MINNESOTA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2017 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The Minnesota safety program distributes HSIP funds between Local and State agencies. The program balances needs for fiscal responsibility with effective safety strategies by emphasizing projects identified in systemic analysis or safety planning. As fatal and serious injury crashes are widely distributed, lower-cost countermeasures receive additional consideration to improve coverage of the roadway system.

The SHSP is the comprehensive framework for reducing fatalities and serious injuries on public roads in Minnesota; this plan is the primary guidance for HSIP. Collaboration between local and state, internal and external partners is key to this process. The Minnesota Toward Zero Deaths (TZD) program and HSIP provide the context for partners to engage with State traffic safety programming.

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 Minnesota HSIP program is split between Local and State projects. MnDOT Office of Traffic, Safety & Technology (OTST) solicits projects from local governing units for the next four years; a parallel solicitation for State projects is issued to the districts. These solicitations aim to fully program safety projects in the next two years, but projects three to four years out are awarded to ensure planning. A parallel process is conducted within the Minneapolis-St Paul Metro that is coordinated through the MPO. Funding is distributed between Local and State based on fatal and serious injury crashes; distribution between each district or Area Transportation Partnership is based on the location of these fatal and serious injury crashes.

Beginning with SFY 2017, OTST approves all State and Local HSIP projects before they are entered in the STIP. The award memo received is the basis for being allowed to enter the STIP.

Where is HSIP staff located within the State DOT?

Operations

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

How are HSIP funds allocated in a State?

Central Office via Statewide Competitive Application Process
Formula via Districts/Regions

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

Central Office allocates funds based on fatal and serious injury crashes between State Highways and Local Roads. Within these each DOT District or Area Transportation Planning Region receives targets based on crash history. Solicitations are administered centrally twice annually.

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

MnDOT distributes funds to local roads through the Greater Minnesota Combined Solicitation. OTST, with representatives from State-Aid and MnDOT District Traffic Engineers, prioritize the local HSIP projects for each ATP. Districts are given the opportunity to comment on the prioritization of projects.

The allocation of HSIP funds is based on the distribution of fatal and A-injury crashes. Funds are distributed as follows:

Step 1: Funds are split based on % of K and A crashes in each District.
Step 2: Funds are split again based on % of K and A crashes occurring on State vs. local system.

The Minnesota Strategic Highway Safety Plan (SHSP) is the main guidance for project selection and evaluation. MnDOT has worked to develop a County Road Safety Plan for all 87 counties within the state based on systemic risk assessment. These plans are given priority in the selection process. Stand-alone safety projects rather than countermeasures within larger projects are given priority.

A subset of counties has opted to join OTST in updating the County Road Safety Plan: this process has begun in 2017.

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

Traffic Engineering/Safety
Districts/Regions
Local Aid Programs Office/Division

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

Describe coordination with internal partners.

MnDOT's office of Traffic, Safety and Technology (OTST) works closely with the State Aid for Local Transportation (SALT) office as well as district traffic engineers in the distribution of HSIP funds.

A representative from the state aid office sits on the both the steering and selection committees for HSIP. The offices work together to educate local agencies and district personnel on the HSIP program. Once projects are selected the state aid office coordinates with the local agencies and provides support as necessary.

The HSIP project selection committee asks for input from the district traffic engineers during the selection and award processes. District traffic engineers provide vital background information on proposed projects as well as adding the local perspective. Additionally, local partners are asked to provide some documentation that the district traffic engineer is aware of and supportive of their prospective project if it impacts MnDOT roadways.

MnDOT also holds quarterly TEO (Traffic Engineering Organization) Safety Subcommittee meetings, at which additional HSIP coordination occurs.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
FHWA
Other-City Engineer Safety Committee
Other-County Engineer Safety Committee

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

Describe coordination with external partners.

Districts and Counties collaborate extensively to develop and implement safety plans as funded by HSIP; a subset of Minnesota's 87 counties have opted in to updating these plans. MPOs are involved in reviewing HSIP solicitations within their respective boundaries before awards are published. Beginning in 2016, a traffic safety culture project in Park Rapids, MN has begun planning processes with local enforcement, public health, healthcare providers, emergency response, county commissioners, and chamber of commerce; these partners collaborate to develop local initiatives.

Minnesota's Toward Zero Deaths program is the primary way local partners can integrate and become involved in Statewide safety programming. TZD regional coordinators build coalitions through outreach and workshops helping to direct action among local partners.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

No

Program Methodology

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

Yes

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

2017 Minnesota Highway Safety Improvement Program

File Name:
HSIP funding guide FINAL.pdf

Select the programs that are administered under the HSIP.

HSIP (no subprograms)

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

Program:	HSIP (no subprograms)
Date of Program Methodology:	8/1/2015

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

Addresses SHSP priority or emphasis area

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

Competes with all projects

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

Crashes	**Exposure**	**Roadway**

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

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

Yes

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

Yes

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

How are projects under this program advanced for implementation?

Competitive application process
selection committee

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

Rank of Priority Consideration

Ranking based on B/C : 3
Available funding : 3
Cost Effectiveness : 3

Enter additional comments here to clarify your response for this question or add supporting information.
Minnesota does not define explicit programs or subprograms for HSIP: projects are selected from a competitive application process.

What percentage of HSIP funds address systemic improvements?

72

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

Cable Median Barriers
Rumble Strips
Pavement/Shoulder Widening
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Safety Edge
Install/Improve Lighting
Horizontal curve signs

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

What process is used to identify potential countermeasures? [Check all that apply]

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

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

Does the State HSIP consider connected vehicles and ITS technologies?

2017 Minnesota Highway Safety Improvement Program
Yes

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

Connected vehicle and ITS projects are considered for HSIP funding in Minnesota. Funds for these initiatives are available from multiple sources, so while the projects are competitive in HSIP solicitation, investments and investigations in Minnesota have been funded outside of HSIP.

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.

Central Office performs a limited form of Highway Safety Manual analysis at the request of District Traffic Engineering staff. Reactive projects use a simplified form of HSM methods. Spot location projects are evaluated based on prior crash history weighted by the appropriate crash modification factor for the crash type and countermeasure proposed; the resulting benefit-cost ratio is used to prioritize which of these reactive projects receive funding. While training on the HSM predictive analysis continues, widespread use for proactive projects has not been adopted: Minnesota has developed risk factors for proactive projects rather than a prediction of total crashes.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

No

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

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

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$37,276,296	$11,639,254	31.22%
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)	$3,821,446	$3,821,196	99.99%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$41,097,742	$15,460,450	37.62%

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

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

56%

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

6%

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

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

2%

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

4%

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

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

0%

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

0%

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

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

A program review was completed in May 2016 to better understand factors relating to a lower than average obligation rate in Minnesota. Historically, HSIP apportionment amounts have varied considerably from year-to-year, but there appeared to be miscommunications regarding the target programming levels as they remained constant. While the vast majority of projects are selected and let as programmed, a larger than anticipated number of projects were not delivered. Estimated costs both for local projects and on the state system were consistently higher than bids.

MnDOT is discussing strategies for more efficient reporting of programming amounts as well as communication between offices at the Department. New regular updates by programming office on programmed and let projects to help OTST reallocate HSIP funds back to HSIP projects. Development of shelf/flex projects that can be escalated quickly to meet HSIP goals have been discussed with MnDOT Division and District leadership. MnDOT has obtained IDIQ SEP-14 approval to better meet obligations; projects have been identified that will use this process moving forward.

