Highway Safety Improvement Program

Data Driven Decisions

Montana
Highway Safety Improvement Program
2013 Annual Report

Prepared by: MT

Disclaimer

Protection of Data from Discovery & Admission into Evidence

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

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

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Executive Summary

In the 2012 reporting period, the Montana Department of Transportation (MDT) successfully utilized our allotted Highway Safety Improvement Program (HSIP) funds on Montana's roadways. MDT also completed Corridor Safety audits (CSA) on two locations in the state. Recommendations from these CSA's are being utilized to supplement our historical site specific identification of safety improvements. MDT is moving forward with upgrading of our safety analysis software and is developing a Roadway Departure Safety Implementation Plan. MDT continues to evaluate our historical processes for identifying locations for safety improvements and is discussing how to balance our site specific program with systemic improvements. Overall crash trends for fatal and severe injury crashes in the state had a slight increase in 2012 as compared to 2011; however, overall fatalities and serious injuries are down over 21% since the establishment of the goal in 2007.

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 MAP-21 Reporting Guidance dated February 13, 2013 and consists of four sections: program structure, progress in implementing HSIP projects, progress in achieving safety performance targets, and assessment of the effectiveness of the improvements.

Program Structure

Program Administration

How are Highway Safety Improvement Program funds allocated in a State?

☒ Central

☐ District

☐ Other

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

Describe how local roads are addressed as part of Highway Safety Improvement Program.

Crash data is available for local roads; however, the ability to query the data based on local road route and milepost is very limited. MDT has developed a process to generate approximate coordinates for crashes coded to off-system routes. Additionally, traffic volume and roadway characteristics data is generally not available for the local routes. MDT has made an effort to identify crash clusters on the local road system using the crash data and querying

methodologies currently available. MDT also offered to provide information on the HSIP to the local government officials during one of their annual conferences; however, no space was available on the agenda.

Fatal crash data is available for the Tribal reservations; however, other crashes investigated by the Tribal enforcement agencies 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 attached to this report and is also included on the MDT internet page at: http://www.mdt.mt.gov/publications/docs/forms/hsip_application.pdf. MDT presented information on the HSIP at the Annual Tribal Transportation Safety Summit held in June 2012. This presentation provided information to Tribal officials on the MDT HSIP as well as information on how Tribal governments can apply for safety funding through the HSIP application.

Identify which internal partners are involved with Highway Safety Improvement Program planning.

☒Design

☒Planning

☒Maintenance

☒Operations

☒Governors Highway Safety Office

☒Other: Other-District Personnel

Briefly describe coordination with internal partners.

The MDT Planning Division coordinates the safety activities and administers the Comprehensive Highway Safety Plan (Strategic Highway Safety Plan).

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 based

primarily on severity. Enforcement agencies identify locations and request site reviews. Local and Tribal agencies can forward safety projects or request MDT evaluate areas of interest. MDT District Offices also submit sites for investigation and participate in the engineering study to determine crash trends and countermeasure selection. Project selection is currently based on the benefit/cost ratio method. MDT has advanced some systemic improvements (curve signing as an example) based on the strategies outlined in the Comprehensive Highway Safety Plan.

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

Identify which external partners are involved with Highway Safety Improvement Program planning.

☒ Metropolitan Planning Organizations

☐ Governors Highway Safety Office

☒ Local Government Association

☒ Other: Other-Tribes

☒ Other: Other-Law Enforcement

Identify any program administration practices used to implement the HSIP that have changed since the last reporting period.

☐ Multi-disciplinary HSIP steering committee

☒ Other: Other-MDT has developed guidelines for evaluation of the HSIP.

Describe any other aspects of Highway Safety Improvement Program Administration on which you 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 is being developed to allow 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.

This change of crash reporting forced MDT to map the MMUCC data elements to the present MARS (Montana Accident Record System) crash data base. MDT has developed a process to approximate crash locations between GPS longitude and latitude and route, mile marker, and mile marker offsets. MDT also has processes in place to approximate the location of crashes occurring on off-system routes which are coded to a Township, Range and Section. MDT has access to the MHP crash investigator's reports, if additional detail on the particular crash is required. MDT is in the process of developing a Request for Proposal for a potential upgrade to the data system and analysis tools used to evaluate safety data.

MDT has implemented a Linear Referencing System. The LRS is complete on all roads open to public travel in the state. The current road log has information on roadway width, number of through lanes and shoulder widths. MDT is currently evaluating the guidance provided by FHWA on the collection of the Model Inventory of Roadway Elements (MIRE). MDT has purchased additional hardware for the photo-log vans which will allow for additional data collection which may include horizontal and vertical alignments, superelevation and roadside inventory.

The Office of Court Administration (OCA) maintains a central court repository (CCR), which contains electronic case records from all Courts of Limited Jurisdiction and District Courts. The CCR includes records on all citations, as well as corresponding disposition information. The Department of Justice (DOJ) receives any CCR information that must be applied to a driver's record. Working with the OCA and the DOJ, MDT receives the same driver information for use in traffic safety analysis. While the data is not yet available for traffic safety users, a project to increase the scope of the data received and to develop the reports and analysis needed is listed as a medium priority in the Montana Traffic Records Strategic Plan Annual Element.

The Traffic and Safety Bureau is actively involved in the implementation and update of the Strategic Highway Safety Plan also known as the Comprehensive Highway Safety Plan. Traffic and Safety is taking the lead in the areas of single vehicle run-off-the-road/road departure crashes and in the rural high-crash severity corridors and high crash locations. MDT is conducting a minimum of two Road Safety audits per year on identified rural high crash corridors.

Program Methodology

Select the programs that are administered under the HSIP.

☐ Median Barrier	☐ Intersection	☐ Safe Corridor
☐ Horizontal Curve	☐ Bicycle Safety	☐ Rural State Highways
☐ Skid Hazard	☐ Crash Data	☐ Red Light Running Prevention

☐ Roadway Departure
☐ Low-Cost Spot Improvements
☐ Sign Replacement And Improvement
☐ Local Safety
☐ Pedestrian Safety
☐ Right Angle Crash
☐ Left Turn Crash
☐ Shoulder Improvement
☐ Segments
☒ Other: Other-Hot Spot

Program: **Other-Hot Spot**

Date of Program Methodology: **10/1/1989**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☒ Volume	☐ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
☒ Other-See additional description provided in question #15	☐ Other	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-Severity Rate

☒ Other-Requests - Areas to be investigated as requested by any agency or individual

☒ Other-Any combination of fatal or severe injuries meeting minimum number of crashes

☒ Other-Rural, in intersection or intersection related crashes, excluding property damage only.

☒ Other-Rural commercial vehicle crashes, excluding property damage only.

☒ Other-Crashes on rural local roads resuling in an injury.

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

☒ Yes

☐ No

If yes, are local road projects identified using the same methodology as state roads?

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ 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).

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☒ Ranking based on B/C	1
☐ Available funding	
☐ Incremental B/C	
☐ Ranking based on net benefit	
☐ Cost Effectiveness	
☒ MDT has advanced some systemic projects (curve signing as an example) based on the strategies outlined in the Comprehensive Highway Safety Plan without calculating a benefit/cost.	1

What proportion of highway safety improvement program funds address systemic improvements?

6

Highway safety improvment program funds are used to address which of the following systemic improvments?

- ☐ Cable Median Barriers
- ☒ Rumble Strips
- ☐ Traffic Control Device Rehabilitation
- ☐ Pavement/Shoulder Widening
- ☒ Install/Improve Signing
- ☐ Install/Improve Pavement Marking and/or Delineation
- ☐ Upgrade Guard Rails
- ☐ Clear Zone Improvements
- ☐ Safety Edge
- ☐ Install/Improve Lighting
- ☐ Add/Upgrade/Modify/Remove Traffic Signal
- ☐ Other

What process is used to identify potential countermeasures?

- ☒ Engineering Study
- ☒ Road Safety Assessment
- ☒ Other: Other-Field review of location with personnel knowledgeable of the crash trend as well as personnel (MDT/Local/Tribal) familiar with the roadway.

Identify any program methodology practices used to implement the HSIP that have changed since the last reporting period.

☐ Highway Safety Manual

☐ Road Safety audits

☐ Systemic Approach

☒ Other: Other-No program methodology changes have been implemented in the reporting period.

Describe any other aspects of the Highway Safety Improvement Program methodology on which you would like to elaborate.

The following is a summary of the criteria utilized to identify high crash locations for the 2012/2013 HSIP. All segment lengths were 0.5 miles.

Severity Index (SI) – Greater than one and a half (1.5) times the statewide average meeting the following criteria:

Interstate, NINHS routes = 5 years (2007-2011), minimum 5 crashes.

State Primary routes = 5 years (2007-2011), minimum 5 crashes.

State Secondary routes = 10 years (2002-2011), minimum 5 crashes.

State Urban routes = 3 years (2009-2011), minimum 5 crashes.

Severity Rate (SR) - minimum severity rate six (6) times the statewide average meeting the following criteria:

Interstate, NINHS, State Primary routes = 5 years (2007-2011), minimum 5 crashes.

State Secondary routes = 10 years (2002-2011), minimum 5 crashes.

State Urban routes = 3 years (2009-2011), minimum 5 crashes.

Severe Injuries (SINJ) – any combination of Fatal or Severe Injuries meeting meeting the following criteria:

Interstate, NINHS, State Primary routes = 5 years (2007-2011), minimum 4 crashes

State Secondary routes = 10 years (2002-2011), minimum 4 crashes

State Urban routes = 3 years (2009-2011), minimum 5 crashes

Intersection (INTX) – Rural, In Intersection or Intersection Related only, Severity > “0” meeting the following criteria:

NINHS, State Primary, State Secondary = 5 years (2007-2011), minimum 4 crashes

Commercial Vehicles (CV) – Rural, Severity > “0” meeting the following criteria:

NINHS, State Primary, State Secondary = 10 years (2002-2011), minimum 4 crashes

Local Roads (LR) – Rural, Severity > “0” meeting the following criteria:

Off System (Location Type = ‘R’) = 10 years (2002-2011), minimum 4 crashes in a section.

Requests (REQ) - Areas to be investigated as requested by an agency or individual.

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 drafting collision diagrams, an office 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 on the basis of the costs of the analysis year. The benefits are the anticipated annualized cost reductions due to a lower number of crashes and lower crash severity in the given analysis year. The projects with the highest benefit-cost ratios get programmed for improvements.

MDT has initiated several district wide horizontal curve signing upgrade projects. The intent of these projects is to complete a proactive improvement to upgrade all the curve warning signs to a consistent standard. This project directly addresses one of the strategies outlined in the Montana Comprehensive Highway Safety Plan (CHSP).

MDT has finalized guidelines for conducting Road Safety audits (RSA) and has completed two RSA’s in the last year. MDT is also evaluating the existing roadway network to identify locations for construction of shoulder rumble strips and has nominated several standalone rumble strip projects. These projects are proactive efforts to address the Single Vehicle Run-Off-the-Road emphasis area within the CHSP.

MDT has nominated several projects to install retroreflective borders on the signals as well as upgrading to flashing yellow arrows at select locations. Finally, MDT has also nominated several projects to upgrade all the “wrong-way” signing on the interstate off ramps.

The following definitions/notes are provided for clarification of the crash criteria utilized in development of the HSIP.

Crash Rate: Number of crashes per million vehicles miles.

Severity Index: Ratio of the sum of fatal and incapacitating injury crashes times 8 plus the number of other injury crashes times 3 plus the number of property damage crashes to the total number of crashes.

Severity Rate: Crash rate multiplied by the severity index.

Urban Routes: Searches crashes coded to the state Urban Route with the majority being between City and Urban Limits. Crashes within city limits on Urban Routes should be coded to city grid. Some crashes outside city limits may be coded to city grid or range, township, section, which will not show in the queried criteria.

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

☐ Calendar Year

☒ State Fiscal Year

☐ Federal Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	14823504	22 %	14823504	22 %
HRRRP (SAFETEA-LU)	470895	1 %	470895	1 %
HRRR Special Rule				
Penalty Transfer - Section 154				
Penalty Transfer – Section 164	6053565	9 %	6053565	9 %
Incentive Grants - Section 163				
Incentive Grants (Section 406)				

Other Federal-aid Funds (i.e. STP, NHPP)	38274758	57 %	38274758	57 %
State and Local Funds	7634428	11 %	7634428	11 %
Totals	67257150	100%	67257150	100%

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

6 %

How much funding is obligated to local safety projects?

6 %

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

1 %

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

1 %

How much funding was transferred in to the HSIP from other core program areas during the reporting period?

$0.00

How much funding was transferred out of the HSIP to other core program areas during the reporting period?

$0.00

Discuss impediments to obligating Highway Safety Improvement Program funds and plans to overcome this in the future.

None at this time.

Describe any other aspects of the general Highway Safety Improvement Program implementation progress on which you would like to elaborate.

Historically, MDT has been very successful in utilizing HSIP funds. We are evaluating our current project nomination guidelines in an effort to blend the historical focus on site specific projects with proactive/systemic/systematic projects as well as improvements recommended in Road Safety audits. Completion of updated guidelines will likely be completed once the new upgrade to the safety analysis system is complete.

In line with the Comprehensive Highway Safety Plan (CHSP), Montana identified rural high crash severity corridors in terms of corridors with high crash severity, the corridors with high number of unbelted vehicle occupants involved in severe crashes and corridors with high incidents of drivers who had been using alcohol or drugs and who were involved in severe crashes. The mileage identified for these corridors represents the roadways carrying the highest traffic volumes and experiencing the highest numbers of severe crashes.

MDT also identified corridors with a combination of high crash severity rate and high number of fatalities and incapacitating injuries per mile. The corridors with the highest severity rates using a 10 mile plus segment length were identified as well as the corridors with the highest number of severe crashes (fatal and incapacitating injury crashes). MDT added the crash severity rate and the number of fatalities and incapacitating injuries per mile to derive the high crash severity corridors. MDT has updated the high crash severity corridors with 2011 crash data. A map of the currently identified corridors is available on the MDT internet page at: http://www.mdt.mt.gov/safety/safety-initiatives/high-crash-corridors.shtml.

MDT has a process to perform road (corridor) safety audits of these corridors. The intent is to develop safety recommendations as the engineering component of this process and pursue strategies such as enforcement activities and public education, involving the disciplines of the participants in the development of the strategic highway safety plan. The road safety audits recommend short, medium and long term improvements from a behavioral and engineering perspective.

MDT has also initiated development of a Roadway Departure Safety Implementation Plan. The purpose of this Plan is to provide specific details on countermeasures, actions, key steps, schedules, and investments needed to support the goals of the CHSP by mitigating roadway departure crashes. The plan will provide specific information on how additions, modifications or enhancements to the current programs can be effectively implemented to address these types of crashes.

MDT is also developing a non-infrastructure HSIP project. The goal of the project is the development of a media campaign to educate drivers on road departure crashes.

Based on high numbers of crashes involving drivers who had been using alcohol or drugs and high numbers of crashes with occupants not wearing their seat belt, the Montana Highway Patrol in collaboration with MDT established corridors where roving patrol are performing concentrated enforcement.

Similarly, based on number of crashes in the Motor Carrier Services crash data base, corridors were selected for increased enforcement and truck safety checks.

Enforcement (selective) has been concentrated in most of these corridors, under NHTSA Grants. Most of the education campaigns will be statewide. Emergency Medical Services and Trauma Services Section provide intervention strategies with patients involved in alcohol/drug related crashes and have formed regional task forces promoting a reduction of trauma.

General Listing of Projects

List each highway safety improvement project obligated during the reporting period.

