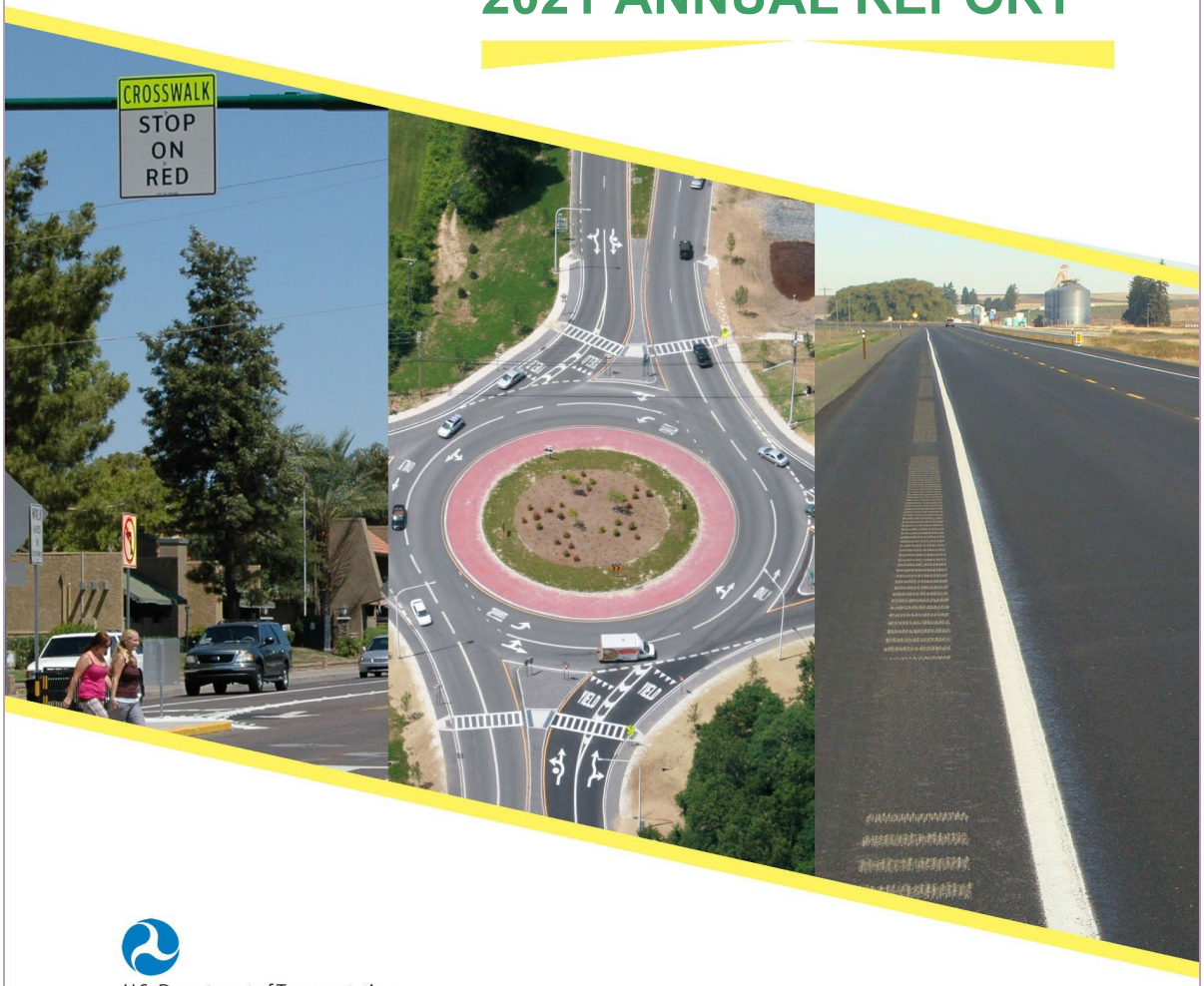
MONTANA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2021 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. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The Montana Department of Transportation continues to successfully implement Highway Safety Improvement Program (HSIP) Funds throughout the State. This past year, funds have been utilized on state, county, city and local roadways. This includes large systemic applications (curve signing, sinusodial centerline rumble strips, median cable barrier) as well as for spot locations. The spot safety improvements have ranged from delineation, striping and signs to turn lanes, signals and roundabouts.

MDT's Safety Information Management System (SIMS) and Montana Specific Safety Performance Functions continues to provide Montana with effective tools to identify, analyze and implement HSIP projects. MDT is currently in the process of upgrading their SIMS software to improve identification of potential sites and tracking of projects.

Montana did see an increase in severe injury crashes in 2020. The COVID pandemic changed the way drivers utilized Montana's highways resulting in more fatal and serious injury crashes. This included higher speeds and riskier driving behaviors. This corresponds with results being seen in other western states for 2020.

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 Safety Engineering Section within the Traffic & Safety Bureau, administers MDT's HSIP Program.

Each year, the Safety Engineering Section uses a data-driven approach to identify locations for potential safety improvements. This includes spot locations and also longer highway segments or entire corridors for systemic safety improvements. 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 Montana's HSIP available funding, are nominated as HSIP Funded Safety Projects.

Where is HSIP staff located within the State DOT?

Engineering

The HSIP Program and associated Staff are located in the Traffic & Safety Bureau within MDT's Engineering Division.

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process

The Safety Engineering Section administers MDT's HSIP Program. MDT's program is a centrally administered program within MDT's Headquarters Office.

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. MDT's database and program allows MDT staff the ability 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 . These governments may also work through MDT's District Offices to request a location be reviewed by MDT's Safety Program.

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 local and Tribal roads. These tools are anticipated to be usable in late 2021.

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-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 was updated 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 a few local agencies. This web based system allows local enforcement agencies to input crash information via the internet, if they choose to participate. Law enforcement agencies are now working with other vendors to collect their local crash data. MDT and MHP are working with these agencies to develop ways for this crash data to be imported into MHP's crash database and become usable by MDT for it's HSIP Program. Approximately eight departments report about 80% of all local crashes.

In 2014, MDT implemented an upgrade to the safety database and analysis tools. This current system, referred to as the Safety Information Management System (SIMS) 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 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 current system also allows MDT to utilize MHP citation data. MDT is currently in the process of updating this system and is under contract with AASHTOware. This new crash database and analysis tool is anticipated to be in full production by late 2021.

The Traffic and Safety Bureau is actively involved in the update and implementation of the CHSP. Traffic and Safety continues to take 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
MDT's Safety Program has a safety manual used by Safety Staff. This is an internal document.

Select the programs that are administered under the HSIP.

- Intersection
- Roadway Departure
- Other-Hot Spot

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 • Fatal and serious injury crashes only	• Traffic • 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 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).

Relative Weight in Scoring

Ranking based on B/C:100
Total Relative Weight:100

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).

Relative Weight in Scoring

Ranking based on B/C:100
Total Relative Weight:100

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?