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

No

General Listing of Projects

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

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
CSAH 50: AT CSAH 11/CR 404 IN BEMIDJI, INSTALL RURAL INTERSECTION CONFLICT WARNING SYSTEM	Advanced technology and ITS	Advanced technology and ITS - other	1	Intersections	$132450.3	$147167	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CSAH 20: AT THE JCT OF CSAH 20 & CSAH 19 IN POLK COUNTY. INTERSECTION REALIGNMENT & LIGHTING	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	$166630	$185144	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CSAH 13: FROM CSAH 3 TO TH 25, SHOULDER PAVE, RUMBLE STRIPE & SAFETY EDGE, INCLUDES BIT RECLAIM & CULVERT REPLACEMENT (NON PAR)	Roadway	Rumble strips - edge or shoulder	3	Miles	$108000	$733861	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
BLUE EARTH COUNTYWIDE: CURVE AND INTERSECTION SAFETY IMP. INCLUDING SIGNING, PVMT MARKINGS, SHLDR PAVING, RUMBLE STRIPS & STRIPES AT VARIOUS LOCATIONS	Roadway	Rumble strips - edge or shoulder	92	Miles	$589056	$654507	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-1 DISTRICTWIDE: INSTALL 2017 RURAL INTERSECTION LIGHTING AT VARIOUS LOCATIONS THROUGHOUT CARLTON, ITASCA & ST. LOUIS COUNTIES (ST LOUIS IS LEAD)	Lighting	Intersection lighting	55	Intersections	$1058247	$1175830	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CASS COUNTYWIDE: INSTALL 6" EPOXY EDGELINE STRIPING & 6" GROUND IN WET-REFLECTIVE EDGELINE STRIPING AT VARIOUS LOCATIONS THROUGHOUT CASS CO	Roadway delineation	Improve retroreflectivity	63	Miles	$433055.07	$481172.3	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
SKOGMAN LAKE RD: FROM 0.15 MI S OF CSAH 10 TO CSAH 10, REALIGN SKOGMAN RD TO A T-INTERSECTION AT CSAH 4 & ON CSAH 10 AT CSAH 4/SKOGMAN RD, TURN LNS	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$275565	$306184	HSIP (23 U.S.C. 148)		0		County Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
CSAH 23 (CHISAGO BLVD): AT CSAH 27 (MORGAN AVE) IN CHISAGO LAKES TWP, CONSTRUCT LEFT & RIGHT TURN LANES	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$280800	$477050	HSIP (23 U.S.C. 148)		0		County Highway Agency	Spot	Intersections	
CSAH 1: CSAH 27 TO TH 30, OVLY, PAVE SHLDRS, RUMBLE STRIPES	Roadway	Rumble strips - edge or shoulder	8	Miles	$324816.96	$3019113.3	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
CSAH 31: AT NORTHLAND DR & MENDOTA HEIGHTS RD (MSAS 103) IN MENDOTA HTS, CONST TO 3/4 ACCESS INTERSECTION AT NORTHLAND DR & LFT TRN LNS ALONG MSAS 103	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$667791.96	$741991.06	HSIP (23 U.S.C. 148)		0		County Highway Agency	Spot	Intersections	
CSAH 1: CSAH 18 TO EAST COUNTY LINE, INSTALL 2' SHOULDER PAVING WITH SAFETY WEDGE & RUMBLE STRIPES	Shoulder treatments	Pave existing shoulders	7	Miles	$193555	$215061	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
CSAH 1: CSAH 18 TO EAST COUNTY LINE, INSTALL 2' SHOULDER PAVING WITH SAFETY WEDGE & RUMBLE STRIPES	Shoulder treatments	Pave existing shoulders	7	Miles	$571050	$645753	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-6 DISTRICTWIDE: INSTALL 6" EDGELINE EPOXY PVMT MARKINGS AT VARIOUS LOCATIONS	Roadway delineation	Improve retroreflectivity	457	Miles	$1034481.25	$1149423.62	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
METRO COUNTYWIDE: VARIOUS LOCATIONS ON CSAH'S 17,61,81,130 & 152, FIBER OPTIC CABLE INTERCONNET, PURCHASE ATMS TO MONITOR & COORDINATE 81 TRAFFIC SIGS	Intersection traffic control	Modify traffic signal timing - signal coordination	39	Intersections	$1459246	$1621384	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
ISANTI COUNTYWIDE: INSTALL GROUND IN WET-REFLECTIVE PVMT MARKINGS ON VARIOUS CSAH'S/CR'S	Roadway delineation	Improve retroreflectivity	21	Miles	$143398	$177034	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
ISANTI COUNTYWIDE: ON MULTIPLE CSAH'S/CR'S THROUGHOUT ISANTI CO., INSTALL CHEVRON SIGNS	Roadway signs and traffic control	Curve-related warning signs and flashers	35	Curves	$50114	$61869	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-8 LINCOLN COUNTYWIDE: INSTALL CHEVRONS & EDGELINE PAVEMENT MARKINGS	Roadway signs and traffic control	Curve-related warning signs and flashers	36	Curves	$137523.09	$152803.43	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
LYON COUNTYWIDE: AT VARIOUS LOCATIONS	Roadway delineation	Longitudinal pavement markings - remarking	65	Miles	$353000	$491603	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
THROUGHOUT LYON CO., DURABLE PVMT MARKINGS														
LYON COUNTYWIDE: AT VARIOUS LOCATIONS THROUGHOUT LYON CO., CHEVRON INSTALLATION	Roadway signs and traffic control	Curve-related warning signs and flashers	30	Curves	$26001	$28890	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-8 MCLEOD COUNTYWIDE: INSTALL 6" EDGELINE PAVEMENT MARKINGS AT VARIOUS LCOATIONS	Roadway delineation	Longitudinal pavement markings - remarking	107	Miles	$57858.35	$64287.05	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
MORRISON COUNTYWIDE: INSTALL CHEVRON SIGNS ON MULTIPLE COUNTY ROADS IN MORRISON COUNTY	Roadway signs and traffic control	Curve-related warning signs and flashers	43	Curves	$19305.59	$21450.66	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
MORRISON COUNTYWIDE: INSTALL GROUND-IN 6" EPOXY WET REFLECTIVE MARKING ON MULTIPLE MORRISON COUNTY ROADS	Roadway delineation	Improve retroreflectivity	62	Miles	$235411.09	$261567.88	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
MORRISON COUNTYWIDE: 6" PAVEMENT MARKINGS ON VARIOUS CSAH'S & CR'S IN MORRISON CO	Roadway delineation	Longitudinal pavement markings - remarking	250	Miles	$166238.26	$262144.79	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
US 10: FROM 126' S OF CSAH 33 TO 1160' N OF E ST. GERMAIN ST IN ST. CLOUD- INSTALL CABLE MEDIAN BARRIER	Roadside	Barrier - cable	6	Miles	$195142.04	$216824.49	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
US 10: FROM 126' S OF CSAH 33 TO 1160' N OF E ST. GERMAIN ST IN ST. CLOUD- INSTALL CABLE MEDIAN BARRIER	Roadside	Barrier - cable	0	Miles	$405312.74	$450347.49	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
TH 25: FROM TH 95 TO TH 23 IN FOLEY- RECLAMATION & PAVE SHOULDERS	Shoulder treatments	Pave existing shoulders	5	Miles	$208868.68	$232076.31	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
D-8 MURRAY COUNTYWIDE: INSTALL GROUND-IN WET REFLECTIVE EDGELINES/CENTERLINES AT VARIOUS LOCATIONS	Roadway delineation	Improve retroreflectivity	28	Miles	$172635.35	$191817.06	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-4 DISTRICTWIDE: INSTALL LATEX & EPOXY EDGELINE PVMT MARKINGS AT VARIOUS LOCATIONS	Roadway delineation	Longitudinal pavement markings - remarking	1358	Miles	$778690.92	$865212.15	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
CSAH 53: AT CSAH 11, INTERSECTION REALIGNMENT & LIGHTING & ON CSAH 53, FROM CSAH 11 TO CSAH 50, BIT SUF & AGG SHOULDER	Lighting	Intersection lighting	1	Intersections	$90119.97	$394295.9	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CSAH 45 (LONG LAKE RD): AT THE INTERSECTION OF CSAH 10 (MOUNDS VIEW BLVD) IN MOUNDS VIEW-CONST LEFT TURN LNS, REPLC SIGNAL, APS & COUNTDOWN TIMERS	Pedestrians and bicyclists	Pedestrian signal - modify existing	1	Intersections	$315640	$459371	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Pedestrians	
D-8 RENVILLE COUNTYWIDE: INSTALL 6" EDGELINE PAINT STRIPING AT VARIOUS LOCATIONS	Roadway delineation	Longitudinal pavement markings - remarking	185	Miles	$66883.06	$130218.72	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
CSAH 13: AT THE INTERSECTION OF CSAH 45 IN ST. LOUIS CO-MAINLINE DYNAMIC WARNING SYSTEM PROJECT	Advanced technology and ITS	Advanced technology and ITS - other	1	Intersections	$67889.03	$75432.26	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
D-1 ST. LOUIS COUNTYWIDE:TRAFFIC SIGNAL CONFIRMATION LIGHT PROJECT, INSTALL RED LIGHT-RUNNING CONFIRMATION LIGHTS AT VARIOUS LOCATIONS IN DULUTH(cont)	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	13	Intersections	$32400	$36000	HSIP (23 U.S.C. 148)		0		County Highway Agency	Spot	Intersections	
CSAH 27: AT CSAH 68 IN CREDIT RIVER TWP, CONSTRUCT ROUNDABOUT	Intersection traffic control	Modify control - all-way stop to roundabout	1	Intersections	$954000	$1478356	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CSAH 1: AT INTERSECTION OF CSAH 4 (W OF ZIMMERMAN) AND ON CSAH 16, AT INTERSECTION OF CSAH 11 (S OF SANTIAGO)-INSTALL LED STOP SIGNS	Intersection traffic control	Intersection flashers - add stop sign-mounted	2	Intersections	$7758	$8620	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
SHERBURNE COUNTYWIDE: IMPROVE INTERSECTION SIGNING ON MULTIPLE SHERBURNE COUNTY ROADS	Roadway signs and traffic control	Roadway signs (including post) - new or updated	6	Intersections	$11484	$12760	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
STEARNS COUNTYWIDE: INSTALL GROUND-IN WET REFLECTIVE EPOXY PAVEMENT MARKINGS ON MULTIPLE CSAH'S/CR'S	Roadway delineation	Improve retroreflectivity	22	Miles	$264823.34	$294248.16	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
THROUGHOUT STEARNS CO														
CSAH 2: GREYSTONE RD TO CSAH 75 & FROM N LIMITS OF ST. JOSEPH TO CSAH 4 & ON CSAH 133, FROM N LIMITS OF ST. JOSEPH TO 19TH AVE- INSTALL RUMBLE STRIPS	Roadway	Rumble strips - edge or shoulder	16	Miles	$12469.5	$13855	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
D-3 TODD COUNTYWIDE: INSTALL GROIUND-IN WET REFLECTIVE PAVEMENT MARKING ON MULTIPLE ROADS	Roadway delineation	Improve retroreflectivity	208	Miles	$81220.13	$90244.59	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
CSAH 3: FROM S COUNTY LN TO TH 27, SHOULDER PVMT, SAFETY WEDGE, RUMBLE STRIPES & BITUMINOUS OVERLAY	Roadway	Rumble strips - edge or shoulder	9	Miles	$459653.41	$2043535.55	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
CSAH 35: AT JCT OF CSAH 6 & JCT OF CSAH 8, INSTALL INTERSECTION CONFLICT WARNING SYSTEM	Advanced technology and ITS	Advanced technology and ITS - other	2	Intersections	$205265	$228072	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
CR 117 (EDMONSON AVE): AT JCT'S OF CSAH 35, CSAH 37 & CR 113 AND AT JCT OF CSAH 39 AND CSAH 11, INSTALL DYNAMIC RURAL INTERSECTION WARNING SYSTEMS	Advanced technology and ITS	Advanced technology and ITS - other	4	Intersections	$217187	$241319	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Intersections	
D-8 YELLOW MEDICINE COUNTYWIDE: INSTALL 6" EDGELINE (EPOXY & LATEX) AT VARIOUS LOCATIONS	Roadway delineation	Longitudinal pavement markings - remarking	28	Miles	$32198.88	$35776.53	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
TH 169: AT TH 37 IN HIBBING & ON TH 37, FROM TH 169 TO 0.29 MI E OF TH 169 - CONST ROUNDABOUT	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$2559864.15	$2847848.5	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Intersections	
TH 65 (CENTRAL AVE): IN COLUMBIA HEIGHTS, FROM 47TH AVE TO 51ST AVE, PEDESTRIAN & VEHICLE LIGHTING & CONST 3/4 INTERSECTION BTWN 47TH & 48TH AVE NE	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$833976	$957518	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Pedestrians	
MSAS 221 (7TH ST S): FROM 3RD AVE S TO 11TH AVE S IN MINNEAPOLIS, INSTALL MAST ARMS AT 6 EXISTING SIGNALS (3RD,	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)	6	Intersections	$1638000	$1871604	HSIP (23 U.S.C. 148)		0		City of Municipal Highway Agency	Systemic	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
5TH, PORTLAND, PARK, CHICAGO & 11TH)														
TH 92: AT INTERSECTION OF CSAH 26/27 (340TH ST) IN NORA TWP, INSTALL RURAL INTERSECTION CONFLICT WARNING SYSTEM (RICWS) & LIGHTING	Advanced technology and ITS	Advanced technology and ITS - other	1	Intersections	$115983	$128870	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
TH 52: 1070' N OF CSAH 86 TO 130' S OF CSAH 46, CLOSE MEDIAN XOVERS, CONST 3/4 INTERSECTION WITH U-TURN & TURN LN, CABLE MEDIAN BARRIER	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$3561205.58	$3956895.09	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
TH 52: NH FROM ROCHESTER TO CANNON FALLS- MED BIT OVLY, CULV REPLC/REPAIR, TENSION CABLE MEDIAN BARRIER, TURN LNS & BYPASS LN	Roadside	Barrier - cable	7	Miles	$1086998.4	$1207776	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
I-35: 'ELLA' FROM IOWA/MN BORDER TO I-90 (JUST N OF ALBERT LEA)- INSTALL CABLE MEDIAN BARRIER	Roadside	Barrier - cable	14	Miles	$1146054.72	$1273394.13	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
I-35: 'ELLA' FROM IOWA/MN BORDER TO I-90 (JUST N OF ALBERT LEA)- INSTALL CABLE MEDIAN BARRIER	Roadside	Barrier - cable	14	Miles	$0	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
TH 59: AT CSAH 6, CONST LEFT TURN LANE	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$452228.81	$502576.46	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
TH 238: 0.4 MI N OF RAILROAD AVE IN ALBANY TO CR 21 IN UPSALA- RECLAMATION & SHOULDER WIDENING	Shoulder treatments	Widen shoulder - paved or other	14	Miles	$126998.55	$141109.5	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
TH 94: TH 15 INTERCHANGE TO STEARNS CSAH 75 INTERCHANGE IN ST. CLOUD- REPLACE MEDIAN CABLE GUARDRAIL	Roadside	Barrier - cable	1	Locations	$0	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Lane Departure	
D-4 DISTRICTWIDE: AT VARIOUS LOCATIONS IN D-4, RUMBLE/MUMBLE STRIPES & SAFETY IMPROVEMENTS	Roadway	Rumble strips - edge or shoulder	224	Miles	$373899.3	$415443.67	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
D-4 DISTRICTWIDE: AT VARIOUS LOCATIONS IN D-4, RUMBLE/MUMBLE	Roadway	Rumble strips - edge or shoulder	224	Miles	$100676.33	$111862.59	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
STRIPES & SAFETY IMPROVEMENTS														
CSAH 3: FROM TH 32 IN ST. HILAIRE TO TH 59, SHOULDER PAVING, RUMBLE STRIPS & SAFETY WEDGE	Roadway	Rumble strips - edge or shoulder	7	Miles	$144669.54	$160743.93	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
METRO DISTRICTWIDE: INSTALL SIGNS ON HORIZONTAL CURVES TO COMPLY WITH NEW MMUTCD STANDARDS	Roadway signs and traffic control	Curve-related warning signs and flashers	53	Locations	$477000	$530000	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
TH 71: 0.5 MI N OF TH 23 TO 0.2 MI N OF TH 9- M&O, TURN LANES & GLACIAL LAKES STATE TRAIL EXT, CONST UNDERPASS UNDER TH 71 (BR 34X05)	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	1	Locations	$451296.54	$1277517.84	HSIP (23 U.S.C. 148)		0		State Highway Agency	Spot	Pedestrians	
D-4 DISTRICTWIDE: LIGHTING AT VARIOUS LOCATIONS	Lighting	Intersection lighting	55	Intersections	$360900	$476969	HSIP (23 U.S.C. 148)		0		State and County Highway Agencies	Systemic	Intersections	
CSAH 8: FROM CSAH 46 TO CR 77: SHOULDER PAVING, RUMBLE STRIPES, ENHANCED CENTERLINE PVMT MARKINGS & BIT SAFETY EDGE	Roadway	Rumble strips - edge or shoulder	3	Miles	$114652.96	$842493.84	HSIP (23 U.S.C. 148)		0		County Highway Agency	Systemic	Lane Departure	
TH 59: AT CSAH 22, ROUNDABOUT (BIT & CONC SURF), ADA & LIGHTING	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1808040.35	$1808290.35	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Spot	Intersections	
TH 19: FROM 0.27 MI W OF CSAH 3 TO CSAH 89 - CONSTRUCT CENTER LEFT & RIGHT TURN LANES & LIGHTING	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1	Intersections	$480000	$480000	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Spot	Intersections	
TH 94: TH 15 INTERCHANGE TO STEARNS CSAH 75 INTERCHANGE IN ST. CLOUD- REPLACE MEDIAN CABLE GUARDRAIL	Roadside	Barrier - cable	1	Locations	$813155.25	$813155.25	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Spot	Lane Departure	
STATEWIDE: TRAFFIC EVALUATION, ROAD SAFETY AUDIT OF MN TH 23 FROM CITY OF FOLEY TO MILACA (NE OF ST. CLOUD)	Non-infrastructure	Road safety audits	16	Miles	$25000	$25000	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Spot	Planning / Management Systems	
STATEWIDE: *SEC164*: CRASH DATABASE SYSTEM & DATA ENHANCEMENTS: CRASH BUSINESS INTELLIGENCE	Non-infrastructure	Data/traffic records	1	Numbers	$100000	$100000	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Other	Data	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
ENHANCEMENT - GEOSPATIAL ANALYTICS, SITE														
STATEWIDE: TRAFFIC EVALUATION-ROUNDABOUT CAPACITY & SAFETY ANALYSIS	Non-infrastructure	Non-infrastructure - other	1	Numbers	$25000	$25000	Penalty Funds (23 U.S.C. 164)		0		Non-infrastructure	Other	Intersections	
STATEWIDE: TRAFFIC EVALUATION, INTERSECTION CONFLICT WARNING SYSTEMS ANALYSIS	Non-infrastructure	Non-infrastructure - other	1	Numbers	$30000	$30000	Penalty Funds (23 U.S.C. 164)		0		Non-infrastructure	Other	Intersections	
STATEWIDE: INTERSECTION STRATEGIES-CONSTRICTOR PAVEMENT MARKING & SINUSOIDAL RUMBLES BID PKG	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	82	Intersections	$55000	$55000	Penalty Funds (23 U.S.C. 164)		0		State Highway Agency	Spot	Lane Departure	
STATEWIDE: 5.5 TZD (TOWARD ZERO DEATHS) REGIONAL COORDINATOR POSITIONS, SALARIES & EXPENSES 7/1/17 TO 6/30/18	Non-infrastructure	Educational efforts	5.5	Numbers	$485000	$485000	Penalty Funds (23 U.S.C. 164)		0		Non-infrastructure	Systemic	Traffic Safety Culture	

