$21234	$21234	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															problem identification.
SF 179 INTX IMPRRV CR 350 P-201	Intersection traffic control	Intersection traffic control - other	1	Intersections	$17256	$17256	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	369	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 MARION SFTY IMPRV	Shoulder treatments	Widen shoulder - paved or other	1	Miles	$232439	$258266	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,145	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 N-10 RUMBLE STRIPS	Roadway	Rumble strips - edge or shoulder	87	Miles	$37294	$111882	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,504	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 N-10 SFTY IMPROVEMENTS	Lighting	Intersection lighting	1	Intersections	$26112	$58026	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,681	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 N-57 CURVE WIDENING	Shoulder treatments	Widen shoulder - paved or other	1	Curves	$50349	$55943	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,186	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 PARK DR 1ST AVE N SFTY	Intersection traffic control	Intersection traffic control - other	1	Intersections	$16478	$32956	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	2,279	25	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															driven problem identification.
SF 179 PIPE CREEK RD CURVES	Shoulder treatments	Widen shoulder - paved or other	0.5	Miles	$117505	$130561	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,027	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 S OF LIBBY CURVE SFTY	Shoulder treatments	Widen shoulder - paved or other	1	Curves	$73127	$81252	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,332	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 SFTY IMPRV E OF HUNTLEY	Shoulder treatments	Widen shoulder - paved or other	3.25	Miles	$459407	$510452	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,800	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 SHLD WIDEN BELKNAP	Shoulder treatments	Widen shoulder - paved or other	7	Miles	$727768	$808631	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	1,605	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF 179 SHLD WIDEN S OF CNTRVLE	Shoulder treatments	Widen shoulder - paved or other	1.3	Miles	$283945	$315494	HSIP (23 U.S.C. 148)	Rural	Major Collector	364	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SF 179 SIGNAL KAGY SOURDOUGH	Intersection traffic control	Intersection traffic control - other	1	Intersections	$63869	$63869	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,327	35	City or Municipal Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 TARGHEE TURN LANES	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1	Locations	$136481	$151646	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,985	70	State Highway Agency	Request	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 179 TURN LANE W OF HUNTLEY	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1	Locations	$170672	$189636	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,207	60	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF 189 AMSTERDAM RD INTX IMPRV	Intersection traffic control	Intersection traffic control - other	1	Intersections	$46815.3	$52017	HSIP (23 U.S.C. 148)	Urban	Major Collector	1,759	55	County Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification.
SF189 D1 CLRS KALISPELL AREA	Roadway	Rumble strips - center	1	District-wide	$93608	$93608	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.
SF189 D1 CLRS MISSOULA AREA	Roadway	Rumble strips - center	1	District-wide	$93608	$93608	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

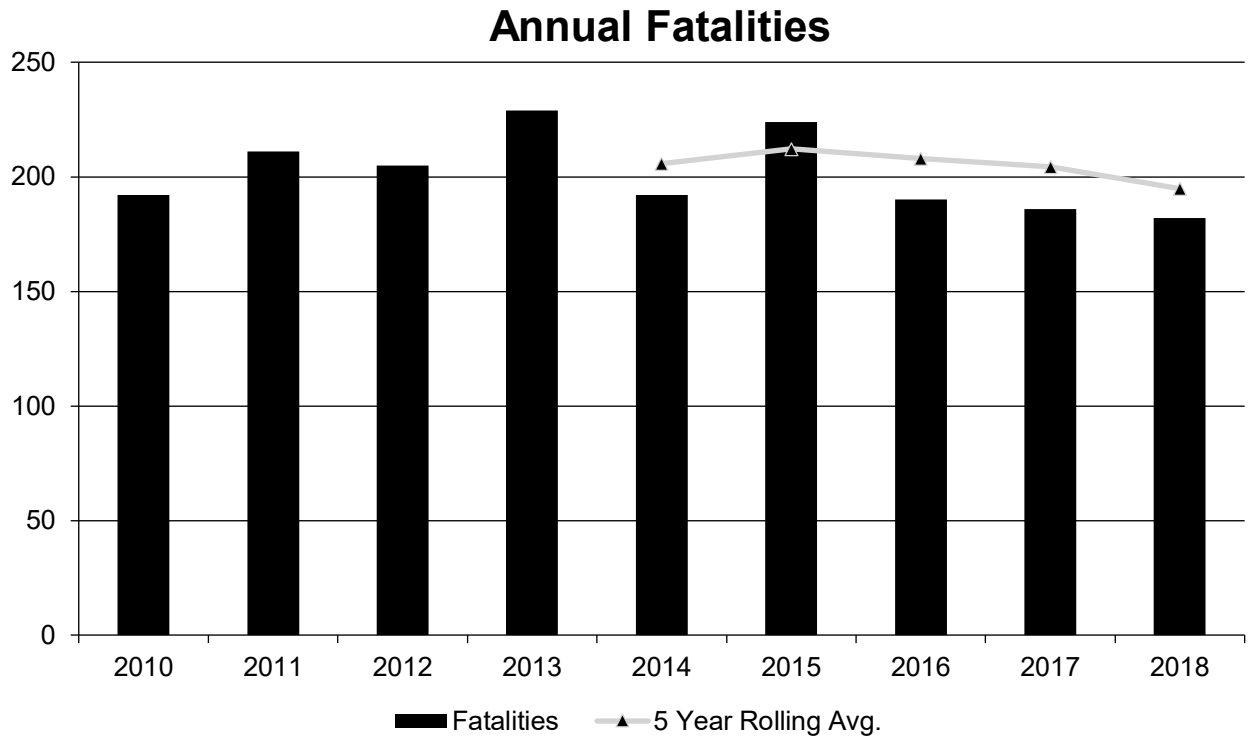
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SF189 WIBAUX RR XING RELOCATE	Alignment	Horizontal and vertical alignment	1	Locations	$235520	$235520	Penalty Funds (23 U.S.C. 164)	Rural	Multiple/Varies	0		County Highway Agency	Request	Roadway Departure	Reduce and mitigate roadway departure crashes through data-driven problem identification.