- Level of service of safety (LOSS)
- 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 2020 HSIP, many 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?

36

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

- Cable Median Barriers
- Horizontal curve signs
- Install/Improve Signing
- Rumble Strips
- Wrong way driving treatments

In State Fiscal Year (SFY) 2021, MDT obligated two (2) large centerline rumble strip projects in the Missoula District. These rumble strip projects accounted for over 35% of HSIP funds expended for SFY 21.

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 uses available engineering resources to determine the most appropriate safety countermeasure for a given location. Any new FHWA guidance or academic research is utilized to help in this process.

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 both its Roadway Departure Study and Intersection Safety 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. MDT recently updated its Roadway Departure Montana Specific SPF's utilizing the same methodology.

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

Criteria for the HSIP Program's annual list is primarily focused on roadway departure and/or intersection crashes which is in line with Montana's Comprehensive Highway Safety Plan.

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 identify 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 several state-wide systemic projects including horizontal curve signing, interstate wrong-way signing upgrades, centerline rumble strips and interstate median barriers. These projects are being installed on a large district-wide scale. MDT will also be initiating additional large scale systemic projects including developing local road safety plans.

MDT recently updated its Roadway Departure Safety Performance Functions (SPFs), Levels of Service of Safety (LOSS), and diagnostic norms. MDT is using the updated tools for continued evaluation of the HSIP as well as analysis for other agency projects.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$31,184,538	$31,184,538	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$9,157,340	$9,157,340	100%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$23,611,603	$23,611,603	100%
State and Local Funds	$0	$0	0%
Totals	$63,953,481	$63,953,481	100%

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

$2,622,832

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

$2,622,832

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

$1,655,550

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

$1,655,550

The yearly project that funds MDT's HSIP Planning Process is HSIP STWD (835). The funds identified above are for State Fiscal Year (FY) July 1, 2021 to June 30, 2022 (FY 2022 HSIP Program)

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. The National Highway Traffic Safety Administration (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 (impairment, 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 is utilizing recently completed studies to identify locations for safety improvements. These studies include the Median Cable Barrier Study, the Intersection Safety Study and the Roadway Departure Study (2020 Update). These studies use data-driven tools, HSM methodologies and Montana specific data to assist MDT in implementing HSIP projects across the state.

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
SAFETY MANAGEMENT PROGRAM (22)	Miscellaneous	Transportation safety planning			$1489995	$1655550	HSIP (23 U.S.C. 148)			0					
HSIP PROGRAM JOC- BILLINGS	Roadway signs and traffic control	Roadway signs and traffic control - other	1	District-wide	$76121.7	$79511	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		Multiple Agencies	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
LITTLE DRY CREEK - EAST	Roadside	Roadside - other	2	Miles	$1500000	$1500000	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	509	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF109-GR NE OF BOZ (PH2)	Roadside	Removal of fixed objects (trees, poles, etc.)	1	structure	$1047875.24	$1164305.82222222	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,386	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 129 - RNDABOUT KING 56TH	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$555000	$555000	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,103	60	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem

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
															identification and the use of best practices
SF 139-DERN SPRING RECONSTRUCT	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$372942	$434659	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,618	60	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF 139-DERN SPRING RECONSTRUCT	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$6665967.05	$6665967.05	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	10,618	60	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF 149 N-8 SHLD WDNG	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1	Miles	$2164646.7	$2405163	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,314	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 159 N OF HARDIN SLP FLTN	Roadside	Slope Flattening	1.1	Miles	$59746.79	$66385.3222222222	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	275	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices

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 159 N OF ST XAVIER CRV RECO	Alignment	Horizontal curve realignment	1	Curves	$168089	$168089	HSIP (23 U.S.C. 148)	Rural	Major Collector	494	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 159 SO WIBAUX CRV IMPRV	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	5	Miles	$173537.1	$192819	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	787	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 169 BLGS AREA SFTY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	9	Locations	$17748.9	$19721	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		Multiple Agencies	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 169 FAIRFIELD CURVE IMPRV	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	3	Curves	$99042.29	$110046.988888889	HSIP (23 U.S.C. 148)	Rural	Major Collector	230	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices

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 169 FRNTG RD WISE LN INTX	Advanced technology and ITS	Intersection Conflict Warning System (ICWS)	1	Intersections	$202517.1	$225019	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	4,184	55	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF 169 I90 W KING AVE LIGHTING	Lighting	Continuous roadway lighting	0.5	Miles	$640053.1	$709629	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	30,074	65	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF-169 LINCOLN APPLEGATE INTX	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$472500	$525000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,801	45	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF 169 S OF GLASGOW SFTY IMPRV	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1	Curves	$1515767.4	$1684186	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	866	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 169 W OF WHITEFISH SFTY	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2	Curves	$379511.1	$421679	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,773	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure

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
															crashes through data driven problem identification and the use of best practices
SF 179 ASHLAND RABBITTOWN PATH	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1.2	Miles	$429142.8	$476825.333333333	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,142	60	State Highway Agency	Spot	Pedestrians	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 D1 SFTY SIGNS GUARDRAIL	Roadside	Barrier- metal	3	Locations	$889557.5	$926692	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 and the use of best practices
SF 179 D1 SIGNS RUMBLE STRIPS	Roadway	Rumble strips – edge or shoulder	4	Locations	$366806.9	$395308	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 and the use of best practices
SF 179 GALLATIN CANYON VMS	Advanced technology and ITS	Dynamic message signs	1	Locations	$18000	$20000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,596	60	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 and the use of best practices
SF 179 GLENDIVE HRZNTL CRV SIG	Roadway signs and traffic control	Roadway signs and traffic control - other	1	District-wide	$24835.02	$24835.02	HSIP (23 U.S.C. 148)	Rural	N/A	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 HENDERSON CURVE SFTY	Advanced technology and ITS	Dynamic message signs	1	Locations	$279452.4	$307233	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	6,415	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 I-15 CURVE SFTY DILLON	Roadside	Barrier- metal	0.5	Miles	$5000	$5000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	3,356	80	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 PIPE CREEK RD CURVES	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2	Curves	$127659.6	$141844	HSIP (23 U.S.C. 148)	Rural	Major Collector	439	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem

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
															identification and the use of best practices
SF 179 S OF LIBBY CURVE SFTY	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1	Curves	$122410.6	$136011.777777778	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,412	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 SIGNAL KAGY SOURDOUGH	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$115016	$115016	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,705	35	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF179 STEPHENS ORANGE SFTY IMP	Roadside	Roadside - other	1	Locations	$113941.8	$126602	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,894	30	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF 179 TARGHEE TURN LANES	Roadway	Roadway widening - add lane(s) along segment	1.2	Miles	$341887	$379874.444444444	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,070	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices

