



Highway Safety Improvement Program
Data Driven Decisions

Minnesota
Highway Safety Improvement Program
2016 Annual Report

Prepared by: MN

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

Minnesota distributes HSIP funds based on the percentage of serious injuries and fatalities. This approach uses the Strategic Highway Safety Plan as a basis. Road Safety Plans for Minnesota districts and counties have further directed the focus of safety funds to lower-cost, systemic strategies. An update to the 8 Minnesota district plans was finished in this year. Currently, MnDOT is in collaboration with interested counties to update County Road Safety Plans—systemic plans for county roadways.

Definition of Terms:

MnDOT: Minnesota Department of Transportation

Greater Minnesota: Minnesota is split into 8 MnDOT districts. District 5 is the Metro District. All other districts when referred to as a collective, are called Greater Minnesota.

OTST: MnDOT's Office of Traffic, Safety and Technology. MnDOT's Central Office Safety Unit resides within OTST.

SALT: MnDOT's Office of State Aid for Local Transportation. This is the MnDOT office that works most directly with local agencies.

ATP: Area Transportation Partnership. Boundaries are synonymous with MnDOT district investment boundaries. The partnerships have, as their members metropolitan and non-metropolitan stakeholders and can include Metropolitan planning organizations, Regional Development Commissions, cities, counties, townships, transit providers, tribal governments, other interests and MnDOT.

SFY: State Fiscal Year

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

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

MnDOT distributes funds to local roads through the Greater Minnesota Combined Solicitation. The latest solicitations, conducted in March 2015, distributed over \$17M over four years (2016-2019) of local projects for HSIP Funds. OTST, with representatives from State-Aid, prioritizes 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 resulting “HSIP Goals” and local/state split of this fund are shown in the table attached to the Program Administration section. The file shows 2009-2011 crash data was used to distribute funds for SFY 2017 and beyond.

The 2014 Minnesota Strategic Highway Safety Plan (SHSP) is the main guidance for project selection and evaluation. The goal for this solicitation is that 70% of Greater Minnesota projects and 30% of Metro projects be systemic. **Systemic projects make up 72% of all the projects awarded for Minnesota in 2014. Historically, a subset of that program, local projects in Greater Minnesota, is comprised of approximately 95% systemic projects since 2007.**

Additionally, Minnesota has funded a County Safety Plan for each of its 87 counties and 8 districts. These plans have been completed and are being implemented. They provide each county and district with a prioritized list of low-cost, systemic projects. The District safety plans were recently revised; a collaborative effort to update the County Safety Plans has begun with plans anticipated by 2018.

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

Other-MnDOT District Traffic Engineers

Other-MnDOT Office of Traffic, Safety & Technology
Other-MnDOT State Aid

Briefly 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 Highway Safety Improvement Program planning.

Metropolitan Planning Organizations
Governors Highway Safety Office
Other-City Engineer Safety Committee
Other-County Engineer Safety Committee

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

Other-Beginning with FY 2017, projects will be programmed in a more centralized project selection process as described in question 9.

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

Beginning with projects programmed in SFY 2017, Minnesota has changed the way it administers state projects. Decisions are made at the central office level rather than the district level. Prior to SFY 2017 projects, only the local HSIP projects were selected by Central Office. District projects were approved by the district personnel in the past, but will now go through Central Office in a more formalized process.

The first solicitation, occurring in March 2015 was the first solicitation to utilize the new process. A current solicitation using this process due November 2016. This solicitation is looking to program both local and district projects through SFY 2020.

The local and district projects follow the same deadlines to allow for better project coordination between the two groups.

Program Methodology

Select the programs that are administered under the HSIP.

Other-MnDOT funds these countermeasures through HSIP.

Program: Other-MnDOT funds these countermeasures through HSIP.
Date of Program Methodology: 10/1/2007

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
Fatal and serious injury crashes only	Traffic Volume	Median width Horizontal curvature Roadside features Other-Road surface: In one particular county, gravel roads make up almost half of the system but fewer than 15 percent of all severe crashes occur on these roads.

What project identification methodology was used for this program?

Crash frequency
 Crash rate
 Critical rate
 Excess proportions of specific crash types
 Other-Severe Crash Rate

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

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

How are highway safety improvement projects 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	1
Road Safety Plan	1

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

72%

Highway safety improvement program funds are used to address which of the following systemic improvements?

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

What process is used to identify potential countermeasures?

Other-County and District Safety Plans

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

Other-District Road Safety Plans completed.

Other-County Road Safety Plans Phase 2 are currently under revision.

Other-update Crash Records System

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

HSIP funds are distributed in three distinct solicitations:

Met Council HSIP (Metro District and local projects)

Greater Minnesota Local HSIP (All State Aid eligible agencies in Greater Minnesota)

Greater Minnesota MnDOT District HSIP (All Greater Minnesota Districts)

All three solicitations utilize risk based analysis (Road Safety Plans) to select projects. The Greater Minnesota MnDOT District HSIP solicitation was revised starting with projects programmed in SFY 2017 and beyond to more closely resemble the Greater Minnesota Local HSIP solicitation. This includes approval from Central Office Traffic and additional checks and balances to ensure proper funding categories are assigned to each project.

Lower cost, systemic treatments (lighting, signage, rumble strips and enhanced edgelines) are the focus of the Greater Minnesota projects. Any entity that is eligible for State Aid funds can apply directly to the Greater Minnesota Local HSIP solicitation. Cities and Tribal Governments that are not State Aid eligible must apply for HSIP funds through their county.

In the Metro District, systemic projects are funded as well as projects that address a spot location safety concern. Metro District projects and local metro projects compete side by side for the Metro HSIP funds in the Met Council solicitation.

Critical crash rates have been formally added to the Greater Minnesota District and Local solicitations as a tool for evaluating spot improvement projects.

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

State Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	\$28,674,907.00	76 %	\$7,792,511.00	53 %
Penalty Transfer – Section 164	\$8,915,000.00	24 %	\$7,024,402.00	47 %
Totals	\$37,589,907.00	100%	\$14,816,913.00	100%

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

\$18,829,233.00

How much funding is obligated to local safety projects?

\$1,950,914.00

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

\$3,275,000.00

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

\$2,655,000.00

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.

An FHWA investigation into institutional issues in Minnesota and the low obligation rate highlighted potential areas of improvement. As a result, a new goal of 80% obligation rate has been established; MnDOT is committed to meeting or exceeding this goal.

Minnesota's HSIP program has consisted mainly of stand-alone safety projects. Each district is also required to spend an additional 2x HSIP on safety add-ons to other projects in their program. Some higher cost projects, such as roundabout, while eligible for HSIP funds, have normally been funded through other programs.

Regular engagement with locals is necessary to meet local obligations. In 2017, MnDOT is beginning a phase 2 update to the County Road Safety Plans with enhanced county buy-in and collaboration. While not all counties are participating in the update, a majority are interested in the project.

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

N/A

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
0406-62	Access management Access management - other	1 Numbers	202500	225000	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
880C-164CDB I-16	Non-infrastructure Data/traffic records	1 Numbers	250000	250000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Data	
880C-164CMA-16	Non-infrastructure Data/traffic records	1 Numbers	200000	200000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Data	
880C-164CRS P-16	Non-infrastructure Transportation safety planning	15 Numbers	900000	900000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Planning	
880C-164TSC-16	Non-infrastructure Outreach	1 Numbers	550000	550000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Safety Culture	

8816-2520	Non-infrastructure Outreach	5.5 Numbers	485000	485000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Safety Culture	
8816-2556	Non-infrastructure Data/traffic records	1 Numbers	750000	750000	Penalty Transfer – Section 164		0	0	Non-infrastructure	Data	
8816-2552	Non-infrastructure Data/traffic records	1 Numbers	30000	30000	Penalty Transfer – Section 164		0	0	Acceleration Lane Utilization Rate Study	Data	
1806-74AC	Advanced technology and ITS Dynamic message signs	5 Numbers	26398	26398	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
7102-132AC	Advanced technology and ITS Dynamic message signs	5 Numbers	90227	90227	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
3405-42	Interchange design Interchange design - other	1 Numbers	440000	488889	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
019-608-001	Intersection traffic control Modify control - modifications to roundabout	1 Numbers	806400	1120000	HSIP (Section 148)		0	0	County Highway Agency	Intersections	
019-611-011; 179-020-	Intersection geometry Auxiliary lanes - add two-way left-turn lane	1.4 Miles	769500	855000	HSIP (Section 148)		0	0	County Highway Agency	Intersections	