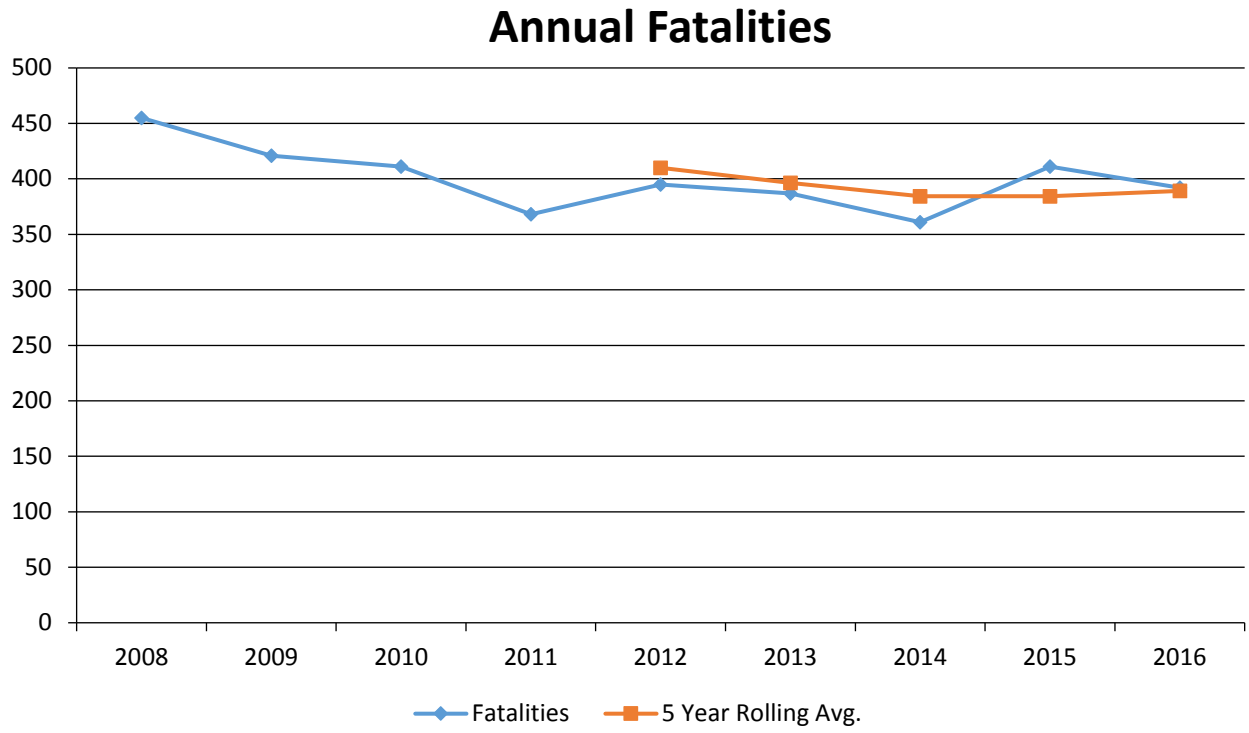
Enter additional comments here to clarify your response for this question or add supporting information.