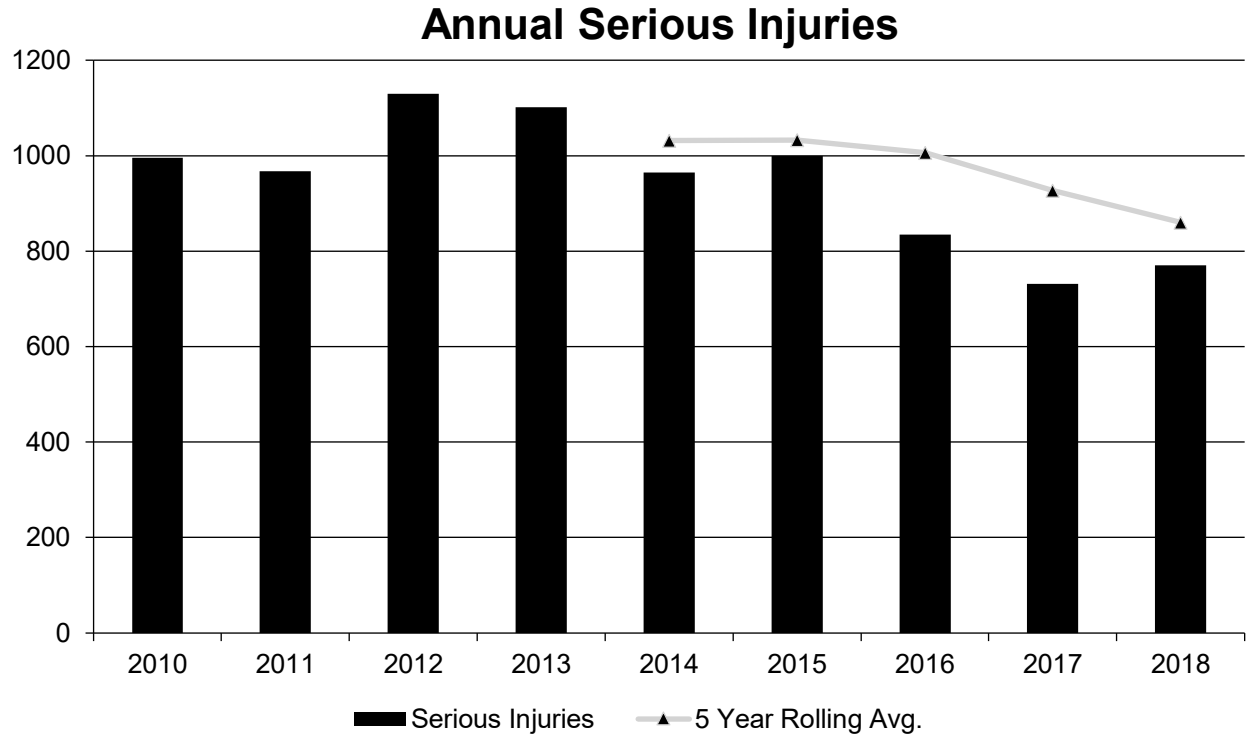
Safety Performance

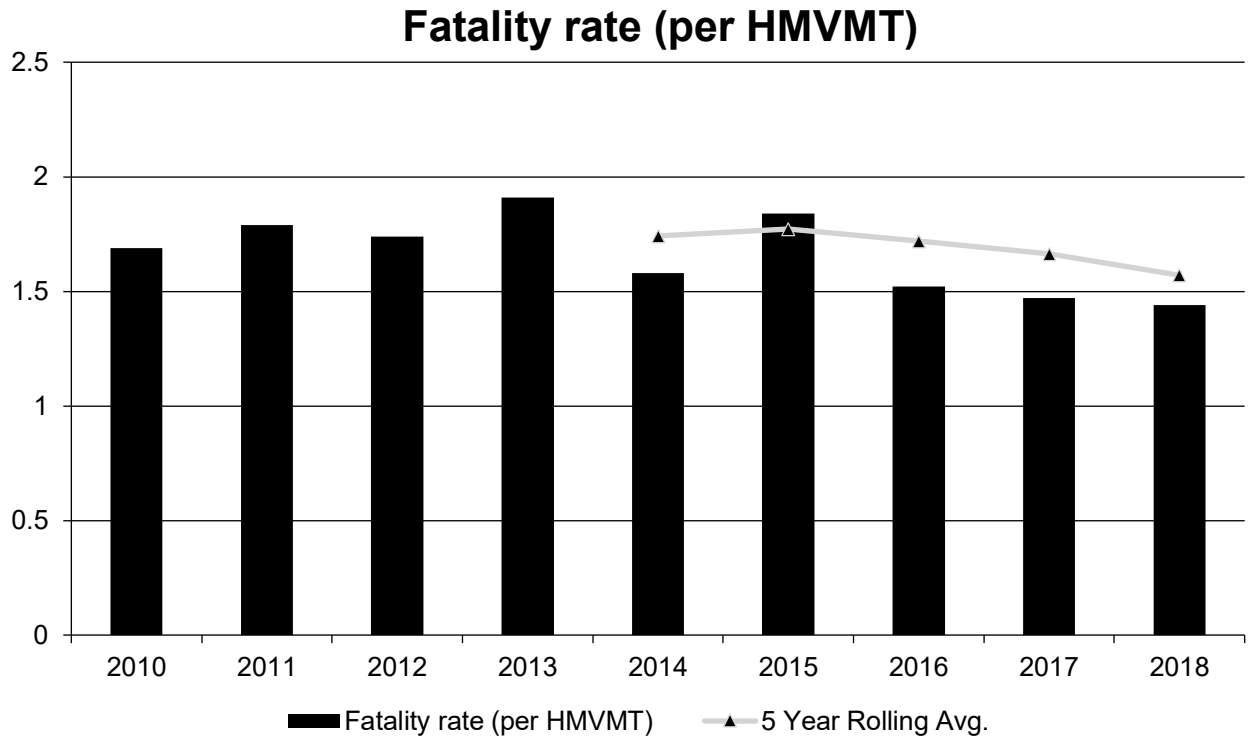
General Highway Safety Trends

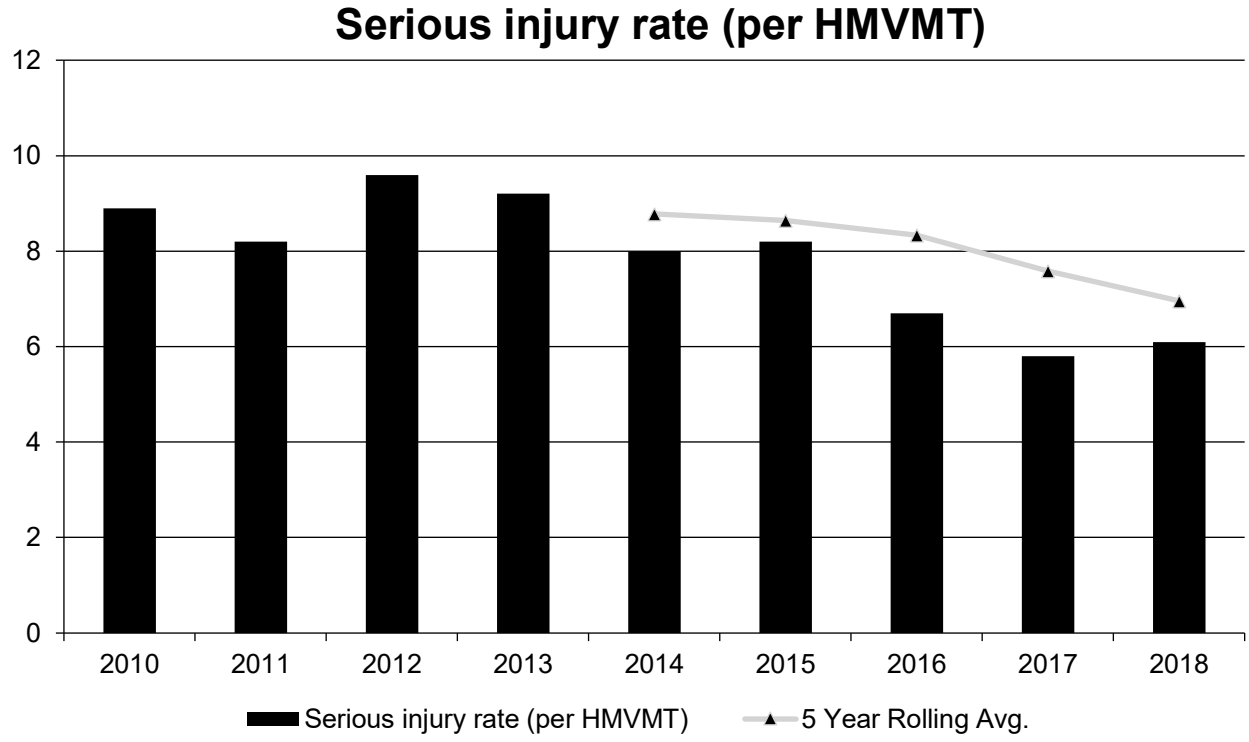
Present data showing the general highway safety trends in the State for the past five years.