040											
1002-100	Intersection geometry Auxiliary lanes - add acceleration lane	3 Numbe rs	15480 00	172000 0	HSIP (Sectio n 148)		0	0	State Highway Agency	Intersectio ns	
7321-51S	Intersection geometry Auxiliary lanes - add two- way left-turn lane	3.1 Miles	71500 0	794444	HSIP (Sectio n 148)		0	0	State Highway Agency	Intersectio ns	
018-070-011	Intersection traffic control Modify control - modifications to roundabout	2 Numbe rs	16200 0	180000	HSIP (Sectio n 148)		0	0	County Highway Agency	Intersectio ns	
086-070-010	Intersection traffic control Modify control - modifications to roundabout	1 Numbe rs	45000 0	900000	HSIP (Sectio n 148)		0	0	County Highway Agency	Intersectio ns	
0905-54	Intersection traffic control Intersection signing - miscellaneous/other/unspe cified	2 Numbe rs	27000 0	300000	HSIP (Sectio n 148)		0	0	State Highway Agency	Intersectio ns	
150-070-001AC	Intersection traffic control Modify control - modifications to roundabout	1 Numbe rs	63000 0	700000	HSIP (Sectio n 148)		0	0	City of Municipal Highway Agency	Intersectio ns	
004-070-013	Lighting Intersection lighting	28 Numbe rs	25200 0	280000	HSIP (Sectio n 148)		0	0	County Highway Agency	Intersectio ns	
057-070-005	Lighting Intersection lighting	3 Numbe rs	16200	18000	HSIP (Sectio n 148)		0	0	County Highway Agency	Intersectio ns	
8606-61; 086-	Lighting Intersection lighting	1 Numbe rs	80500 0	805000	Penalty Transfe r -		0	0	State Highway Agency	Intersectio ns	

603-021					Section 164						
8607-59	Lighting Intersection lighting	2 Numbers	405000	450000	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
8821-268	Lighting Intersection lighting	8 Numbers	180000	200000	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
8816-2505	Non-infrastructure Data/traffic records	1 Numbers	50000	50000	Penalty Transfer – Section 164		0	0	State Highway Agency	Data	
8816-2506	Non-infrastructure Enforcement	1 Numbers	60000	60000	Penalty Transfer – Section 164		0	0	State Highway Agency	Intersections	
0206-65	Pedestrians and bicyclists Medians and pedestrian refuge areas	2 Numbers	126000	140000	HSIP (Section 148)		0	0	State Highway Agency	Intersections	
027-030-035	Pedestrians and bicyclists Pedestrian signal	43 Numbers	212998	317000	HSIP (Section 148)		0	0	County Highway Agency	Pedestrians	
141-030-023	Pedestrians and bicyclists Pedestrian warning signs - overhead	12 Numbers	1209600	1344000	HSIP (Section 148)		0	0	City of Municipal Highway Agency	Pedestrians	
141-030-024	Pedestrians and bicyclists Pedestrian signal	40 Numbers	306880	341600	HSIP (Section 148)		0	0	City of Municipal Highway Agency	Pedestrians	

141-030-028; 027-030-044	Pedestrians and bicyclists Pedestrian warning signs - overhead	24 Numbers	23278 80	258653 3	HSIP (Section 148)		0	0	County Highway Agency	Pedestrians	
161-030-001	Pedestrians and bicyclists Pedestrian signal	8 Numbers	69313 8	770153	HSIP (Section 148)		0	0	County Highway Agency	Pedestrians	
1380-85	Roadside Barrier - cable	7.4 Miles	16200 00	180000 0	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
2480-106	Roadside Barrier - cable	9.2 Miles	10000 00	100000 0	Penalty Transfer – Section 164		0	0	State Highway Agency	Lane Departure	
2713-120	Roadside Barrier - concrete	3.4 Miles	19911 60	221740 0	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
2762-98	Roadside Barrier - cable	13.5 Miles	13680 00	136800 0	Penalty Transfer – Section 164		0	0	State Highway Agency	Lane Departure	
8608-30	Roadside Barrier - cable	4.3 Miles	76860 0	854000	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
8825-551	Roadside Barrier - other	15.4 Miles	20170 00	201700 0	Penalty Transfer – Section 164		0	0	State Highway Agency	Lane Departure	

004-070-016	Roadway Rumble strips - edge or shoulder	6.6 Miles	208800	232000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
012-070-005; 012-606-012	Roadway Rumble strips - edge or shoulder	11 Miles	540540	600600	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
013-030-005	Roadway Rumble strips - edge or shoulder	26.1 Miles	232421	258246	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
024-070-017, 024-070-018, 024-070-019, 024-070-020	Roadway Rumble strips - edge or shoulder	26.8 Miles	1390050	1544500	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
045-070-003	Roadway Rumble strips - edge or shoulder	10.9 Miles	350000	388889	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
054-070-003	Roadway Rumble strips - edge or shoulder	24.5 Miles	147600	164000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
056-070-019	Roadway Rumble strips - edge or shoulder	40 Numbers	244715	271905	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	

057-070-004AC	Roadway Rumble strips - edge or shoulder	67.4 Miles	233600	233600	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
057-070-006	Roadway Rumble strips - edge or shoulder	34.1 Miles	108000	120000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
062-609-006; 6284-162	Roadway Roadway - other	1 Numbers	630000	1720000	HSIP (Section 148)		0	0	County Highway Agency	Intersections	
071-070-031, 071-070-032	Roadway Rumble strips - edge or shoulder	12 Miles	167850	186500	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
075-070-008; 075-601-031	Roadway Rumble strips - edge or shoulder	4.8 Miles	176400	196000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
079-070-008	Roadway Rumble strips - edge or shoulder	2.1 Miles	150000	166666	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
8606-62	Roadway Pavement surface - high friction surface	1.6 Miles	450000	450000	Penalty Transfer - Section 164		0	0	State Highway Agency	Lane Departure	
8822-185	Roadway Rumble strips - unspecified or other	55.9 Miles	115147	127941	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	

					n 148)				Agency		
8824-117	Roadway Rumble strips - unspecified or other	223.6 Miles	485280	539200	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
002-601-047	Roadway delineation Longitudinal pavement markings - new	5.9 Miles	272916	303240	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
005-070-001	Roadway delineation Longitudinal pavement markings - new	19.1 Miles	141525	157250	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
018-070-012	Roadway delineation Longitudinal pavement markings - new	41.2 Miles	225000	250000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
025-070-009	Roadway delineation Longitudinal pavement markings - new	6.6 Miles	50490	56100	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
027-030-033	Roadway delineation Longitudinal pavement markings - new	75.3 Miles	818030	908922	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
030-070-007	Roadway delineation Longitudinal pavement markings - new	27 Miles	204255	226950	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
033-070-007	Roadway delineation Longitudinal pavement markings - new	225.4 Miles	150525	167250	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
034-070-007	Roadway delineation Raised pavement markers	65.4 Miles	309498	343887	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
068-070-002	Roadway delineation Longitudinal pavement markings - new	44 Numbers	145305	161450	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
069-	Roadway delineation	7.2	37800	42000	HSIP		0	0	County	Lane	

070-018	Longitudinal pavement markings - new	Miles			(Section 148)				Highway Agency	Departure	
077-070-007	Roadway delineation Longitudinal pavement markings - new	208.1 Miles	15000 0	166667	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
080-070-005	Roadway delineation Longitudinal pavement markings - new	49.6 Miles	11907 8	132309	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
088-070-045	Roadway delineation Longitudinal pavement markings - new	139.7 Miles	85950 0	955000	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
8826-181	Roadway delineation Longitudinal pavement markings - new	28.9 Miles	47558 9	528432	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
017-070-001	Roadway signs and traffic control Curve-related warning signs and flashers	32 Numbers	95040	105600	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
023-070-002	Roadway signs and traffic control Curve-related warning signs and flashers	43 Numbers	49860	55400	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
056-070-020	Roadway signs and traffic control Curve-related warning signs and flashers	39 Numbers	18711 2	207902	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
070-030-007	Shoulder treatments Pave existing shoulders	22.7 Miles	20520 00	228000 0	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	
083-070-007, 083-070-008	Shoulder treatments Shoulder treatments - other	10 Miles	45450 0	320000 0	HSIP (Section 148)		0	0	County Highway Agency	Lane Departure	

8827-257	Shoulder treatments Shoulder treatments - other	115.3 Miles	47700 0	530000	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	
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Progress in Achieving Safety Performance Targets

