



Highway Safety Improvement Program
Data Driven Decisions

Arkansas
Highway Safety Improvement Program
2016 Annual Report

Prepared by: AR

Disclaimer

Protection of Data from Discovery & Admission into Evidence

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

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

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Executive Summary

In accordance with 23 USC 148 and pursuant to 23 CFR 924, the Arkansas State Highway and Transportation Department (AHTD) has prepared a Highway Safety Improvement Program (HSIP) Annual Report for State Fiscal Year 2015 (July 1, 2015 through June 30, 2016). The format of this report is consistent with the reporting guidelines issued by the Federal Highway Administration on February 13, 2013.

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.

To address safety concerns on local roads, the AHTD continues to provide technical assistance and training programs on safety issues to local governments through its efforts by System Information and Research Division staff and the Technology Transfer Program. The AHTD continues to coordinate with the Arkansas State Police through the Traffic Records Coordinating Committee and has implemented

eCrash and the Advance program that allows law enforcement agencies and other State and local agencies to have better access to crash data on all public roads, and run analytics and produce reports on numerous aspects of the crash data

Furthermore, the AHTD continues to update our linear referencing system. This allowed the location of a crash that occurs on Federal-aid local roads to be identified by geographical location. A project to provide a linear referencing system for all public roads is currently underway. Approximately 55% of all public roads now have a linear referencing system in place. Based on this data, crash queries can be conducted to determine if there are locations with a high frequency of crashes. This data can be provided to a local government agency or a Metropolitan Planning Organization (MPO) upon request.

AHTD has provided a GIS and Aerial photograph driven tool, VISUAL-T, to the Arkansas State Police and various county and local law enforcement agencies to assist the agencies with providing an accurate crash location on the crash report. The AHTD technical staff provided continued support to the local law enforcement agencies in this reporting period. This tool has greatly enhanced both speed and accuracy in providing a crash location to the Crash Database. Agencies using eCrash have also been provided with MapClick that allows law enforcement to accurately pin point crash locations while at the scene and send the LRS location, Lat/Long and all the roadway information associated with the crash location to the eCrash database. Staff is also attending the Local Road HSIP Exchange in Missouri in November 2016.

We attended a Systemic Safety Peer Exchange in Phoenix, AZ, where we met several LTAP representatives. This peer exchange helped us to develop a policy for local road safety improvement program which is under development.

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

Design
Planning
Maintenance
Operations

Briefly describe coordination with internal partners.

Coordination with internal partners, along with the HSO and the eight Metro-Plan Organizations across the State, occurs on different levels. Design, planning, maintenance, operations, MPOs and the HSO are all on the SHSP Steering committee. Coordination has also taken place when addressing work zone safety, roadway departure safety, and in the identification of infrastructure and non-infrastructure projects. Traffic Safety and Maintenance work together on daily basis to address the spot treatments due to fatal crashes.

Traffic Safety performs the preliminary scope of safety improvements on segment jobs according to the HSM guidelines to help with the design process. We have started a site visit protocol for scoping safety improvements for corridor program. It includes personnel from Roadway Design, Planning, Maintenance, and District/Construction engineers. We plan to include personnel from other Divisions as well to expedite the programming/design of these safety jobs.

Based on our field experience, we revised our scope to address safety improvements by choosing low-cost countermeasures such as replacement/installation of guard rails, signs, pavement markings, etc.

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

Metropolitan Planning Organizations
Governors Highway Safety Office

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

Other-New countermeasures such as enhanced pavement markings and centerline rumble strips were installed to address KA crashes.

Other-Performance measure coordination with the Arkansas State Police, Highway Safety Office and some MPO organizations was accomplished in multiple meetings. Different methodologies and laws were discussed prior to setting targets.

Other-We perform a site visit which includes staff from different disciplines/divisions to help scope safety improvements on safety corridor projects.

Other-We have developed minor shoulder widening program in conjunction with the overlay program.

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

The AHTD Traffic Safety Section (TSS), which manages the HSIP, continued to use the Highway Safety Manual on case by case basis. The TSS now has 4 Engineers working on the Safety Program. Prior to May 2011, TSS did not have an Engineer. The TSS has marketed the SHSP (approved by FHWA in March 2013) with a focus on TZD through the Arkansas Highways Magazine, idrivearkansas.com and tzdarkansas.org.

Also HSM Safety Performance Functions' research is under progress along with continued improvements to data analysis processes and tools used by the TSS. AHTD continued to be a member State in the

Evaluation of Low-Cost Safety Improvements Pooled Fund Study. AHTD is coordinating with the FHWA Division Office to conduct a HSIP Peer Review during the 2017 Federal Fiscal Year. Information learned from this effort will be used to update the HSIP Process document.

We attended a systemic peer exchange in Phoenix, AZ, where we met several LTAP representatives. This peer exchange helped us to develop a policy for local road safety improvement program which is under development. Staff is also attending the Local Road HSIP Exchange in Missouri in November 2016.

Program Methodology

Select the programs that are administered under the HSIP.

Median Barrier	Intersection	Rural State Highways
Skid Hazard	Crash Data	Roadway Departure
Shoulder Improvement	Segments	Other-Pavement Marking Improvements

Program: Median Barrier

Date of Program Methodology: 7/7/2011

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Traffic	Median width
Fatal and serious injury crashes only		Functional classification

What project identification methodology was used for this program?

Other-Systemic approach

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Based on systemic approach considering median width, ADT, etc.

Program: Intersection

Date of Program Methodology: 4/1/2015

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Other-Rural vs Urban	Other-ROW and utilities consideration
Fatal and serious injury crashes only		

What project identification methodology was used for this program?

Crash frequency

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Cost Effectiveness	2
analyzed multiple locations statewide that were identified through various sources.	1

Program: Rural State Highways

Date of Program Methodology: 6/6/2016

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Traffic	Functional classification
	Volume	

What project identification methodology was used for this program?