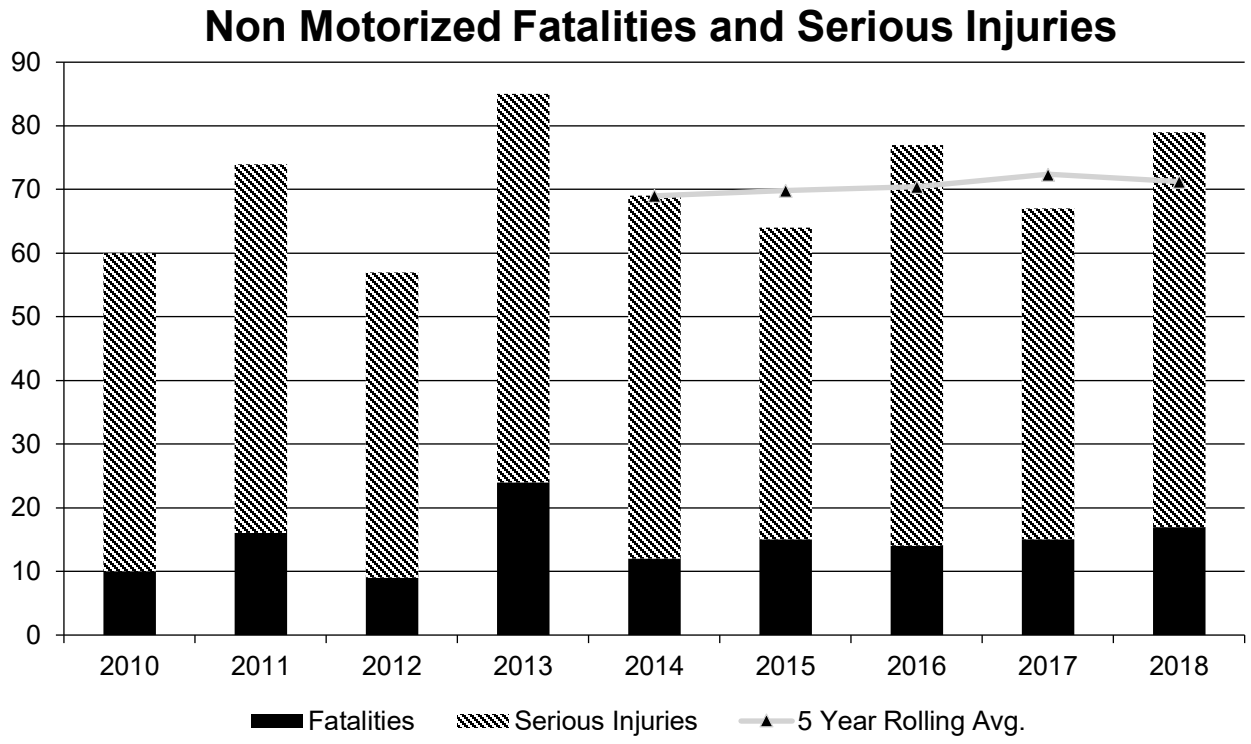
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	192	211	205	229	192	224	190	186	182
Serious Injuries	995	967	1,129	1,102	965	1,000	835	731	770
Fatality rate (per HMVMT)	1.690	1.790	1.740	1.910	1.580	1.840	1.520	1.471	1.439
Serious injury rate (per HMVMT)	8.900	8.200	9.600	9.200	8.000	8.200	6.700	5.800	6.089
Number non-motorized fatalities	10	16	9	24	12	15	14	15	17
Number of non-motorized serious injuries	50	58	48	61	57	49	63	52	62