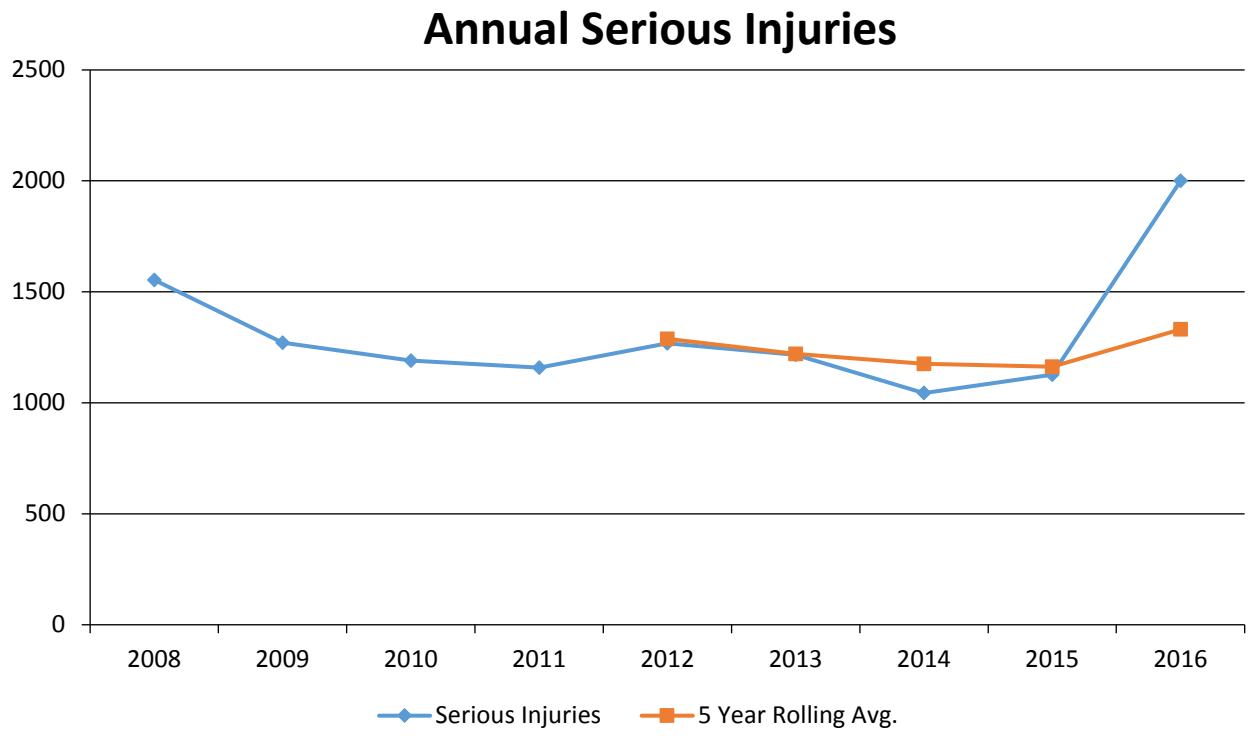
Safety Performance

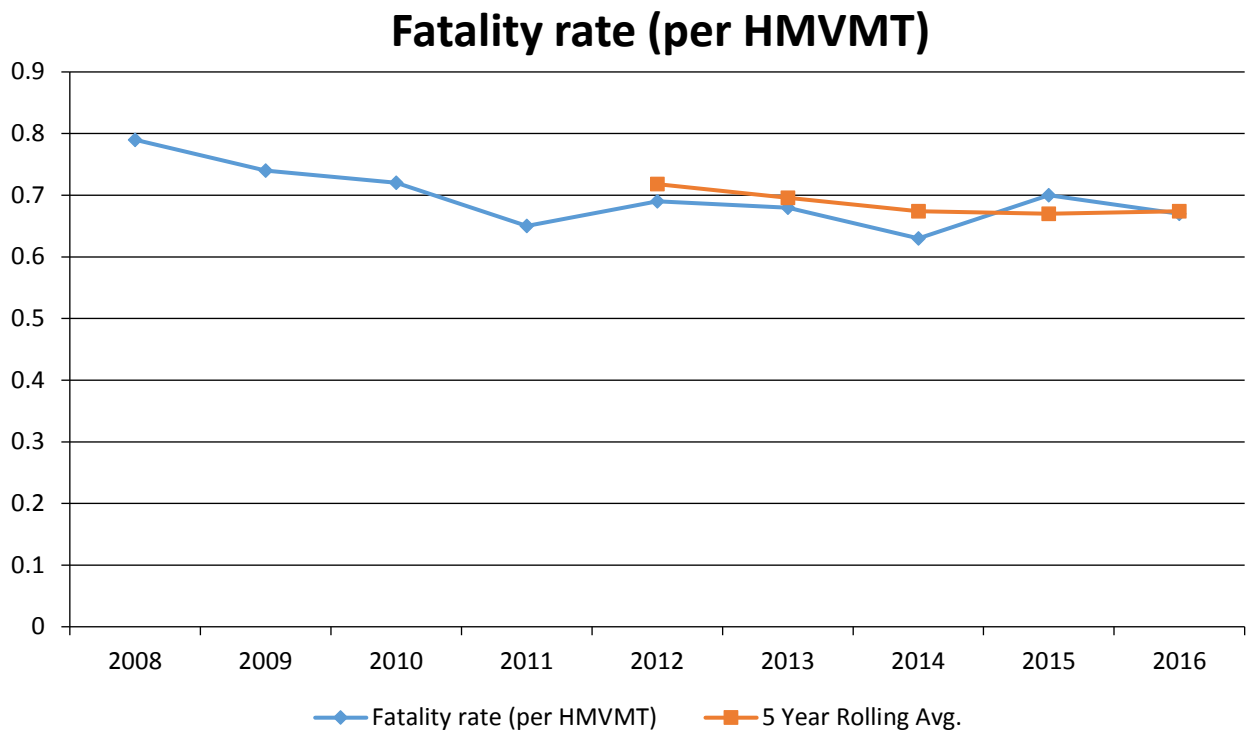
General Highway Safety Trends

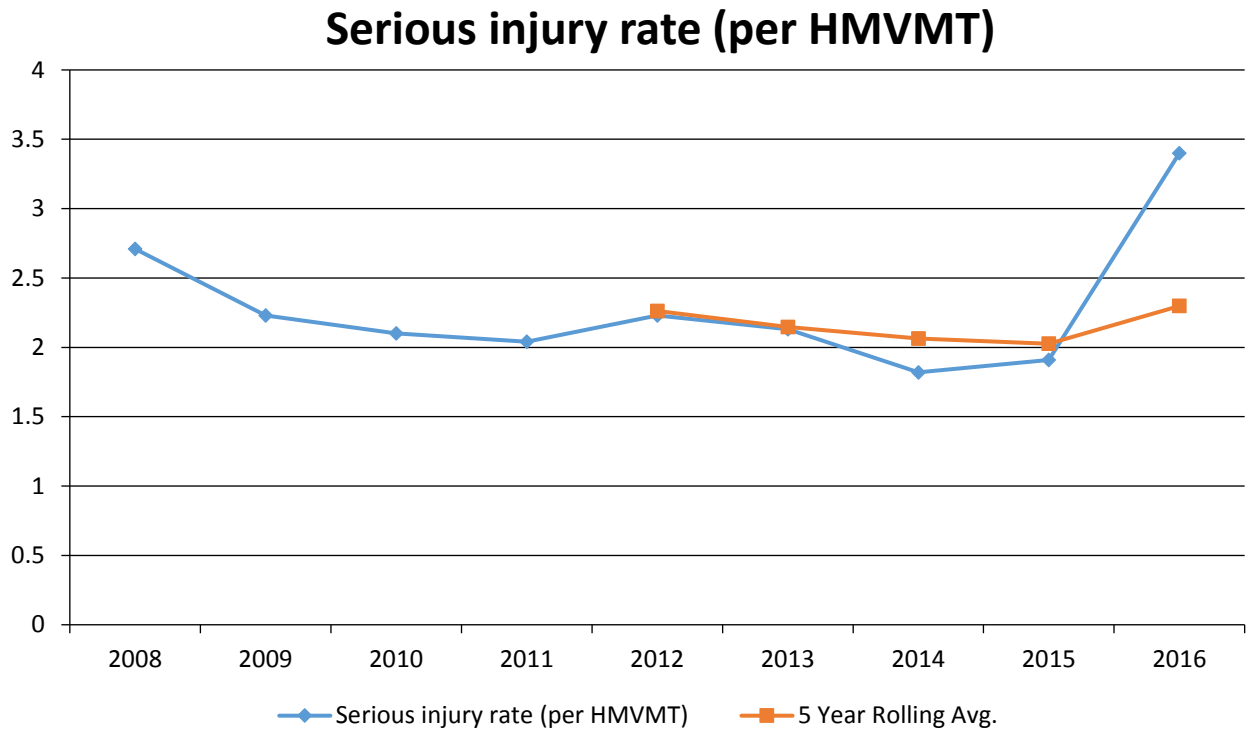
Present data showing the general highway safety trends in the State for the past five years.

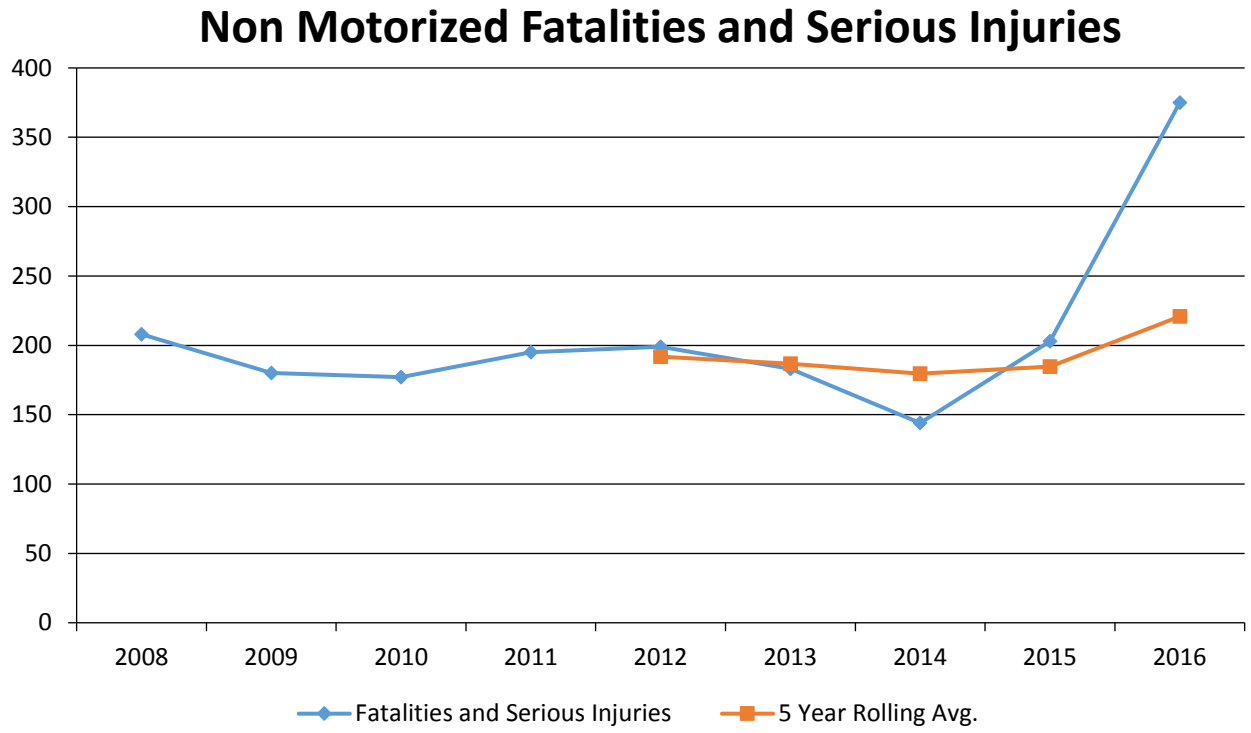
PERFORMANCE MEASURES	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	455	421	411	368	395	387	361	411	392
Serious Injuries	1,553	1,271	1,191	1,159	1,268	1,216	1,044	1,127	2,000
Fatality rate (per HMVMT)	0.790	0.740	0.720	0.650	0.690	0.680	0.630	0.700	0.670
Serious injury rate (per HMVMT)	2.710	2.230	2.100	2.040	2.230	2.130	1.820	1.910	3.400
Number non-motorized fatalities	38	51	45	45	47	39	20	50	67
Number of non-motorized serious injuries	170	129	132	150	152	144	124	153	308


Annual Fatalities
500
450
400
350
300
250
200
150
100
50
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
2500
2000
1500
1000
500
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
4
3.5
3
2.5
2
1.5
1
0.5
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



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

Minnesota released a new crash report in 2016. While the definition of a serious injury did not change, the text displayed to the officer added "Suspected." With the revised phrasing, we have seen A injuries reported at higher numbers than previously seen (2,000 serious injuries reported in 2016 versus an average of 955 over the last five years). Part of this may be due to the new definition but part may be attributed to officer training. Minnesota hopes to address training and modeling to set targets/goals moving forward.

Describe fatality data source.