Crash rate

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

No

How are highway safety improvement projects advanced for implementation?

Other-Includes only signing improvements on high risk rural highways using state maintenance funds.

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

Program: Skid Hazard

Date of Program Methodology: 1/1/2013

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Other-Wet pavement crashes	Other-Skid resistance
Fatal and serious injury crashes only		consideration

What project identification methodology was used for this program?

Crash frequency

Crash rate

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Wet pavement crashes were considered statewide and further analyzed to select the locations based on a certain threshold.

Program: Crash Data

Date of Program Methodology: 1/1/2012

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Other-All types of data exposure considered for improvements	Other-MIRE roadway data elements are the priority for improvements.
Other-Converting from TRACS to E-Crash with the add-on software of ADVANCE for querying data.		

What project identification methodology was used for this program?

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?

Other-The MIRE is connected with the eCrash which will improve the data quality for analysis.

Other-The AHTD continues to coordinate with the Arkansas State Police through the TRCC to implement eCrash and the Advance program that will allow law enforcement agencies and other State and local agencies to have timely access to the crash data.

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).

Various state agencies are

prioritizing and funding needed improvements through the TRCC.

Program: Roadway Departure
Date of Program Methodology: 1/1/2014

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Traffic	Other-Minimum of 1 foot
Fatal and serious injury crashes only		shoulder

What project identification methodology was used for this program?

Crash frequency

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Available funding	2
The process was systemic based approach but due to available funding the systematic approach was also considered.	1

Program: Shoulder Improvement
Date of Program Methodology: 1/1/2016

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Traffic	Functional classification
Fatal and serious injury crashes only	Volume	
	Lane miles	
	Other-Preventative maintenance.	

What project identification methodology was used for this program?

Crash rate

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Cost Effectiveness	2
Sites were selected in conjunction with the Overlay Program.	1

Program: Segments
Date of Program Methodology: 1/1/2013

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Lane miles	Horizontal curvature
Fatal and serious injury crashes only		Roadside features
		Other-Clearzones and shoulder widths.

What project identification methodology was used for this program?

Crash rate
 Other-Statewide average crash rates

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

No

How are highway safety improvement projects advanced for implementation?

Other-Each segment is analyzed for low cost countermeasures and improvements as well as realignment or turn lanes at select locations.

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
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Program: Other-Pavement Marking Improvements

Date of Program Methodology: 1/1/2016

What data types were used in the program methodology?

<i>Crashes</i>	<i>Exposure</i>	<i>Roadway</i>
All crashes	Traffic	
Fatal and serious injury crashes only	Volume	
	Population	
		Functional classification
		Other-APHN Routes excluding Interstates, Freeways, and Expressways.

What project identification methodology was used for this program?

Crash rate

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

No

How are highway safety improvement projects advanced for implementation?

Other-The process is consistent with the AHTD HSIP process adopted in 2011.

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

Systematic approach was used to 1
select rural APHN routes other
than Interstates, Freeways and
Expressways.

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

37%

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

Cable Median Barriers
Rumble Strips
Install/Improve Pavement Marking and/or
Delineation

What process is used to identify potential countermeasures?

Engineering Study

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

Systemic Approach

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

Systemic approaches to addressing roadway departure safety are underway. AHTD is already implementing cable median barrier projects, rumble strip/stripe projects, and enhanced pavement marking projects through a systemic process. With guidance from the Roadway Departure Safety

Implementation Plan, a systemic approach to install high friction surface treatment and shoulder widening/improvement is also underway. For segmental projects, AHTD continues to use B/C analysis to target low and medium cost improvements to hot spots while also applying the other low cost improvements for the entire length of the project.

The successful implementation of ongoing rumble strips is due in part by the development of a policy for the use of rumble strips in April 2012 that has increased the installation of both shoulder and centerline rumble strips throughout Arkansas. AHTD is working towards the installation of centerline rumble strips in passing zones by upgrading the policy considering low-noise rumble strips.

AHTD is progressing toward the use of enhanced thermoplastic pavement marking by replacing High Performance Pavement Marking in the policy. This change will provide cost saving for the department that will allow additional maintenance efforts through out the state.

AHTD is also developing Local Road Safety Program for the Highway Commission's approval.

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)	\$43,449,423.00	26 %	\$35,636,182.00	40 %
HRRRP (SAFETEA-LU)	\$1,197,217.00	1 %	\$2,234,486.00	2 %
HRRR Special Rule	\$0.00	0 %	\$0.00	0 %
Penalty Transfer - Section 154	\$11,554,765.00	7 %	\$11,554,765.00	13 %
Penalty Transfer – Section 164	\$0.00	0 %	\$0.00	0 %
Incentive Grants - Section 163	\$0.00	0 %	\$0.00	0 %
Incentive Grants (Section 406)	\$0.00	0 %	\$0.00	0 %
Other Federal-aid Funds (i.e. STP, NHPP)	\$91,841,961.00	55 %	\$31,407,808.00	35 %
State and Local Funds	\$20,208,233.00	12 %	\$8,717,879.00	10 %

Totals	\$168,251,599.00	100%	\$89,551,120.00	100%
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How much funding is programmed to local (non-state owned and operated) safety projects?

\$0.00

How much funding is obligated to local safety projects?

\$0.00

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

\$969,000.00

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

\$450,132.00

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.

Developing policies to systematically deploy the use of HSIP funds for the implementation of minor shoulder widening, horizontal curves, signs, raised pavement markers etc. Better streamlining of the

HSIP project development process (into the normal project development process) for corridor safety projects; implementing numerous low cost countermeasures.

AHTD is working on revising the HSIP process document to improve the program and plans to host a peer exchange next month that will be funded by FHWA. Four states representatives from their state or FHWA division offices will be participating to help us document the ways any impediments should be overcome.