Project	Improvement Category	Output	HSIP Cost	Total Cost	Funding Category	Functional Classification	AADT	Speed	Roadway Ownership	Relationship to SHSP	
										Emphasis Area	Strategy
2001-SUN RIVER-2 KM S VAUGHN	Roadway Roadway - other	1 Miles	1001306	2910104	Other Federal-aid Funds (i.e. STP, NHPP)	Rural Major Collector			County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
2003-SAFETY IMP-CARTER DR-HLNA	Intersection traffic control Intersection traffic control - other	0.074 Miles	362950	362950	HSIP (Section 148)	Rural Major Collector	2187 0	45	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
2003-SAFETY IMPVT-S WHITEFISH	Roadway Roadway - other	0.497 Miles	1606000	1606000	HSIP (Section 148)	Rural Major Collector	1680	50	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

2003-SIGNING/GDRAIL-LINCOLN CO	Roadside Barrier-metal	4 Miles	79350	79350	HSIP (Section 148)	Rural Minor Collector			County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
2013 SFTY UTILITY FAST PROCESS	Roadside Removal of roadside objects (trees, poles, etc.)		63871	63871	HSIP (Section 148)	Statewide				Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
BIDDLE-NORTH & SOUTH	Roadway Roadway - other	9.132 Miles	1500000	12920902	Other Federal-aid Funds (i.e. STP, NHPP)	Rural Minor Arterial	871	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
BIG MUDDY CR - EAST	Roadway Roadway - other	4.843 Miles	860000	11080301	Other Federal-aid Funds (i.e. STP, NHPP)	Rural Principal Arterial - Other	1184	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
CHECKERBOARD MARTINSDALE	Roadway Roadway -	8.863 Miles	1600000	9070273	Other Federal-aid	Rural Minor	398	70	State Highway	Reducing Crashes in High Crash	Strategy 8 - Roadway Engineering

EAST	other				Funds (i.e. STP, NHPP)	Arterial			Agency	Corridors/High Crash Locations	Improvements
HAVRE EAST PHASE II	Roadway Roadway - other	3.067 Miles	3753565	6850440	Penalty Transfer – Section 164	Rural Principal Arterial - Other	5476	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
LEBO CREEK-N & S	Roadway Roadway - other	4.466 Miles	700000	671771 5	Other Federal-aid Funds (i.e. STP, NHPP)	Rural Minor Arterial	640	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
LEWISTOWN-EAST	Roadway Roadway - other	3.096 Miles	600000	360393 9	Other Federal-aid Funds (i.e. STP, NHPP)	Rural Principal Arterial - Other	4926	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
PARK AVE-BDWY TO NEILL-HLNA	Pedestrians and bicyclists Medians and pedestrian	0.467 Miles	65200	636275	Other Federal-aid Funds (i.e. STP,	Urban Principal Arterial - Other	1012 1	25	County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash	Strategy 8 - Roadway Engineering Improvements

	refuge areas				NHPP)					Locations	
SF 099 E OF DENTON	Roadside Roadside grading	1.198 Miles	1246320	1746320	HSIP (Section 148)	Rural Minor Arterial	350	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 E OF EAST HELENA	Roadway Superelevation / cross slope	0.5 Miles	534487	534487	HSIP (Section 148)	Rural Major Collector	1320	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 E OF POLSON	Roadside Roadside grading	0.663 Miles	123959	123959	HSIP (Section 148)	Rural Minor Arterial	3590	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 HAUSER DAM/LTL WOLF CR	Roadside Roadside - other	1 Miles	14501	14501	HSIP (Section 148)	Rural Major Collector			County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

SF 099 JCT FILSON/QUARTER CRCL	Intersection geometry Auxiliary lanes - add left-turn lane	0.7 Miles	178753	178753	HSIP (Section 148)	Rural Principal Arterial - Other	5190	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 MT 35 JCT S-206	Intersection traffic control Intersection traffic control - other	1 Numbers	236737	236737	HSIP (Section 148)	Rural Minor Arterial	7182	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 N OF LAME DEER	Shoulder treatments Widen shoulder - paved or other	3.861 Miles	293544	293544	HSIP (Section 148)	Rural Minor Arterial	1472	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 N OF POLSON	Shoulder treatments Widen shoulder - paved or other	0.488 Miles	449144	449144	HSIP (Section 148)	Rural Principal Arterial - Other	3830	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 N OF	Animal-	10	66852	668520	HSIP (Section	Rural Major	308	70	State Highway	Reducing Crashes in	Strategy 8 - Roadway

VALIER	related	Miles	0		148)	Collector			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF 099 PIPESTONE PASS	Roadside Barrier-metal	0.81 Miles	126354	126354	HSIP (Section 148)	Rural Minor Arterial	910	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 RECONSTRUCTN OF LAUREL	Alignment Horizontal curve realignment	0.399 Miles	109006	109006	HSIP (Section 148)	Rural Major Collector	780	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 S OF BIGFORK	Roadside Roadside grading	0.607 Miles	108207	108207	HSIP (Section 148)	Rural Minor Arterial	3190	50	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 S OF ST MARY	Roadside Roadside grading	0.919 Miles	13250	13250	HSIP (Section 148)	Rural Minor Arterial	1135	50	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash	Strategy 8 - Roadway Engineering Improveme

										Locations	nts
SF 099 SIGNING, SLOPE FLATTEN	Roadside Roadside grading	14.225 Miles	193345	193345	HSIP (Section 148)	Rural Major Collector	83	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 099 W OF ST REGIS	Roadside Barrier-metal	0.7 Miles	97440	97440	HSIP (Section 148)	Rural Principal Arterial - Interstate	5770	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 110- RUMBLE STRIPS N-11	Roadway Rumble strips - unspecified or other	48.281 Miles	126500	126500	HSIP (Section 148)	Rural Principal Arterial - Other	1942	70	State Highway Agency	Reducing Single Vehicle Run Off the Road Fatal and Incapacitating Injury Crashes	Strategy 11 - Roadway Engineering Improvements
SF 119 - DELINEATION I-15	Roadway delineation Longitudinal pavement markings -	15.159 Miles	221654	221654	HSIP (Section 148)	Rural Principal Arterial - Interstate	4090	75	State Highway Agency	Reducing Single Vehicle Run Off the Road Fatal and Incapacitati	Strategy 11 - Roadway Engineering Improvements

	new									ng Injury Crashes	
SF 119-GLENDIVE RUMBLE STRIPS	Roadway Rumble strips - edge or shoulder	100.108 Miles	273972	273972	HSIP (Section 148)	Rural Principal Arterial - Other	3869	70	State Highway Agency	Reducing Single Vehicle Run Off the Road Fatal and Incapacitating Injury Crashes	Strategy 11 - Roadway Engineering Improvements
SF 119-JCT US93/SKALKAHO ROAD	Intersection traffic control Intersection flashers - add advance intersection warning sign-mounted	0.4 Miles	43775	43775	HSIP (Section 148)	Rural Principal Arterial - Other	6838	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 119-SIGNING E OF ST REGIS	Roadway signs and traffic control Curve-related warning	1.038 Miles	1014	1014	HSIP (Section 148)	Rural Minor Arterial	1700	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

	signs and flashers										
SF 129 - CURVE SFTY IMPRV	Roadway Roadway widening - curve	0.5 Miles	56518	56518	HSIP (Section 148)	Rural Principal Arterial - Other	2300	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - CURVE SGNG RESERVE	Roadway signs and traffic control Curve-related warning signs and flashers	0.5 Miles	4377	4377	HSIP (Section 148)	Rural Major Collector	430	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - CURVE SIGN CHOTEAU	Roadway delineation Roadway delineation - other	0.5 Miles	901	901	HSIP (Section 148)	Rural Major Collector	260	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - DEL RUMBLE KLEIN	Roadway Rumble strips - unspecified	0.999 Miles	515	515	HSIP (Section 148)	Rural Principal Arterial -	3170	70	State Highway Agency	Reducing Single Vehicle Run Off the Road	Strategy 11 - Roadway Engineering Improveme

	or other					Other				Fatal and Incapacitating Injury Crashes	nts
SF 129 - DERN SPRING CR	Advanced technology and ITS Advanced technology and ITS - other	0.314 Miles	23174	23174	HSIP (Section 148)	Rural Principal Arterial - Other	8380	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - FLT E CASCADE	Roadside Roadside grading	0.981 Miles	171356	171356	HSIP (Section 148)	Rural Major Collector	358	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - FLT S HAVRE	Roadside Roadside grading	0.395 Miles	34632	34632	HSIP (Section 148)	Rural Major Collector	670	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - G-RAIL S CHESTER	Roadside Barrier end treatments (crash	0.6 Miles	3605	3605	HSIP (Section 148)	Rural Minor Arterial	370	70	State Highway Agency	Reducing Crashes in High Crash Corridors/Hi	Strategy 8 - Roadway Engineering Improveme

	cushions, terminals)									gh Crash Locations	nts
SF 129 - GRDRAIL N POLSON	Roadside Barrier-metal	1.997 Miles	72868	72868	HSIP (Section 148)	Rural Minor Arterial	2720	50	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - GUARDRAIL BEARCREEK	Roadside Barrier transitions	1.123 Miles	6823	6823	HSIP (Section 148)	Rural Major Collector	760	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - GUARDRAIL JCT 324	Roadside Barrier-metal	0.6 Miles	31284	31284	HSIP (Section 148)	Rural Principal Arterial - Interstate	3295	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - ITS G-RAIL SIEBEN	Advanced technology and ITS Dynamic message signs	1.119 Miles	42356	42356	HSIP (Section 148)	Rural Principal Arterial - Interstate	4090	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

SF 129 - ITS/VMS ROGERS PASS	Advanced technology and ITS Dynamic message signs	0.679 Miles	45832	45832	HSIP (Section 148)	Rural Principal Arterial - Other	1390	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - LIGHTING HUSON INTCH	Lighting Site lighting - interchange	0.679 Miles	42485	42485	HSIP (Section 148)	Rural Principal Arterial - Interstate	8160	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - PED SFTY IMPR MAIN ST	Pedestrians and bicyclists Medians and pedestrian refuge areas	0.514 Miles	31928	31928	HSIP (Section 148)	Urban Principal Arterial - Other	7181	25	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - RECON INT HELENA	Intersection geometry Intersection geometry - other	1 Miles	45704	45704	HSIP (Section 148)	Rural Major Collector			County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - RRXING MT	Railroad grade	0.581	13389	13389	HSIP (Section	Rural Major	1870	55	State Highway	Reducing Crashes in	Strategy 8 - Roadway

CITY	crossings Surface treatment	Miles			148)	Collector			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF 129 - SFTY FENCING GLENDIVE	Roadside Fencing	1.8 Miles	32292	32292	HSIP (Section 148)	Rural Major Collector	80	55	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SFTY IMPR BIGFORK	Roadway Pavement surface - high friction surface	1 Miles	12874	12874	HSIP (Section 148)	Rural Minor Arterial	6525	35	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SFTY IMPR GIFFEN	Roadway delineation Delineators post-mounted or on barrier	1 Miles	18410	18410	HSIP (Section 148)	Rural Major Collector	140		County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SFTY IMPRV GALEN	Roadway Rumble strips - transverse	0.08 Miles	4377	4377	HSIP (Section 148)	Rural Major Collector	300	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash	Engineering Improveme

										Locations	nts
SF 129 - SFTY IMPRV GRASSRANGE	Roadway signs and traffic control Curve-related warning signs and flashers	1 Miles	14934	14934	HSIP (Section 148)	Rural Principal Arterial - Other	420	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SFTY IMPRV S DILLON	Roadway delineation Delineators post-mounted or on barrier	0.55 Miles	11458	11458	HSIP (Section 148)	Rural Principal Arterial - Interstate	3330	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SGN FLASHER MONTCLAIR	Roadway signs and traffic control Roadway signs and traffic control - other	0.2 Miles	4377	4377	HSIP (Section 148)	Urban Principal Arterial - Other	26378	45	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SGNG BRDG TRTM	Roadside Barrier-	0.5	24204	24204	HSIP (Section	Rural Major	240	70	State Highway	Reducing Crashes in	Strategy 8 - Roadway

CIRCLE	metal	Miles			148)	Collector			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF 129 - SIGNING IMPROV P29	Roadway signs and traffic control Roadway signs (including post) - new or updated	1.4 Miles	14419	14419	HSIP (Section 148)	Rural Minor Arterial	922	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - SKD TRMT PIPESTONE	Roadway Pavement surface - high friction surface	0.51 Miles	11458	11458	HSIP (Section 148)	Rural Principal Arterial - Interstate	7310	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129 - S354/S211 SAFETY IMPRV	Intersection traffic control Intersection flashers - add stop sign-mounted	2 Numbers	15449	15449	HSIP (Section 148)	Rural Major Collector	730	65	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

SF 129 -SLOPE FLTTNNG BELGRADE	Roadside Roadside grading	0.5 Miles	58834	58834	HSIP (Section 148)	Rural Major Collector	10650	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-ADV FLASHER CEMETERY RD	Intersection traffic control Intersection flashers - modify existing	2 Numbers	32829	32829	HSIP (Section 148)	Rural Principal Arterial - Other	13352	55	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-ADV FLASHER N BIGFORK	Intersection traffic control Intersection flashers - modify existing	2 Numbers	18668	18668	HSIP (Section 148)	Rural Minor Arterial	7638	50	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-BILLINGS WRNG WY-PH 1	Roadway signs and traffic control Roadway signs (including	278.223 Miles	62280	62280	HSIP (Section 148)	Rural Principal Arterial - Interstate	9204	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

	post) - new or updated										
SF 129-BUTTE HRZNTAL CRV SIGNG	Roadway signs and traffic control Curve-related warning signs and flashers		189897	189897	HSIP (Section 148)	District Wide			State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy HC-3 HCC Sign Evaluation
SF 129-BUTTE WRNG WY-PH 1	Roadway signs and traffic control Roadway signs (including post) - new or updated	347.177 Miles	117318	117318	HSIP (Section 148)	Rural Principal Arterial - Interstate	3950	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-GF WRNG WY-PH 1	Roadway signs and traffic control Roadway signs (including	206.47 Miles	75315	75315	HSIP (Section 148)	Rural Principal Arterial - Interstate	4344	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

	post) - new or updated										
SF 129-GLENDIVE WRNG WY-PH 1	Roadway signs and traffic control Roadway signs (including post) - new or updated	171.634 Miles	49969	49969	HSIP (Section 148)	Rural Principal Arterial - Interstate	4793	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-GRDRAIL RAYNESFORD EAST	Roadside Barrier-metal	0.486 Miles	40683	40683	HSIP (Section 148)	Rural Principal Arterial - Other	1630	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-GTFLS HRZNTAL CRV SIGNG	Roadway signs and traffic control Curve-related warning signs and flashers		284845	284845	HSIP (Section 148)	District Wide			State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy HC-3 HCC Sign Evaluation

SF 129-KALISPELL SIGNAL BRDRS	Intersection traffic control Modify traffic signal - add backplates with retroreflective borders	3.808 Miles	12617	12617	HSIP (Section 148)	Rural Principal Arterial - Other	22671	55	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-LFT TURN LN EMIGRANT RA	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	56645	56645	HSIP (Section 148)	Rural Principal Arterial - Other	1710	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-MISSOULA WRNG WY-PH 1	Roadway signs and traffic control Roadway signs (including post) - new or updated	194.135 Miles	61556	61556	HSIP (Section 148)	Rural Principal Arterial - Interstate	8563	75	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-ROUNDABOUT	Intersection traffic	1 Numbe	352517	352517	HSIP (Section	Rural Principal	3208	55	State Highway	Reducing Crashes in	Strategy 8 - Roadway

LAME DEER	control Modify control - all-way stop to roundabout	rs			148)	Arterial - Other			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF 129-SB LT TURN GOLDSTEIN	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	56388	56388	HSIP (Section 148)	Rural Major Collector	4220	45	County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-SB RT TURN PATTERSON	Intersection geometry Auxiliary lanes - add right-turn lane	1 Numbers	48277	48277	HSIP (Section 148)	Rural Major Collector	4220	45	County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-SFTY IMPRV BRDGR CANYON	Roadside Barrier-metal	0.5 Miles	15706	15706	HSIP (Section 148)	Rural Minor Arterial	2052	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-SFTY IMPRV DEER LODGE	Roadway signs and traffic control	1.707 Miles	10685	10685	HSIP (Section 148)	Rural Principal Arterial -	7570	75	State Highway Agency	Reducing Crashes in High Crash Corridors/Hi	Strategy 8 - Roadway Engineering Improveme

	Curve-related warning signs and flashers					Interstate				gh Crash Locations	nts
SF 129-SFTY IMPV THOMPSON PASS	Roadway signs and traffic control Curve-related warning signs and flashers	1 Miles	23431	23431	HSIP (Section 148)	Rural Major Collector	200	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-SGN FLASHER NE HAMILTON	Advanced technology and ITS Advanced technology and ITS - other	2.335 Miles	31027	31027	HSIP (Section 148)	Rural Major Collector	4957	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 129-SGN FLASHER RED HRN RD	Intersection traffic control Intersection flashers - add advance	2 Numbers	9398	9398	HSIP (Section 148)	Rural Principal Arterial - Other	6187	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements

	intersection warning sign-mounted										
SF 129-SGN FLASHER SEELEY LAKE	Intersection traffic control Intersection flashers - add advance intersection warning sign-mounted	2 Numbers	3605	3605	HSIP (Section 148)	Rural Minor Arterial	2260	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 139 - BUTTE ADV SGNL FLSHER	Intersection traffic control Intersection flashers - add overhead (actuated)	8 Numbers	12814	12814	HSIP (Section 148)	Rural Principal Arterial - Other	37898	55	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF 139 - RDWY DEPT MEDIA CMPGN	Non-infrastructure		256283	256283	HSIP (Section 148)	Statewide				Reducing Single Vehicle Run Off the Road Fatal and	Strategy 1 - Media Plan