State Motor Vehicle Crash Database

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

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

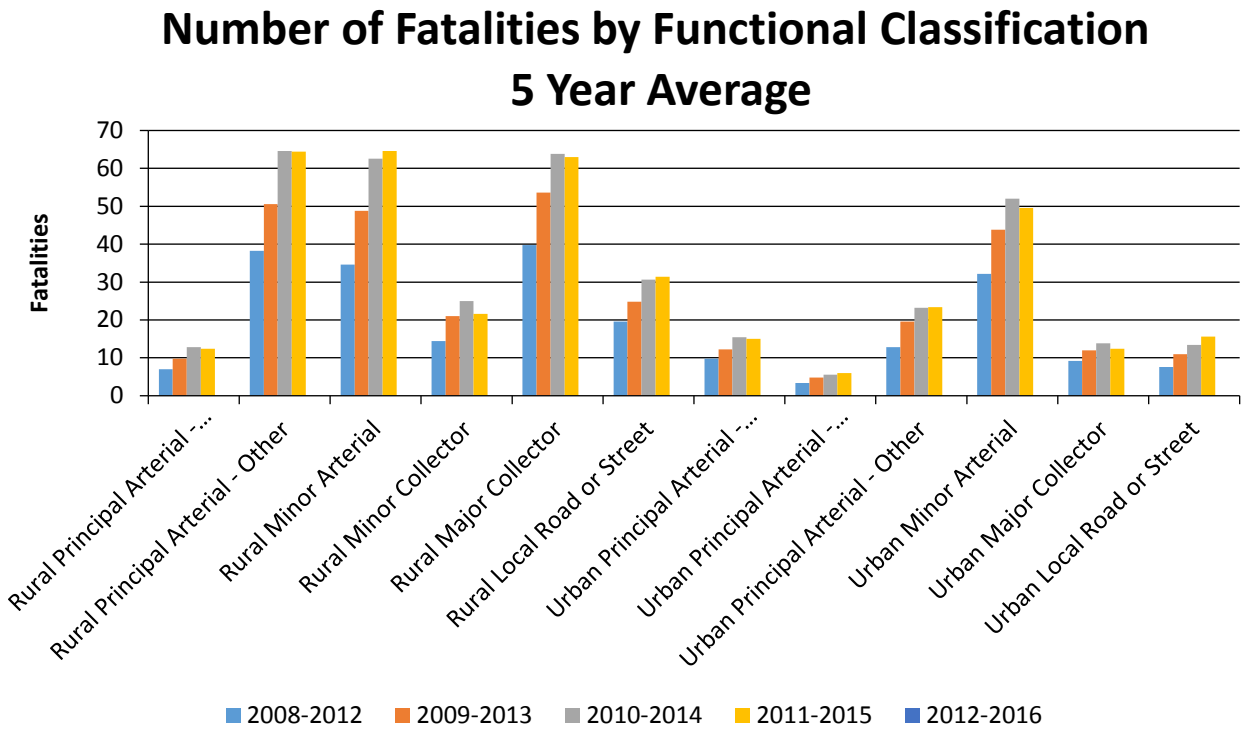
Year 2015

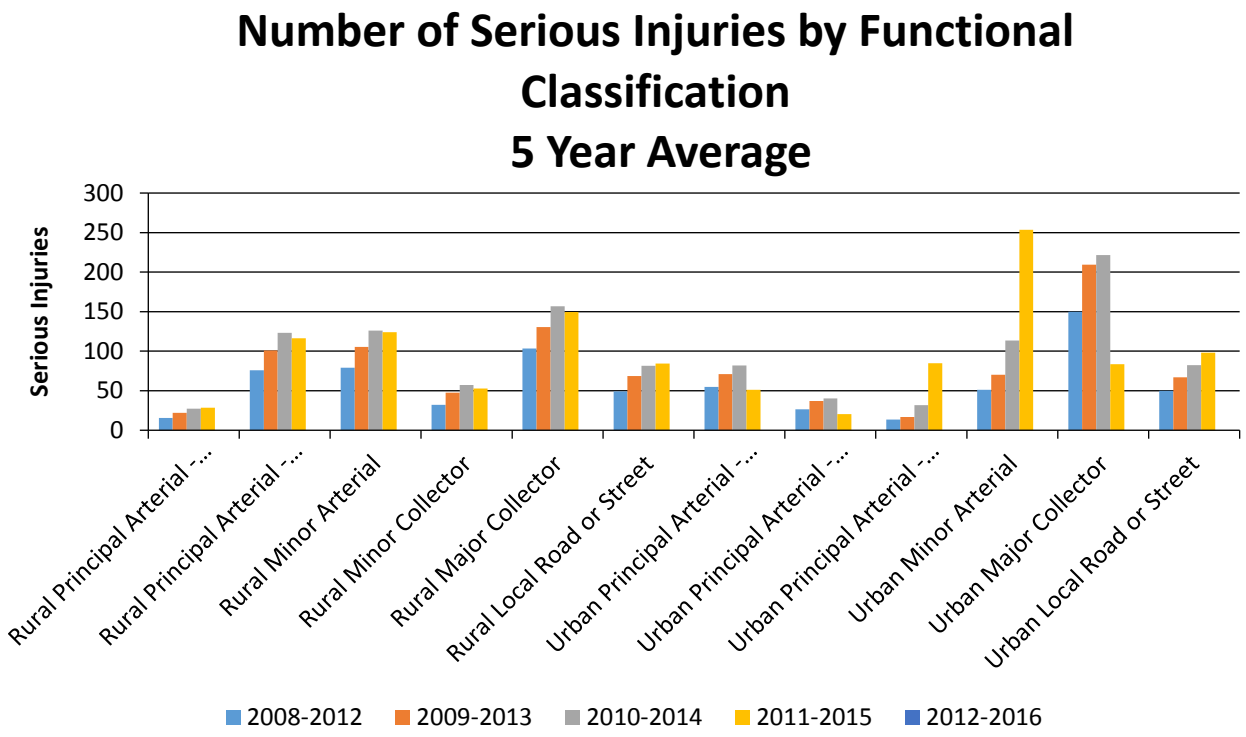
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Interstate	12.4	28.4		

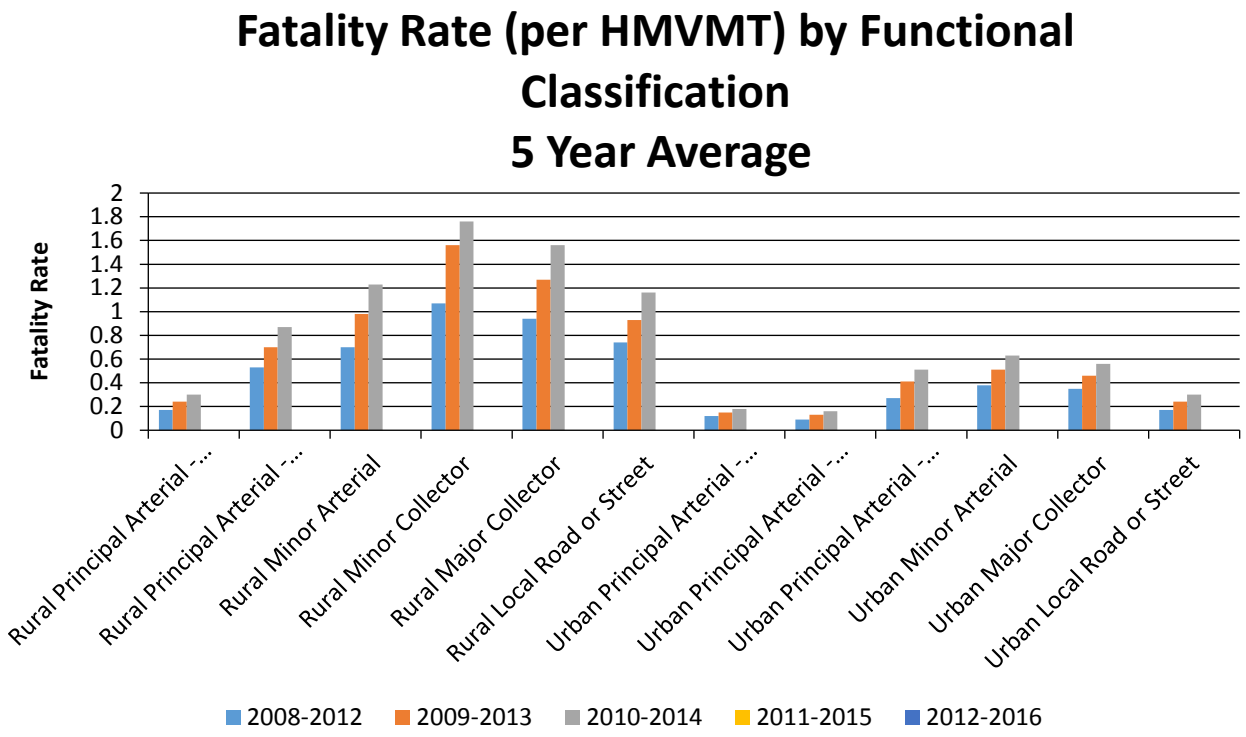
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial - Other Freeways and Expressways				
Rural Principal Arterial - Other	64.4	116.4		
Rural Minor Arterial	64.6	124.2		
Rural Minor Collector	21.6	52.6		
Rural Major Collector	63	149.6		
Rural Local Road or Street	31.4	84.2		
Urban Principal Arterial - Interstate	15	51.2		
Urban Principal Arterial - Other Freeways and Expressways	6	20.4		
Urban Principal Arterial - Other	23.4	84.8		
Urban Minor Arterial	49.6	253.6		
Urban Minor Collector				
Urban Major Collector	12.4	83.4		
Urban Local Road or Street	15.6	98		

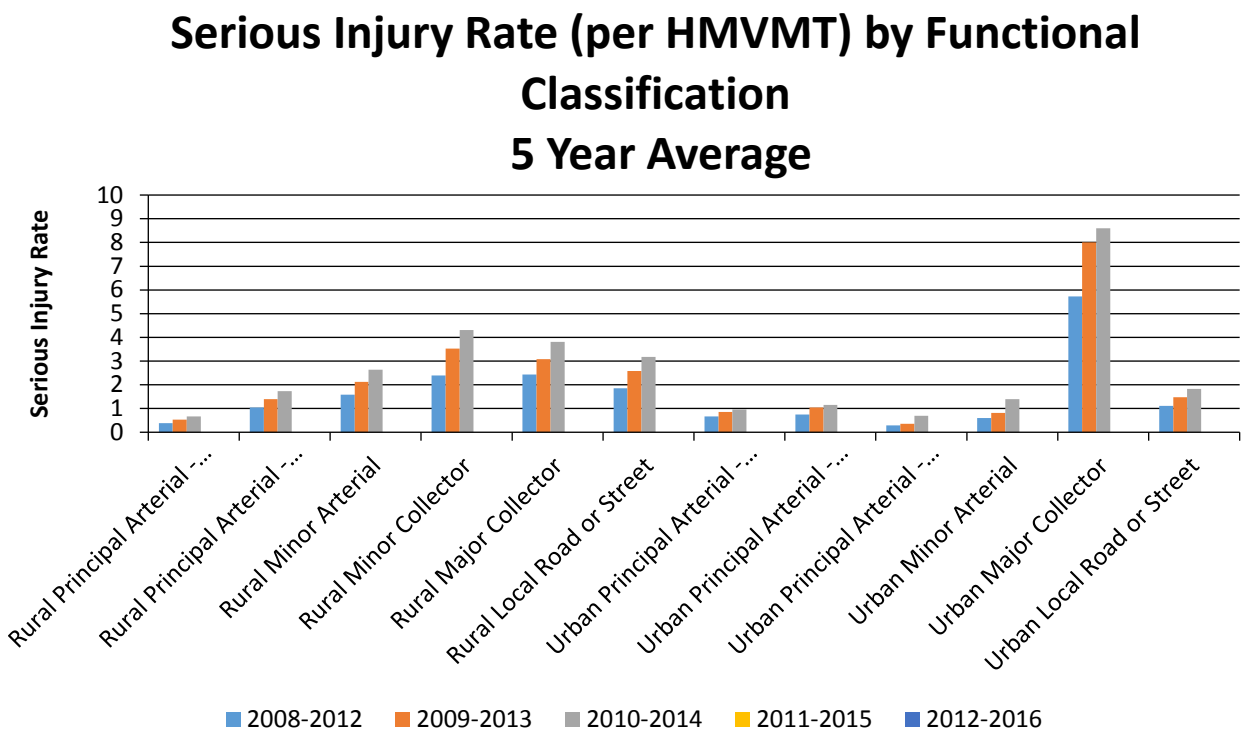
Year 2016

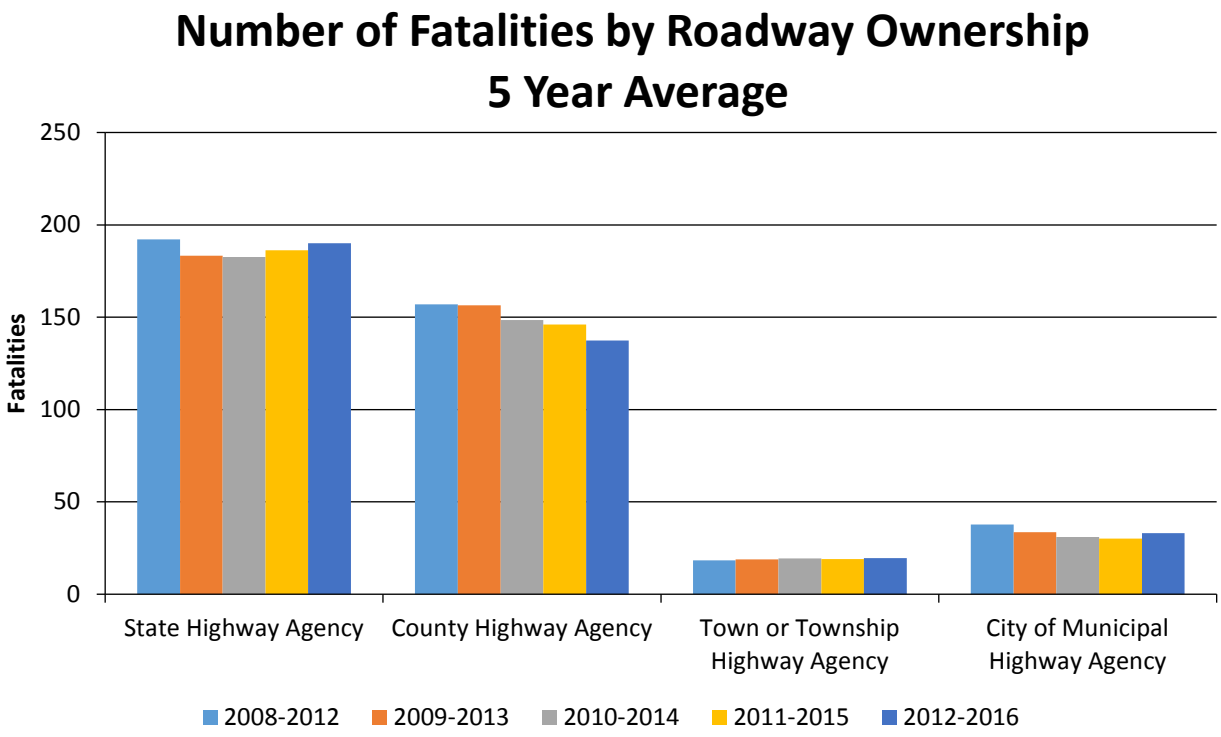
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	190	449.8	0.57	1.35
County Highway Agency	137.4	482.4	0.98	3.45
Town or Township Highway Agency	19.6	56.4	1.64	4.71
City of Municipal Highway Agency	33	285.6	0.36	3.1
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