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 93N RUMBLE STRIPS	Roadway	Rumble strips – edge or shoulder	50	Miles	$20875.5	$23195	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,100	70	State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 AIRPORT RD GLENDIVE SFTY	Roadway signs and traffic control	Roadway signs and traffic control - other	2.9	Miles	$46457.1	$51619	HSIP (23 U.S.C. 148)	Multiple/Varies	Local Road or Street	242	45	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 BOZEMAN PASS HFST	Roadway	Pavement surface – high friction surface	4	Bridges	$25706.49	$28562.77	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	14,046	80	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 BOZEMAN PASS HFST	Roadway	Pavement surface – high friction surface	4	Bridges	$19865.23	$19865.23	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Interstate	14,046	80	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices

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 CURVE S OF RAVALLI	Advanced technology and ITS	Advanced technology and ITS - other	2	Curves	$18390	$18390	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,408	60	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 CURVE SW OF CONRAD	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1	Curves	$87750.9	$97501	HSIP (23 U.S.C. 148)	Rural	Major Collector	506	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 D1 CLRS KALISPELL AREA	Roadway	Rumble strips – center	400	Miles	$8827121.9	$9588970	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 and the use of best practices
SF189 D1 CLRS MISSOULA AREA	Roadway	Rumble strips – center	200	Miles	$5062420.3	$5505699.88888889	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices

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 GLOVER RD SAFETY	Roadside	Barrier- metal	1	Locations	$35627	$35627	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	0		County Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 MINESINGER SAFETY	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$26490	$26490	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,826	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF189 NORTH D5 SAFETY IMPRV	Roadway	Rumble strips – other	2	Locations	$17955	$19950	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF189 PROSPECT AVE LIGHTING	Lighting	Continuous roadway lighting	1	Miles	$95301.9	$105891	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,740	35	State Highway Agency	Systemic	Pedestrians	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 PVMT MARKINGS D3	Roadway	Roadway - other	2	Locations	$95337	$105930	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure

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
															crashes through data driven problem identification and the use of best practices
SF189 RUMBLE STRIPS EXIT 298	Roadway	Rumble strips – edge or shoulder	1	Locations	$1073.7	$1193	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	16,519	75	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 S OF MILES CITY SHLD WID	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2.3	Miles	$290768.39	$323075.988888889	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	684	70	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 SAFETY FLASHERS BOZEMAN	Advanced technology and ITS	Advanced technology and ITS - other	2	Locations	$66776.4	$74196	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	29,590	75	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 SAFETY IMPROVEMENTS P-86	Roadside	Barrier- metal	0.5	Miles	$28010.7	$31123	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,386	45	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 and the use of best practices
SF189 SIGNING SAFETY D3	Roadway signs and traffic control	Roadway signs and traffic control - other	3	Locations	$7478.1	$8309	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 and the use of best practices
SF189 SOUTH D5 SAFETY IMPRV	Roadway signs and traffic control	Roadway signs and traffic control - other	3	Locations	$35791.2	$39768	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 and the use of best practices
SF189 TURN LANE 34TH VAUGHN RD	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$67996.8	$75552	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	6,804	45	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF189 TURN LANE ASHLEY LAKE RD	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$203989.49	$226654.988888889	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,090	70	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use

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
															of best practices
SF189 US93 ALT SAFETY IMPRV	Roadside	Barrier – concrete	1	Curves	$93815.1	$104239	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	19,787	55	State Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 WIBAUX RR XING RELOCATE	Alignment	Horizontal and vertical alignment	1	Locations	$40500	$45000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	0	0	County Highway Agency	Spot	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices
SF189 WOLF POINT RODEO RD SFTY	Advanced technology and ITS	Advanced technology and ITS - other	1	Intersections	$32698	$32698	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	293	35	County Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF199 MARYJANE BROADWAY INTX	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$864283.22	$960314.69	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	14,818	55	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices

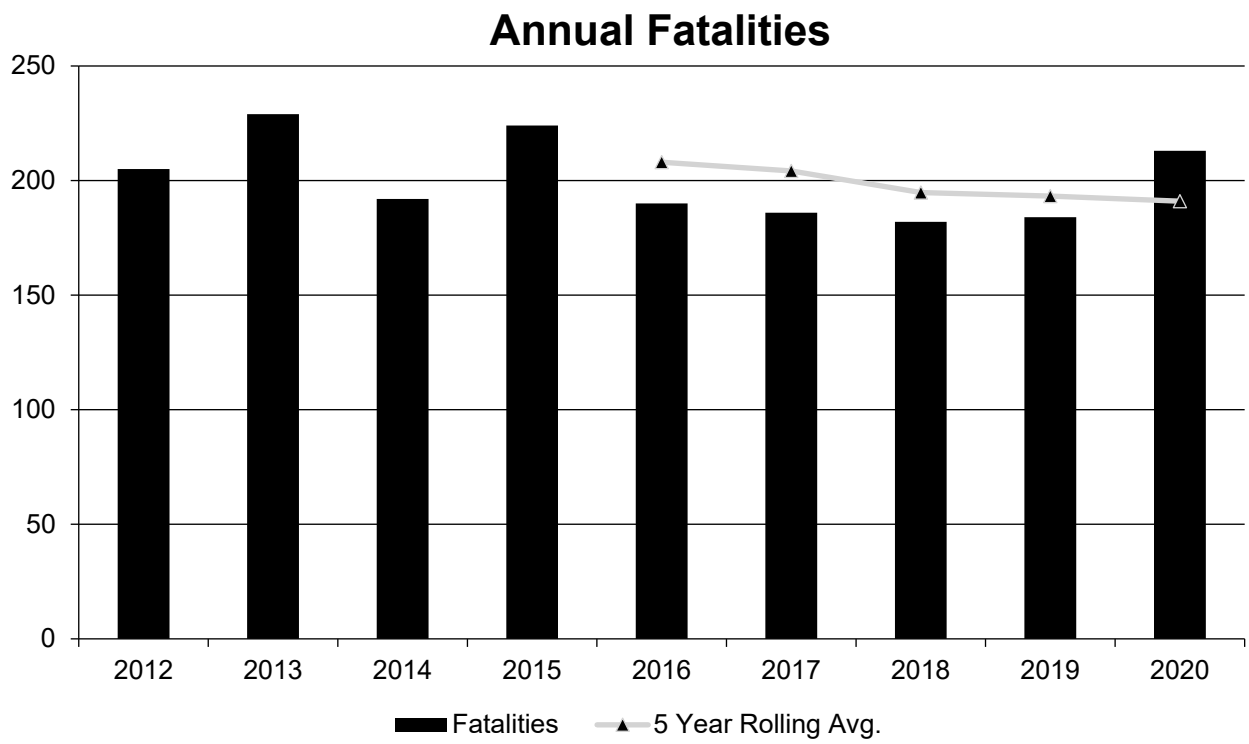
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
SF199 MARYJANE BROADWAY INTX	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$680928.31	$680928.31	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	14,818	55	State Highway Agency	Spot	Intersections	Reduce and mitigate intersection crashes through data-driven problem identification and the use of best practices
SF199 MSLA HT MEDIAN CABLERAIL	Roadside	Barrier – cable	44	Miles	$685890	$762100	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	10,935	80	State Highway Agency	Systemic	Roadway Departure	Reduce and mitigate roadway departure crashes through data driven problem identification and the use of best practices