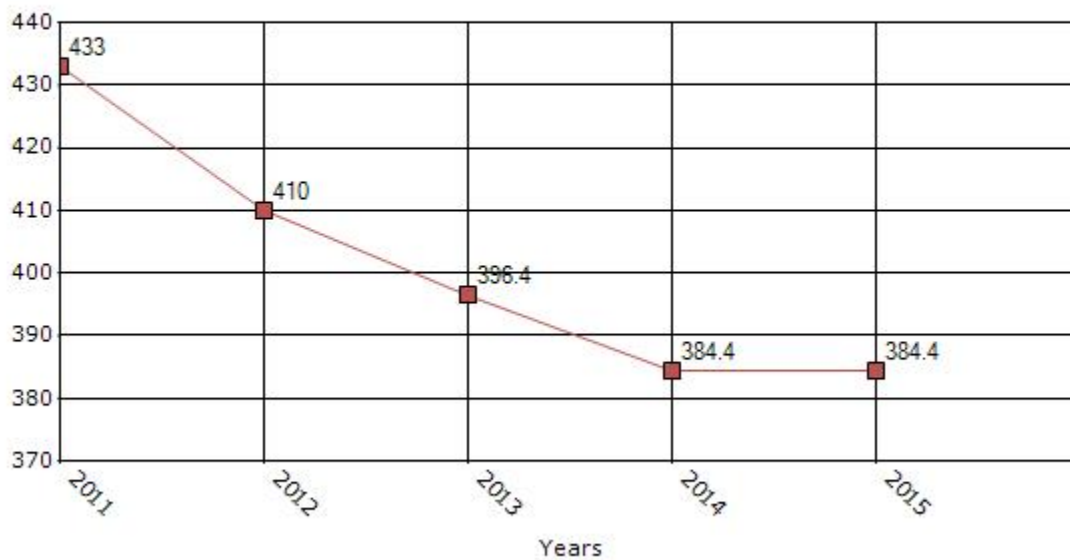
Overview of General Safety Trends

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

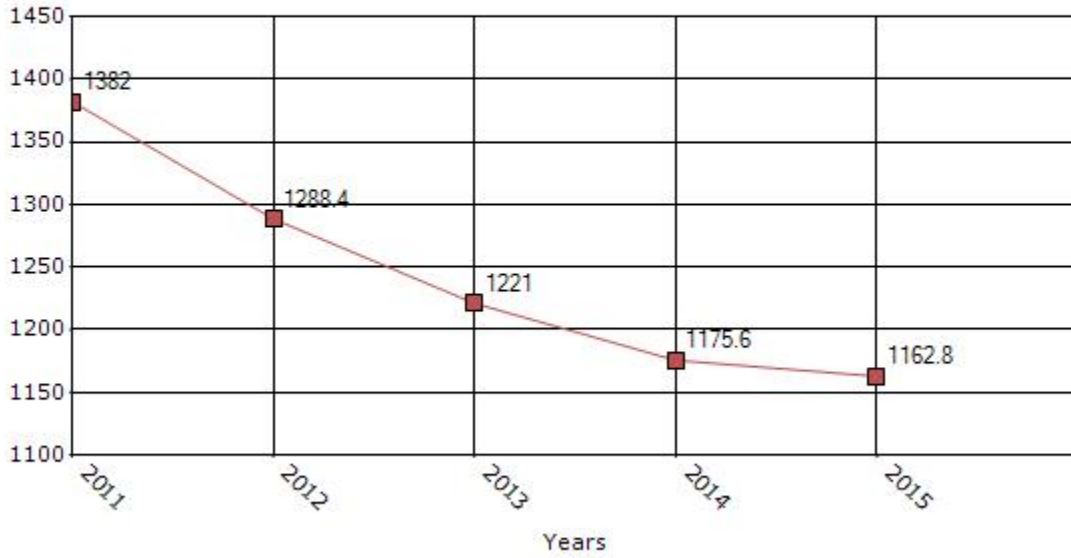
Performance Measures*	2011	2012	2013	2014	2015
Number of fatalities	433	410	396.4	384.4	384.4
Number of serious injuries	1382	1288.4	1221	1175.6	1162.8
Fatality rate (per HMVMT)	0.758	0.718	0.696	0.674	0.67
Serious injury rate (per HMVMT)	2.42	2.262	2.146	2.064	2.026

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

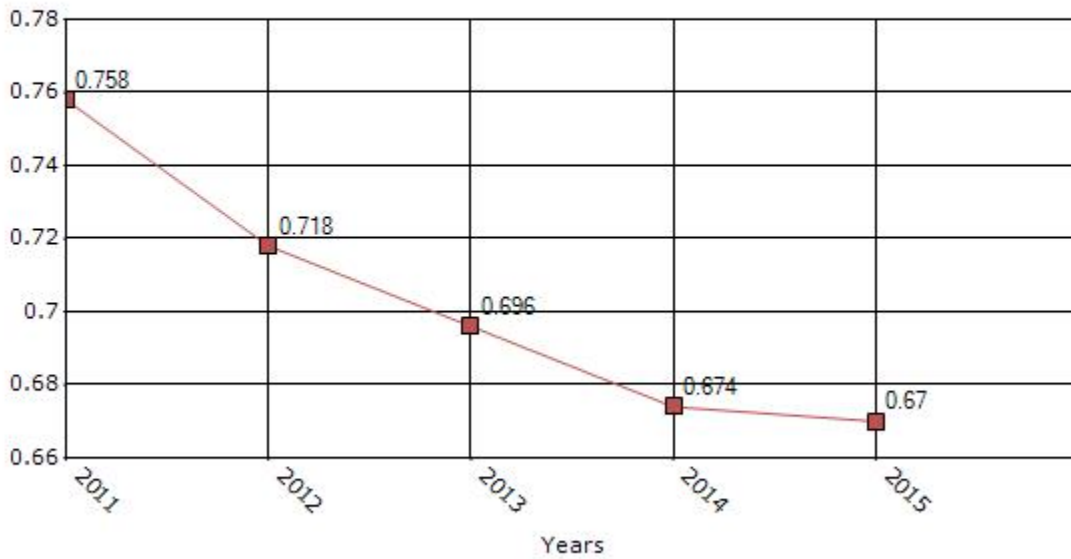
Number of Fatalities for the Last Five Years
5-yr Average Measure Data



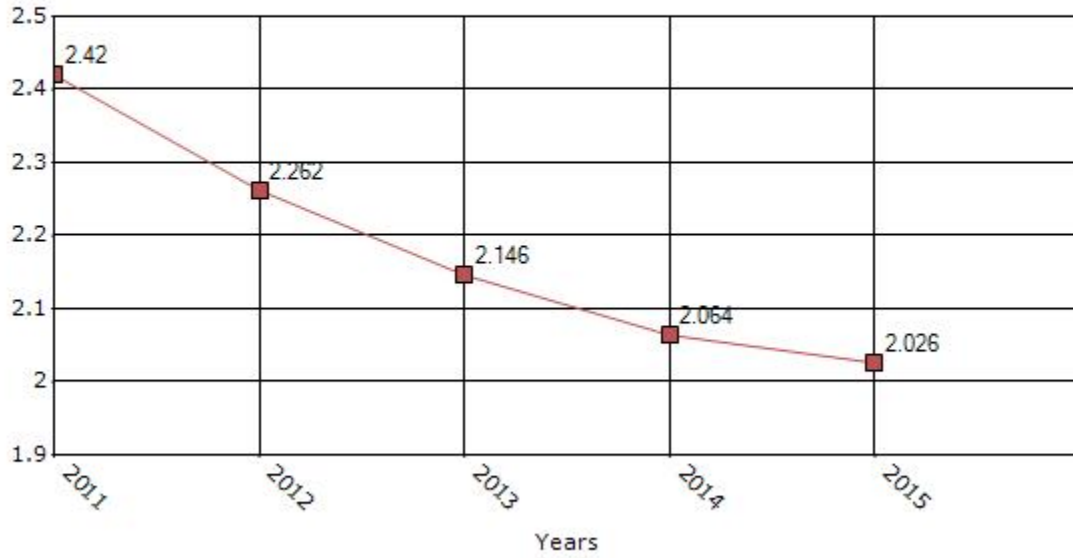
Number of Serious Injuries for the Last Five Years 5-yr Average Measure Data



Rate of Fatalities for the Last Five Years 5-yr Average Measure Data



Rate of Serious Injuries for the Last Five Years 5-yr Average Measure Data



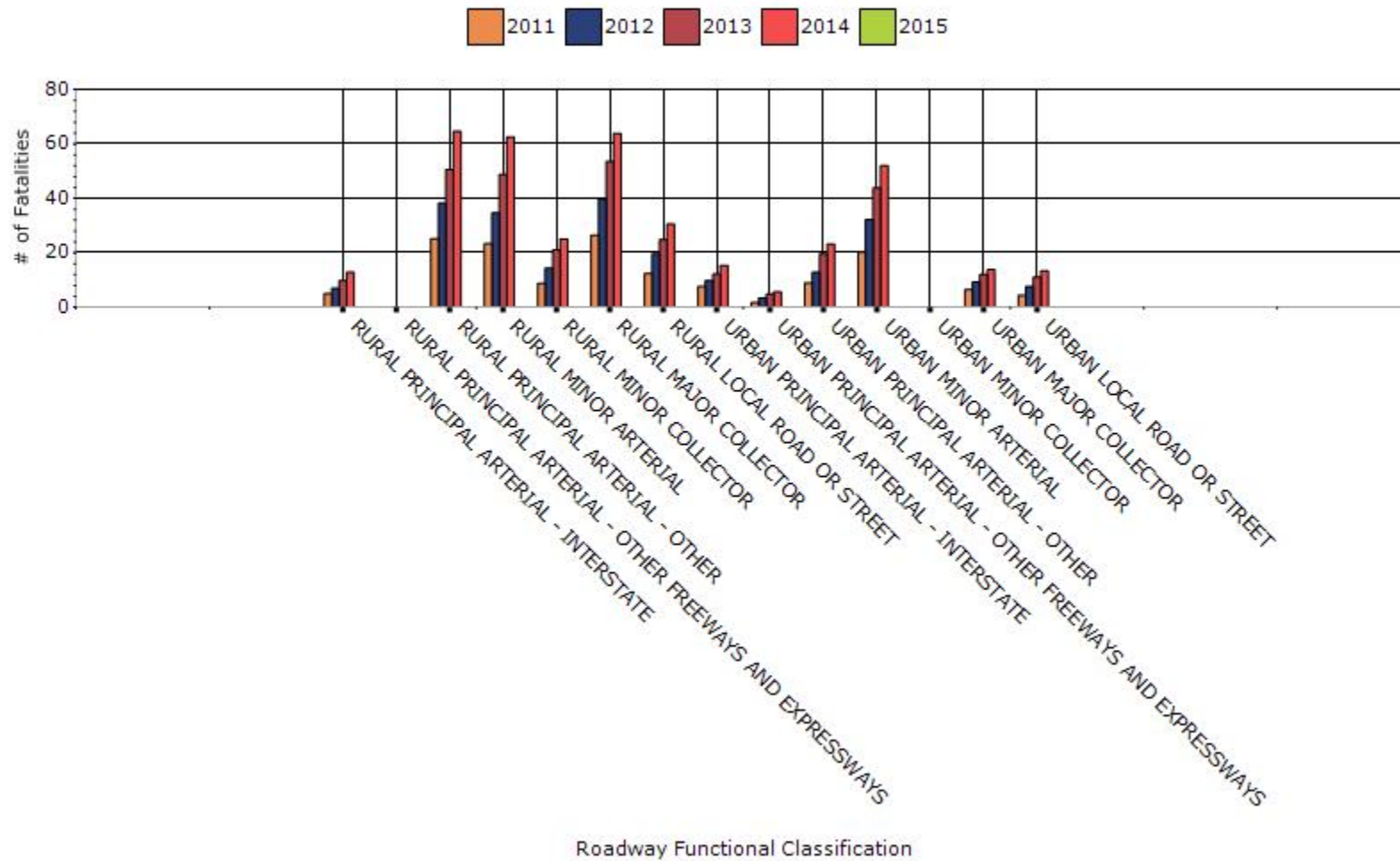
To the maximum extent possible, present performance measure* data by functional classification and ownership.