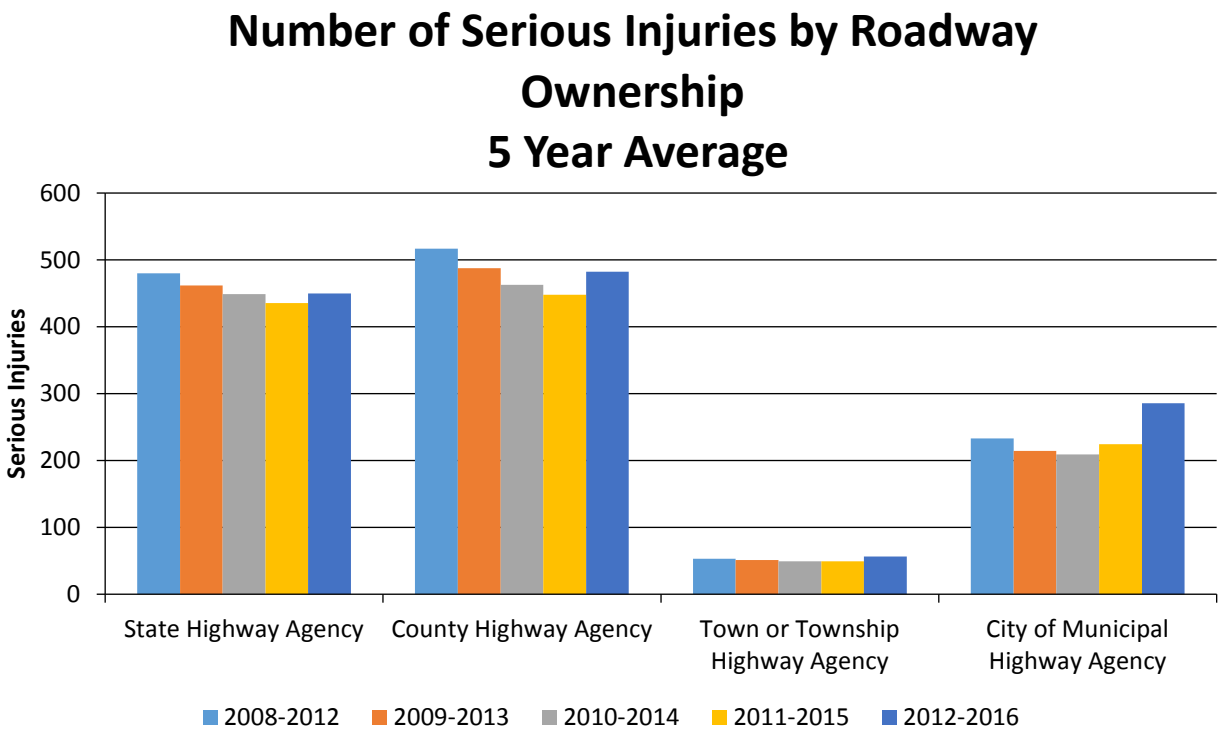

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
70
60
50
40
30
20
10
0
Rural Principal Arterial -...
Rural Principal Arterial - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial - Other
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

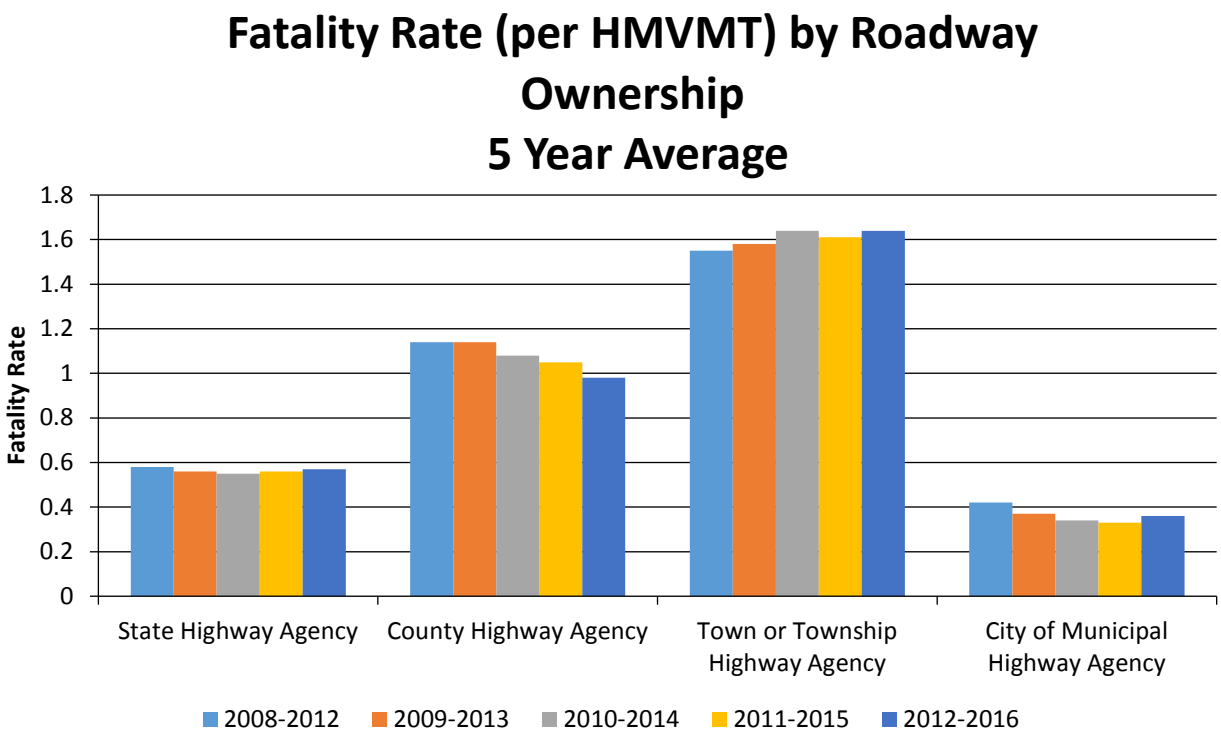

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
300
250
200
150
100
50
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016

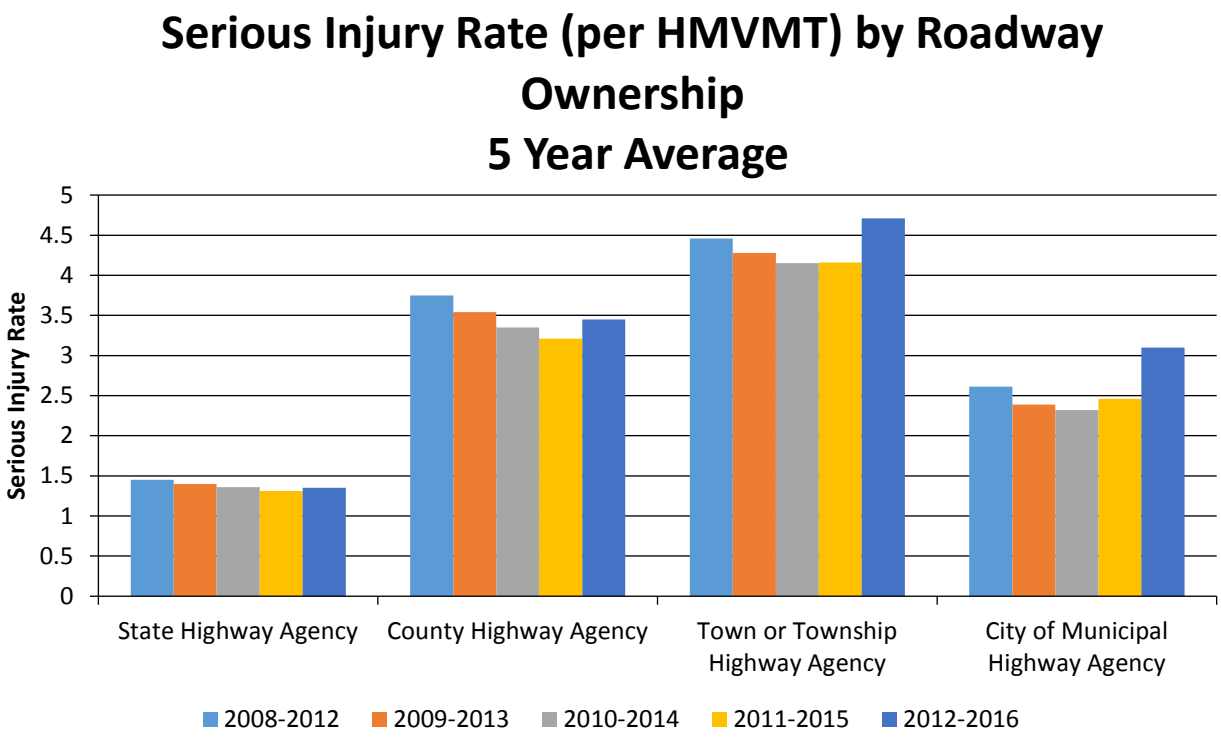

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
10
9
8
7
6
5
4
3
2
1
0
Rural Principal Arterial -...
Rural Principal Arterial -...
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Principal Arterial -...
Urban Minor Arterial
Urban Major Collector
Urban Local Road or Street
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
250
200
150
100
50
0
State Highway Agency
County Highway Agency
Town or Township Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
600
500
400
300
200
100
0
State Highway Agency
County Highway Agency
Town or Township Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
State Highway Agency
County Highway Agency
Town or Township Highway Agency
City of Municipal Highway Agency
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016



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

Over the course of 2016, Minnesota has been in the process of updating MnDOT's linear referencing and crash reporting systems. At this time, traffic volume data by functional classification was not consistently available as the new system is being populated. While functional classification is being reported in the crash report, current extracts have been inconsistent in populating this field. As such, 2016 performance measures by functional classification have not been populated for this report.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

Yes

Provide additional discussion related to general highway safety trends.

Minnesota released a new crash report in 2016. While the definition of a serious injury did not change, the text displayed to the officer added "Suspected." With the revised phrasing, we have seen A injuries reported at higher numbers than previously seen (2,299 serious injuries reported in 2016 versus an average of 955 over the last five years). Part of this may be due to the new definition but part also concerns training of officers: Minnesota plans to review training material for crash data collection.

Moving forward, Minnesota will be looking for best practices for planning and setting goals to maintain consistency in HSIP programming over this update. Several key data fields utilized in establishing SHSP focus area definitions have been removed or substantially modified; however, new fields are available to supplement with more information.

Safety Performance Targets

Calendar Year 2018 Targets *

Number of Fatalities 375.0

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

The number of fatalities was developed using a 5 year rolling average and projecting forward to a target year. Additional slight adjustments were made to the measures based on local knowledge gathered from stakeholders; this did not result in a substantial change in the measures.

Number of Serious Injuries 1935.0

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

The number of serious injuries was developed using a 5 year rolling average and projecting forward to a target year. This percentage reduction was applied to the 2016 number (81% increase) and projected forward to the 2018 time period. Additional slight adjustments were made to the measures based on local knowledge gathered from stakeholders; this did not result in a substantial change in the measures.

Fatality Rate 0.620

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

Fatality ate was developed using a 5 year rolling average and projecting forward to a target year. Additional slight adjustments were made to the measures based on local knowledge gathered from stakeholders; this did not result in a substantial change in the measures.

Serious Injury Rate 3.190

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

Serious injury rate was developed using a 5 year rolling average and projecting forward to a target year. This percentage reduction was applied to the 2016 number (81% increase) and projected forward to the 2018 time period. Additional slight adjustments were made to the measures based on local knowledge gathered from stakeholders; this did not result in a substantial change in the measures.