										Incapacitating Injury Crashes	
SF 139 - HELENA SIGNAL BORDERS	Intersection traffic control Modify traffic signal - add backplates with retroreflective borders	1.094 Miles	11148	11148	HSIP (Section 148)	Rural Principal Arterial - Other	14272	35	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF069-BLACK & BASS-S CORVALLIS	Roadway Roadway - other	0.3 Miles	791859	791859	HSIP (Section 148)	Rural Major Collector	7310	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF079 CANYON FERRY RD-HLNA	Shoulder treatments Widen shoulder - paved or other	0.4 Miles	612039	612039	HSIP (Section 148)	Rural Major Collector	1320	60	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF089 GALLATIN	Roadway signs and	1 Miles	43009	43009	HRRRP (SAFETE	Rural Local Road or			County Highway	Reducing Crashes in	Strategy 8 - Roadway

CNTY OFF-SYSTEM	traffic control Roadway signs and traffic control - other				A-LU)	Street			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF089 VAUGHN FRTG GRDL SLP FLT	Roadside Roadside grading	4 Miles	150619	150619	HSIP (Section 148)	Rural Minor Arterial	3188	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF-109 CHVRNS,DELIN -SANDERS CO	Roadway delineation Delineators post-mounted or on barrier	1.398 Miles	10119	10119	HSIP (Section 148)	Rural Minor Arterial	1330	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF109-BRDG RAIL-S OF HARLO	Roadside Barrier-metal	0.4 Miles	132134	132134	HSIP (Section 148)	Rural Minor Arterial	640	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF109-CRV NEAR	Roadway signs and	0.8	72567	72567	HSIP (Section	Rural Minor	2040	70	State Highway	Reducing Crashes in	Strategy 8 - Roadway

BEAVERHEAD ROCK	traffic control Curve-related warning signs and flashers	Miles			148)	Arterial			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF109-GRAIL-S OF HOT SPRINGS	Roadside Barrier-metal	0.2 Miles	78024	78024	HSIP (Section 148)	Rural Major Collector	510	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF109-SKD TRTMNT-E OF KALISPL	Roadway Pavement surface - high friction surface	0.1 Miles	259100	259100	HSIP (Section 148)	Rural Minor Arterial	2040	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF109-WDN SHDLRS, CHRVNS-S226	Shoulder treatments Widen shoulder - paved or other	0.6 Miles	28637	28637	HSIP (Section 148)	Rural Major Collector	250	70	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF119 - SAFETY ROCKVALE-	Roadway Rumble	11.6	28520	285200	HSIP (Section	Rural Principal	7877	70	State Highway	Reducing Crashes in	Strategy 8 - Roadway

LAUREL	strips - center	Miles	0		148)	Arterial - Other			Agency	High Crash Corridors/High Crash Locations	Engineering Improvements
SF119-RIVER PINE-W MACLAY BRDG	Lighting Lighting - other	1 Numbers	0	946	State and Local Funds	Urban Local Road or Street	2330	35	County Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF119-SKID TRTMNT S OF ROUNDUP	Roadway Pavement surface - high friction surface	0.6 Miles	114600	114600	HSIP (Section 148)	Rural Principal Arterial - Other	3170	45	State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy 8 - Roadway Engineering Improvements
SF129-BILLINGS HRZNTL CRV SIGN	Roadway signs and traffic control Curve-related warning signs and flashers		189897	189897	HSIP (Section 148)	District Wide			State Highway Agency	Reducing Crashes in High Crash Corridors/High Crash Locations	Strategy HC-3 HCC Sign Evaluation
SF-129-MISC SAFETY-	Roadway signs and		34201	342010	HSIP (Section	Statewide				Reducing Crashes in	Strategy 8 - Roadway

MAINTENANCE	traffic control Roadway signs (including post) - new or updated		0		148)					High Crash Corridors/High Crash Locations	Engineering Improvements

Progress in Achieving Safety Performance Targets

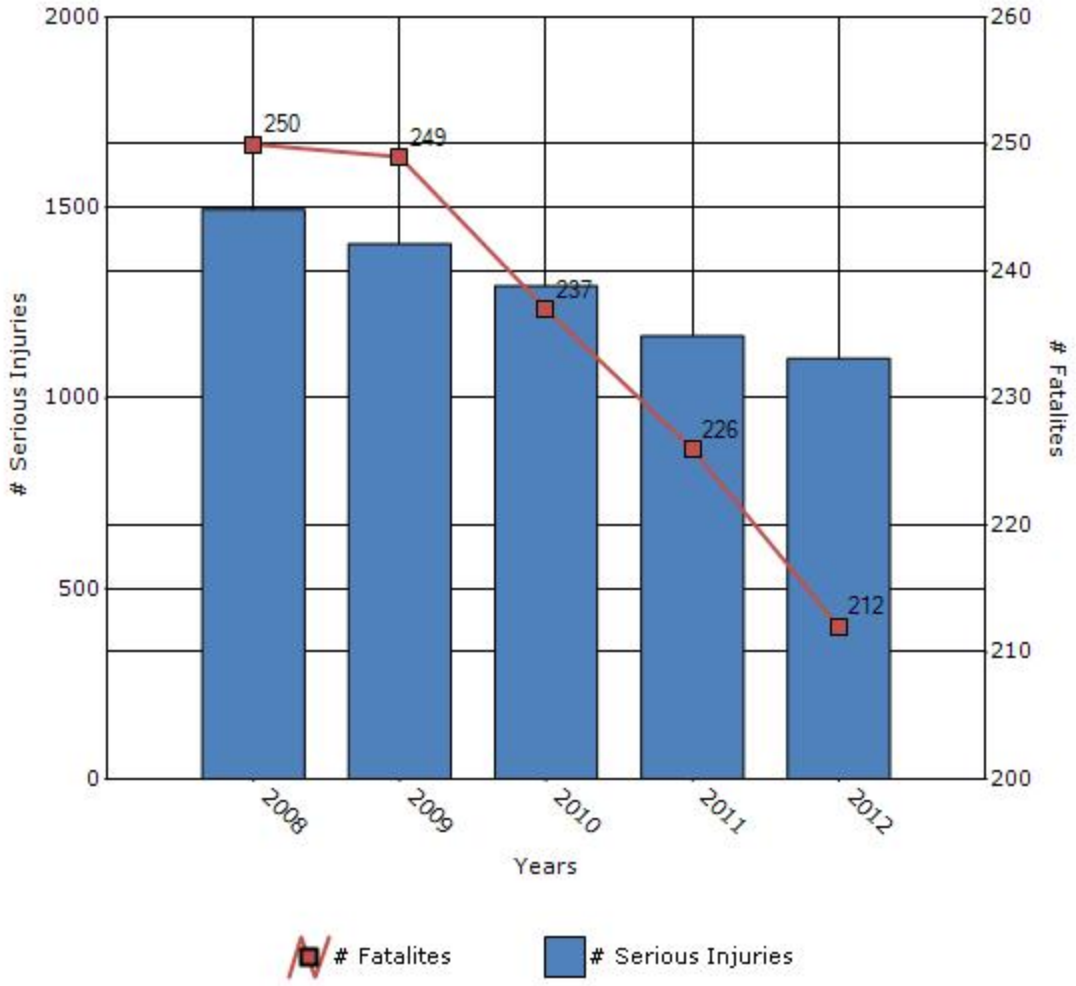
Overview of General Safety Trends

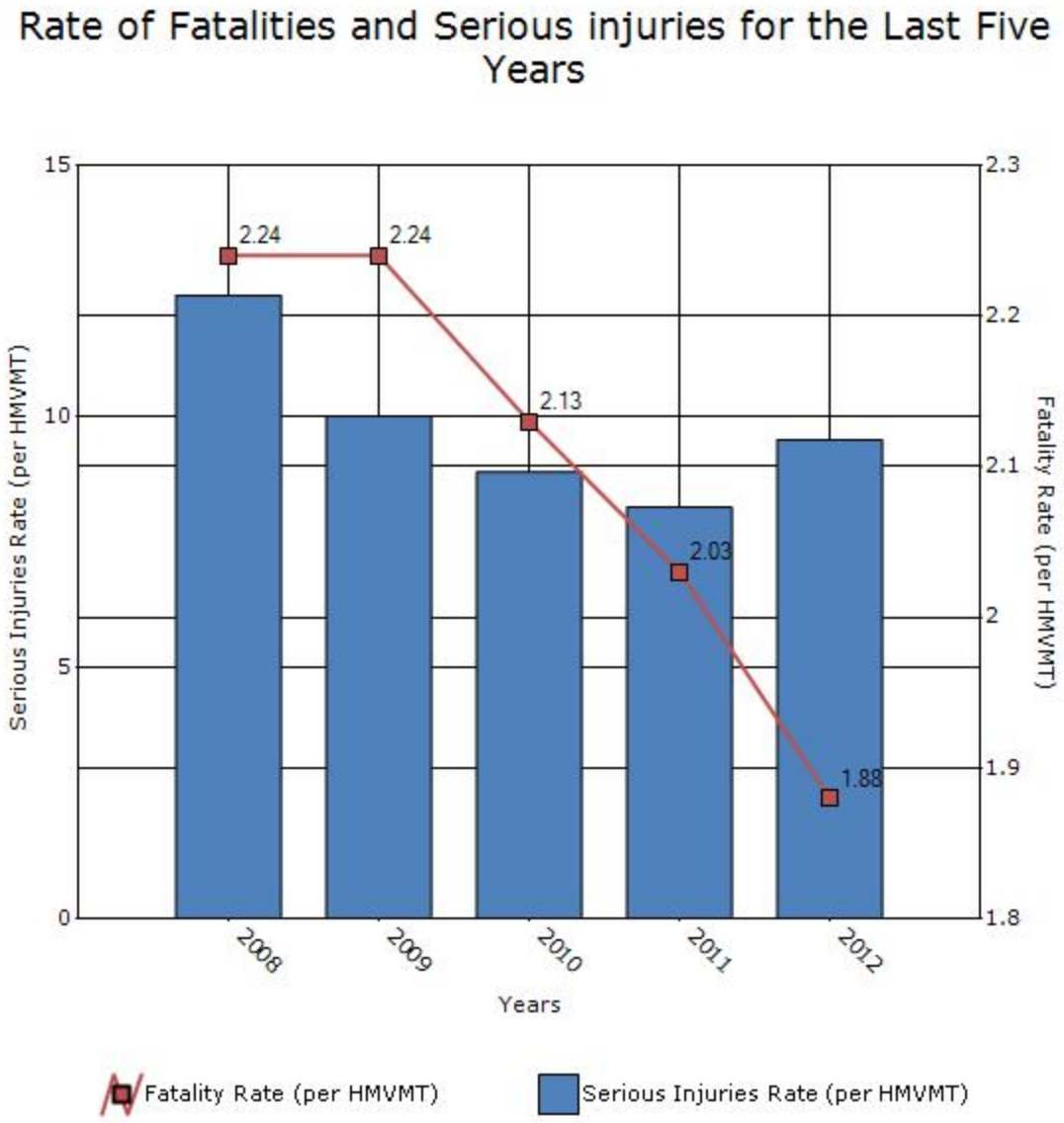
Present data showing the general highway safety trends in the state for the past five years.

Performance Measures*	2008	2009	2010	2011	2012
Number of fatalities	250	249	237	226	212
Number of serious injuries	1496	1405	1295	1164	1104
Fatality rate (per HMVMT)	2.24	2.24	2.13	2.03	1.88
Serious injury rate (per HMVMT)	12.41	10	8.89	8.19	9.53

*Performance measure data is presented using a five-year rolling average.

Number of Fatalities and Serious injuries for the Last Five Years





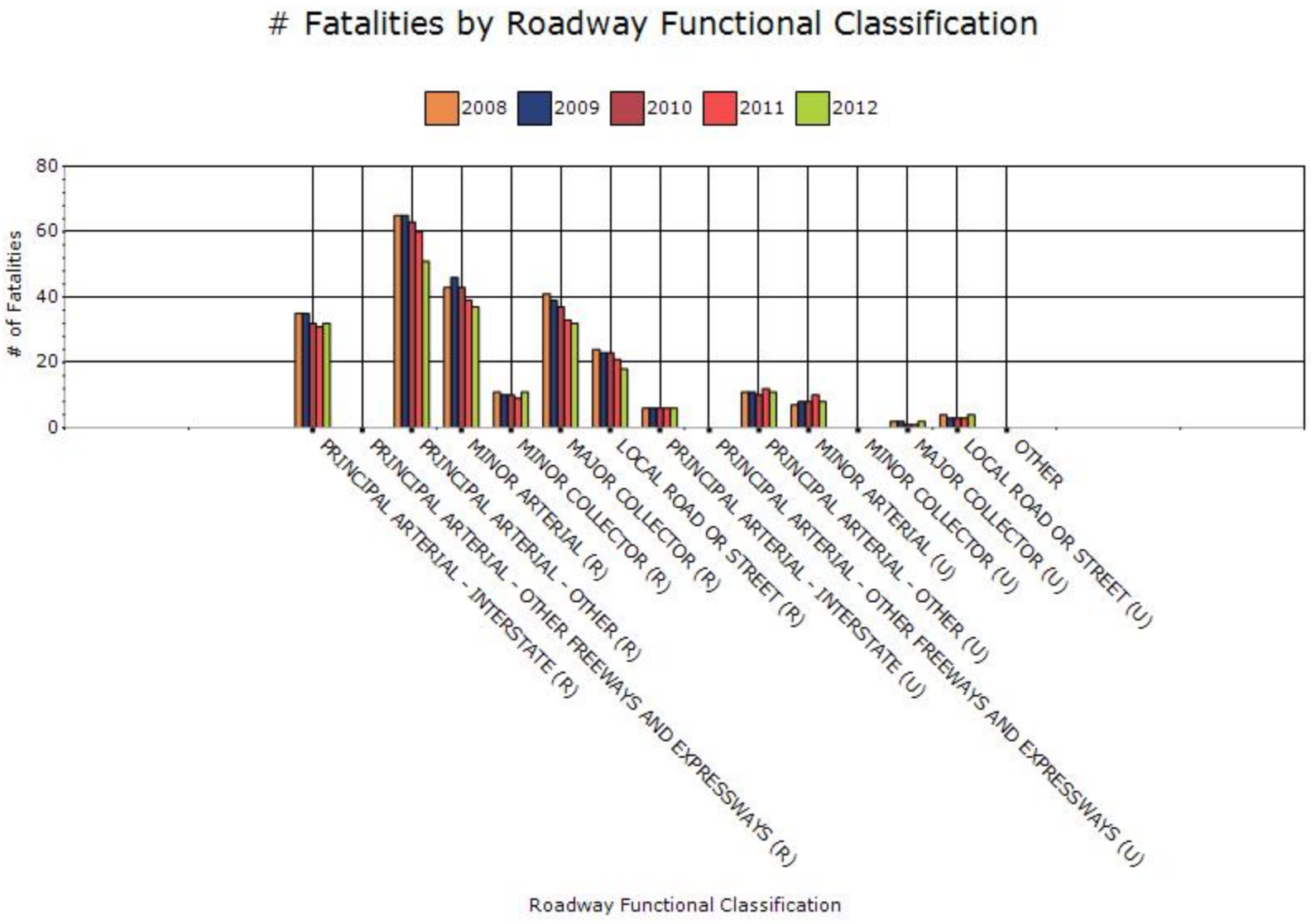
Serious Injuries are defined as incapacitating injuries.