Year - 2014

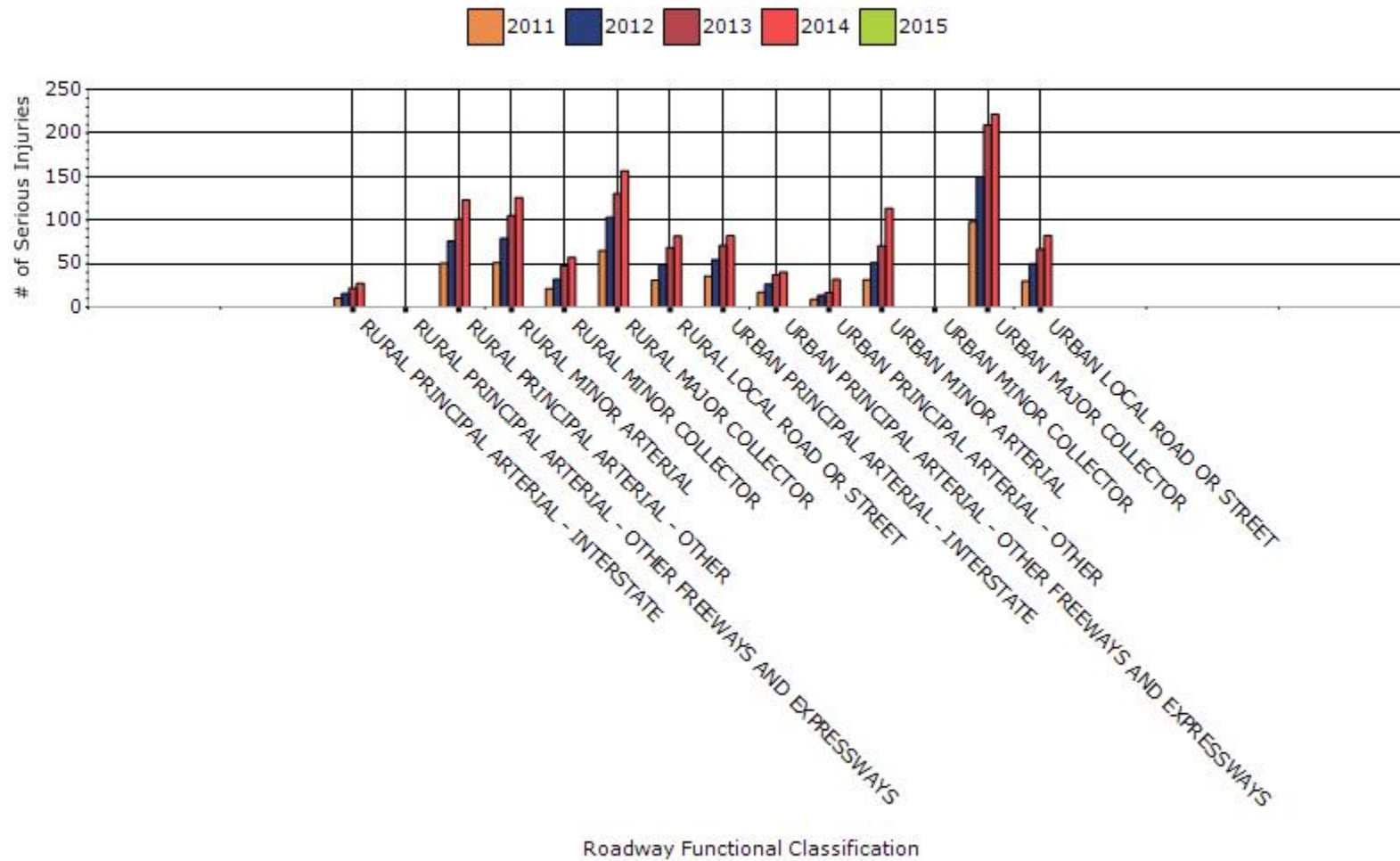
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	12.8	27.2	0.3	0.67
RURAL PRINCIPAL ARTERIAL - OTHER	64.6	123.2	0.87	1.73
RURAL MINOR ARTERIAL	62.6	126	1.23	2.63
RURAL MINOR COLLECTOR	25	57.2	1.76	4.31
RURAL MAJOR COLLECTOR	63.8	156.6	1.56	3.81
RURAL LOCAL ROAD OR STREET	30.6	81.6	1.16	3.18
URBAN PRINCIPAL ARTERIAL - INTERSTATE	15.4	82	0.18	0.97
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	5.6	40.4	0.16	1.15

URBAN PRINCIPAL ARTERIAL - OTHER	23.2	31.8	0.51	0.7
URBAN MINOR ARTERIAL	52	113.6	0.63	1.4
URBAN MAJOR COLLECTOR	13.8	221.4	0.56	8.6
URBAN LOCAL ROAD OR STREET	13.4	82.2	0.3	1.83

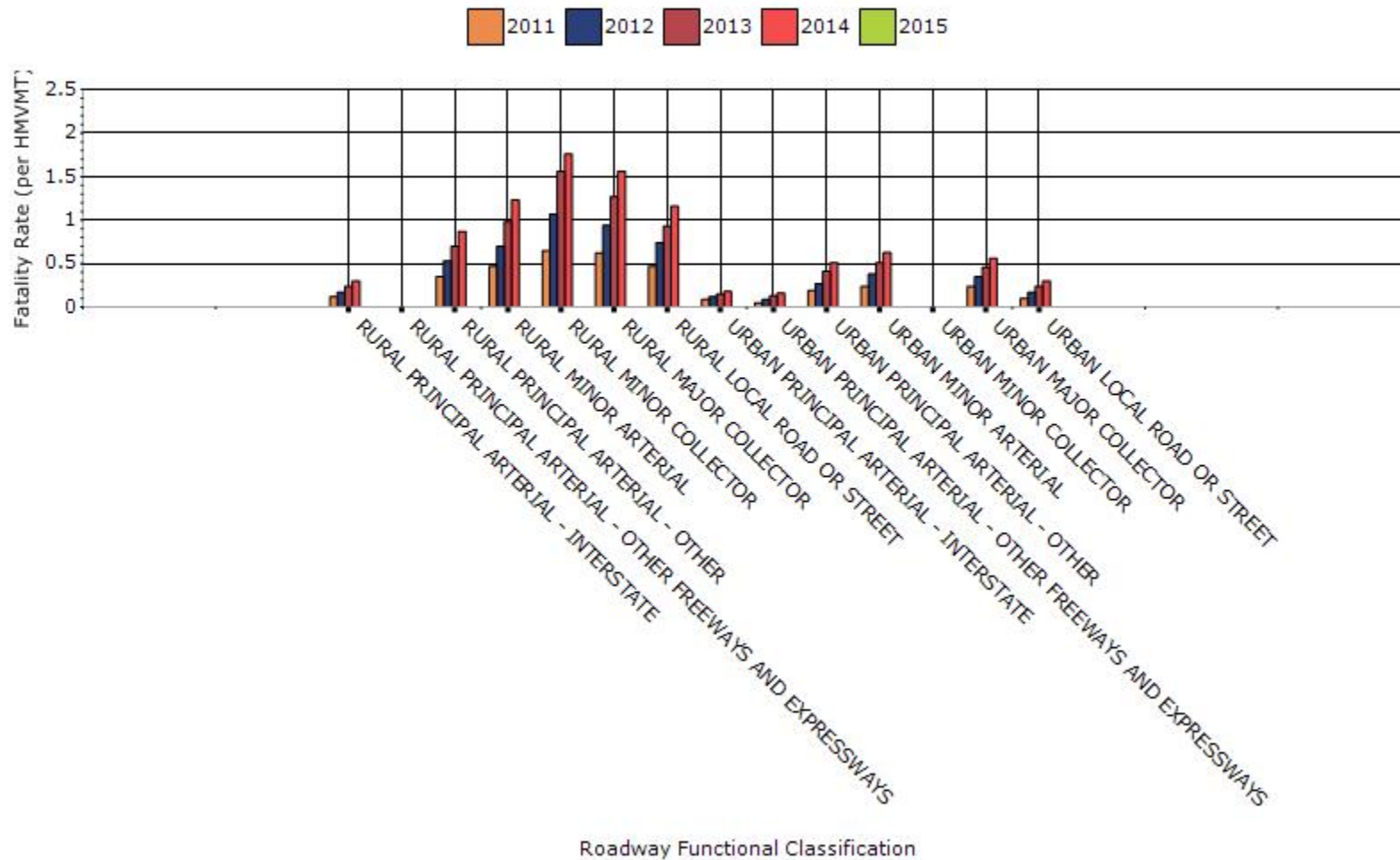
Fatalities by Roadway Functional Classification 5-yr Average Measure Data