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

Over 600 miles of cable median barriers have been installed to reduce or eliminate KA crashes on interstates and other high speed routes. Statewide shoulder rumble strip/stripes are installed or being installed on 5,000 plus miles of the State Highway System by the end of calendar year 2016. Statewide HFST are being installed at 40 plus locations of the State Highway System by the end of this calendar year. Statewide 6" wide enhanced pavement markings are being installed on over 4200 miles of the State Highway System by the end of calendar year 2016.

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
012185	Non-infrastructure Outreach	0 Miles	132	147	HSIP (Section 148)	Arkansas Safety Summit	0	0	State Highway Agency	Education	Implement outreach program to local governments.
012221	Non-infrastructure Outreach	0 Miles	450000	450000	Penalty Transfer - Section 154	AGIO LINEAR REFERENCING SYSTEM UPGRADE	0	0	State Highway Agency	Traffic Data Systems	Cont. to implement crash data location methods.
012227	Roadway signs and traffic control Roadway signs (including post) - new or updated	15.9 Miles	141270	141270	Penalty Transfer - Section 154	Rural Local Road or Street	5200	55	State Highway Agency	Roadway Departure	Implement low cost safety measures.
012228	Roadway Rumble strips - edge or shoulder	1012.76 Miles	10830967	11914064	HSIP (Section 148)	Various	0	0	State Highway Agency	Roadway Departure	Install rumble strips.

012230	Roadway Rumble strips - edge or shoulder	922.45 Miles	11883174	13071491	Penalty Transfer - Section 154	Various	0	0	State Highway Agency	Roadway Departure	Install rumble strips.
012231	Roadway Roadway - other	24.71 Miles	521275	573403	Penalty Transfer - Section 154	Rural Minor Collector	1500	55	State Highway Agency	Roadway Departure	Shoulder widening.
012239	Roadway Pavement surface - high friction surface	3.7 Miles	22900	22900	Penalty Transfer - Section 154	Rural Minor Collector	0	0	State Highway Agency	Roadway Departure	High Friction Surface.
012257	Roadway delineation Roadway delineation - other	1689.86 Miles	9306450	10237095	HSIP (Section 148)	Various	0	0	State Highway Agency	Roadway Departure	Enhanced delineation.
020326	Railroad grade crossings Grade separation	0.1 Miles	4116	4528	HSIP (Section 148)	Rural Principal Arterial - Other	7800	45	State Highway Agency	Railroad Crossings	Grade separation.
020595	Intersection geometry Intersection geometrics - modify skew angle	6.9 Miles	50400	55440	HSIP (Section 148)	Rural Principal Arterial - Other	6600	60	State Highway Agency	Intersections	Improve sight distance.
020610	Intersection geometry	0.1 Miles	4500	5000	Penalty Transfer	Rural Principal	4350	60	State Highway	Intersections	Install right turn lanes.

	Auxiliary lanes - add auxiliary through lane				- Section 154	Arterial - Other			Agency		
050279	Intersection geometry Auxiliary lanes - add auxiliary through lane	2.55 Miles	197501	197501	Penalty Transfer - Section 154	Rural Minor Collector	2900	55	State Highway Agency	Intersections	Install turn lanes.
050280	Intersection geometry Auxiliary lanes - add auxiliary through lane	1.8 Miles	125000	125000	Penalty Transfer - Section 154	Rural Local Road or Street	3400	55	State Highway Agency	Intersections	Install turn lanes.
050313	Roadway Pavement surface - high friction surface	3.75 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Collector	4000	55	State Highway Agency	Roadway Departure	High Friction Surface
061059	Shoulder treatments Widen shoulder - paved or other	4.46 Miles	173	190	HSIP - HRRR	Rural Principal Arterial - Other Freeways and Expressways	3100	45	State Highway Agency	Roadway Departure	Shoulder widening.
061259	Shoulder treatments Widen shoulder - paved or other	0.89 Miles	19975	21973	HSIP - HRRR	Rural Local Road or Street	8600	55	State Highway Agency	Roadway Departure	Shoulder widening.

061309	Shoulder treatments Widen shoulder - paved or other	3.8 Miles	20000	20000	Penalty Transfer - Section 154	Rural Minor Collector	5600	55	State Highway Agency	Roadway Departure	Shoulder widening.
061428	Shoulder treatments Widen shoulder - paved or other	17.99 Miles	127286	140015	Penalty Transfer - Section 154	Urban Local Road or Street	3200	55	State Highway Agency	Roadway Departure	Shoulder widening.
061437	Interchange design Installation of new lane on ramp	1.5 Miles	67258	73984	HSIP (Section 148)	Urban Principal Arterial - Interstate	69000	65	State Highway Agency	Intersections	Install right turn lane.
061438	Intersection geometry Auxiliary lanes - add two-way left-turn lane	6.3 Miles	100000	100000	Penalty Transfer - Section 154	Rural Principal Arterial - Other Freeways and Expressways	8300	55	State Highway Agency	Intersections	Install turn lanes.
061440	Roadway Pavement surface - high friction surface	17.34 Miles	1558972	1714869	Penalty Transfer - Section 154	Rural Minor Collector	5000	55	State Highway Agency	Roadway Departure	High friction surface.
061441	Shoulder treatments Widen shoulder - paved or	21.25 Miles	7536666	7536666	Penalty Transfer - Section 154	Rural Local Road or Street	3200	55	State Highway Agency	Roadway Departure	Shoulder widening.