Total Number of Non-Motorized Fatalities and Serious Injuries 348.0

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

The number of non-motorized fatalities and serious injuries was developed using a 5 year rolling average and projecting forward to a target year. Additional slight adjustments were made to the measures based on local knowledge gathered from stakeholders; this did not result in a substantial change in the measures.

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

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

Active participation by State agencies and the 8 MPOs in Minnesota established recommendations and input for the leadership team to adopt safety performance targets for the state.

Does the State want to report additional optional targets?

No

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

Applicability of Special Rules

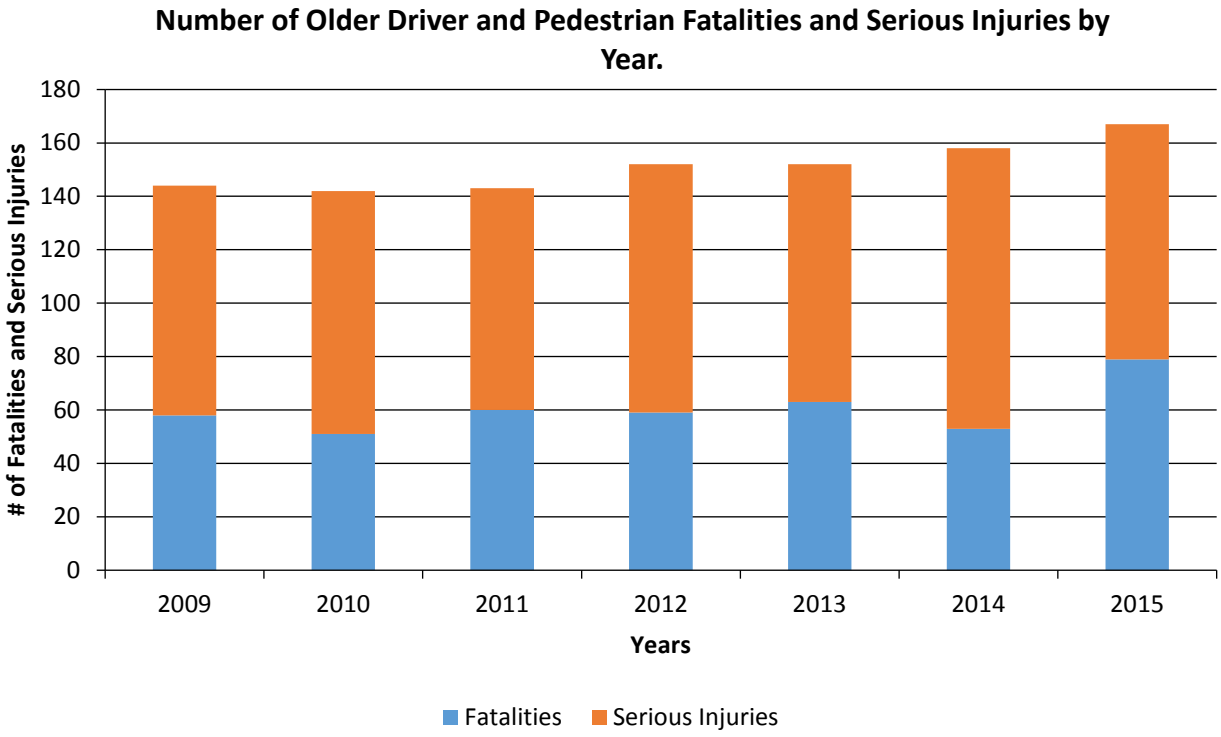
Does the HRRR special rule apply to the State for this reporting period?

No

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

Provide the number of older driver and pedestrian fatalities and serious injuries for the past seven years.

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015
Number of Older Driver and Pedestrian Fatalities	58	51	60	59	63	53	79
Number of Older Driver and Pedestrian Serious Injuries	86	91	83	93	89	105	88



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

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries
Other-Change in fatal and serious injury crashes

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

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

The Minnesota SHSP has a defined scorecard to measure fatal and serious injury crashes for each focus area. While overall fatal and serious injury crashes are declining, further investigation is necessary into (1) potential plateauing of fatalities, and (2) inconsistencies in reporting serious injuries after instrumentation change at the beginning of 2016. MnDOT publishes these trends in an annual pocket-sized Trivia Card for stakeholder and public use.

http://www.mndot.gov/trafficeng/publ/triviacard/

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

Other-Under consideration

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

Leading indicators for HSIP performance are currently under consideration by MnDOT leadership. At this time no further indicators have been adopted.

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

No

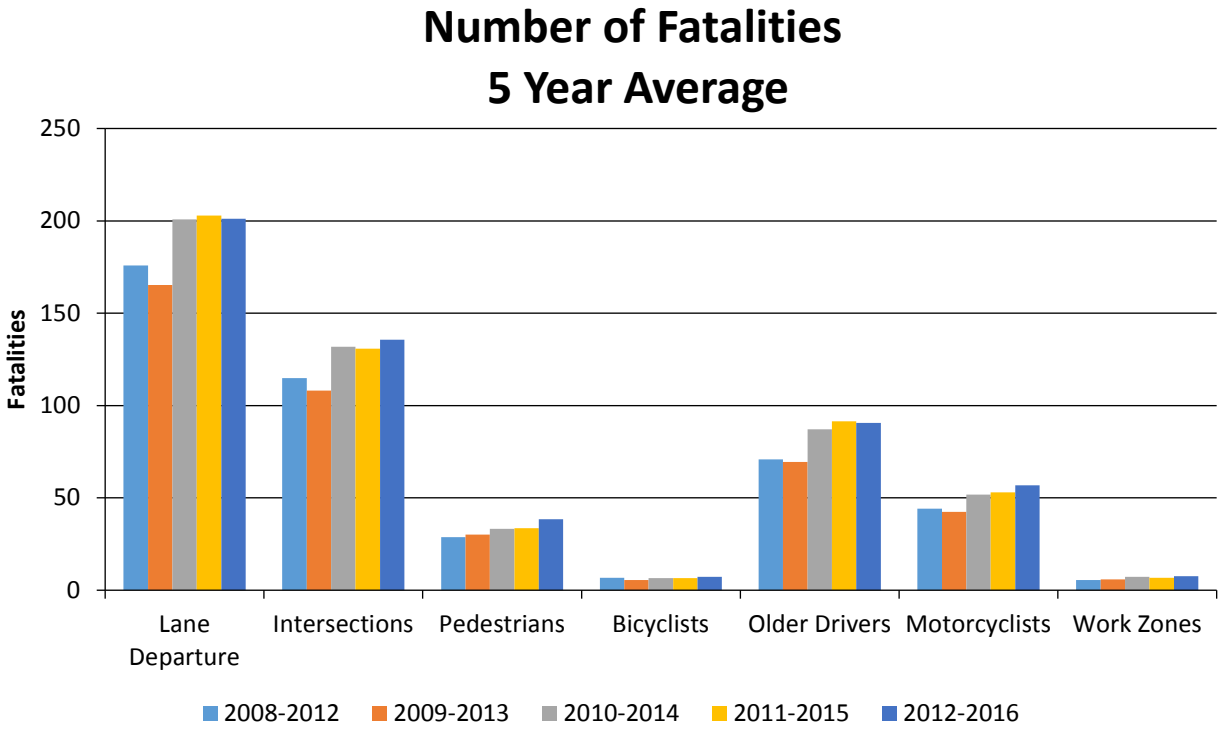
Effectiveness of Groupings or Similar Types of Improvements

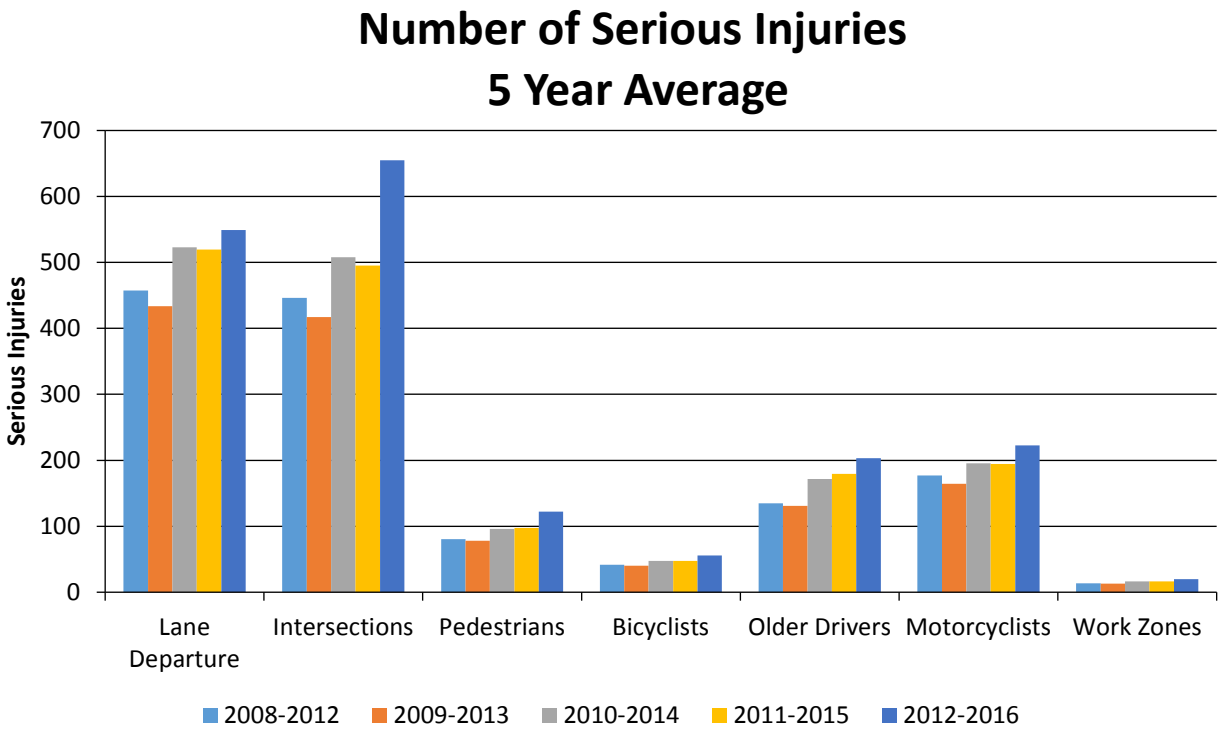
Present and describe trends in SHSP emphasis area performance measures.