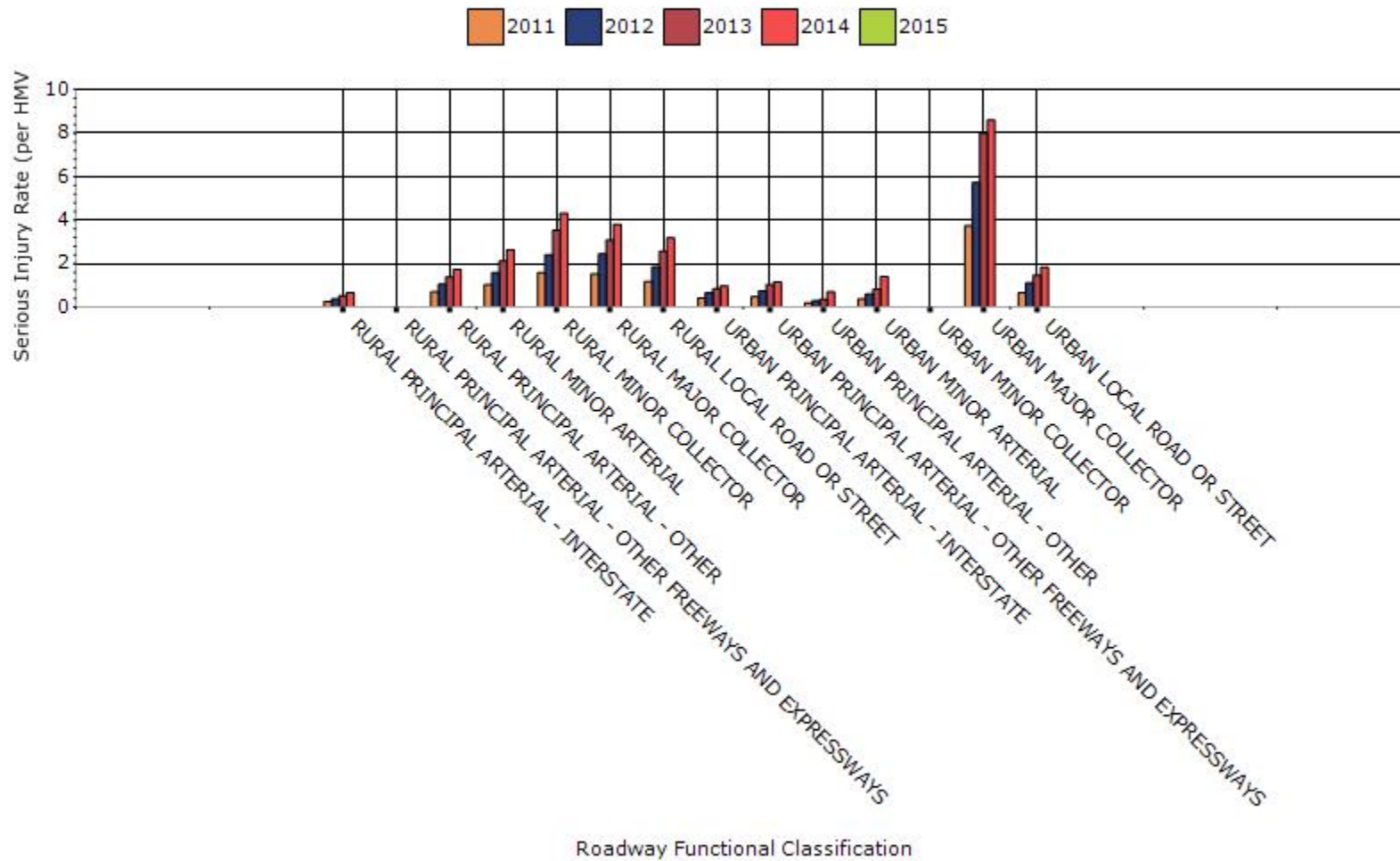
Serious Injuries by Roadway Functional Classification 5-yr Average Measure Data



Fatality Rate by Roadway Functional Classification 5-yr Average Measure Data



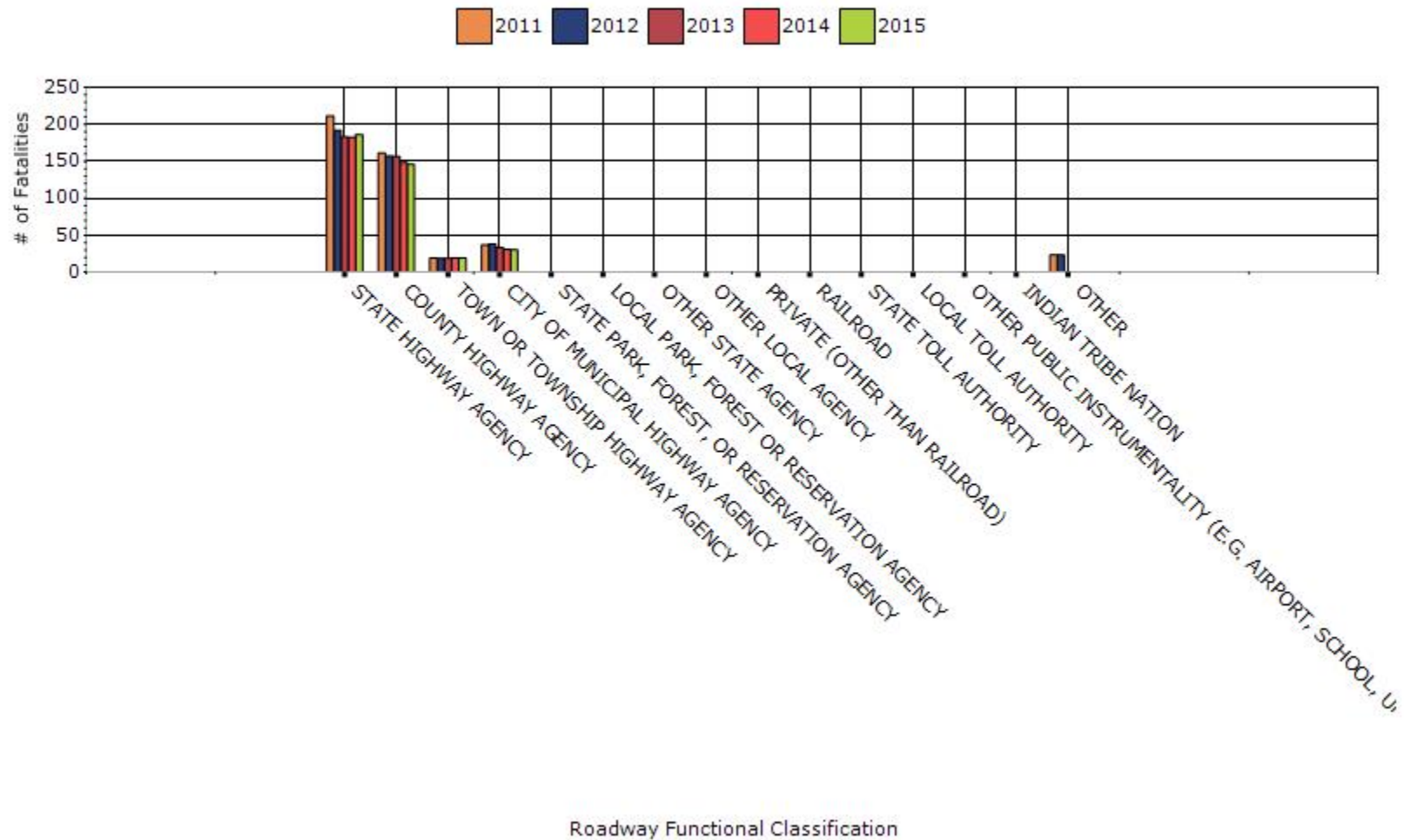
Serious Injury Rate by Roadway Functional Classification 5-yr Average Measure Data