	other										
06144 2	Alignment Horizontal curve realignment	18.01 Miles	22500	24750	HSIP (Section 148)	Rural Local Road or Street	3200	55	State Highway Agency	Rodway Departure	Curve realignment.
07036 8	Alignment Horizontal curve realignment	7.58 Miles	897378	987116	HSIP - HRRR	Rural Minor Collector	1400	55	State Highway Agency	Rodway Departure	Curve realignment.
07042 1	Shoulder treatments Widen shoulder - paved or other	5 Miles	496029	545632	HSIP (Section 148)	Rural Minor Collector	213	55	State Highway Agency	Rodway Departure	Shoulder widening.
08049 4	Alignment Horizontal curve realignment	6.83 Miles	90000	90000	Penalty Transfer - Section 154	Urban Minor Arterial	4900	55	State Highway Agency	Rodway Departure	Curve realignment.
08049 5	Intersection geometry Auxiliary lanes - add left-turn lane	15.57 Miles	180051	198056	Penalty Transfer - Section 154	Rural Minor Collector	4800	55	State Highway Agency	Intersection s	Install left turn lanes.
09040 6	Railroad grade crossings Grade separation	0.47 Miles	1087830	1196613	Penalty Transfer - Section 154	Urban Minor Arterial	1100 0	50	State Highway Agency	Railroad Crossings	Grade seperation.
09042 2	Roadway Roadway - other	2.35 Miles	8312	8312	Penalty Transfer -	Rural Local Road or Street	3300	35	State Highway Agency	Rodway Departure	High friction surface.

					Section 154						
090423	Roadway Roadway - other	13.74 Miles	22983	22983	Penalty Transfer - Section 154	Rural Minor Collector	1800	55	State Highway Agency	Rodway Departure	Curve realignment.
100819	Roadside Barrier - cable	19.23 Miles	2805096	2805096	Penalty Transfer - Section 154	Urban Principal Arterial - Other Freeways and Expressways	5800	70	State Highway Agency	Rodway Departure	Cable median barriers.
110626	Shoulder treatments Widen shoulder - paved or other	5.95 Miles	749280	824208	HSIP (Section 148)	Rural Local Road or Street	1100	55	State Highway Agency	Rodway Departure	Shoulder widening.
110630	Roadside Barrier - cable	15.38 Miles	3363253	3363253	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	29000	70	State Highway Agency	Rodway Departure	Cable median barriers.
110649	Miscellaneous	0 Miles	150000	150000	Penalty Transfer - Section 154	Rural Major Collector	15000	70	State Highway Agency	Large Commercial Vehicles	CMV Compliance.
BB0107	Roadside Barrier - cable	12.8 Miles	60024	60024	Penalty Transfer -	Rural Principal Arterial -	37000	70	State Highway Agency	Rodway Departure	Cable median barriers.

					Section 154	Interstate					
BB0303	Roadside Barrier - cable	2.02 Miles	49052	49052	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	30000	70	State Highway Agency	Rodway Departure	Cable median barriers.
BB0305	Roadside Barrier - cable	4.09 Miles	2223228	2445551	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	30000	70	State Highway Agency	Rodway Departure	Cable median barriers.
BB0310	Shoulder treatments Pave existing shoulders	5.12 Miles	953872	953872	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	32000	70	State Highway Agency	Rodway Departure	Shoulder Improvements.
BB0403	Roadside Barrier - cable	13.86 Miles	231	257	HSIP (Section 148)	Rural Principal Arterial - Interstate	29000	70	State Highway Agency	Rodway Departure	Cable median barriers.
BB0407	Roadside Barrier - concrete	7.46 Miles	35331	38864	HSIP (Section 148)	Rural Principal Arterial - Interstate	42000	65	State Highway Agency	Large Commercial Vehicles	High perf. barriers.
BB0611	Roadside Barrier - concrete	2.82 Miles	65251	71776	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	54000	65	State Highway Agency	Large Commercial Vehicles	High perf. barriers.
CA1101	Roadside Barrier - concrete	3.38 Miles	51663	51663	HSIP (Section 148)	Urban Principal Arterial -	66000	70	State Highway Agency	Large Commercial Vehicles	High perf. barriers.

						Interstate					
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Progress in Achieving Safety Performance Targets