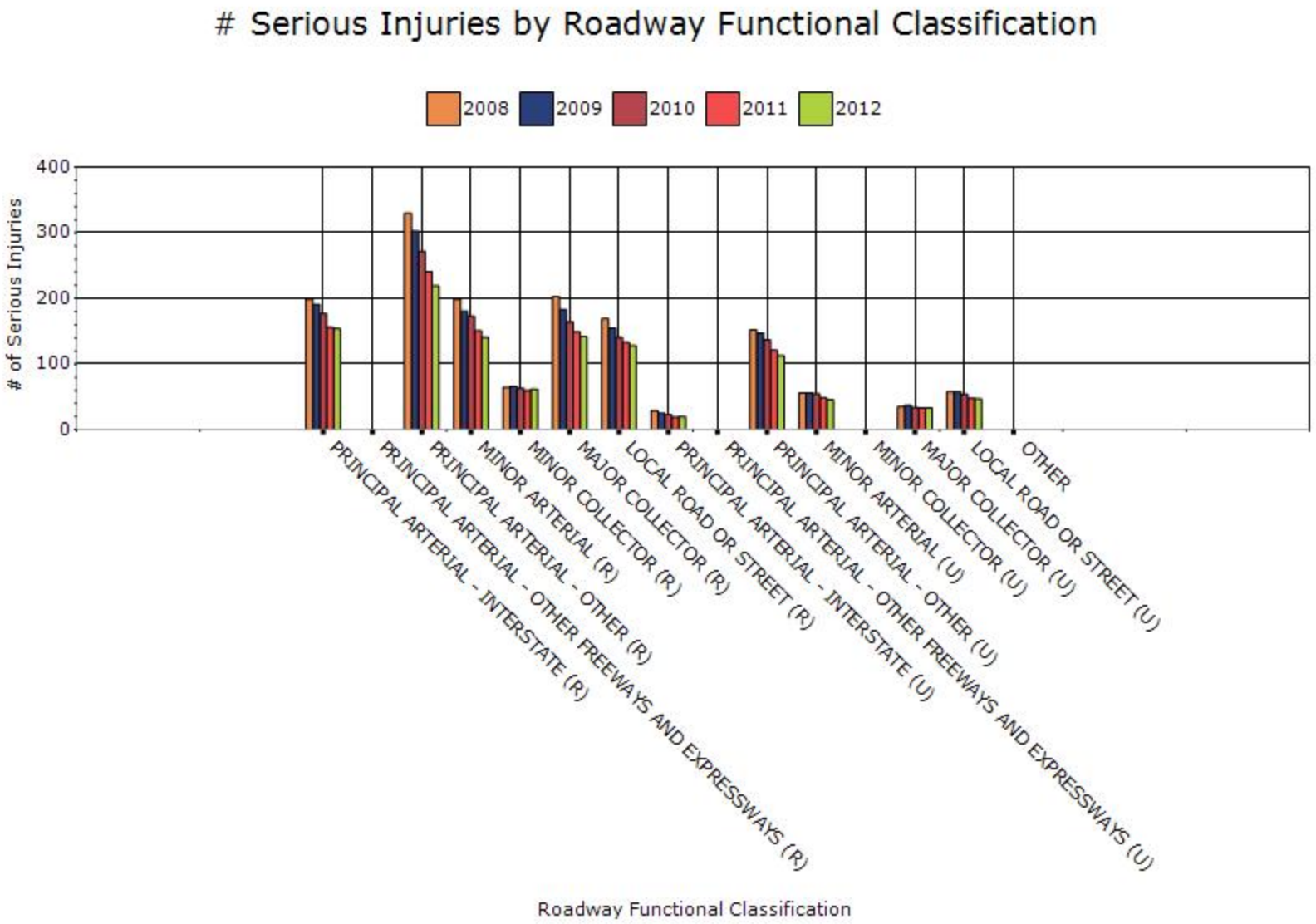
To the maximum extent possible, present performance measure* data by functional classification and ownership.

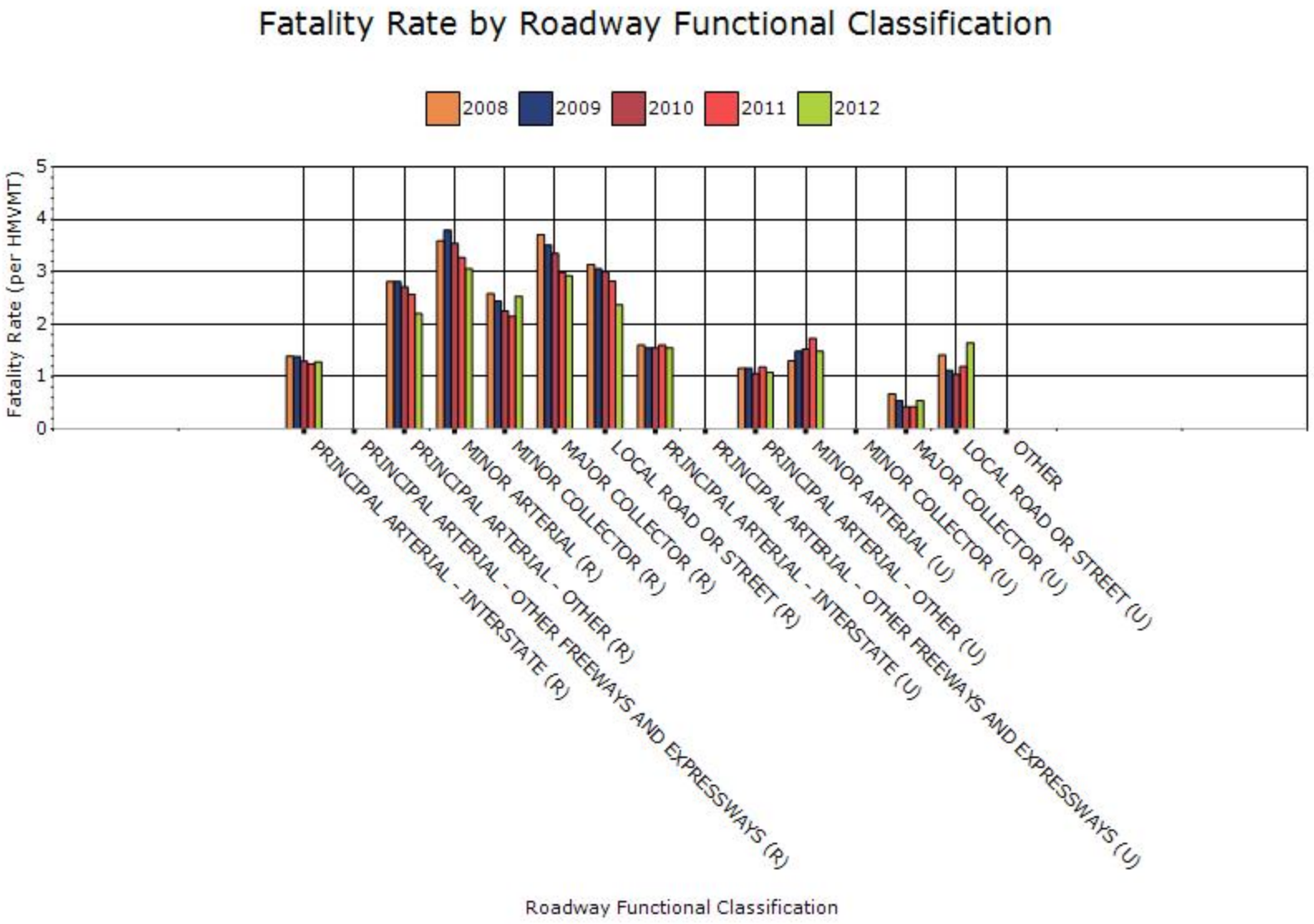
Year - 2012

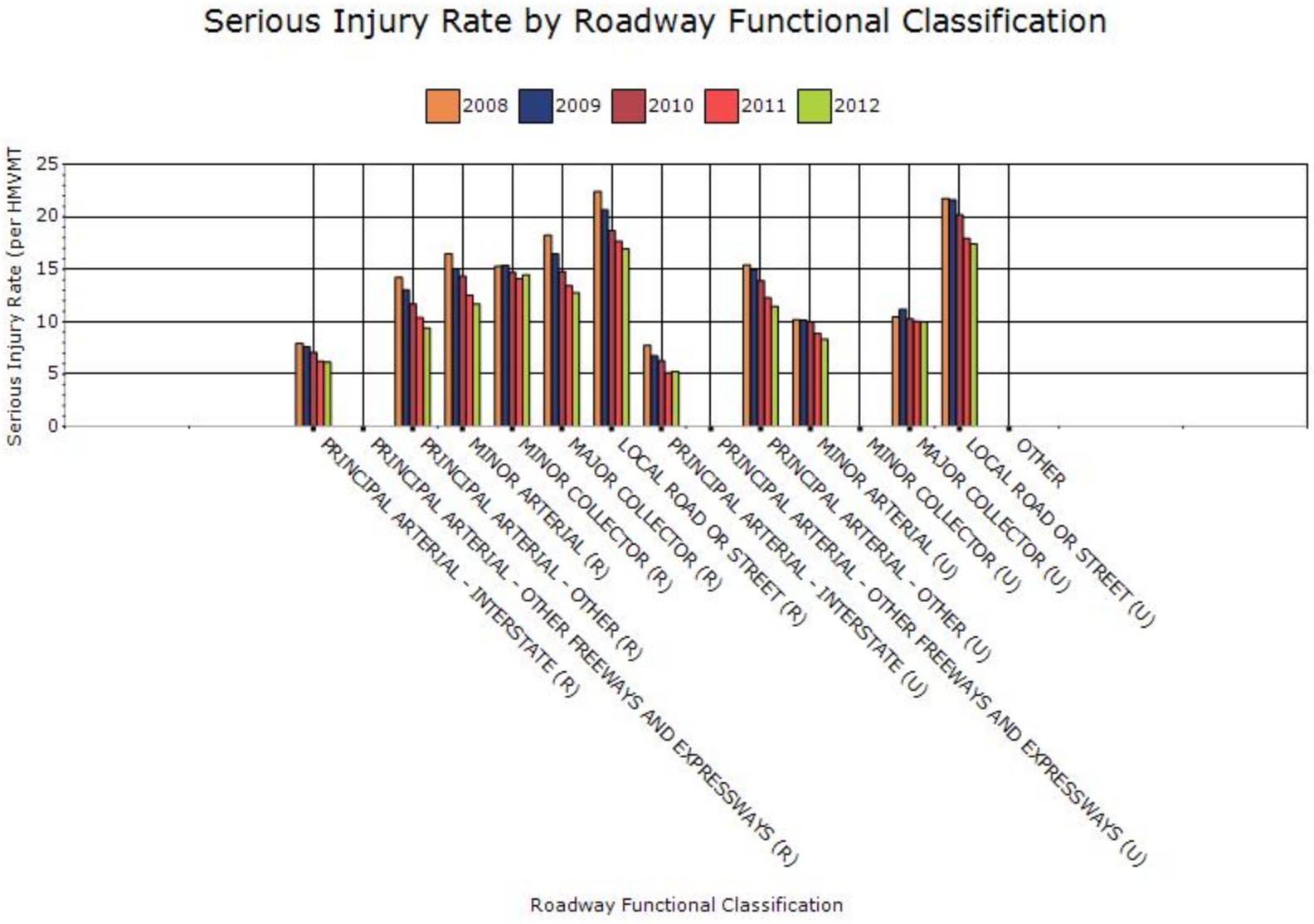
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	32	154	1.28	6.14
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
RURAL PRINCIPAL ARTERIAL - OTHER	51	219	2.2	9.4
RURAL MINOR ARTERIAL	37	141	3.06	11.67
RURAL MINOR COLLECTOR	11	62	2.53	14.47
RURAL MAJOR COLLECTOR	32	142	2.92	12.75
RURAL LOCAL ROAD OR STREET	18	128	2.37	16.96
URBAN PRINCIPAL	6	20	1.55	5.24

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
URBAN PRINCIPAL ARTERIAL - OTHER	11	113	1.08	11.47
URBAN MINOR ARTERIAL	8	46	1.48	8.34
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	2	33	0.54	9.98
URBAN LOCAL ROAD OR STREET	4	47	1.64	17.43
OTHER	0	0	0	0
OTHER	0	0	0	0


Fatalities by Roadway Functional Classification
2008
2009
2010
2011
2012
# of Fatalities
80
60
40
20
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
LOCAL ROAD OR STREET (U)
OTHER
Roadway Functional Classification


Serious Injuries by Roadway Functional Classification
2008
2009
2010
2011
2012
# of Serious Injuries
400
300
200
100
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
LOCAL ROAD OR STREET (U)
OTHER
Roadway Functional Classification

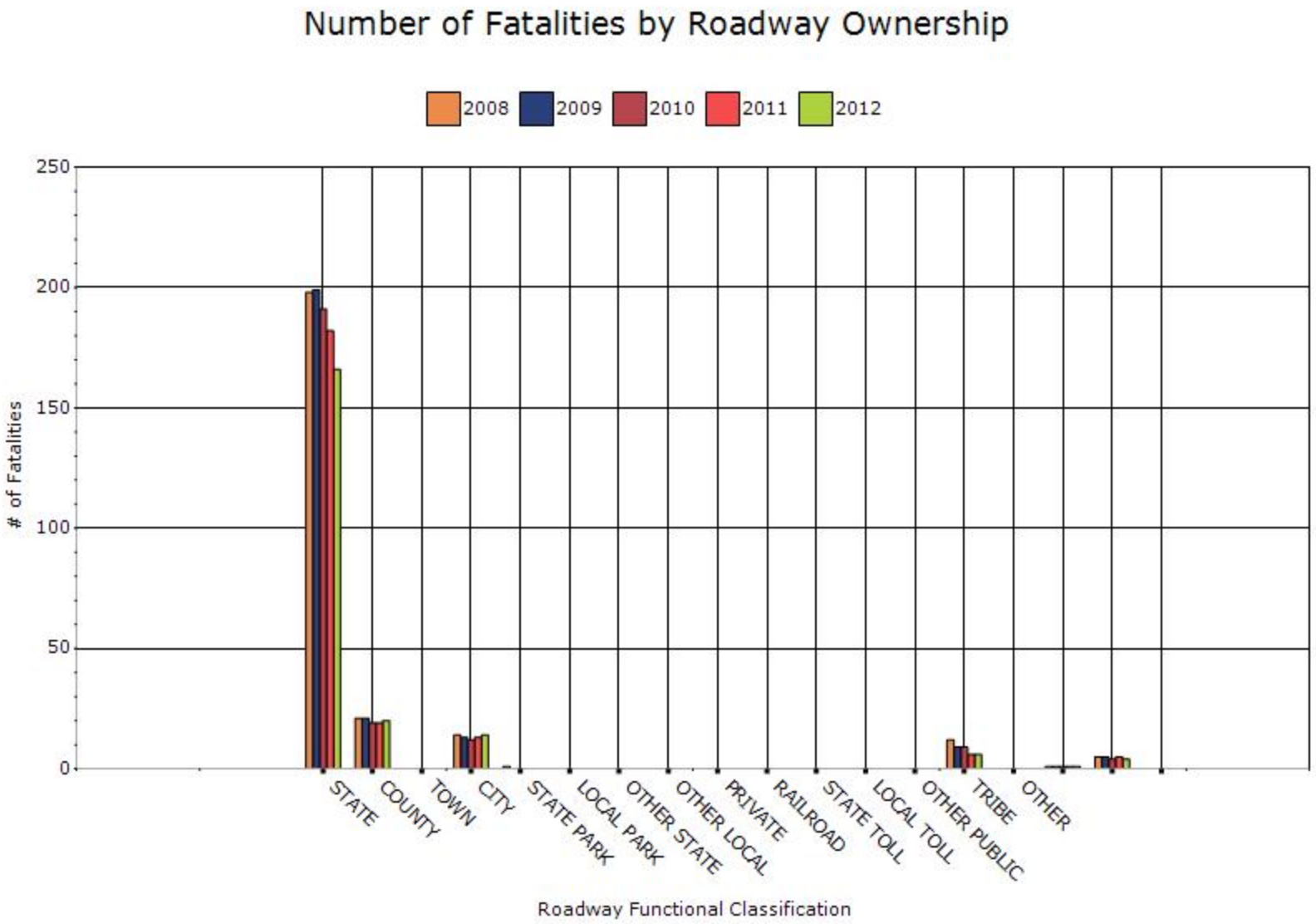

Fatality Rate by Roadway Functional Classification
2008
2009
2010
2011
2012
Fatality Rate (per HMVMT)
0
1
2
3
4
5
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
LOCAL ROAD OR STREET (U)
OTHER
Roadway Functional Classification