Annual Fatalities
250
200
150
100
50
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
1200
1000
800
600
400
200
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2.5
2
1.5
1
0.5
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
12
10
8
6
4
2
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

FARS

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

Year 2018

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	26.75	78.6	25.83	3.08
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0	0	0	0
Rural Principal Arterial (RPA) - Other	43.5	126.2	36.98	5.05
Rural Minor Arterial	24.25	80.6	22.76	7.34
Rural Minor Collector	12.5	37.8	12.62	7.22
Rural Major Collector	28	73.6	22.47	8.15
Rural Local Road or Street	27	101	28.25	7.22

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)**
Urban Principal Arterial (UPA) - Interstate	7.75	24.4	6.99	3.94
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0	0	0	0
Urban Principal Arterial (UPA) - Other	9.5	69.8	20.01	5.58
Urban Minor Arterial	5.5	29.8	10.08	4.64
Urban Minor Collector	0	2.8	0.6	9.22
Urban Major Collector	3.25	22.6	7.01	5.33
Urban Local Road or Street	7.5	58.4	12.76	5.38

Year 2018

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	138.4	553	1.56	6.25
County Highway Agency	22.4	112	1.53	7.73
Town or Township Highway Agency				
City or Municipal Highway Agency	14.8	137	0.73	6.89
State Park, Forest, or Reservation Agency	0.33	3.33	3.57	32.74
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	13.2	23.8	7.37	13.65
Bureau of Indian Affairs	1.25	3.25	10.45	22.27
US Forest Service	4.8	29.8	1.39	9.32
Other Federal Agency				1.45

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:182.2

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

The 2020 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:860.4

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

The 2020 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:1.399

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

The 2020 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:6.608

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

The 2020 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:74.2

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

The 2020 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.

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 2019 to establish the 2020 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

Describe progress toward meeting the State's 2018 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

MDT has met or made significant progress for our safety targets in 2018. MDT was successful in meeting 3 of the 5 Montana 2018 Safety Performance Targets and were better than the baseline for all 5 target areas.

Although the fatalities and fatality rate were not met, fatal crash numbers in 2018 have continued on a downward trend.

Applicability of Special Rules

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

For the 2018 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	24	16	34	24	31	26	20
Number of Older Driver and Pedestrian Serious Injuries	72	71	82	91	88	86	86

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Other-Observational before/after studies

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 few 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. On these types of roads, 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?

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

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) and shoulder widening/slope flattening on secondary roadways which have limited funding sources.