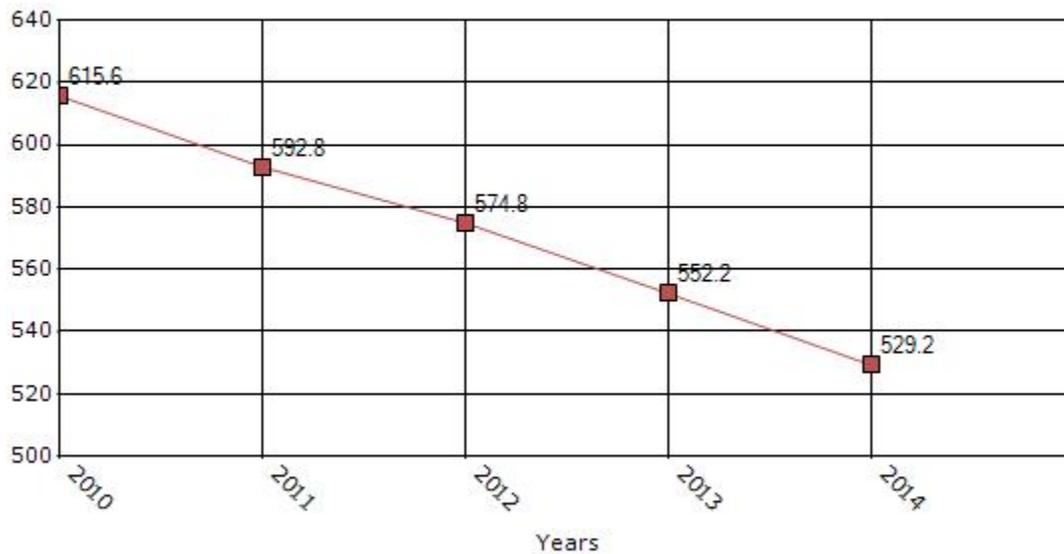
Overview of General Safety Trends

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

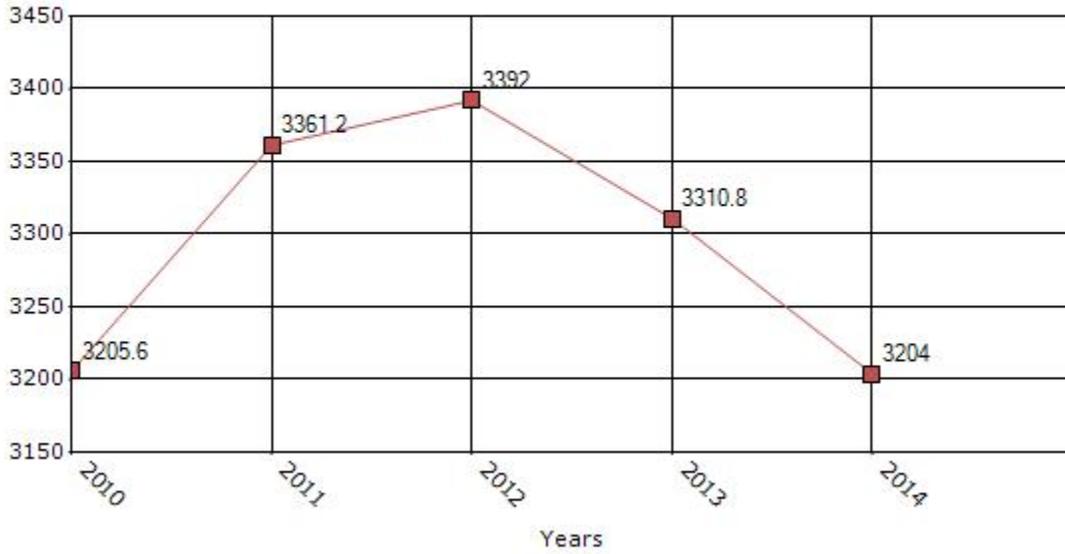
Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	615.6	592.8	574.8	552.2	529.2
Number of serious injuries	3205.6	3361.2	3392	3310.8	3204
Fatality rate (per HMVMT)	1.89	1.81	1.74	1.66	1.58
Serious injury rate (per HMVMT)	9.78	10.21	10.25	9.93	9.57

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

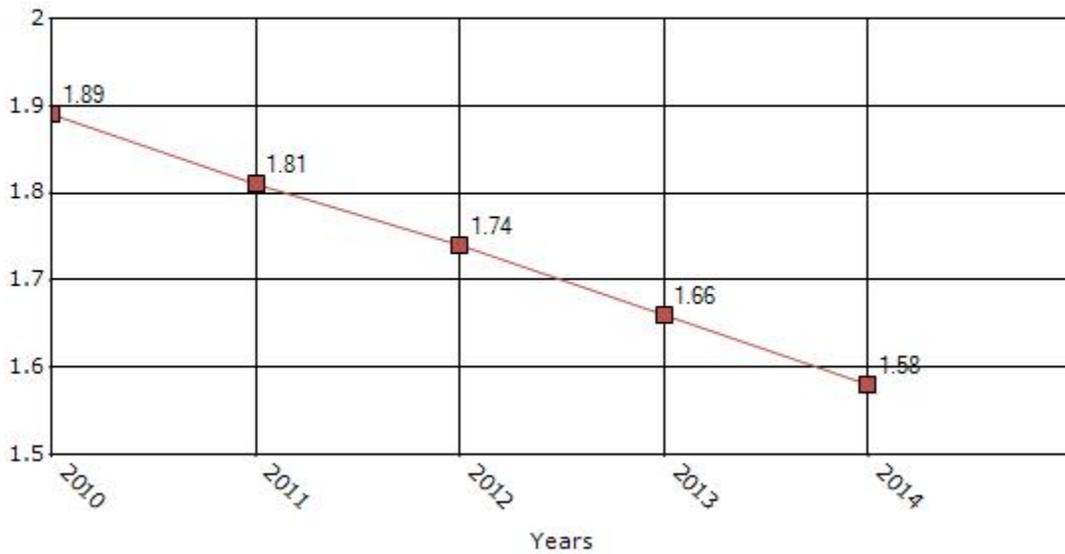
Number of Fatalities for the Last Five Years
5-yr Average Measure Data



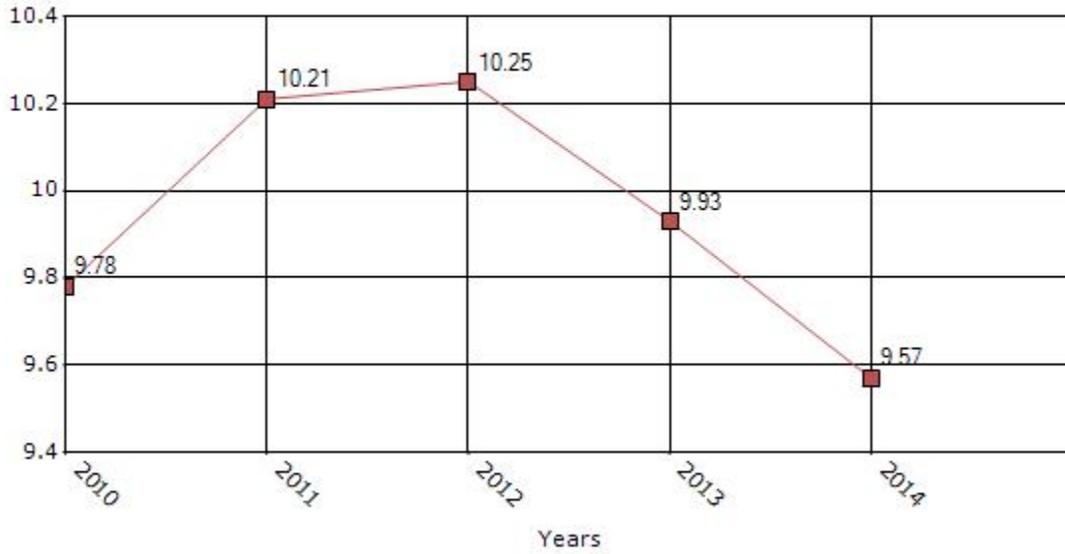
Number of Serious Injuries for the Last Five Years 5-yr Average Measure Data