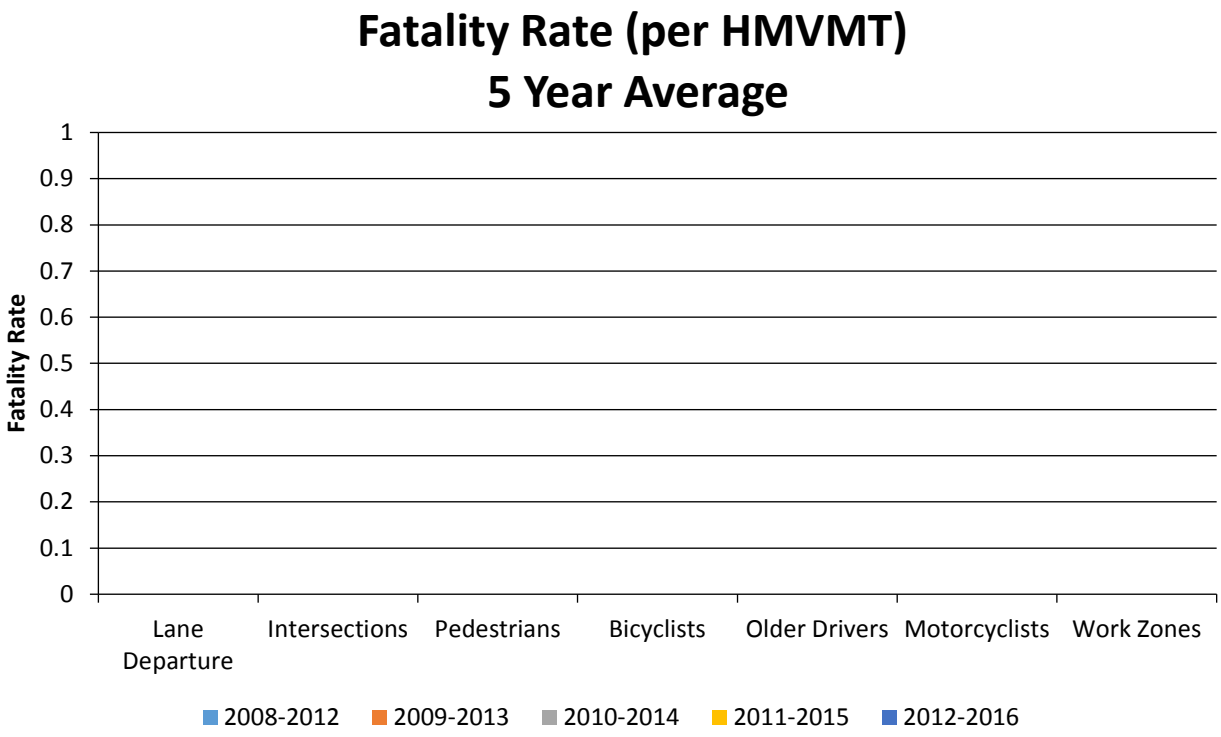
Year 2016

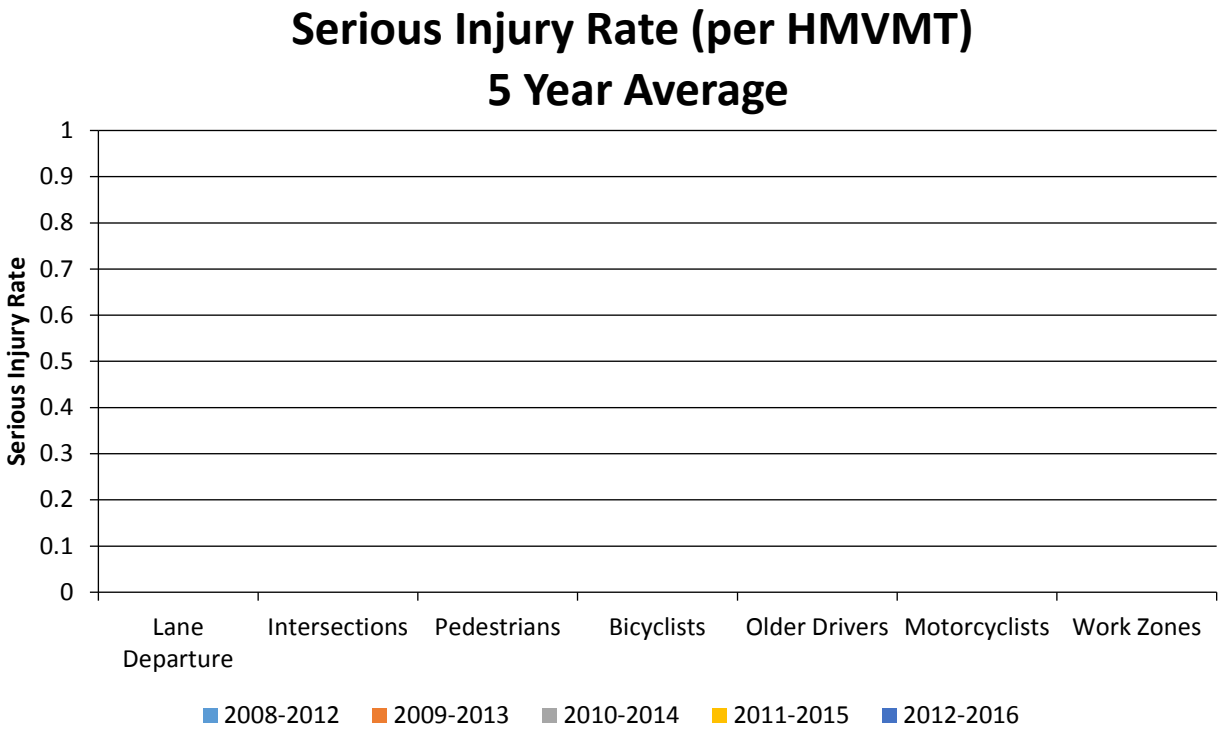
2017 Minnesota Highway Safety Improvement Program

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Lane Departure		201.2	549.2					
Intersections		135.6	655					
Pedestrians		38.4	122.4					
Bicyclists		7.2	55.8					
Older Drivers		90.6	203.4					
Motorcyclists		56.8	222.4					
Work Zones		7.6	19.6					


Number of Fatalities
5 Year Average
Fatalities
250
200
150
100
50
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016


Number of Serious Injuries
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
2008-2012
2009-2013
2010-2014
2011-2015
2012-2016





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

In 2016, a new crash report was implemented in Minnesota. While definitions have been developed to track each of the SHSP Emphasis Areas, the underlying fields have changed. Abnormal spikes in the data from 2015 to 2016 have occurred but will normalize over time.

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

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:	Multi-lane Roundabouts
Description:	Update of previous study on Multi-lane Roundabouts (2013)
Target Crash Type:	Angle
Number of Installations:	39
Number of Installations:	39
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Case-control
Results:	Multi-lane roundabouts are showing several problems that require complex solutions. These solutions could add significant costs for a multi-lane roundabout to function correctly. **The safety performance of multi-lane roundabouts is not definitive; it appears they have a similar safety performance to high volume, low speed signalized intersections; defined by MnDOT as a traffic volume greater than 15,000 ADT, and the posted speed is less than 45 mph. The unbalanced and dual lane roundabout crash rate is also 240% and 630% greater, respectively, than the single lane roundabouts in Minnesota.**

File Name:	Hyperlink
CounterMeasures:	Reduced Conflict Intersection
Description:	
Target Crash Type:	Angle
Number of Installations:	8
Number of Installations:	8
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Before/after using comparison group
Results:	The Reduced Conflict Intersections aim to reduce the number of fatal and serious injury right-angle crashes. Based on the limited after crash data, the RCI is reducing the target crashes: fatal (-100%), serious injury (-67%), and right-angle crashes (-77%). When aggregated, the crash data for intersection-related crashes obtained has shown that RCIs have reduced all crashes by 15%. Right-angle crashes have been reduced by 77%. Most importantly, they have reduced fatal and injury crashes by over 50% (when comparing injury crashes with severity K, A, B, and C) and the most severe crashes (Fatal and A-injury) by 100%. These results are statistically significant and lower than standard thru-stop controlled intersections.
File Name:	Hyperlink

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL INJURY BEFORE	ALL INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
N/A														

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

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

Yes

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

MnDOT is discussing adding evaluation to the initial project scope. Currently, we have begun the process with two projects by setting up evaluation plans before the project is executed; deliverables may be either data or an evaluation report.

Compliance Assessment

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

01/20/2015

What are the years being covered by the current SHSP?

From: 2014 To: 2019

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

2020

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

Minnesota anticipates working on the SHSP update process in calendar 2018 with publication targeted for 2019.

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

	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
MIRE NAME (MIRE NO.)	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT										
Segment Identifier (12)	100	0					0	100	0	90
Route Number (8)	100	0								
Route/Street Name (9)	100	0								
Federal Aid/Route Type (21)	100	0								
Rural/Urban Designation (20)	100	0					0	100		
Surface Type (23)	100	0					0	80		
Begin Point Segment Descriptor (10)	100	0					0	100	0	90
End Point Segment Descriptor (11)	100	0					0	100	0	90
Segment Length (13)	100	0								
Direction of Inventory (18)	100	0								
Functional Class (19)	100	0					0	100	0	90
Median Type (54)	100	0								

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Access Control (22)	100	0								
One/Two Way Operations (91)	100	0								
Number of Through Lanes (31)	100	0					0	100		
Average Annual Daily Traffic (79)	100	0					0	100		
AADT Year (80)	100	0								
Type of Governmental Ownership (4)	100	0					0	100	0	90
INTERSECTION										
Unique Junction Identifier (120)			85	0						
Location Identifier for Road 1 Crossing Point (122)			85	0						
Location Identifier for Road 2 Crossing Point (123)			85	0						
Intersection/Junction Geometry (126)			85	0						
Intersection/Junction Traffic Control (131)			85	0						
AADT for Each Intersecting Road (79)			85	0						
AADT Year (80)			85	0						
Unique Approach Identifier (139)			85	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					95	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	0				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	0				
Ramp Length (187)					100	0				
Roadway Type at Beginning of Ramp Terminal (195)					100	0				

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Roadway Type at End Ramp Terminal (199)					100	0				
Interchange Type (182)					95	0				
Ramp AADT (191)					85	0				
Year of Ramp AADT (192)					85	0				
Functional Class (19)					100	0				
Type of Governmental Ownership (4)					70	0				
Totals (Average Percent Complete):	**100.00**	**0.00**	**85.00**	**0.00**	**93.64**	**0.00**	**0.00**	**97.78**	**0.00**	**90.00**

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

MnDOT Office of Transportation System Management (OTSM) collects and maintains MIRE fundamental element data and quality. These elements are stored and made available through MnDOT via the linear referencing system. There are discussions underway that will improve the accuracy of local road data by referencing locally updated Minnesota Next Gen E911 systems. Currently, roadway data continuously updated and edited to match the existing environment; OTSM estimates that all characteristics are updated at least annually.

Non-local Paved Roads are defined here as trunk highways: in Minnesota, all of these roads are owned by the State. MnDOT has maintained an inventory of intersections and interchanges with trunk highways. In developing safety plans for the MnDOT districts, additional intersections in Greater Minnesota were added; approximately 87% of the intersections existed in the previous inventory. At this time, Minnesota has extensive coverage but will conduct further investigation into level of accuracy, especially on the local system.

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.

At this time, Minnesota has extensive coverage of MIRE fundamental data elements but is working on improving accuracy of the values. Before we can expand accuracy, we will analyze current accuracy and coverage of the data. There are discussions underway that will improve the accuracy of street name data by referencing locally updated Minnesota Next Gen E911 system. Similarly, there has been progress in discussions regarding sharing local data on tribal roads moving forward. Minnesota is working to improve centerlines from van-mounted LiDAR data along state highways; MnDOT is investigating the option of using aerial LiDAR to improve local road data in the future.

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Suspected Serious Injury (A)	Yes	An incapacitating injury is any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.	Yes	Inclusions: severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the accident scene, unable to leave the accident without assistance Exclusions: momentary unconsciousness	Yes

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Database	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Suspected Serious Injury (A)	Yes	A suspected serious injury is any injury other than fatal which results in one or more of the following:	Yes	severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood; broken or distorted extremity (arm or leg); crush injuries; suspected skull, chest or abdominal injury other than bruises or minor lacerations; significant burns (second and third degree burns over 10% or more of the body); unconsciousness when taken from the crash scene; paralysis	Yes

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

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

Yes

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

A program review was completed in May of 2016 to review factors associated with the lower than average HSIP obligation rate: the Minnesota obligation rate was 66% compared to a national average of 83%. The primary recommendation of the review was to establish an 80% minimum obligation goal.

Optional Attachments

Program Structure:

HSIP funding guide FINAL.pdf

Project Implementation:

Safety Performance:

Evaluation:

2015strategicfocusareatrends.pdf
Multi-Lane_Roundabouts_Minnesota_2016.pdf
RCIs_in_Minnesota_2017_v1.1.pdf

Compliance Assessment:

MMUCC - Status of Compliant Serious Injury Reporting - MN.pdf
Injury Definitions, Table.pdf

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.