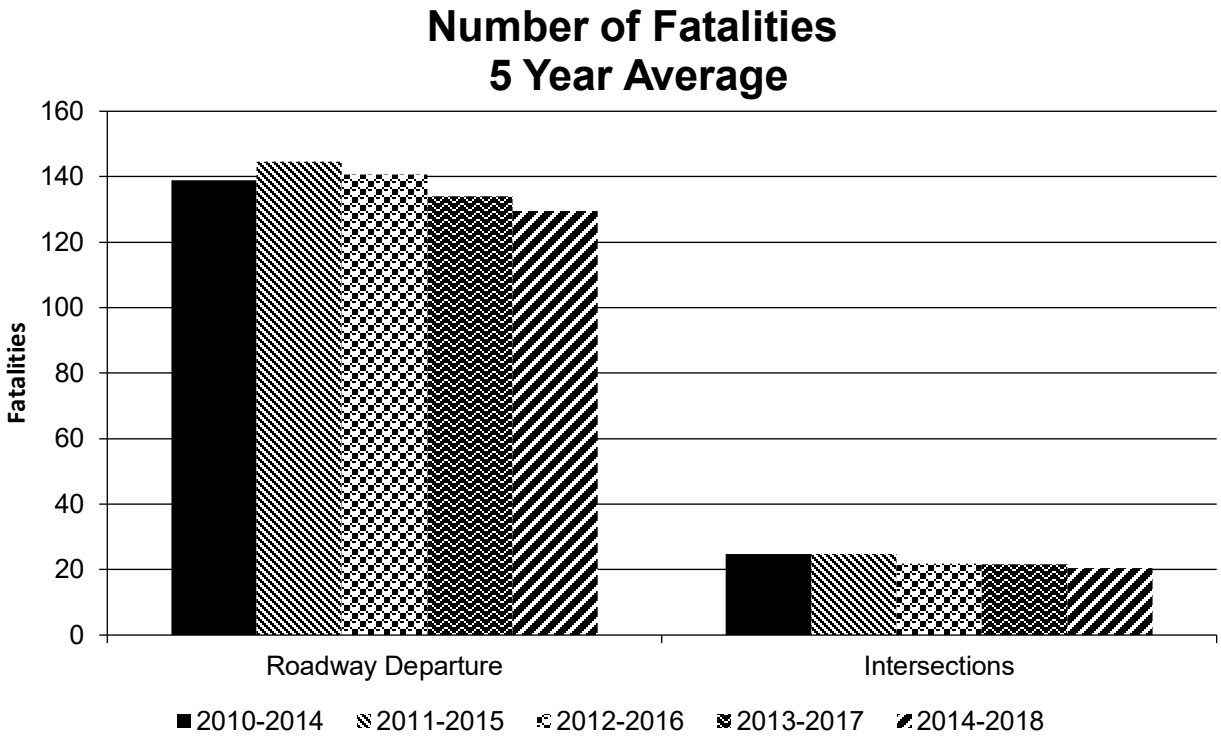
The HSIP Program's success has also increased the awareness of safety within the agency as a whole. This has translated into more collaboration between bureaus as other projects are designed and implemented benefiting both the safety program and ultimately the traveling public.

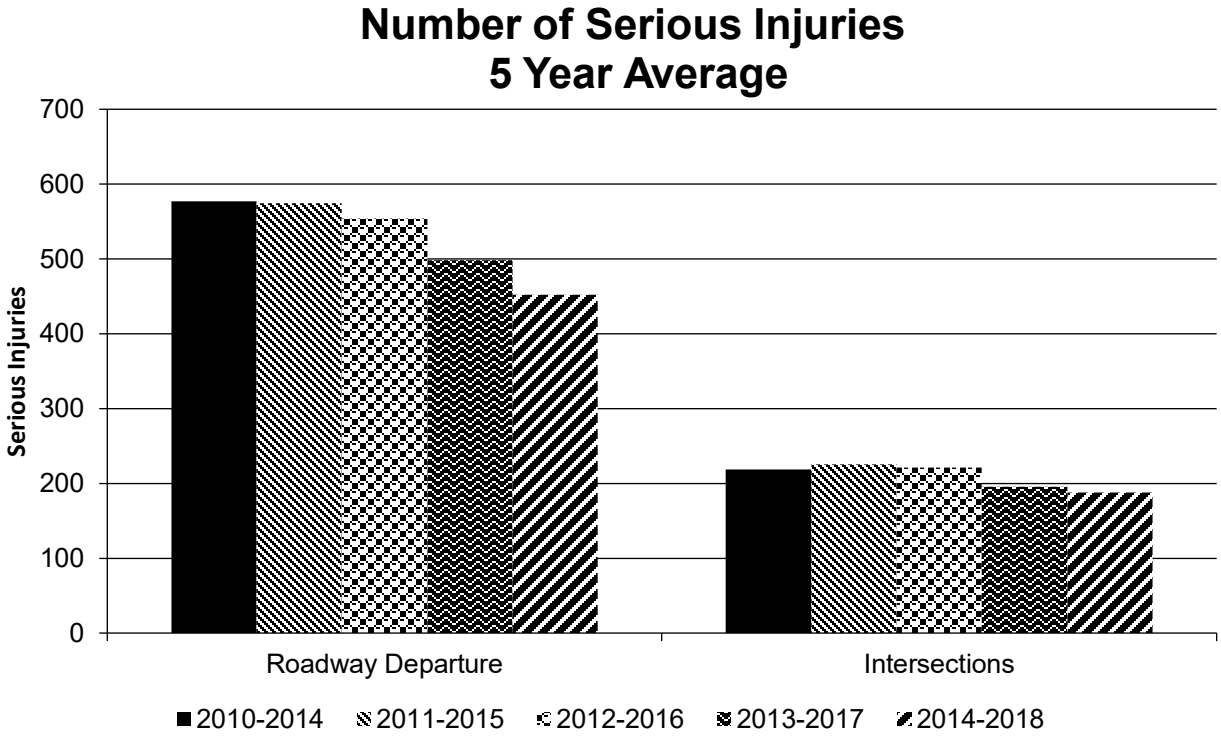
Effectiveness of Groupings or Similar Types of Improvements