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



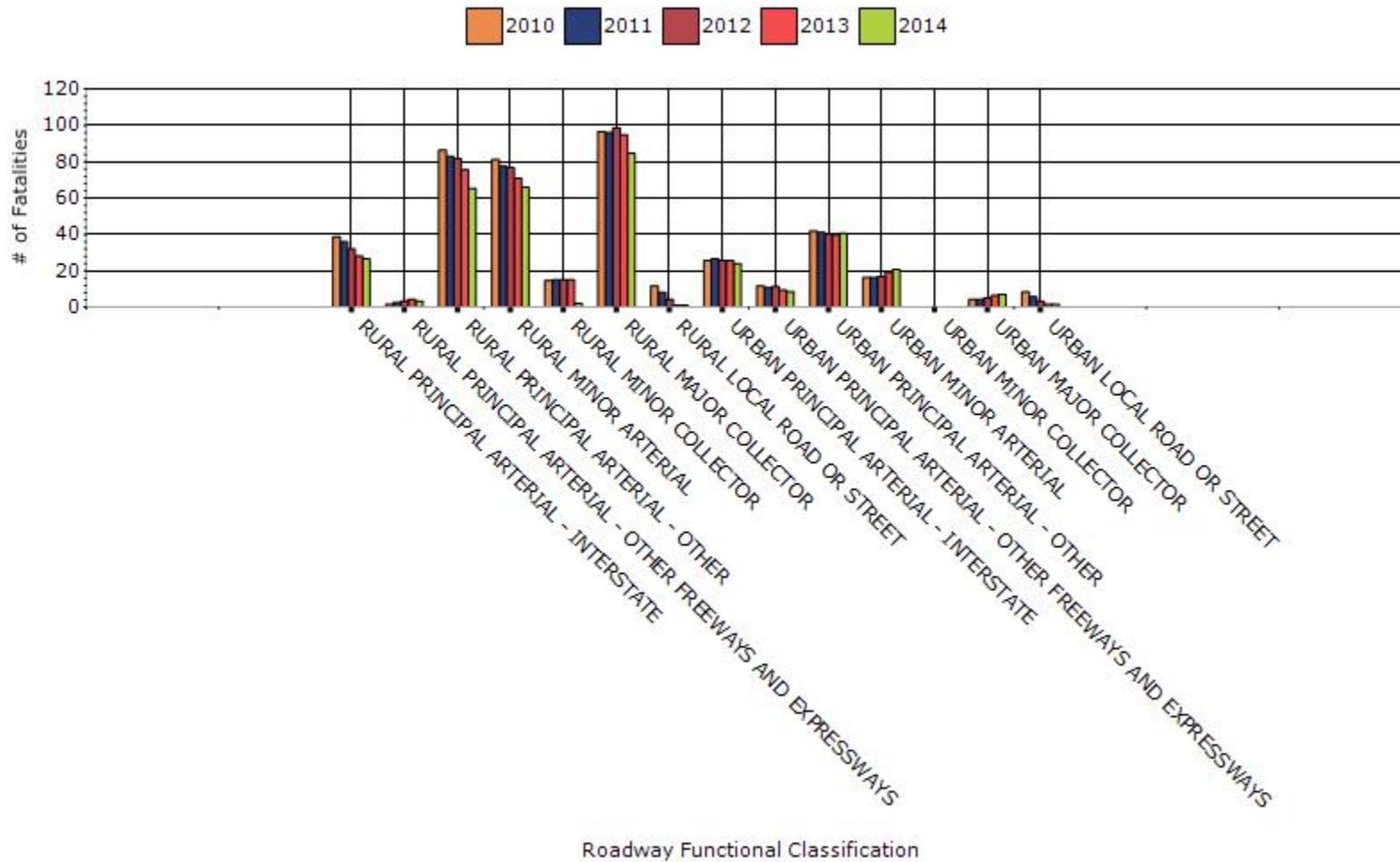
To the maximum extent possible, present performance measure* data by functional classification and ownership.