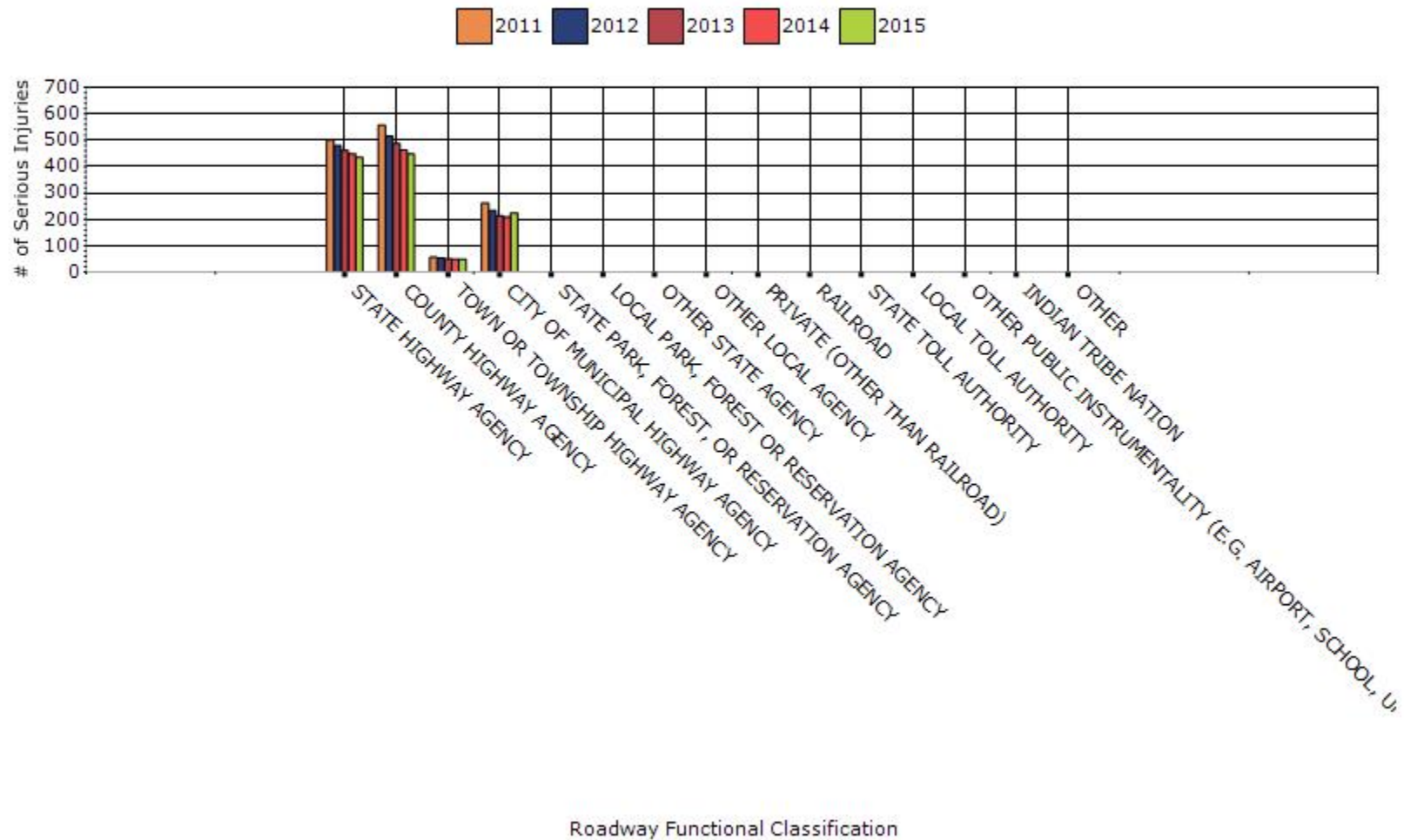
Year - 2015

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	186.2	435.4	0.56	1.31
COUNTY HIGHWAY AGENCY	146	447.8	1.05	3.21
TOWN OR TOWNSHIP HIGHWAY AGENCY	19	49.2	1.61	4.16
CITY OF MUNICIPAL HIGHWAY AGENCY	30.2	224.2	0.33	2.46

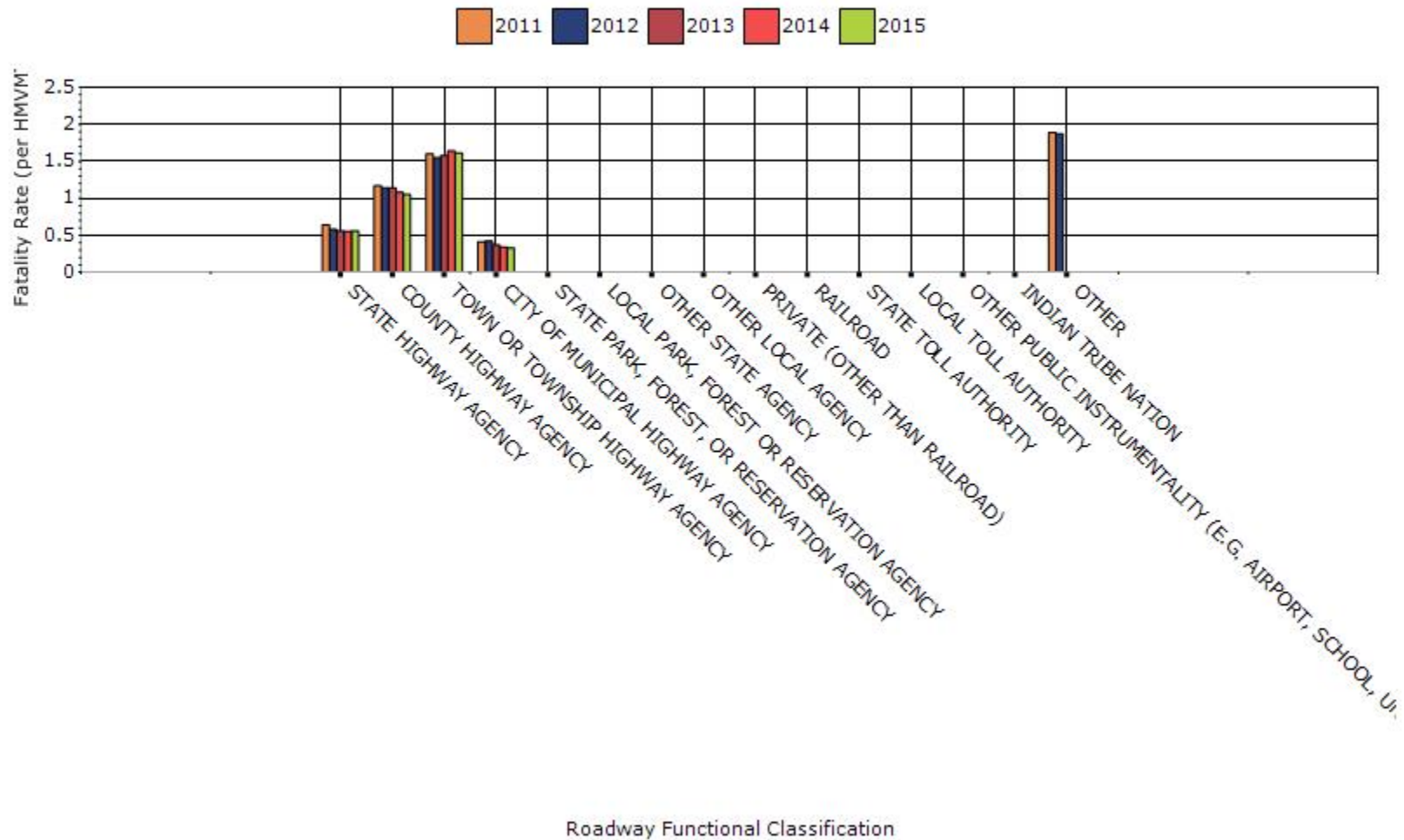
Number of Fatalities by Roadway Ownership 5-yr Average Measure Data