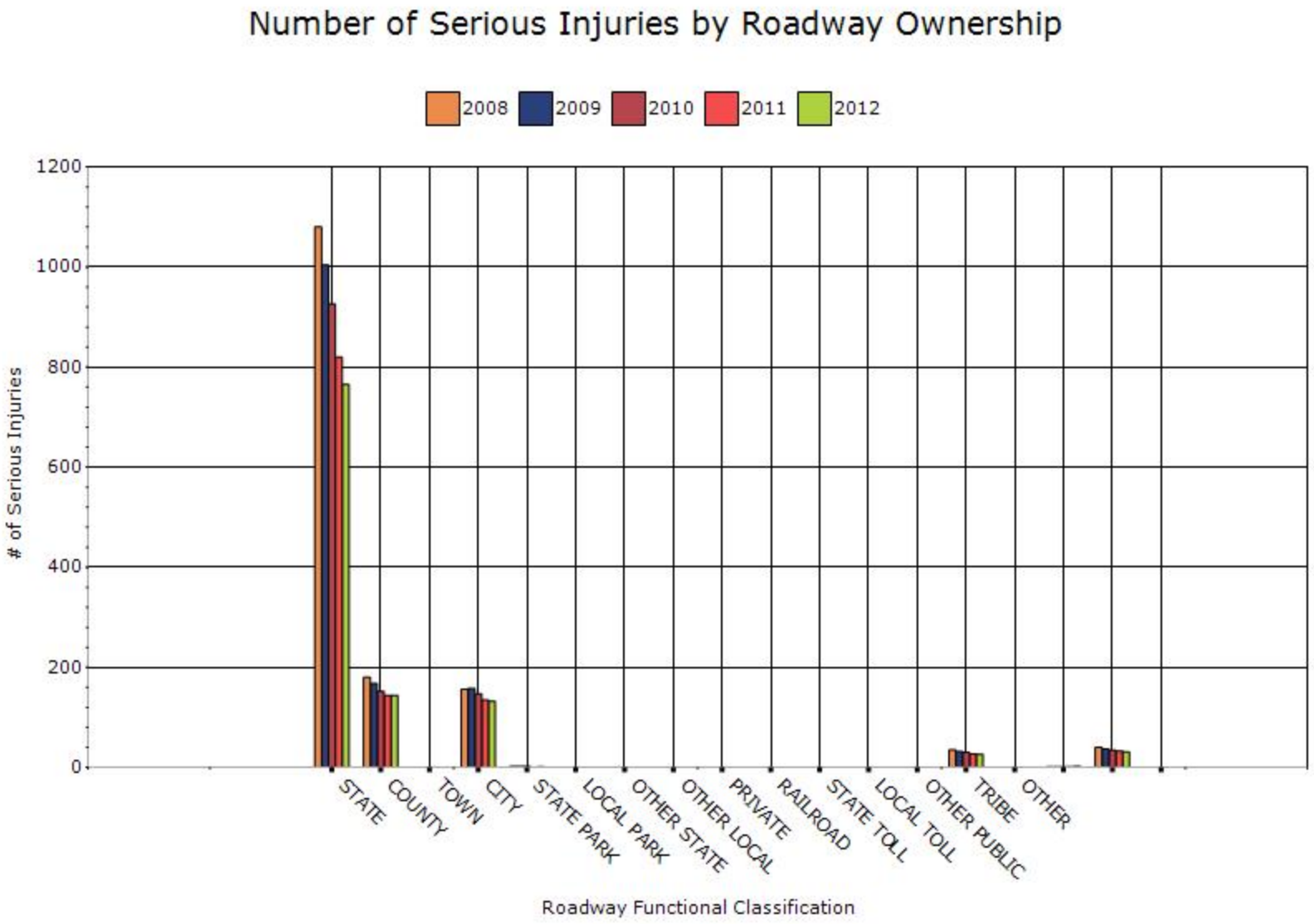

Serious Injury Rate by Roadway Functional Classification
2008
2009
2010
2011
2012
Serious Injury Rate (per HMVMT
25
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
LOCAL ROAD OR STREET (U)
OTHER
Roadway Functional Classification

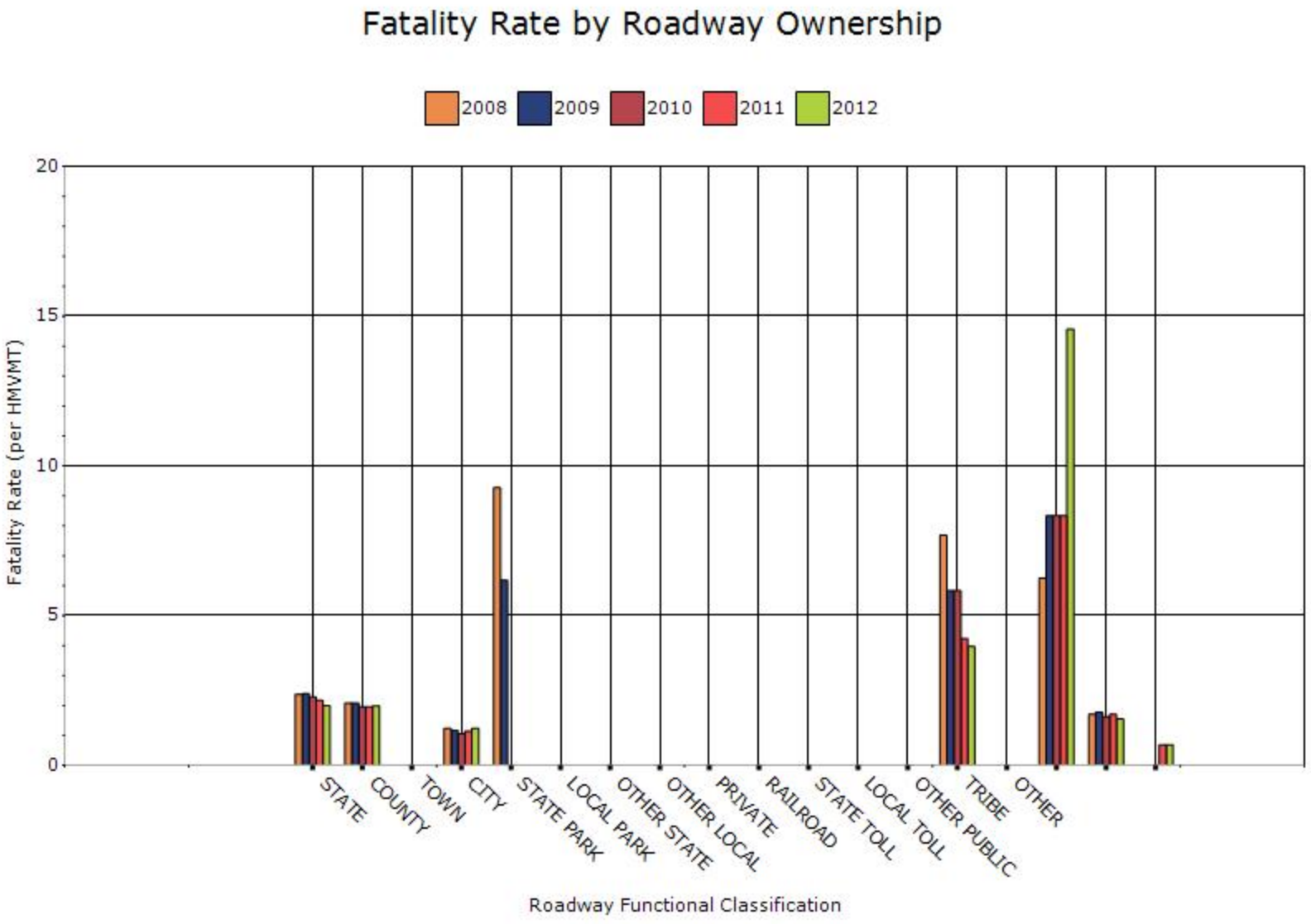
Year - 2012

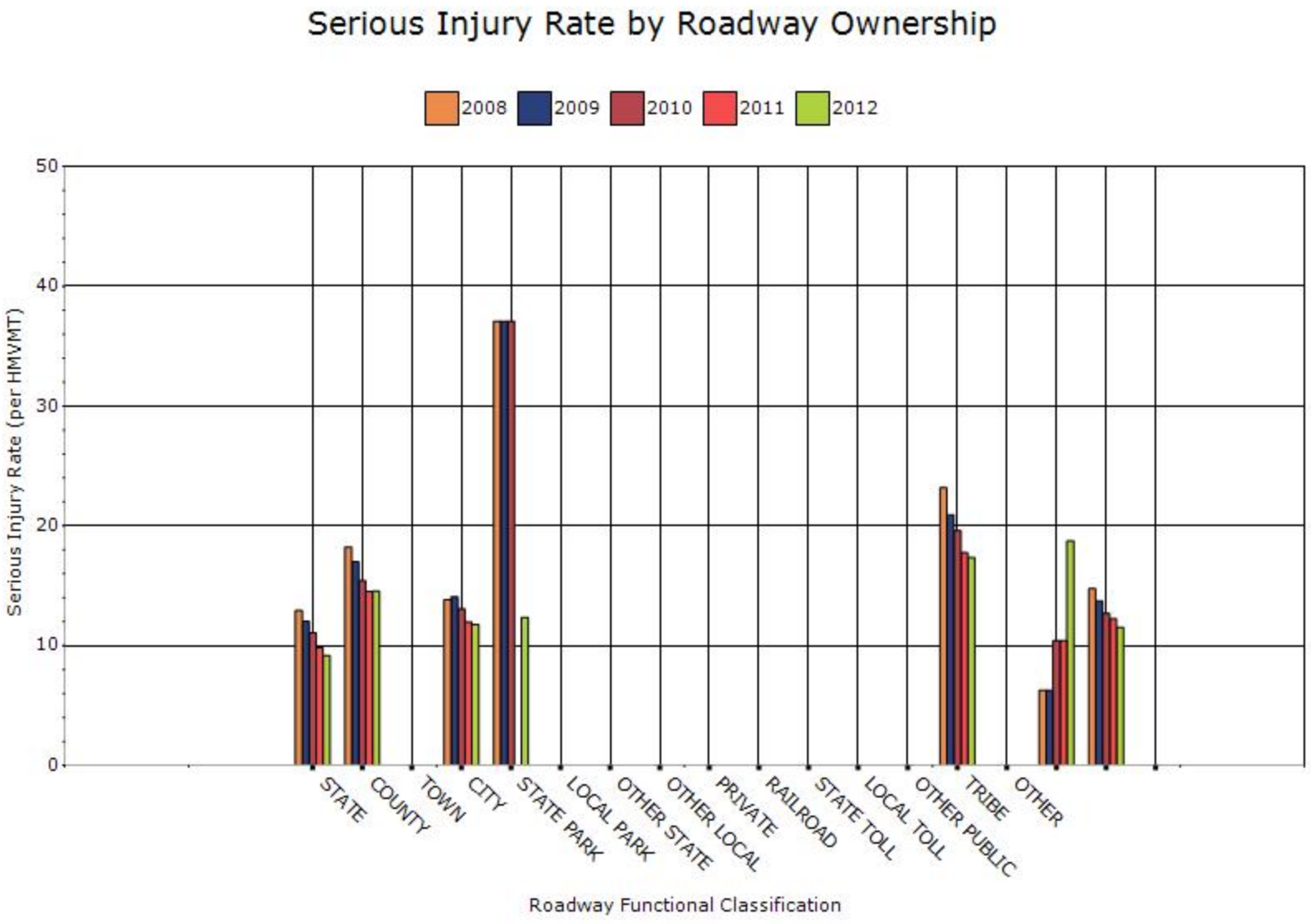
Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	166	765	1.99	9.16
COUNTY HIGHWAY AGENCY	20	144	1.98	14.54
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	14	132	1.24	11.76
STATE PARK, FOREST, OR RESERVATION AGENCY	0	1	0	12.36
LOCAL PARK, FOREST OR RESERVATION AGENCY	0	0	0	0
OTHER STATE AGENCY	0	0	0	0
OTHER LOCAL AGENCY	0	0	0	0
PRIVATE (OTHER THAN RAILROAD)	0	0	0	0

RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	0	0	0	0
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0	0	0
INDIAN TRIBE NATION	6	26	3.97	17.35
OTHER	0	0	0	0
BUREAU OF INDIAN AFFAIRS	1	2	14.57	18.74
US FOREST SERVICE	4	31	1.55	11.5
NATIONAL PARK SERVICE	0	0	0.69	0
NATIONAL PARK SERVICE	0	0	0.69	0


Number of Fatalities by Roadway Ownership
2008
2009
2010
2011
2012
250
200
150
100
50
0
# of Fatalities
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER PUBLIC
TRIBE
OTHER
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
2008
2009
2010
2011
2012
1200
1000
800
600
400
200
0
# of Serious Injuries
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER PUBLIC
TRIBE
OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
2008
2009
2010
2011
2012
Fatality Rate (per HMVMT)
20
15
10
5
0
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER PUBLIC
TRIBE
OTHER
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
2008
2009
2010
2011
2012
Serious Injury Rate (per HMVMT)
50
40
30
20
10
0
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER PUBLIC
TRIBE
OTHER
Roadway Functional Classification

Describe any other aspects of the general highway safety trends on which you would like to elaborate.

At the initiation of the Montana Comprehensive Highway Safety Plan (CHSP) planning process in 2005, the State of Montana adopted an overall "vision" for the CHSP to establish a unifying focus for the ensuing safety planning effort: "All highway users in Montana arrive safely at their destinations." Based on the State's transportation safety trends, the CHSP Oversight Committee reassessed the goal of the CHSP in 2009. The revised goal of the Montana CHSP is: "To reduce fatalities and incapacitating injuries in the State of Montana by half in two decades, from 1,704 in 2007 to 852 by 2030." No highway fatalities are acceptable and all are preventable. Yet realistically, no state has been successful in achieving zero highway fatalities. The original goal of the Montana CHSP was based on the national safety goal adopted by the American Association of State Highway and Transportation Officials (AASHTO) in 2005.

Given national trends which indicated that AASHTO's initial national fatality rate goal of 1.0 could not be met in 2008, AASHTO revised its national fatality goal in 2007. The AASHTO goal is now to halve fatalities over the next two decades by reducing national fatalities by 1,000 per year. The AASHTO policy resolution establishing the new goal "recognizes that success in implementing an aggressive highway safety goal is based in large part upon wide acceptance and enthusiastic support by the general public, media, and public/private institutions of highway safety goals" and "the statement of a safety goal in terms of actual number of lives saved will resonate with the public and these institutions significantly more than the abstract notion of an exposure rate measure." In short, AASHTO is advocating an aggressive but supportable goal based on actual fatalities, rather than rates.

Consistent with AASHTO's approach to utilize actual numbers to define its national transportation safety goal and to halve fatalities over the next two decades, Montana has adopted a similar goal. However, given Montana's lower overall fatality statistics and the tendency for these smaller numbers to fluctuate more substantially from year to year, Montana's CHSP Amendment goal also takes serious injuries (i.e., incapacitating injuries) into account as a basis for establishing a more consistent trend. The CHSP goal cited above would not only result in a substantial reduction in the State's highway fatalities and serious injuries, it also would support Montana's proportional contribution to AASHTO's national goal. Assuming a base year of 2007 in which Montana experienced 1,704 highway fatalities and serious injuries, halving the State's severe injuries by 2030 would result in 852 fatalities and serious injuries by 2030, or an average reduction of 42.6 fatalities and serious injuries per year.

The 2013 Annual Transportation Safety Meeting will be held on October 15-18. Participants represented will include a wide variety of organizations and agencies addressing the four E's of transportation safety (Education, Enforcement, Engineering, and Emergency Response). This will be the seventh annual meeting since the implementation of the Comprehensive Highway Safety Plan (CHSP) began in 2006. It is also the first time the annual meeting will be held in the fall of the year.

The overall goal of the CHSP is to reduce fatalities and incapacitating injuries in the State of Montana by half in two decades, from 1,704 in 2007 to 852 by 2030. The following is summary of the number of fatalities and serious injuries from 2006-2012:

Year	Fatalities and Serious Injuries
2006	1,877
2007	1,704
2008	1,565
2009	1,322
2010	1,185
2011	1,162
2012	1,335

Additionally, in 2012 the number of fatalities decreased by 4 (-1.9%) from 209 in 2011 to 205 in 2012; however, severe injuries increased by 174 (18.2%) from 956 in 2011 to 1,130 in 2012.

Application of Special Rules

Present the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65.