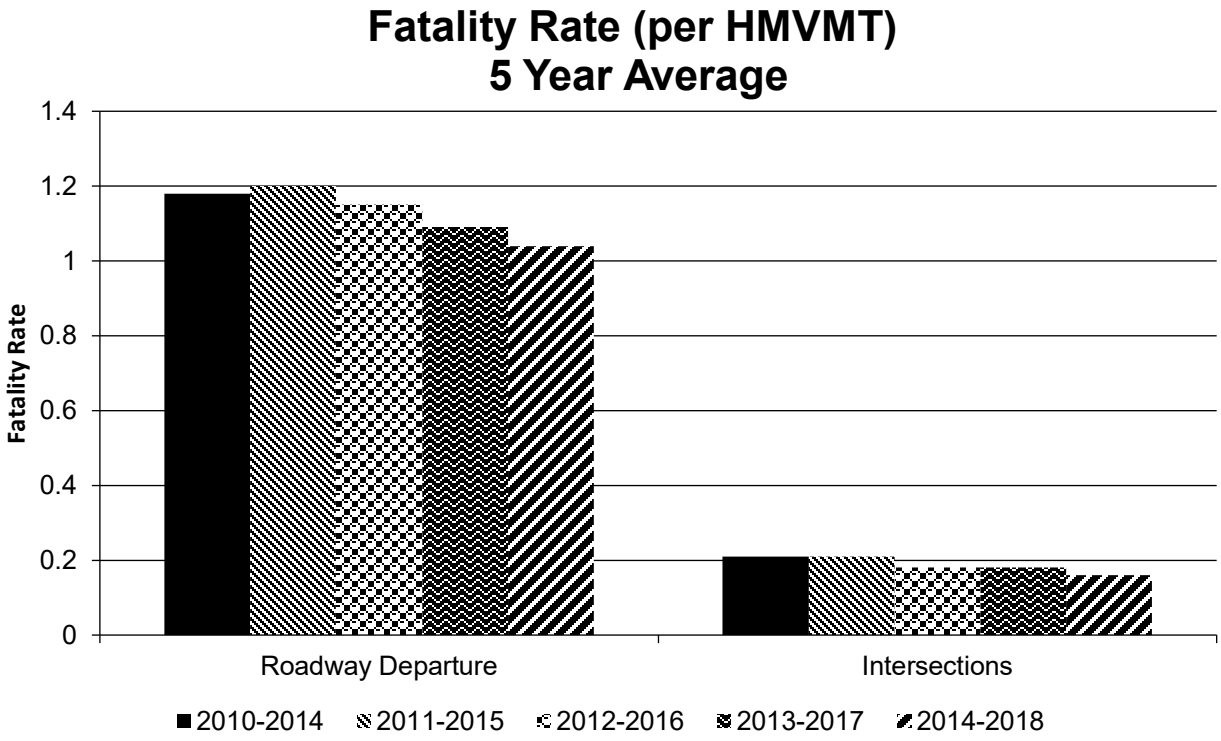
Present and describe trends in SHSP emphasis area performance measures.