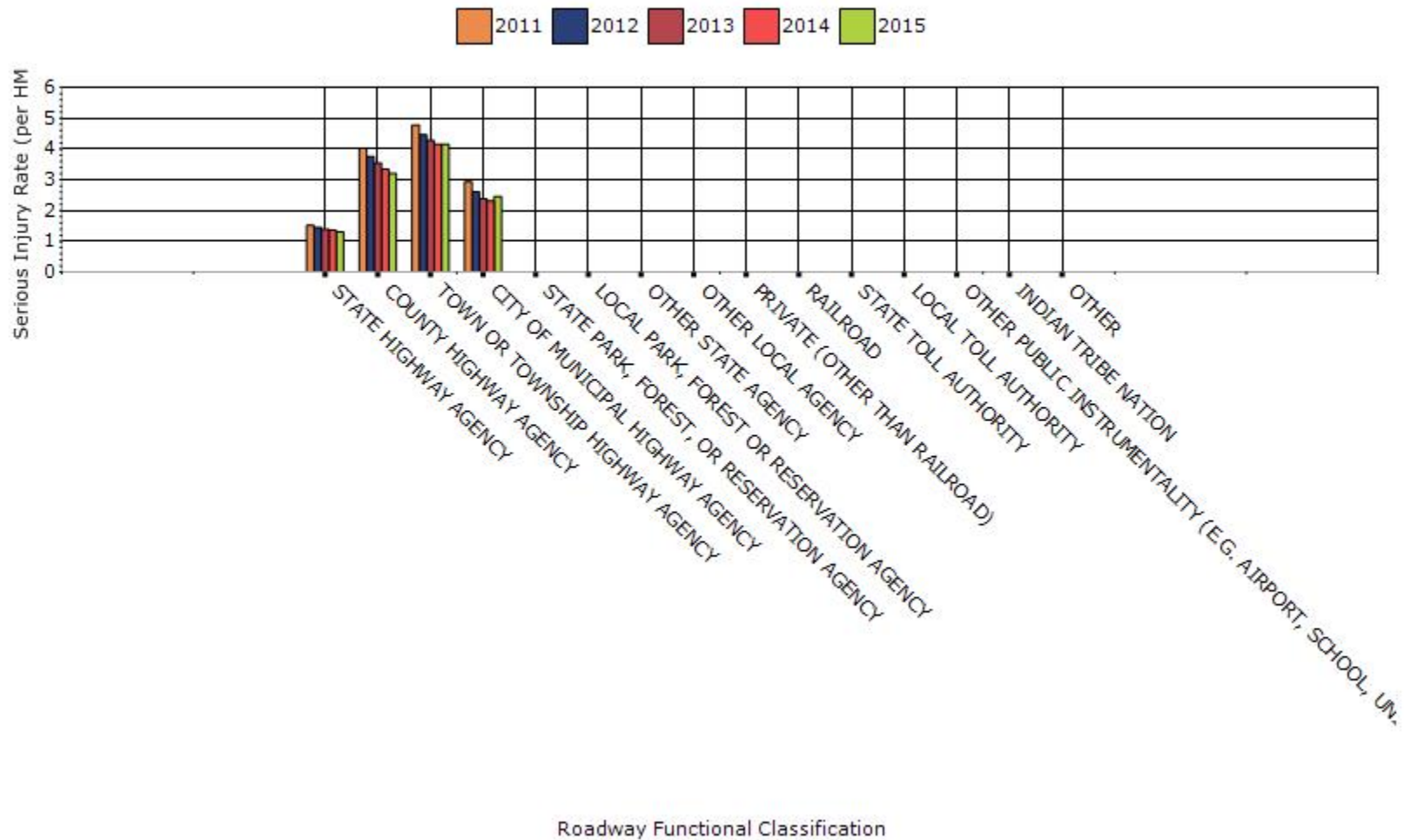
Number of Serious Injuries by Roadway Ownership 5-yr Average Measure Data



Fatality Rate by Roadway Ownership 5-yr Average Measure Data



Serious Injury Rate by Roadway Ownership 5-yr Average Measure Data



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

In 2015, Minnesota experienced a total of 411 traffic fatalities: that is 50 more lives lost than last year. This is the highest number of fatalities since 2010, with 411 as well. The VMT based fatality rate for 2015 is 0.70, among the lowest in the nation. This increase may signal a "leveling off" of Minnesota's previous success: we will be considering how to continue to drive down traffic deaths beyond the initial "low hanging fruit" strategies.

Application of Special Rules

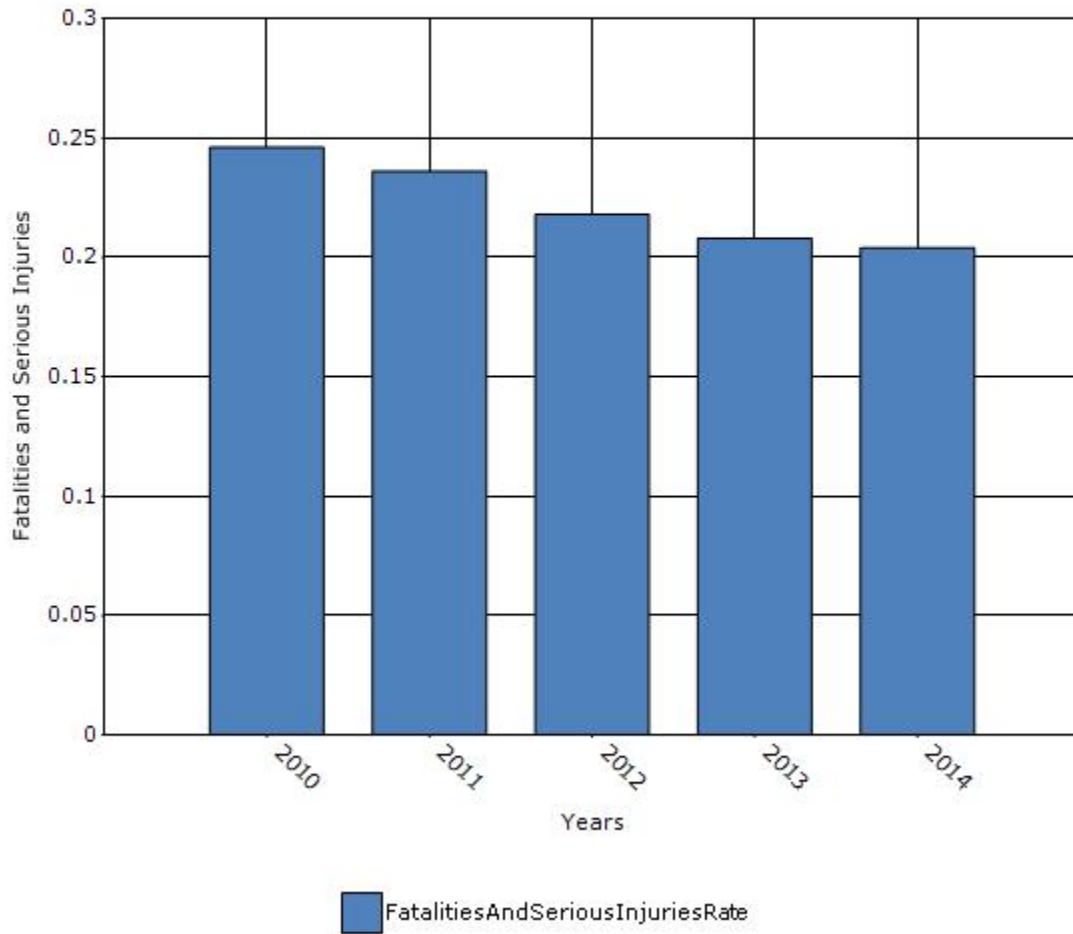
Present the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65.

Older Driver Performance Measures	2010	2011	2012	2013	2014
Fatality rate (per capita)	0.098	0.096	1.67	1.666	1.662
Serious injury rate (per capita)	0.146	0.14	0.132	0.126	0.126
Fatality and serious injury rate (per capita)	0.246	0.236	0.218	0.208	0.204

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

See also attached Excel file with formulas and graphs.

Rate of Fatalities and Serious injuries for the Last Five Years 5-yr Average Measure Data



Using revised Older User Guidance (May 19, 2016)

Does the older driver special rule apply to your state?

No

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?

Other-Minnesota is tracking the number of HSIP projects as an indicator of success. Each set of countermeasures will be studied for their effectiveness at reducing fatal and serious injury crashes. To date, large scale studies of 6-inch edgelines, reduced conflict interesections, and acceleration lanes are been studied. As more years of data are collected, Minnesota will conduct more studies.

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

Other-Revised Minnesota district safety plans.

Other-update Crash Records System

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

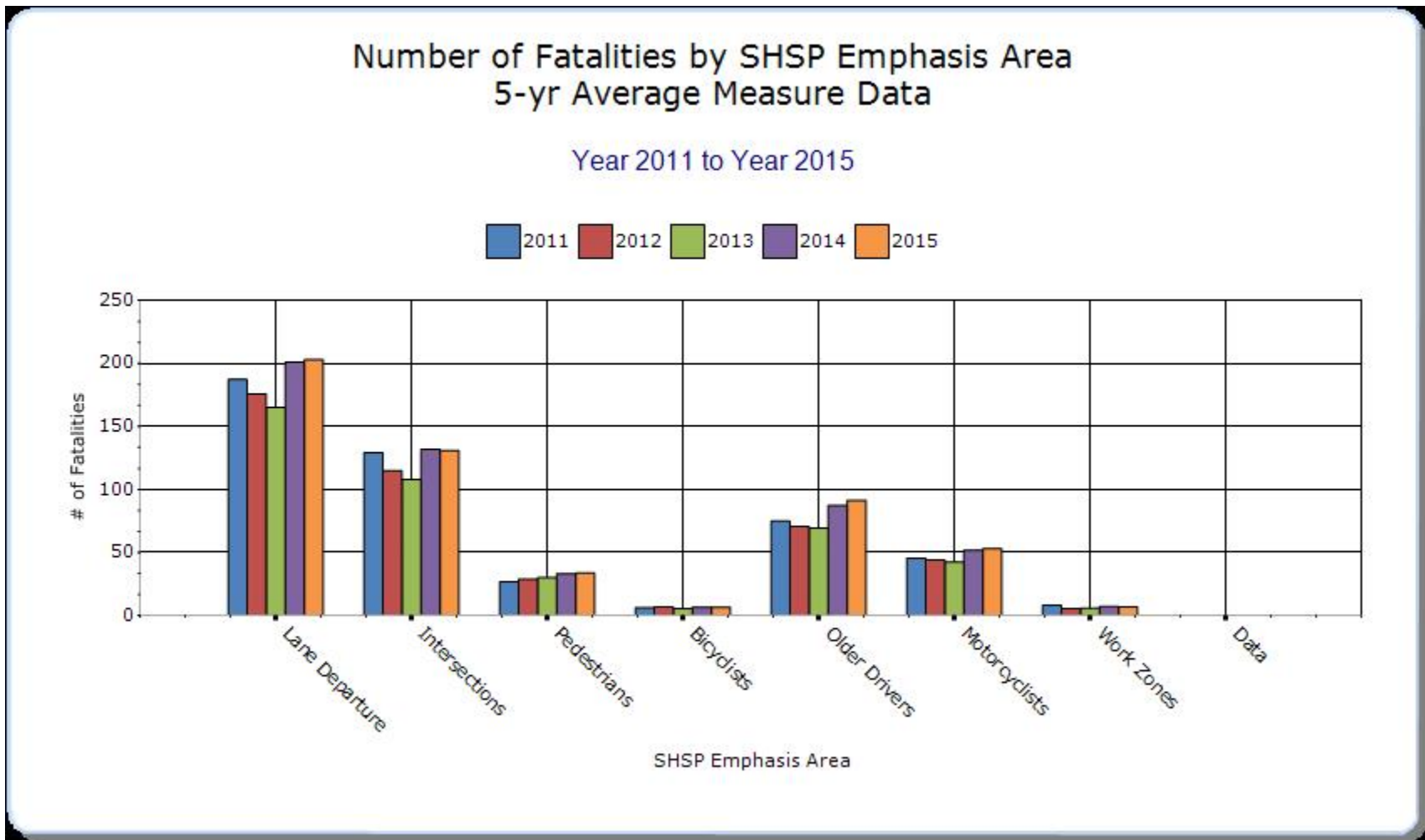
New office director for the Office of Traffic, Safety & Technology. District safety plans are now complete and ready for use in solicitation of HSIP funding. In conjunction with TRCC and Department of Public Safety, MnDOT committed a substantial investment in time and resources outside of HSIP to update the crash records reporting system. The partnership will provide improved data quality and help identify, program, and evaluate HSIP projects going forward.