Year - 2014

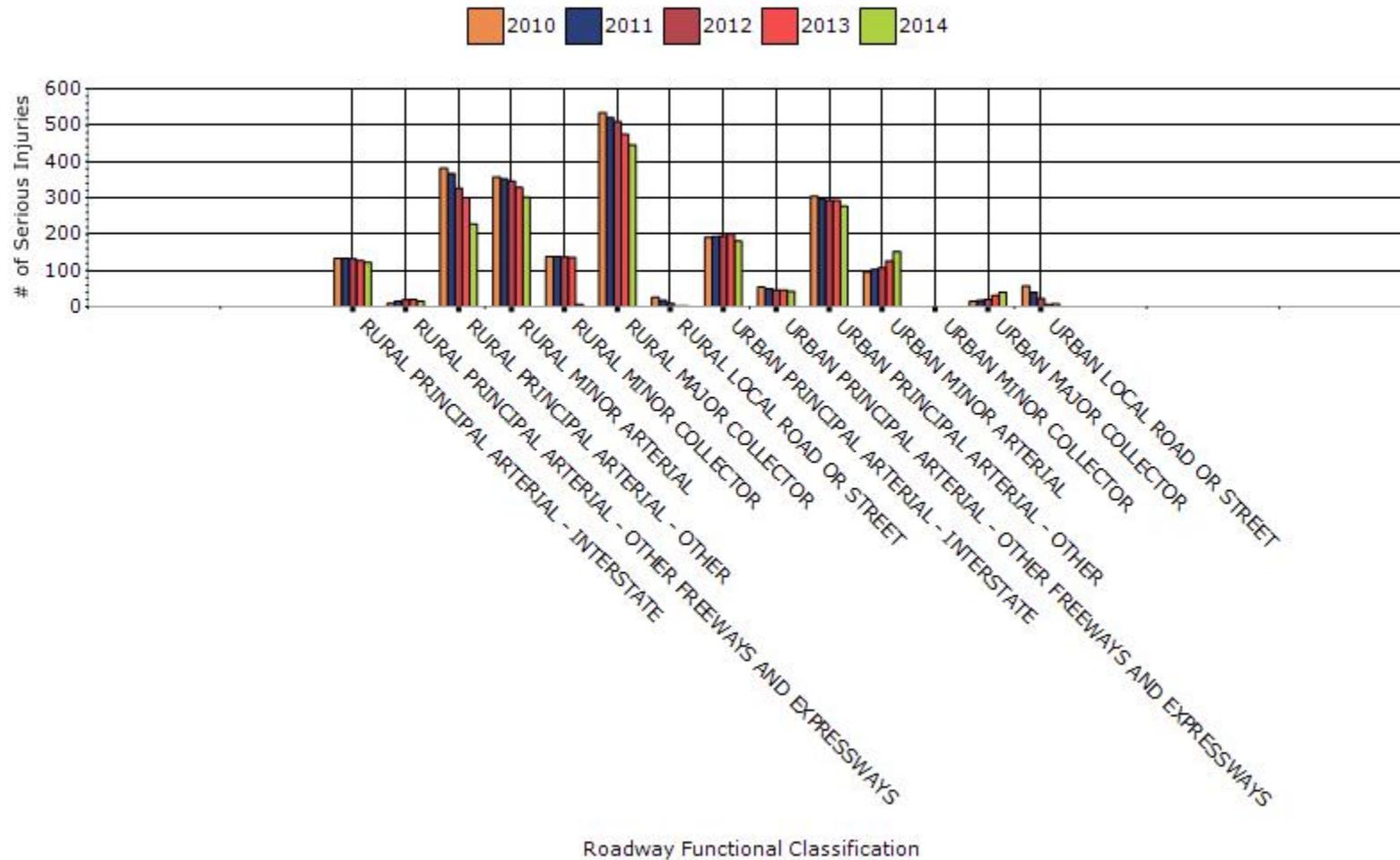
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	26.6	122.6	0.65	2.99
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	3.4	15.6	0.71	3.41
RURAL PRINCIPAL ARTERIAL - OTHER	65.4	228.6	1.72	8.13
RURAL MINOR ARTERIAL	66	302	2.43	11.19
RURAL MINOR COLLECTOR	2	6.2	4.03	11.65
RURAL MAJOR COLLECTOR	84.6	445.8	2.62	13.93
RURAL LOCAL ROAD OR STREET	1.2	2.4	1.71	3.77
URBAN PRINCIPAL ARTERIAL - INTERSTATE	24	181.2	0.48	3.65

URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	8.6	42.2	16.77	3.52
URBAN PRINCIPAL ARTERIAL - OTHER	40.6	277.2	1.16	7.91
URBAN MINOR ARTERIAL	20.8	152.4	1.33	8.54
URBAN MINOR COLLECTOR		0.2		1.57
URBAN MAJOR COLLECTOR	7	40	2.18	11.4
URBAN LOCAL ROAD OR STREET	1.6	7.6	0.75	4.04

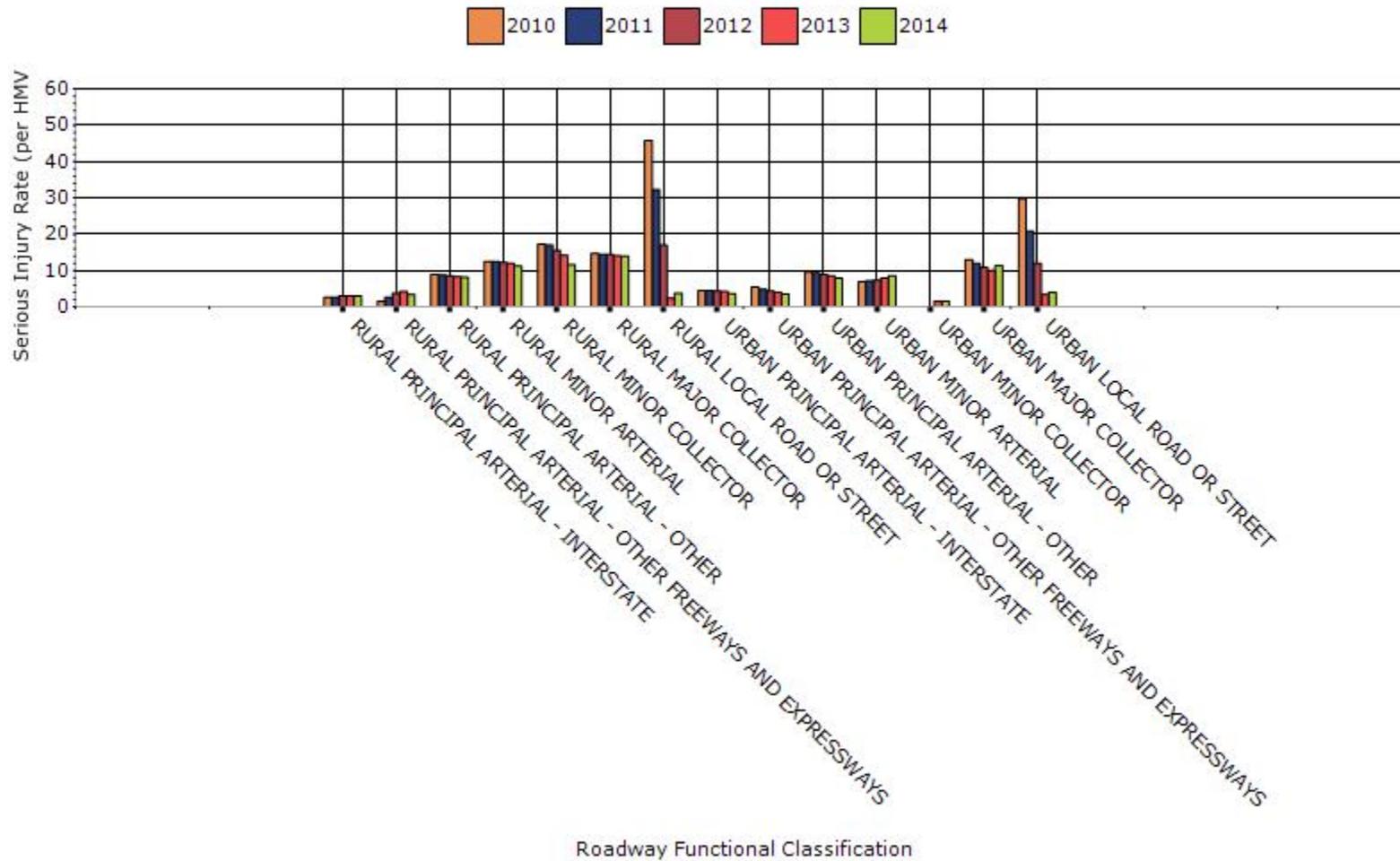
Fatalities by Roadway Functional Classification 5-yr Average Measure Data