Older Driver	2008	2009	2010	2011	2012

Performance Measures					
Fatality rate (per capita)	0	0.27	0.27	0.26	0
Serious injury rate (per capita)	0	1.31	1.22	1.13	0
Fatality and serious injury rate (per capita)	0	1.58	1.49	1.39	0

*Performance measure data is presented using a five-year rolling average.

The Montana Department of Transportation (MDT) queried the crash database for crashes in which the driver is 65 years of age and older for 2004-2012 time frame. A summary of the crash severity and number of persons injured (based on severity) in the crash were tabulated. For reporting purposes, the State of Montana only looked at the crashes that resulted in a fatal injury or serious (incapacitating) injury. The fatal injury crash data was obtained by querying the Fatality Analysis Reporting System (FARS) database. The criteria used for querying the FARS database was as follows:

1) ***Select State:*** Montana

2) ***Number of Fatalities In Crash:*** All

3) ***Age:*** 65 years – 97 years older & 100 years

4) ***Person Type:*** Driver of a Motor Vehicle In-Transport and/or Pedestrian

The population data was obtained from Attachment 2 of the Older Driver and Pedestrian Special Rule Interim Guidance (February 13, 2013) provided by the FHWA. Because 2012 population data is not provided in the interim guidance, calculation of corresponding rates for 2012 was not completed.

MDT then used a 5-year rolling average for each year of reporting (i.e. 2009, 2010, and 2011). A similar query was run for crashes involving a pedestrian(s) that were 65 years of age and older for the same time period and 5-year rolling average was calculated.

To derive the fatality rate and serious injury rate for persons 65 years of age or older per 1,000 total population that are age 65 or greater, the number of fatalities and serious injuries were added together for each year of study and divided by the proportion of Montana's population that is 65 years of age and older for the corresponding year obtained from Attachment 2. As

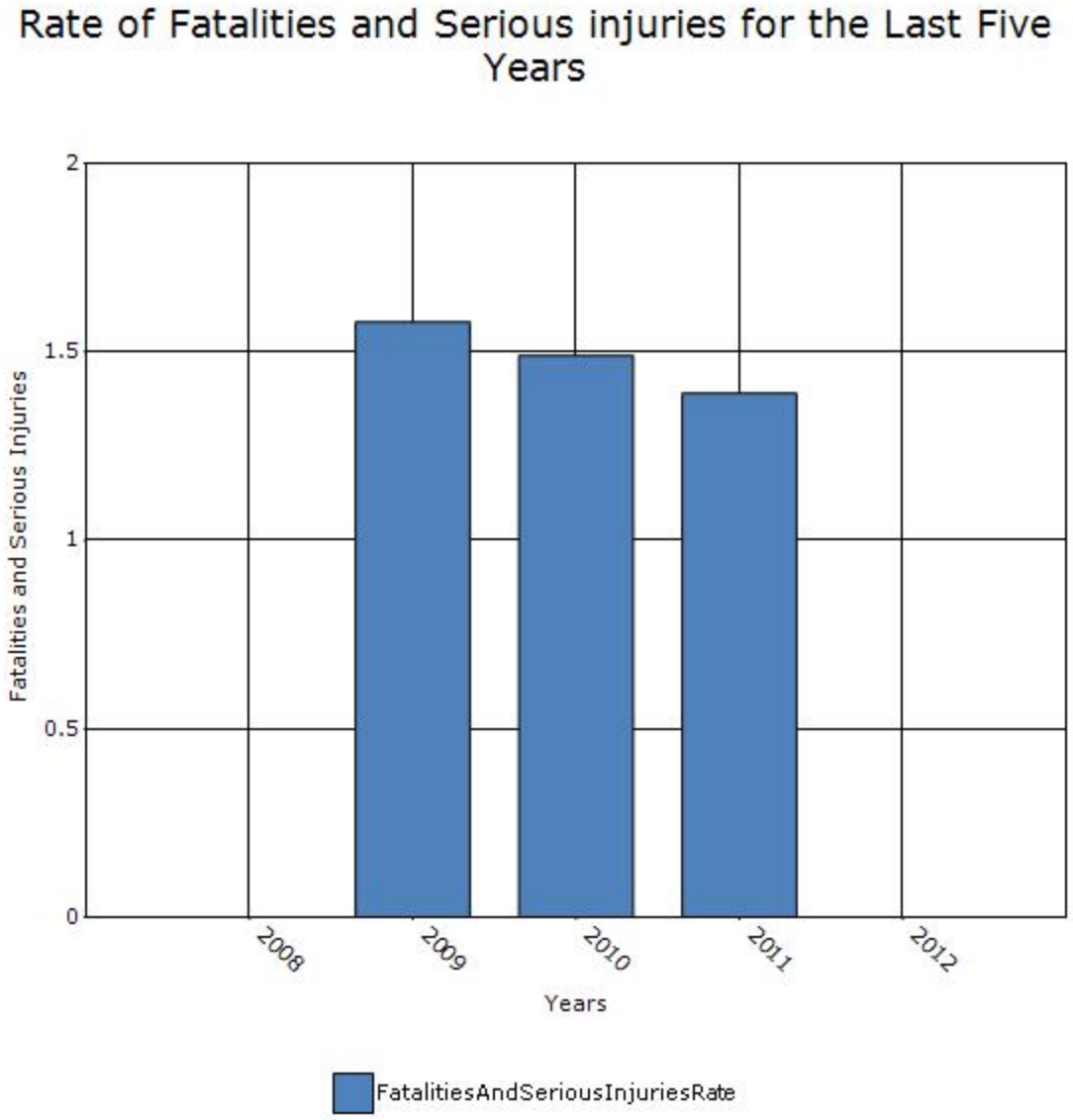
mentioned above, once the yearly fatality rates and serious injury rates were calculated a 5-year rolling average was used for 2008-2011 reporting years.

An example calculation for the combined Fatal and Serious Injury Rate per capita for Drivers and Pedestrians 65 years of age and older for 2011 (2011, 2010, 2009, 2008, and 2007) is illustrated below:

(Fatal + Serious Injury 2011 Drivers and Pedestrians 65 years of age and older/2011 Population Figure)+ (Fatal + Serious Injury 2010 Drivers and Pedestrians 65 years of age and older/2011 Population Figure)+ (Fatal + Serious Injury 2009 Drivers and Pedestrians 65 years of age and older/2011 Population Figure)+ (Fatal + Serious Injury 2008 Drivers and Pedestrians 65 years of age and older/2011 Population Figure)+ (Fatal + Serious Injury 2007 Drivers and Pedestrians 65 years of age and older/2011 Population Figure)/5

The same methodology was used for calculating the Fatality Rate and/or Serious Injury Rate by excluding either the *fatal* or *serious injury* portion of the above equation.

The Montana Department of Transportation used the calculation methodology described in the Section 142-Older Drivers and Pedestrians Special Rule Interim Guidance Report dated February 13, 2013.



Does the older driver special rule apply to your state?

No

The current version of the Montana Comprehensive Highway Safety Plan (CHSP) includes an emphasis area for older driver crashes. The performance measure established for this emphasis area by the CHSP stakeholders during the 2012 annual meeting was to reduce the five-year average number of fatalities and incapacitating injuries from crashes involving older drivers from 209 in 2010 to 162 by 2015. Additional detail on the Older Driver Emphasis Area and the strategies can be found on the MDT internet site at:
http://www.mdt.mt.gov/safety/safety-initiatives/older-drivers.shtml.

Assessment of the Effectiveness of the Improvements (Program Evaluation)

What indicators of success can you use to demonstrate effectiveness and success in the Highway Safety Improvement Program?

☐ None

☒ Benefit/cost

☐ Policy change

☒ Other: Other-Overall reduction in fatalities and incapacitating injuries from 1,704 in 2007 to 1,335 in 2012. HSIP is a component of the overall CHSP goal.

2012 HSIP B/C is 5.38 based on 68 identified locations.

What significant programmatic changes have occurred since the last reporting period?

☐ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☐ Organizational Changes

☒ None

☐ Other:

Briefly describe significant program changes that have occurred since the last reporting period.

No significant program changes have occurred since the last reporting period.

SHSP Emphasis Areas

For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

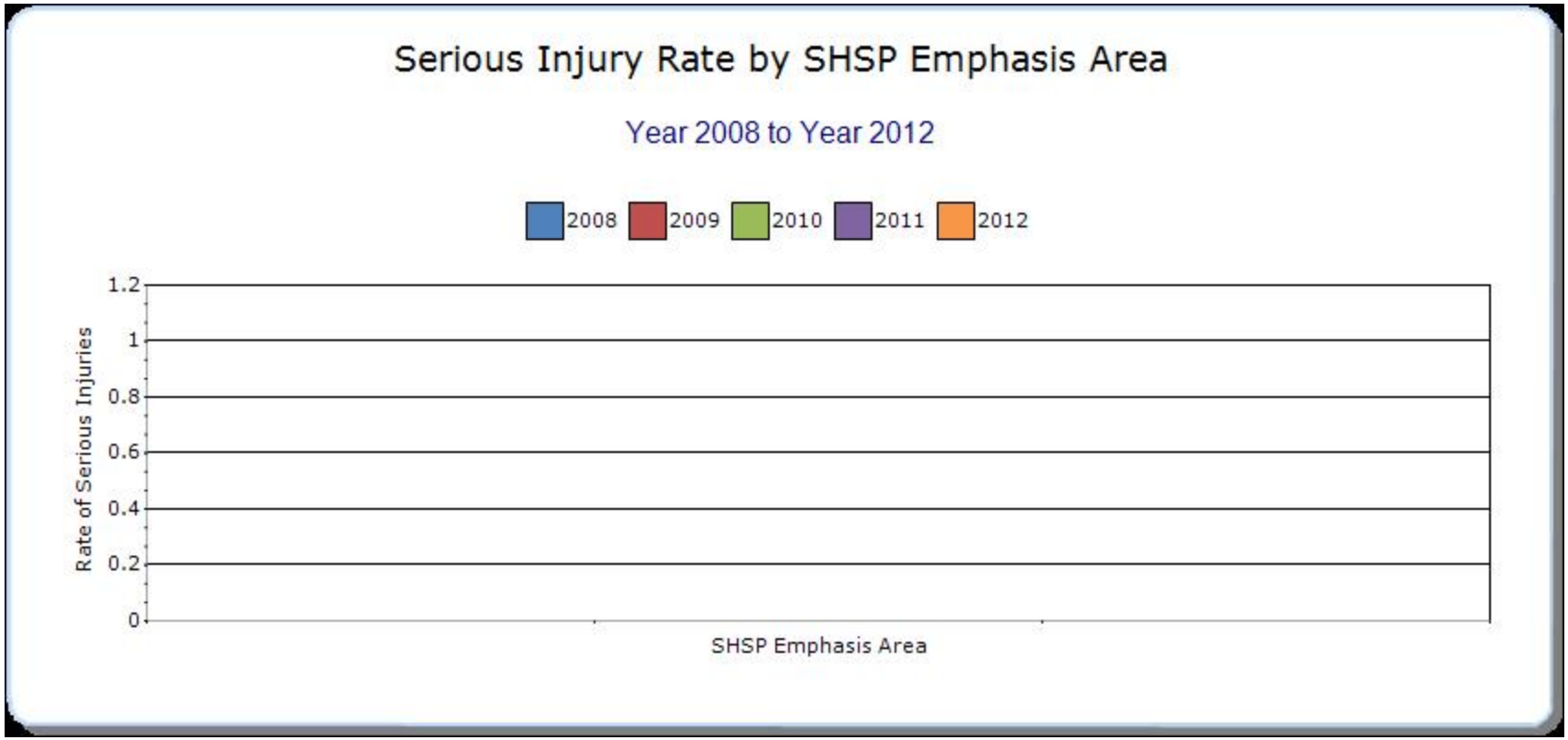
Year - 2012

HSIP-related SHSP Emphasis Areas	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Reducing Single-Vehicle-Run-Off-the-Road Crashes	Run-off-road	121	596	1.07	5.29	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2008 to Year 2012
2008
2009
2010
2011
2012
1.2
1
0.8
0.6
0.4
0.2
0
# of Fatalities
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
Year 2008 to Year 2012
2008
2009
2010
2011
2012
1.2
1
0.8
0.6
0.4
0.2
0
# of Serious Injuries
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2008 to Year 2012
2008
2009
2010
2011
2012
1.2
1
0.8
0.6
0.4
0.2
0
Rate of Fatalities
SHSP Emphasis Area



Since the establishment of the overall Comprehensive Highway Safety Plan goal in 2009 Montana has achieved a significant reduction in fatalities and incapacitating injuries from 1,704 in 2007 to 1,335 in 2012, nearly a 22% decrease.

The Highway Safety Improvement Program (HSIP) is a component of the overall Comprehensive Highway Safety Plan and has contributed to this statewide reduction in severe crashes. MDT's site specific (hot-spot) program mitigates crashes at specific locations using proven engineering countermeasures. MDT has historically utilized all available HSIP funding to construct safety improvements on Montana's highways.

The Montana Comprehensive Highway Safety Plan (CHSP) has several emphasis areas which include a significant engineering strategy and directly relate to the HSIP. These emphasis areas include: 1) Reducing Single-Vehicle-Run-Off-the- Road Crashes; and 2) Reducing Crashes in High Crash Corridors/High Crash Locations. The majority of fatalities in Montana, nearly 60 percent, continue to be the result of single vehicle run-off-the-road crashes (SVROR). Factors contributing to single-vehicle run-off-the-road crashes frequently involve behavior issues that are being addressed in other CHSP Emphasis Areas such as passenger restraint, impairment, and young drivers.

The SVROR Emphasis Area team is currently looking into experiences and strategies that have been tried in other states for applicability to Montana. The following performance measure target was established during the 2012 Annual Meeting: Reduce the five-year average number of fatalities and incapacitating injuries of single vehicle, run-off-the-road crashes from 817 in 2010 to 632 by 2015.

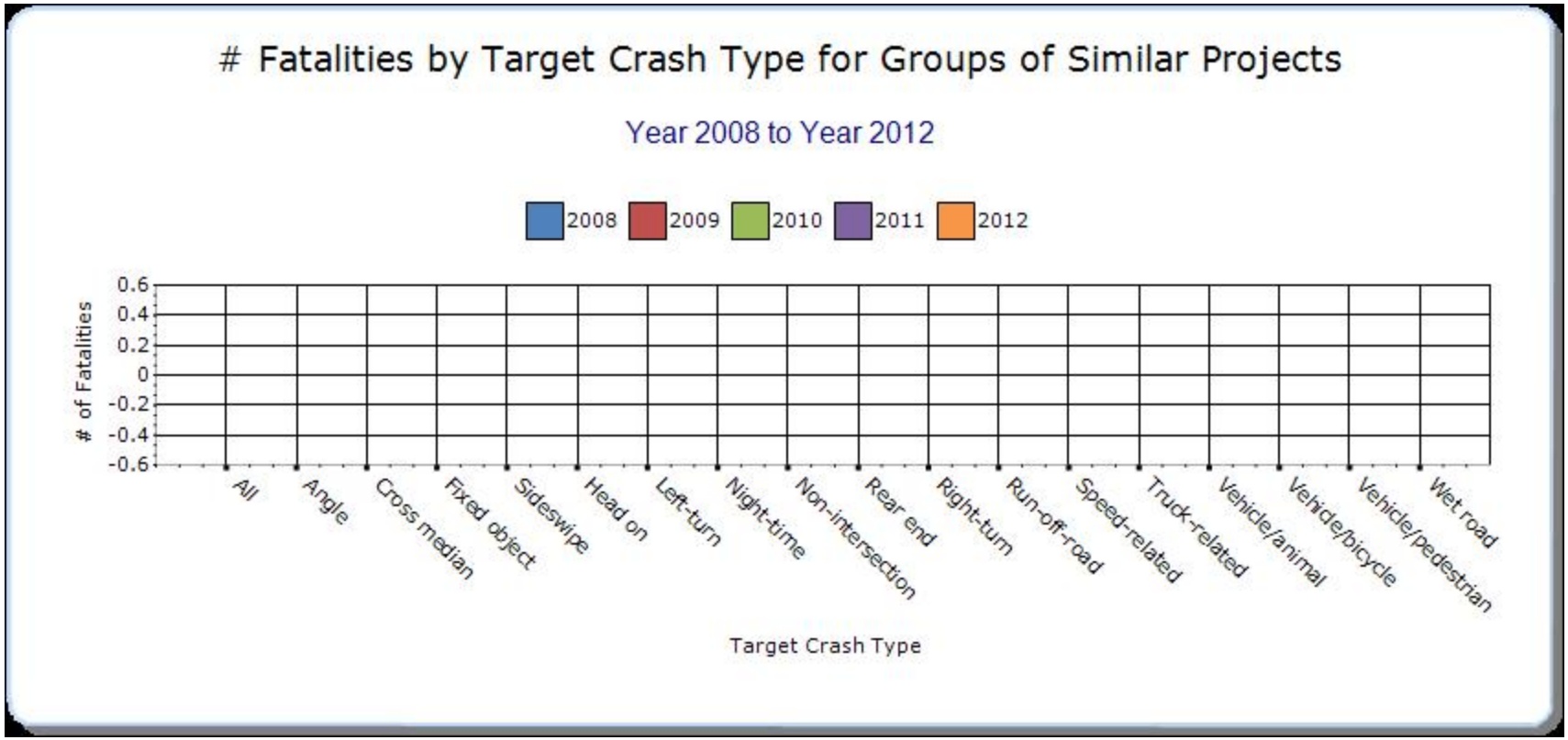
The chart attached to this question presents the 5-year rolling average crash information for single vehicle run off the road fatalities and incapacitating injuries. As shown, the 5-year average number of fatalities and serious injuries has decreased steadily over time.