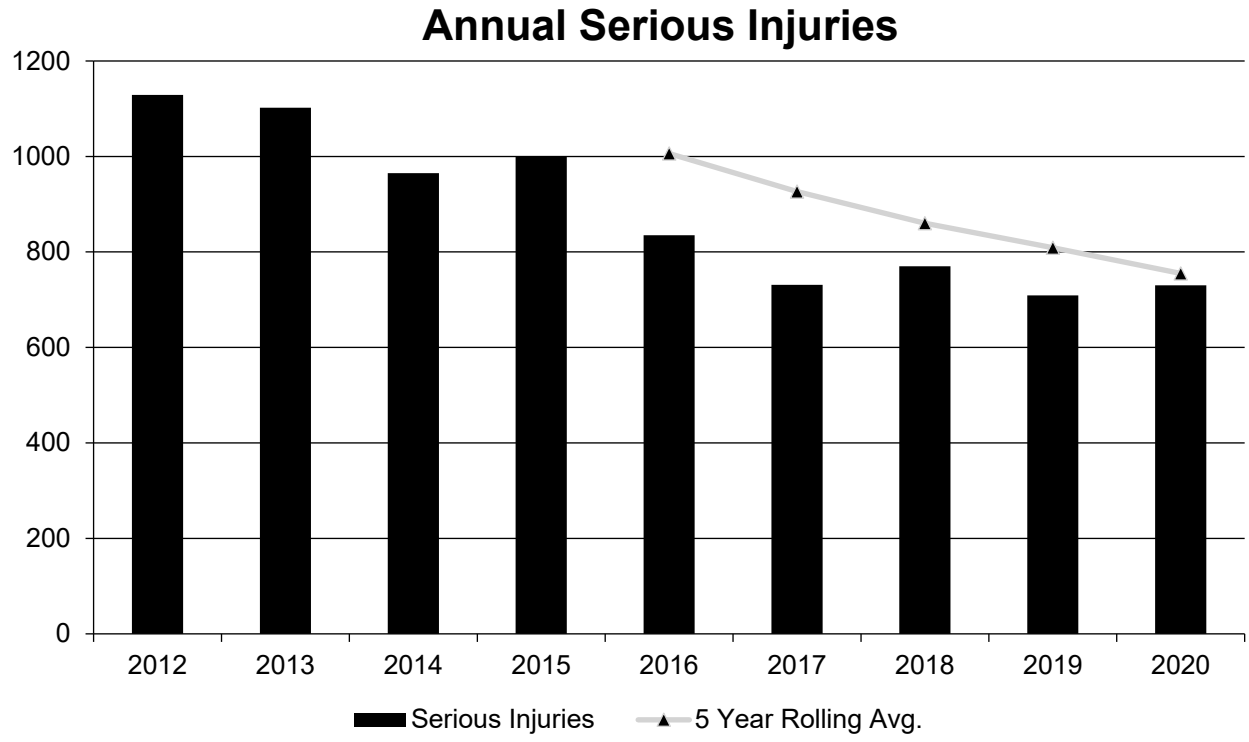
Safety Performance

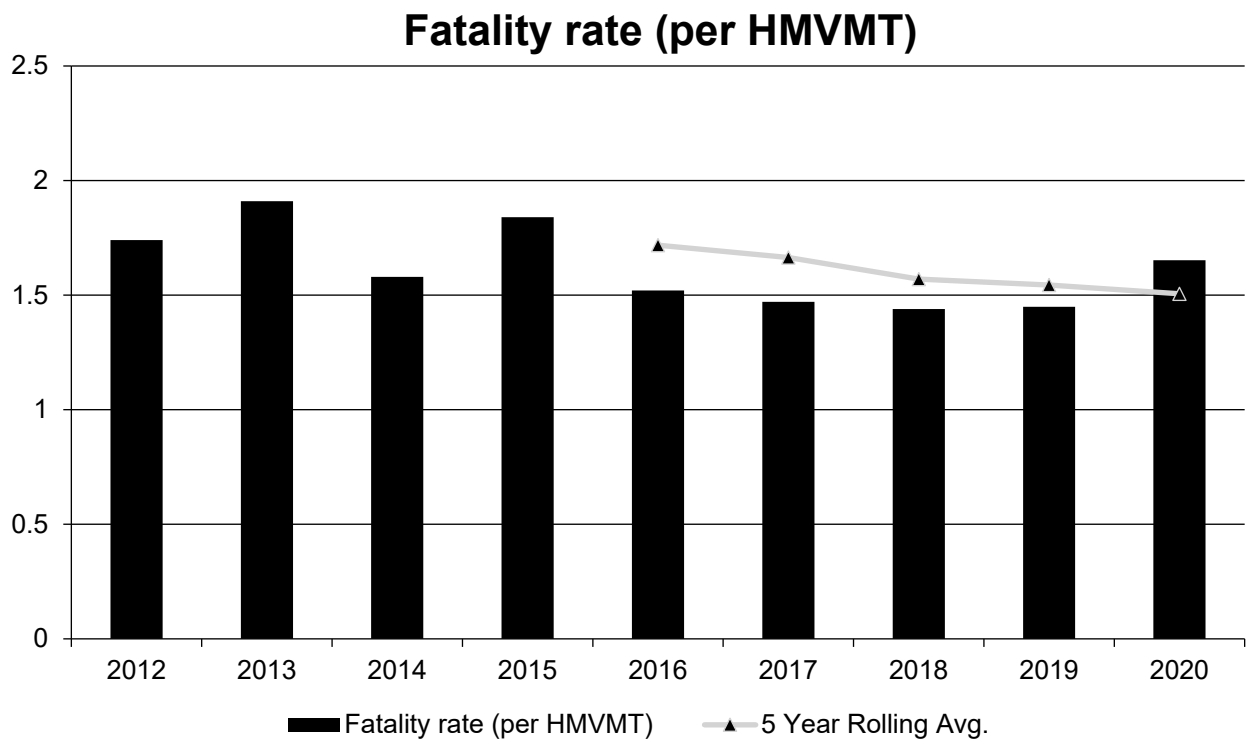
General Highway Safety Trends

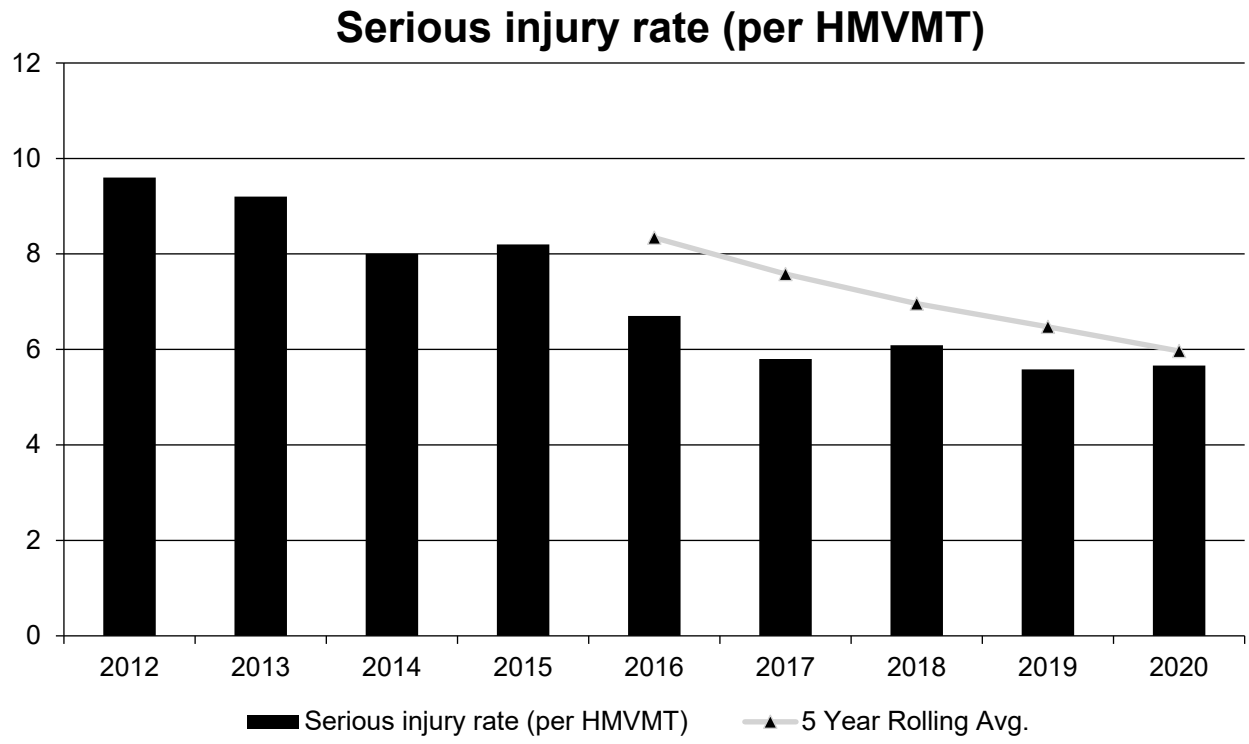
Present data showing the general highway safety trends in the State for the past five years.

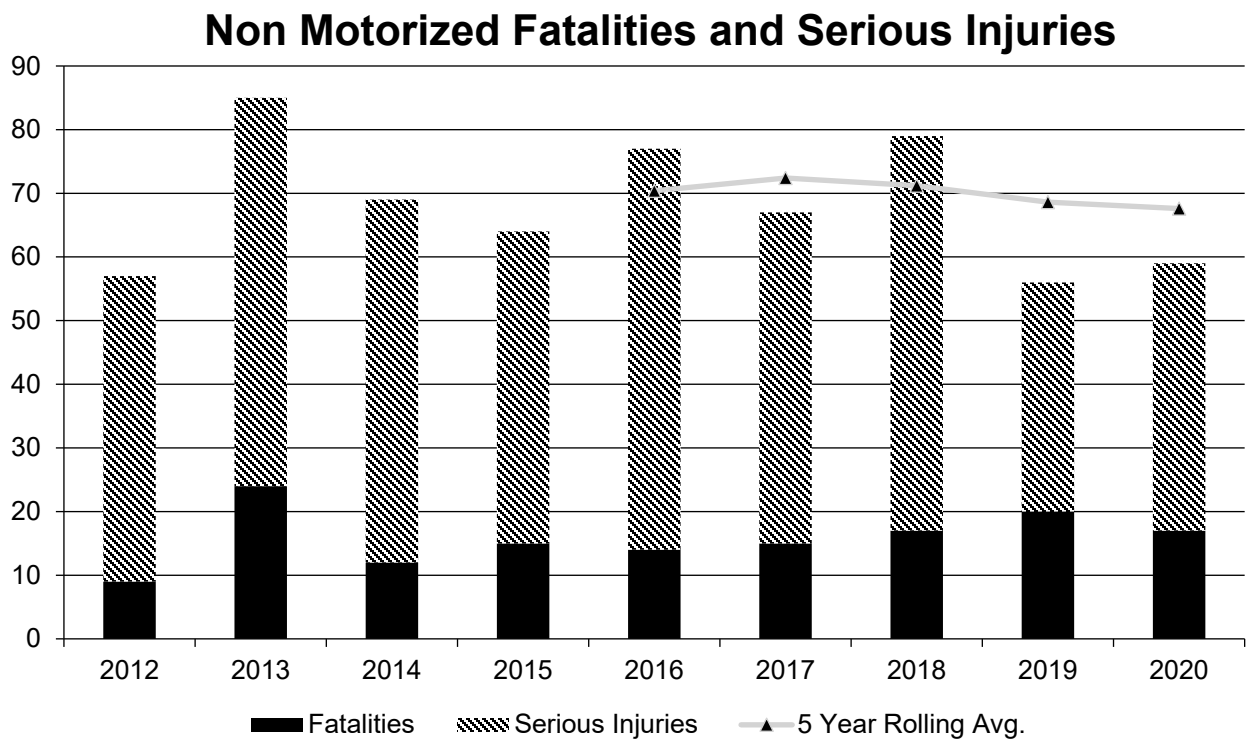
PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	205	229	192	224	190	186	182	184	213
Serious Injuries	1,129	1,102	965	1,000	835	731	770	709	730
Fatality rate (per HMVMT)	1.740	1.910	1.580	1.840	1.520	1.471	1.439	1.449	1.652
Serious injury rate (per HMVMT)	9.600	9.200	8.000	8.200	6.700	5.800	6.089	5.583	5.662
Number non-motorized fatalities	9	24	12	15	14	15	17	20	17
Number of non-motorized serious injuries	48	61	57	49	63	52	62	36	42


Annual Fatalities
250
200
150
100
50
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
1200
1000
800
600
400
200
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
2.5
2
1.5
1
0.5
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
12
10
8
6
4
2
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
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 2020

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	24.75	66.79	1.03	3.07
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	44	114.15	1.77	5.26
Rural Minor Arterial	23.25	69.3	2.12	7.53
Rural Minor Collector	9	32.68	2.06	9.31
Rural Major Collector	24.5	64.6	3.08	9.55