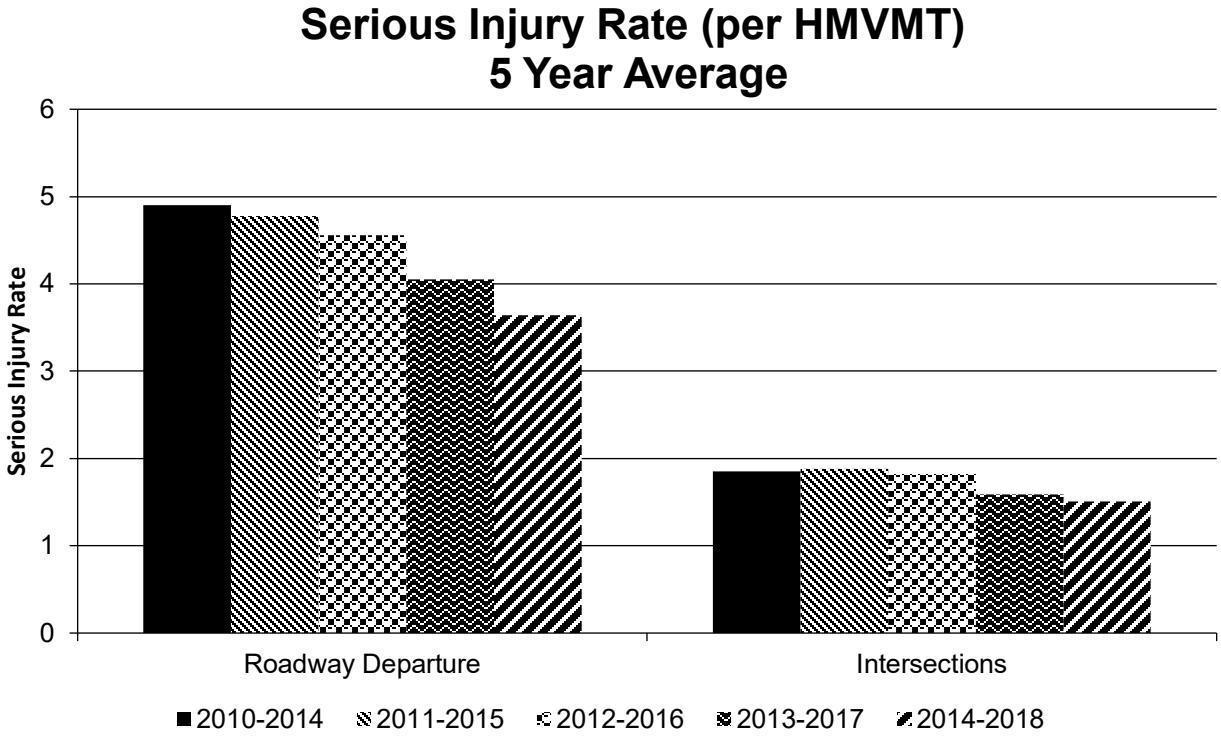
Year 2018

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		129.6	452.2	1.04	3.64
Intersections		20.4	188.2	0.16	1.51


Number of Fatalities
5 Year Average
Fatalities
160
140
120
100
80
60
40
20
0
Roadway Departure
Intersections
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


Number of Serious Injuries
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
Roadway Departure
Intersections
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018





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

No

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	Varies	Roadway	Roadway - other	17.00	11.00			3.00	1.00	13.00	6.00	33.00	18.00	11.78
Intersection Improvements	Varies	Intersection geometry	Intersection geometry - other	364.00	318.00	2.00	2.00	18.00	6.00	147.00	111.00	531.00	437.00	10.2
Signing	Varies	Roadway signs and traffic control	Roadway signs and traffic control - other	16.00	7.00	2.00	1.00	2.00	1.00	9.00	3.00	29.00	12.00	78.71
Guardrail	Varies	Roadside	Barrier - other	36.00	26.00	3.00		3.00	1.00	8.00	6.00	50.00	33.00	103.39

MDT has a process to evaluate safety projects. At this time, the 2019 evaluation has not been completed and therefore it not referenced or included in this report. MDT's 2018 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.

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

MDT is currently in the early stages of updating its SHSP which is known in Montana as the Comprehensive Highway Safety Plan. It is anticipated that it will be completed mid-2020.

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

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
ROADWAY SEGMENT	Segment Identifier (12)	100	100					100	100	100	100
	Route Number (8)	100	100								
	Route/Street Name (9)	100	100								
	Federal Aid/Route Type (21)	100	100								
	Rural/Urban Designation (20)	100	100					100	100		
	Surface Type (23)	100	100					100	100		
	Begin Point Segment Descriptor (10)	100	100					100	100	100	100
	End Point Segment Descriptor (11)	100	100					100	100	100	100
	Segment Length (13)	100	100								
	Direction of Inventory (18)	100	100								
	Functional Class (19)	100	100					100	100	100	100
	Median Type (54)	100	100								
	Access Control (22)	100	100								

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	One/Two Way Operations (91)	100	100								
	Number of Through Lanes (31)	100	100					100	100		
	Average Annual Daily Traffic (79)	100	100					100	100		
	AADT Year (80)	100	100								
	Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120)			100	100						
	Location Identifier for Road 1 Crossing Point (122)			100	100						
	Location Identifier for Road 2 Crossing Point (123)			100	100						
	Intersection/Junction Geometry (126)			100	100						
	Intersection/Junction Traffic Control (131)			100	100						
	AADT for Each Intersecting Road (79)			100	100						
	AADT Year (80)			100	100						
	Unique Approach Identifier (139)			100	100						
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					100	100				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
	Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
	Ramp Length (187)					100	100				

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	Roadway Type at Beginning of Ramp Terminal (195)					100	100				
	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**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

*Based on Functional Classification

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 has collected the final data element using in-house roadway images, Google Street View and field observation efforts.

MDT will now QA/QC the collected data, format and load into our MIRE database by 12/31/2020.

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

MDT's HSIP program assessment is currently underway. This assessment will result in the completion of a safety manual in early 2020.

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.