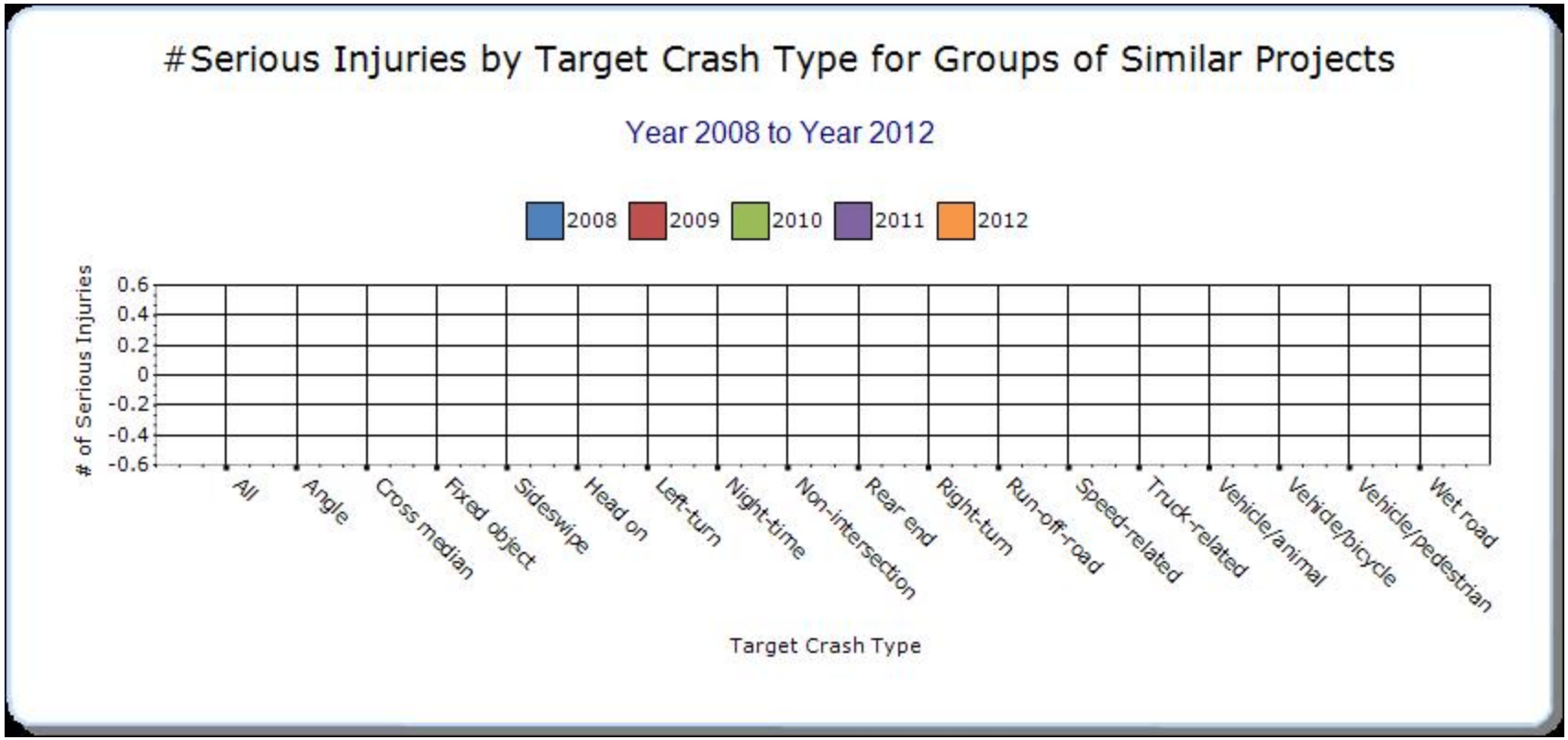
Groups of similar project types

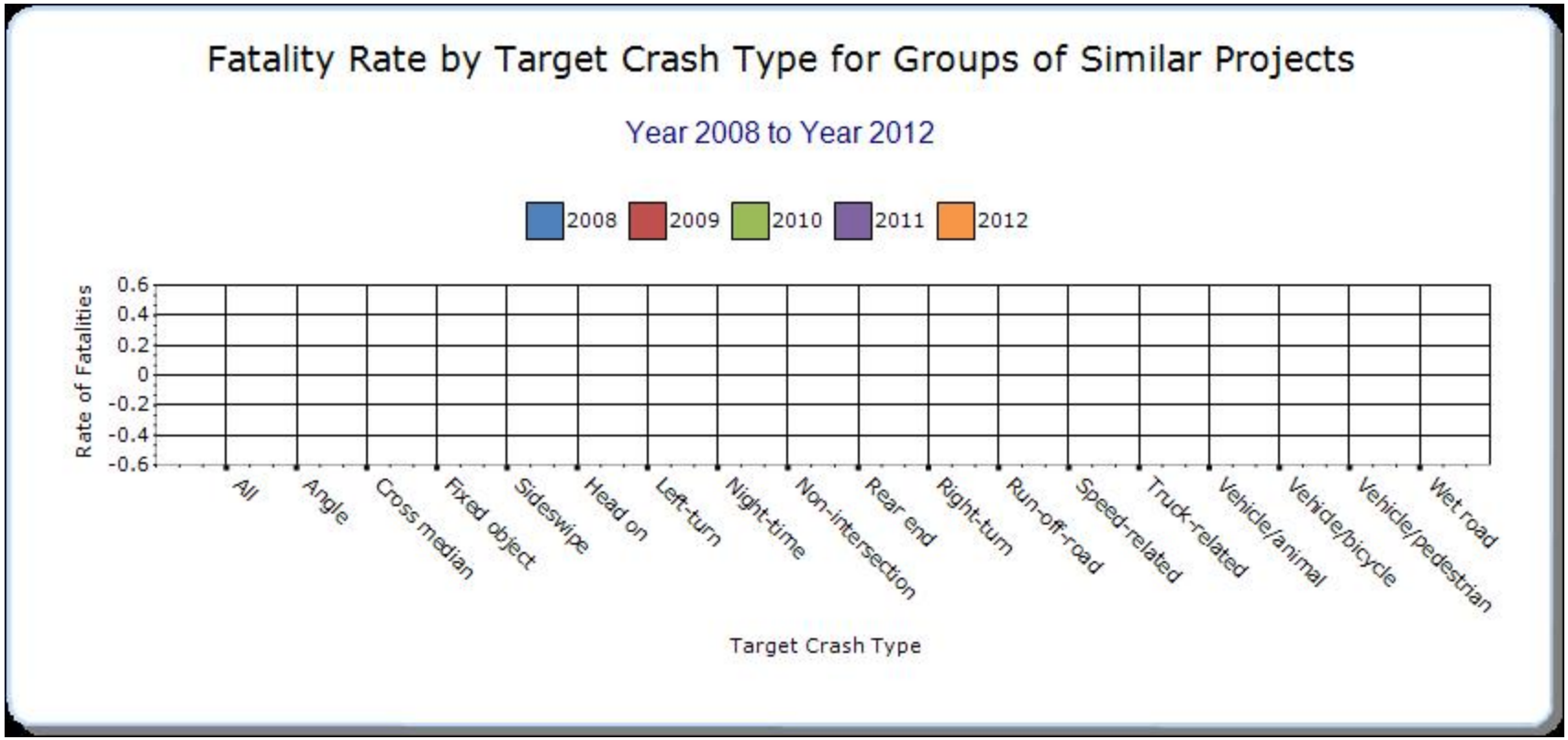
Present the overall effectiveness of groups of similar types of projects.

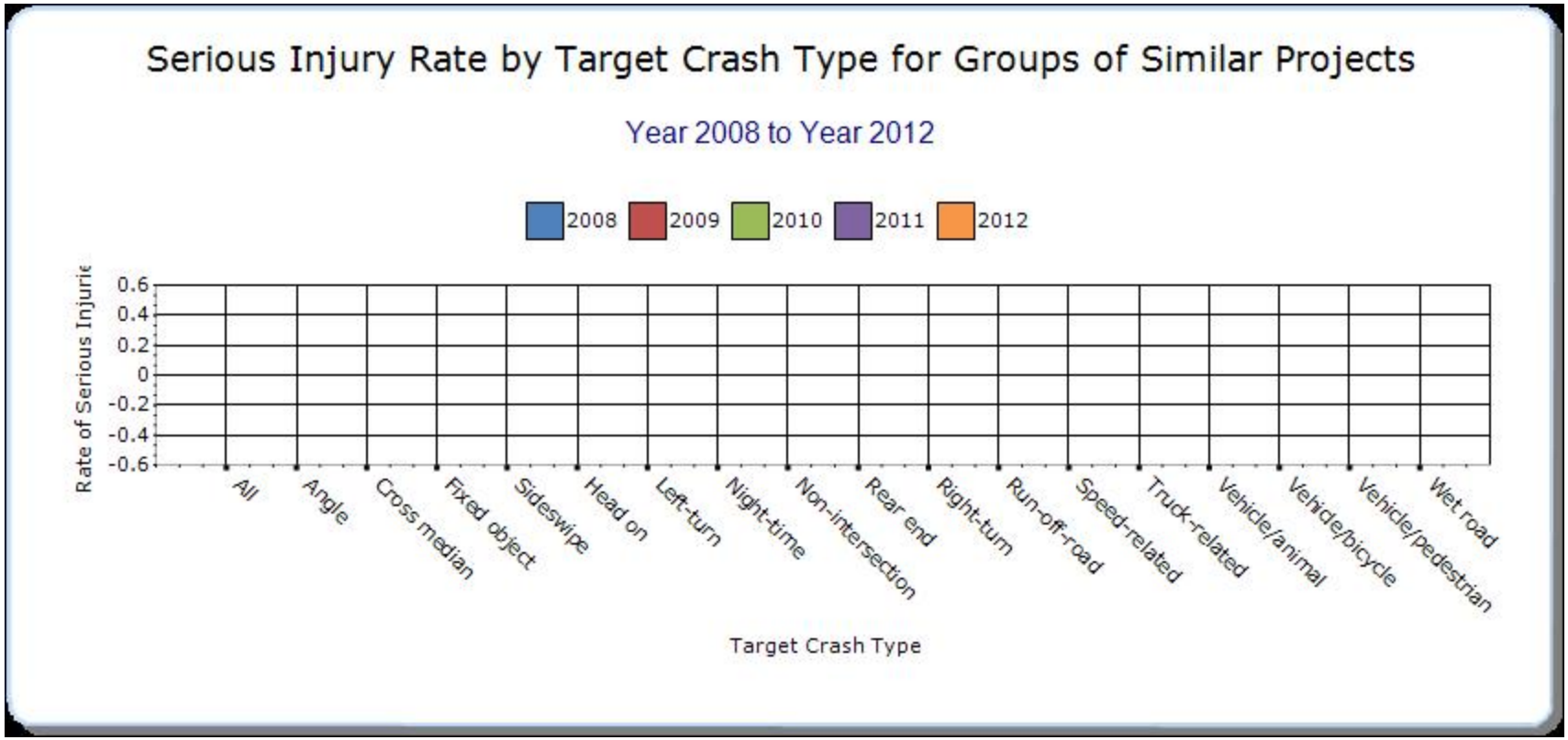
Year - 2012

HSIP Sub-program Types	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2008 to Year 2012
2008
2009
2010
2011
2012
# of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


#Serious Injuries by Target Crash Type for Groups of Similar Projects
Year 2008 to Year 2012
2008
2009
2010
2011
2012
# of Serious Injuries
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Groups of Similar Projects
Year 2008 to Year 2012
2008
2009
2010
2011
2012
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