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Local Road or Street	25	90.13	2.32	9.58
Urban Principal Arterial (UPA) - Interstate	9	24.12	1.41	4.24
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other	10	69.05	0.77	6.05
Urban Minor Arterial	5.25	28.89	0.79	4.85
Urban Minor Collector	0.25	1.65	0.69	7.1
Urban Major Collector	3	20.2	0.79	5.94
Urban Local Road or Street	7.5	51.75	0.72	6.98

Year 2020

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	123.12	403.55	18.24	21.44
County Highway Agency	17.97	80.34	3.69	8.54
Town or Township Highway Agency				
City or Municipal Highway Agency	14.97	103.77	4.09	9
State Park, Forest, or Reservation Agency	0.04	3.53	0.02	33.36
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	10.52	20.92	6.72	13.27
Bureau of Indian Affairs	1.37	2.37	13.37	23.37
US Forest Service	4	20.99	1.84	8.09
Other Federal Agency	0.11	0.61	0.11	2.28
National Park Service	0.65	0.15	0.91	0.1

Safety Performance Targets

Safety Performance Targets

Calendar Year 2022 Targets *

Number of Fatalities:199.2

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

The 2020 CHSP update established the target setting methodology for the five federal performance measures for the five-year life of the plan. The *methodology is based on historical trend data and considers potential impacts of COVID-19.* Trend analysis identified ambitious yet achievable targets for each of the performance areas.

Based on this approach and with input from the safety stakeholders, the methodology that will be used to calculate and set annual targets for each performance measure were established. Performance measures are a five-year roiling average expressed as an annual number.

This supports the state's SHSP (known as Montana's Comprehensive Highway Safety Plan (CHSP)) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 952 in 2018 to 476 in 2030.

Performance Measures for fatalities is moderate. The target is for an annual reduction of 3 fatalities,

Number of Serious Injuries:707.8

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

The 2020 CHSP update established the target setting methodology for the five federal performance measures for the five-year life of the plan. The *methodology is based on historical trend data and considers potential impacts of COVID-19.* Trend analysis identified ambitious yet achievable targets for each of the performance areas.

Based on this approach and with input from the safety stakeholders, the methodology that will be used to calculate and set annual targets for each performance measure were established. Performance measures are a five-year roiling average expressed as an annual number.

This supports the state's SHSP (known as Montana's Comprehensive Highway Safety Plan (CHSP)) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 952 in 2018 to 476 in 2030.

Performance Measures for serious injuries is moderate. The target is for an annual reduction of 41 serious injuries.

Fatality Rate:1.604

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

The 2020 CHSP update established the target setting methodology for the five federal performance measures for the five-year life of the plan. The *methodology is based on historical trend data and considers potential impacts of COVID-19.* Trend analysis identified ambitious yet achievable targets for each of the performance areas.

Based on this approach and with input from the safety stakeholders, the methodology that will be used to calculate and set annual targets for each performance measure were established. Performance measures are a five-year roiling average expressed as an annual number.

This supports the state's SHSP (known as Montana's Comprehensive Highway Safety Plan (CHSP)) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 952 in 2018 to 476 in 2030.

Performance Measures for fatality rate is conservative. The target is for an annual reduction of 0.041 per 100 million annual vehicle miles traveled.

Serious Injury Rate:5.855

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

The 2020 CHSP update established the target setting methodology for the five federal performance measures for the five-year life of the plan. The *methodology is based on historical trend data and considers potential impacts of COVID-19.* Trend analysis identified ambitious yet achievable targets for each of the performance areas.

Based on this approach and with input from the safety stakeholders, the methodology that will be used to calculate and set annual targets for each performance measure were established. Performance measures are a five-year roiling average expressed as an annual number.

This supports the state's SHSP (known as Montana's Comprehensive Highway Safety Plan (CHSP)) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 952 in 2018 to 476 in 2030.

Performance Measures for serious injury rate is conservative. The target is for an annual reduction of 0.114 per 100 million annual vehicle miles traveled.

Total Number of Non-Motorized Fatalities and Serious Injuries:64.0

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

The 2020 CHSP update established the target setting methodology for the five federal performance measures for the five-year life of the plan. The *methodology is based on historical trend data and considers potential impacts of COVID-19.* Trend analysis identified ambitious yet achievable targets for each of the performance areas.

Based on this approach and with input from the safety stakeholders, the methodology that will be used to calculate and set annual targets for each performance measure were established. Performance measures are a five-year roiling average expressed as an annual number.

This supports the state's SHSP (known as Montana's Comprehensive Highway Safety Plan (CHSP)) by working towards the overall Vision Zero Goal and an interim safety goal of halving fatalities and serious injuries from 952 in 2018 to 476 in 2030.

Performance Measures for non-motorized fatalities & serious injuries is low moderate. The target is for an annual reduction of 1 fatality or serious injury.

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. Representatives from MDT Engineering, the State's 3 MPO's and the State Highway Traffic Office met virtually in the spring of 2021 to establish the 2022 Safety Performance Targets. 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 2020 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.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	182.2	191.0
Number of Serious Injuries	860.4	755.0
Fatality Rate	1.399	1.506
Serious Injury Rate	6.608	5.967
Non-Motorized Fatalities and Serious Injuries	74.2	67.6

MDT has made significant progress on 3 of the 5 safety targets for 2020. This includes # of serious injuries, serious injury rate and non-motorized fatalities and serious injures.

However, Montana has not made significant progress during the same time period for fatalities and fatality rate. In 2020 Montana saw a substantial increase from 184 to 213 annual fatalities. This is the 2nd year in a row for seeing fatalities increase. Nationwide, the year 2020 saw a significant increase in severe crashes after the COVID pandemic began. In Montana, behavioral choices were a major contributing factor to the increase. Overall, one of the major challenges for fatal and serious injury crashes is mitigating the behavioral aspect. Currently HSIP funds are not eligible for non-infrastructure projects. Future flexibility of these funds would assist the agency in addressing both infrastructure and behavioral safety needs.

Applicability of Special Rules

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

No

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	2013	2014	2015	2016	2017	2018	2019
Number of Older Driver and Pedestrian Fatalities	34	24	31	26	20	26	41
Number of Older Driver and Pedestrian Serious Injuries	82	91	88	86	86	66	77

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 fairly new to MDT. 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.

There are 2 challenges with this type of evaluation:
1. This form of program level evaluation is difficult 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.
2. Due to the severity of one fatal crash, the overall countermeasure results of a naïve before/after study can show a negative benefit cost ratio. The benefit cost ratio heavily weighs the fatal crash in the calculation and negates any other crash reduction being attained. Thus, the negative benefit cost ratio does not always accurately represent a safety improvement as a overall positive benefit.

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 sized 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.