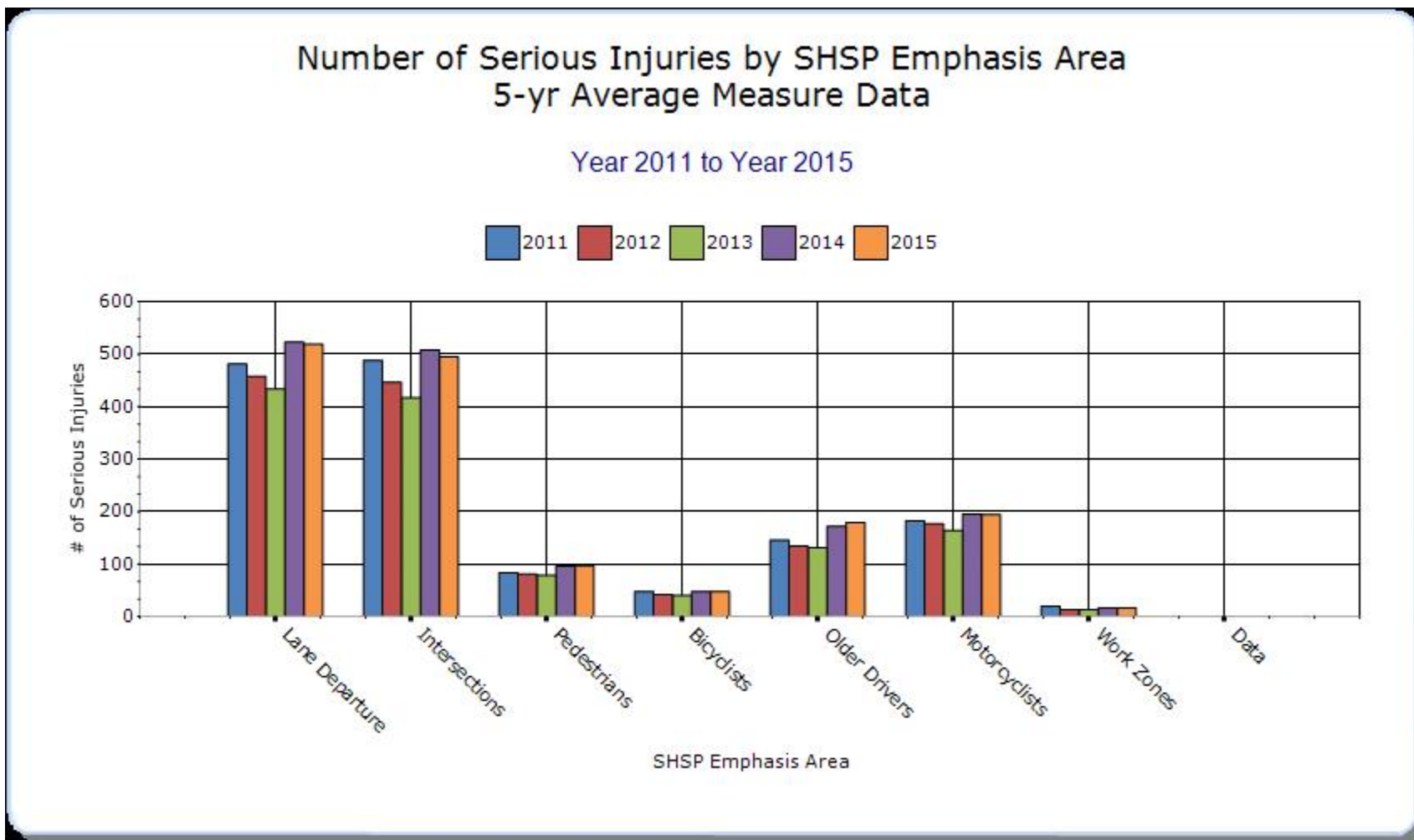
SHSP Emphasis Areas

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

Year - 2015

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
Lane Departure		202.8	519.4					
Intersections		130.8	495					
Pedestrians		33.6	97.2					
Bicyclists		6.6	47.4					
Older Drivers		91.4	179.4					
Motorcyclists		53	194.4					
Work Zones		6.8	16.6					





Groups of similar project types

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

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
SKIP	Unknown.							

Systemic Treatments

Present the overall effectiveness of systemic treatments.

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
SKIP	Changes to databases (linear referencing system, crash reporting) has made tracking these metrics suspect at this time.							

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

Minnesota is trying to balance out our investment between prevention and reduction. Projects focusing on prevention tend to be low-cost systemic projects touching a large number of miles with our HSIP dollars. Local HSIP projects in rural areas tend to fall under the prevention category. Reduction refers to the high crash locations that focus more dollars on fewer miles. Projects in the Metro area tend to be in the reduction category. These urban projects can balloon as associated improvements, e.g. ADA revisions and retiming, can be expensive.

Project Evaluation

Provide project evaluation data for completed projects (optional).

Location	Functional Class	Improvement Category	Improvement Type	Bef-Fatal	Bef-Serious Injury	Bef-All Injuries	Bef-PDO	Bef-Total	Aft-Fatal	Aft-Serious Injury	Aft-All Injuries	Aft-PDO	Aft-Total	Evaluation Results (Benefit/Cost Ratio)
Various Reduced Conflict Intersections (RCIs)		Intersection traffic control	Intersection traffic control - other	4	2	31	22	59			15	30	45	1.20

MnDOT is revising our process for working with local agencies after a project has been funded. The previous process did not include a consistent feedback loop on reporting when a project is finished. We have developed a database for tracking installation and begun in 2016 outreach to our partners. As the database is populated, we will be able to consistently and efficiently evaluate similar projects on an annual basis.

An evaluation of auxiliary buffer lanes at interchanges was conducted. Comparison was treatment sites to similar control sites.

Fatal Crashes: 0 treatment | 0 control

Serious Injury Crashes: 0 treatment | 4 control

Total Crashes: 877 treatment | 2,186 control

Crash Rate: 0.87 treatment | 1.42 control

Evaluation at MnDOT has expanded to include non-infrastructure strategies. The SHSP highlights "Improving Traffic Safety Culture" as a priority focus area for Minnesota. In 2015, a report on Measuring Minnesota Traffic Culture was published that creates a baseline metric for future analysis. In this initial report, new analysis of networks highlights the importance of facilitating a highly connected coalition for TZD.

A similar study evaluating connections in the Towards Zero Deaths regions resulted in a survey for further analysis. Beta tests of the survey were successful; however, dissemination will require a longer timeframe than initially planned.

MnDOT has evaluated locations for risk factors. In 2015, a study of motorcycle crashes (attached) explored identification of these factors and potential systemic solutions. Interestingly, shallow rather than sharp curves were found to have a higher risk for fatal and serious injury motorcycle crashes. Over 51% of fatal and serious injury motorcycle crashes occurred in areas with populations below 5,000. When crashes involved more than one vehicle, the most salient combination was motorcyclist travelling straight while vehicle turning left. Outreach to motorcycle groups confirmed findings and supplied strategies for implementation.

A similar systemic evaluation of sinusoidal rumble strips ("mumble strips") was published on risk factors, guidance, and acceptability.

MnDOT now publishes traffic safety reports on our external website at www.mndot.gov/trafficeng/safety/reportspubl.html

Optional Attachments

Sections

Program Structure: Program Administration

Progress in Achieving Safety Performance Targets:

Application of Special Rules

Files Attached

[HSIP Distribution.xlsx](#)

[Older Driver Metric \(New Guidance\).xlsm](#)

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.

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.