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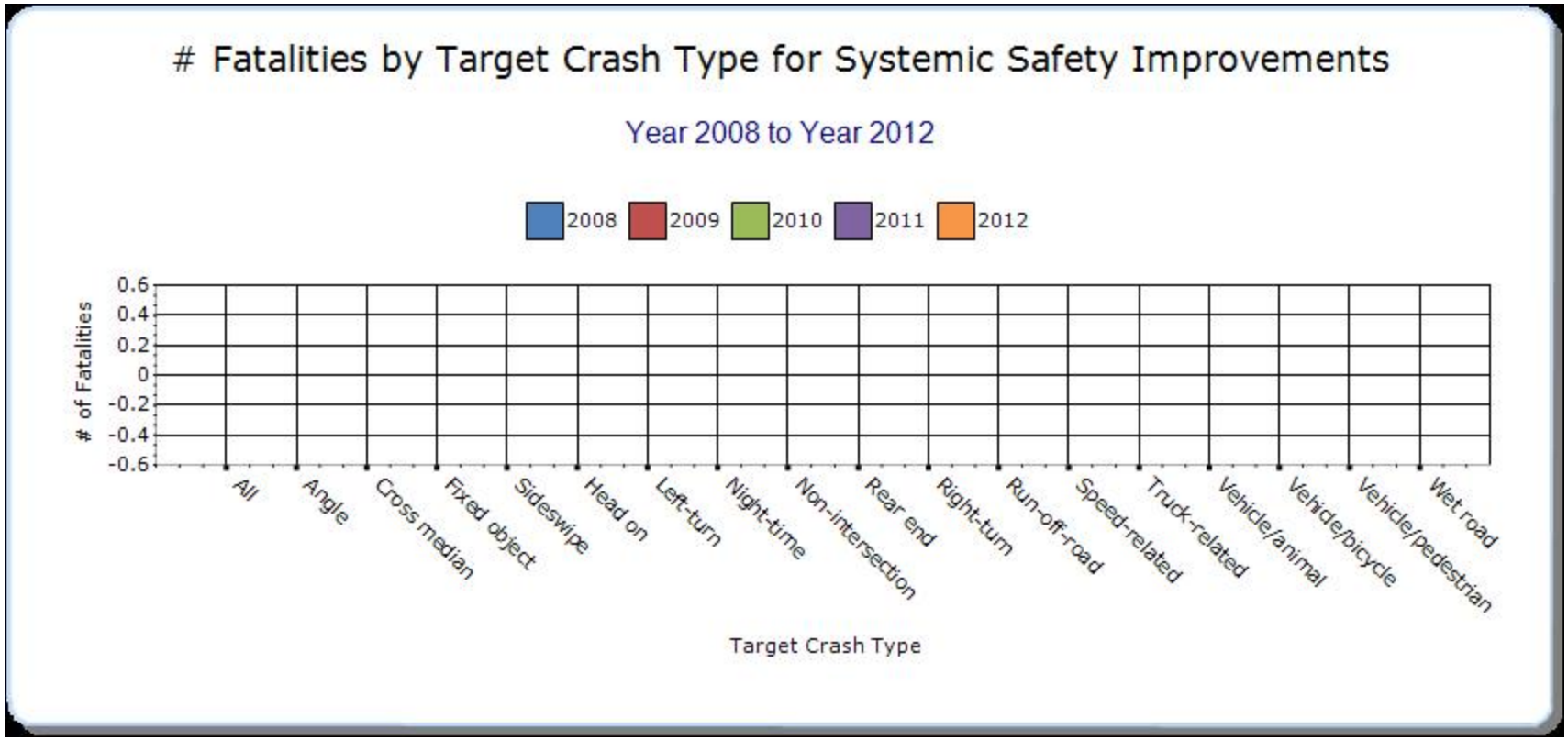
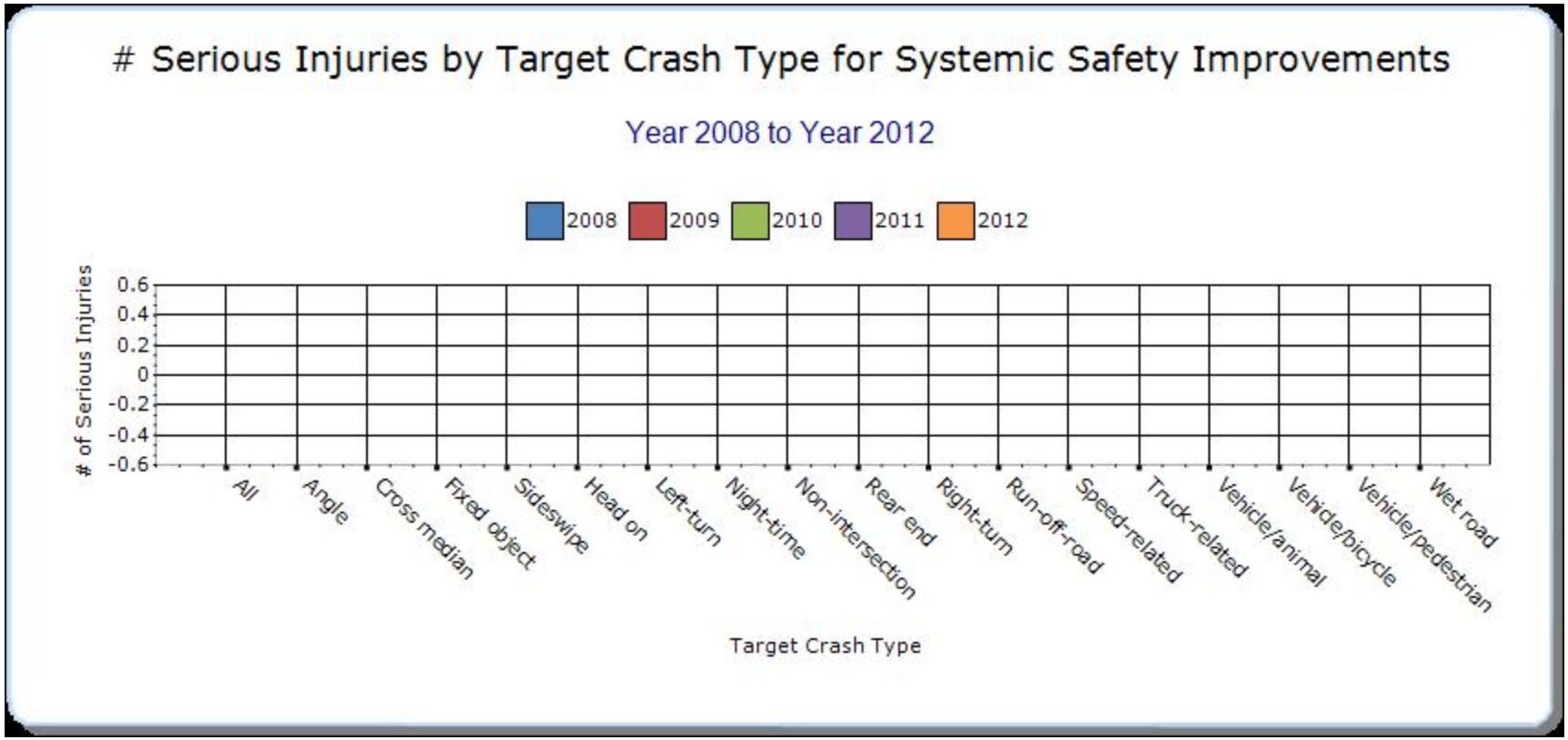
Systemic Treatments

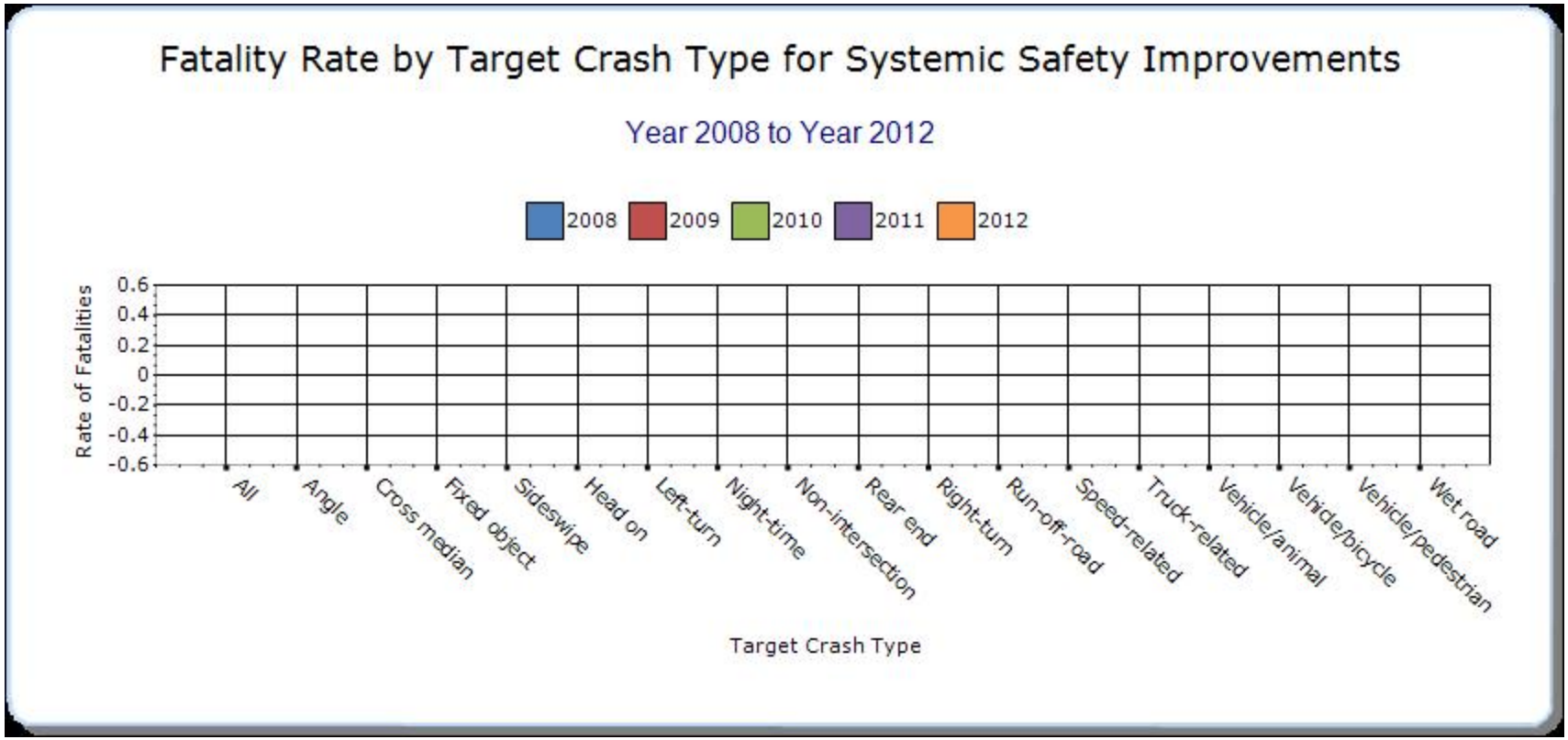
Present the overall effectiveness of systemic treatments..

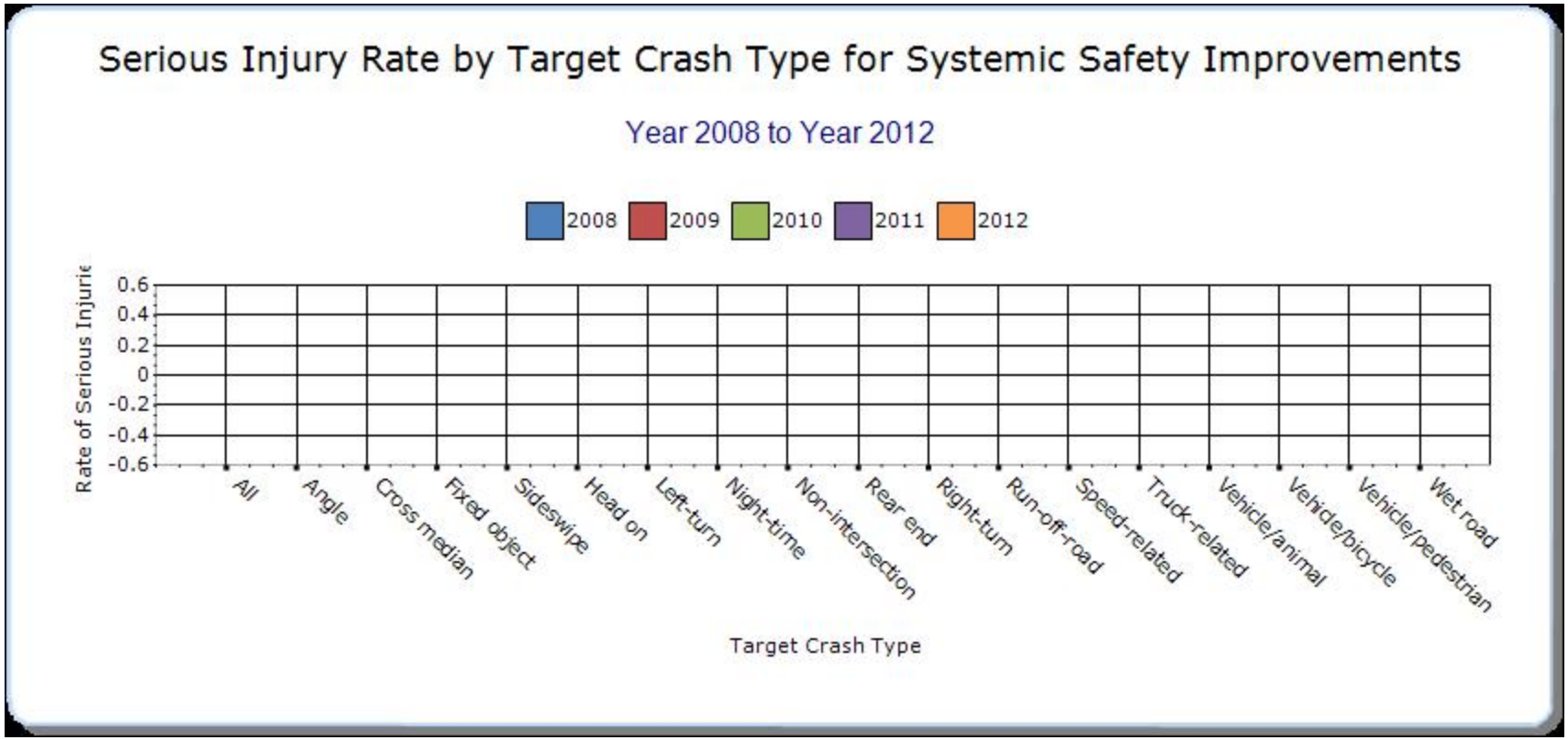
Year - 2012

Systemic improvement	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2008 to Year 2012
2008
2009
2010
2011
2012
# of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2008 to Year 2012
2008
2009
2010
2011
2012
# of Serious Injuries
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Systemic Safety Improvements
Year 2008 to Year 2012
2008
2009
2010
2011
2012
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



MDT has initiated district wide horizontal curve signing upgrade projects. These projects address the High Crash Corridor (HCC) Emphasis Area, Strategy HC-3 HCC Sign Evaluation in the CHSP. In addition, these projects will address single vehicle run off the road crashes and high crash corridors/high crash locations, both of which are identified emphasis areas in the CHSP. Long term, the intent of these projects is to evaluate all MDT roadways; however, evaluations will likely begin on the HCC's identified in the CHSP. Projects are on-going in the Missoula District and will be starting shortly in the Great Falls, Butte and Billings Districts. With the adoption of the new MUTCD, MDT is required to update all horizontal curve signage by 2019. This proposed project furthers the goals of the CHSP as well as meets the deadlines established in the MUTCD. The projects are currently in the development phase and have not been constructed. Evaluations of the effectiveness of the projects can be completed once the projects are constructed and sufficient after period data is available.

MDT has also initiated system wide projects on the interstate system to upgrade all of the "wrong way" signing to MUTCD standards. The first project in the Missoula District is currently slated for construction in federal fiscal year 2014.

Several stand alone rumble strip projects (centerline and shoulder) were identified and advanced as part of this year's HSIP. These projects directly address the Single Vehicle Run Off the Road Emphasis area in the CHSP.

Describe any other aspects of the overall Highway Safety Improvement Program effectiveness on which you would like to elaborate.

The number of fatalities and incapacitating injuries shows a steady overall decline over the last fourteen years and is summarized as follows:

Year-Fatalities and Incapacitating Injuries

1997 - 2,182
1998 - 2,071
1999 - 1,959
2000 - 2,027
2001 - 1,663
2002 - 2,007
2003 - 1,896
2004 - 1,796
2005 - 1,792
2006 - 1,877
2007 - 1,704
2008 - 1,565
2009 - 1,322
2010 - 1,185
2011 - 1,162
2012 - 1,335

The Statewide crash rate and severity rates also show a steady overall decline since 1997:

Year - Crash Rate - Severity Index - Severity Rate

1997 - 2.43 - 1.99 - 4.82
1998 - 2.33 - 1.98 - 4.61
1999 - 2.15 - 2.01 - 4.32
2000 - 2.26 - 1.99 - 4.49
2001 - 2.18 - 1.91 - 4.17
2002 - 2.24 - 1.89 - 4.23
2003 - 2.13 - 1.86 - 3.97
2004 - 1.95 - 1.88 - 3.67
2005 - 2.01 - 1.87 - 3.75
2006 - 1.97 - 1.91 - 3.76
2007 - 1.93 - 1.87 - 3.61
2008 - 2.04 - 1.84 - 3.75
2009 - 1.88 - 1.78 - 3.34
2010 - 1.80 - 1.74 - 3.14
2011 - 1.75 - 1.73 - 3.03
2012 - 1.67 - 1.82 - 3.05

Crash Rate: Number of crashes per million vehicles miles.

Severity Index: Ratio of the sum of fatal and incapacitating injury crashes times 8 plus the number of other injury crashes times 3 plus the number of property damage crashes to the total number of crashes.

Severity Rate: Crash rate multiplied by the severity index.

Provide project evaluation data for completed projects (optional).

Location	Functional Class	Improvement Category	Improvement Type	Bef-Fatal	Bef-Serious Injury	Bef-Other Injury	Bef-PDO	Bef-Total	Aft-Fatal	Aft-Serious Injury	Aft-Other Injury	Aft-PDO	Aft-Total	Evaluation Results (Benefit/ Cost Ratio)
Wild Animal Exclusionary Fencing on I-94; RP 152.1-169.8	Rural Principal Arterial - Interstate	Animal-related		0	6	12	92	110	1	4	5	47	57	2.15
Snow Fence Installation on I-15; RP 143-143.9	Rural Principal Arterial - Interstate	Miscellaneous		0	1	0	10	11	0	0	2	9	11	19.15
Guardrail Improvements at Four Locations	Various	Roadside	Barrier- metal	1	6	19	44	70	1	2	16	56	75	6.25
Intersection improvements at 21 locations.	Various	Intersection traffic control		1	22	58	95	176	1	8	34	70	113	148.49

MDT has elected to evaluate the HSIP based on groups of similar projects on an annual basis. At this time, the evaluation process will focus on nominated projects having a construction and construction engineering (CN+CE) cost exceeding $100,000. Smaller, lower cost projects (CN + CE < $100,000) will not be included in the initial evaluations; however, as the evaluation process matures consideration will be given to evaluating these smaller improvements. Additional evaluations or site specific evaluations will be completed on a case-by-case basis. Typically, a minimum of 5-years of after data should be available for the treatment sites. For urban improvements, utilization of a 3-year before and after time period can be considered.

Optional Attachments

Sections	Files Attached
Program Structure: Program Administration	hsip_application.pdf
Program Structure: Program Administration	SVROR-5_YR_AVGS.pdf

Glossary

5 year rolling average means the average of five individual, 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.

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.