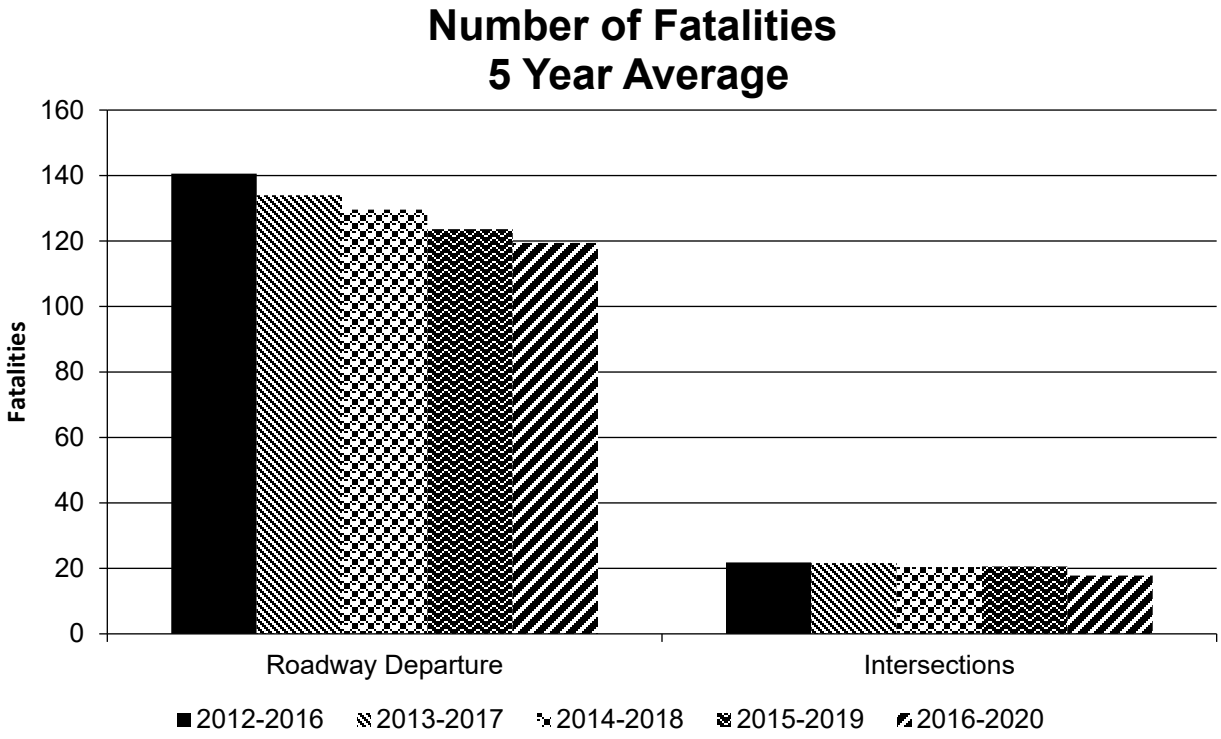
The HSIP Program's success has also increased the awareness of safety within the agency as a whole. This has translated into more collaboration between bureaus as other projects are designed and implemented benefiting both the safety program and ultimately the traveling public.

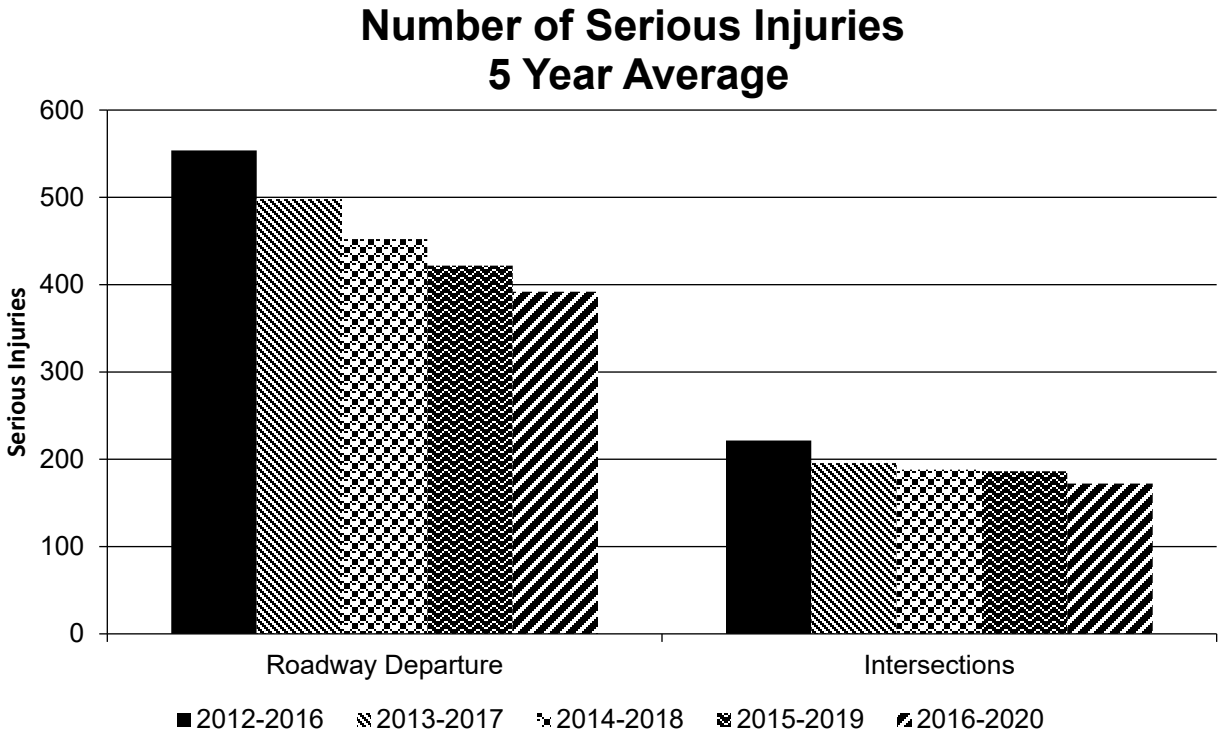
Effectiveness of Groupings or Similar Types of Improvements

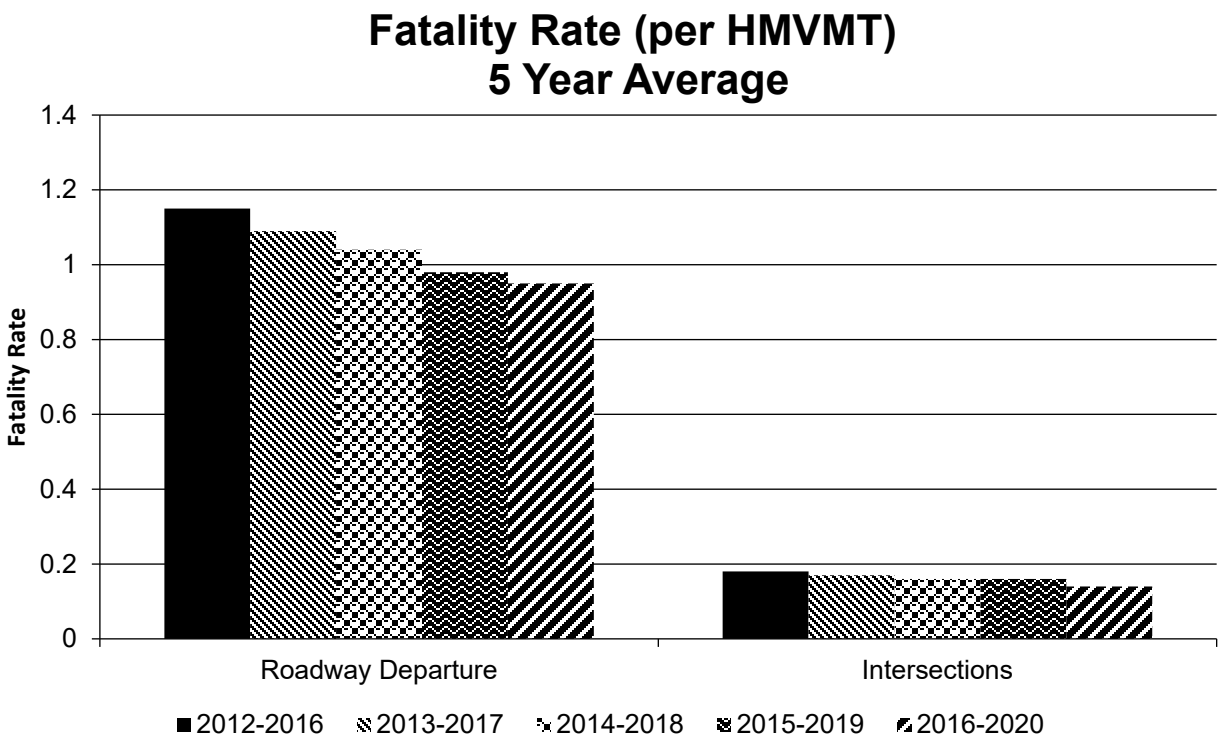
Present and describe trends in SHSP emphasis area performance measures.

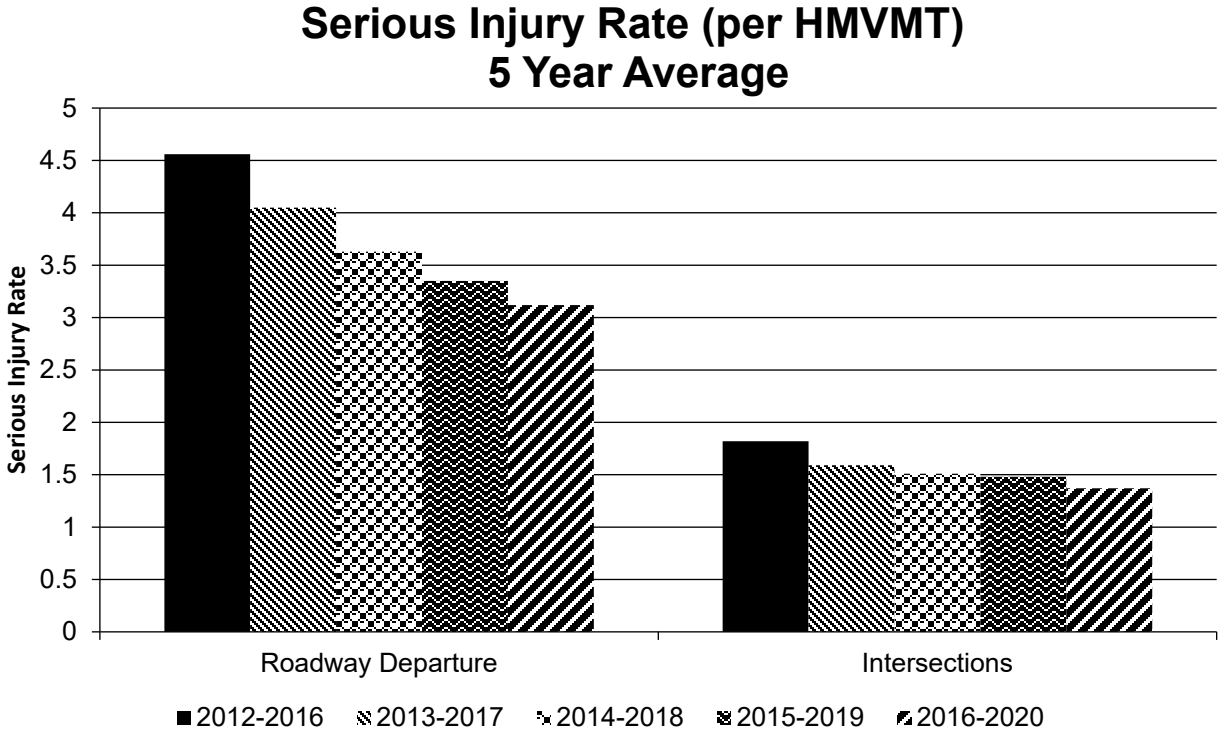
Year 2020

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	Head-On, Sideswipe Opposite Direction, Fixed Object and Roll Over	119.4	392	0.95	3.12
Intersections	All	17.8	172.2	0.14	1.37


Number of Fatalities
5 Year Average
Fatalities
160
140
120
100
80
60
40
20
0
Roadway Departure
Intersections
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Number of Serious Injuries
5 Year Average
Serious Injuries
600
500
400
300
200
100
0
Roadway Departure
Intersections
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Roadway Departure
Intersections
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Roadway Departure
Intersections
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020

Project Effectiveness

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

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

MDT has an annual process in place to evaluate safety projects. This evaluation process includes a simple before/after 5-year study. In addition, small projects with similar scope are grouped together for analysis.

MDT is looking to improve upon the evaluation process in the next few years. The current process does not provide for regression to the mean for low volume roads.

Compliance Assessment

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

12/21/2020

What are the years being covered by the current SHSP?

From: 2021 To: 2025

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

2025

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

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	100		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Median Type (54) [55]	100	100								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					100	100		
	Average Annual Daily Traffic (79) [81]	100	100					100	100		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			100	100						
	Location Identifier for Road 1 Crossing Point (122) [112]			100	100						
	Location Identifier for Road 2 Crossing Point (123) [113]			100	100						
	Intersection/Junction Geometry (126) [116]			100	100						
	Intersection/Junction Traffic Control (131) [131]			100	100						
	AADT for Each Intersecting Road (79) [81]			100	100						
	AADT Year (80) [82]			100	100						
	Unique Approach Identifier (139) [129]			100	100						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				
	Location Identifier for Roadway at					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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]					100	100				
	Ramp AADT (191) [181]					100	100				
	Year of Ramp AADT (192) [182]					100	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [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 (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

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 met this goal.

Optional Attachments

Program Structure:

Project Implementation:

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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.