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



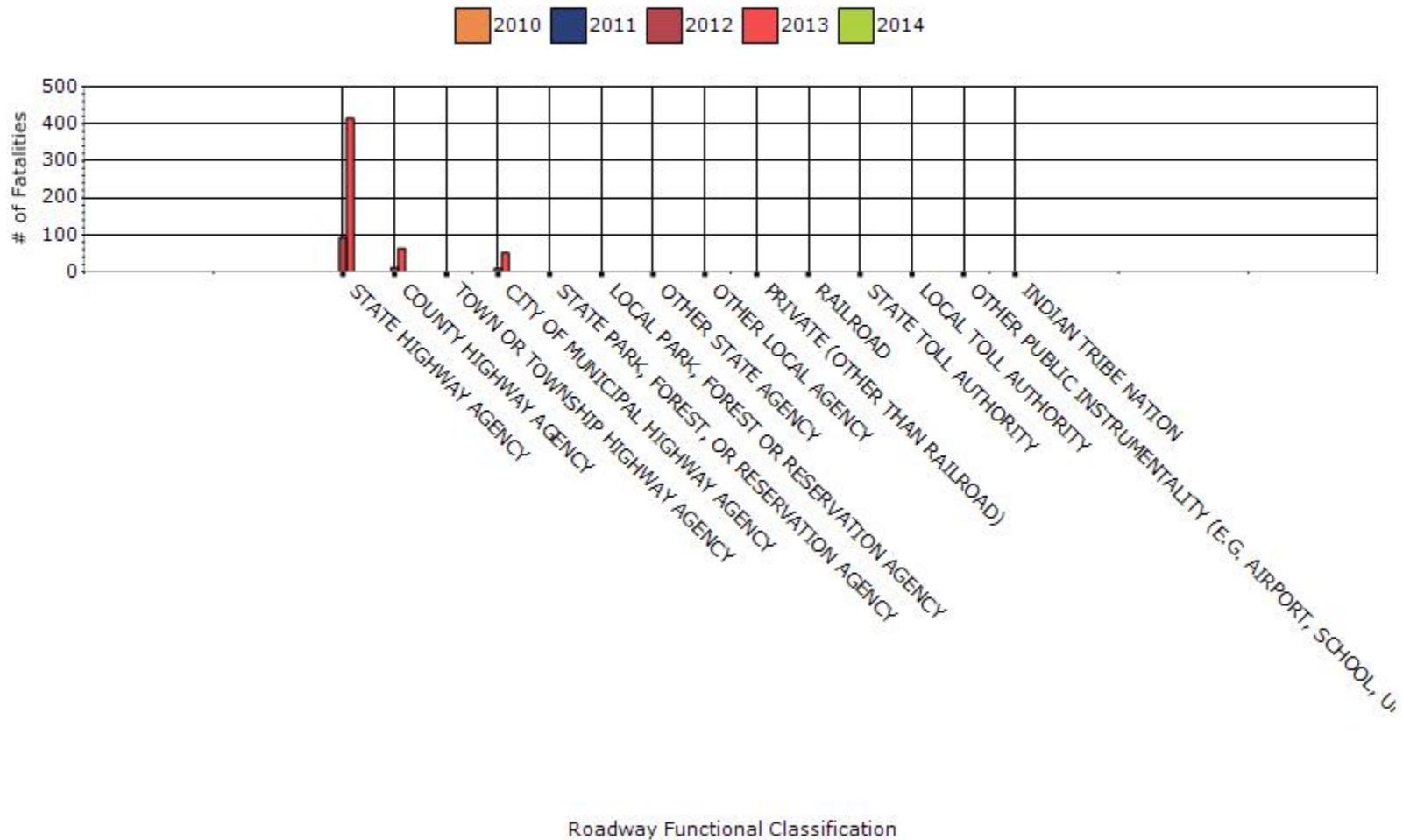
Serious Injury Rate by Roadway Functional Classification 5-yr Average Measure Data



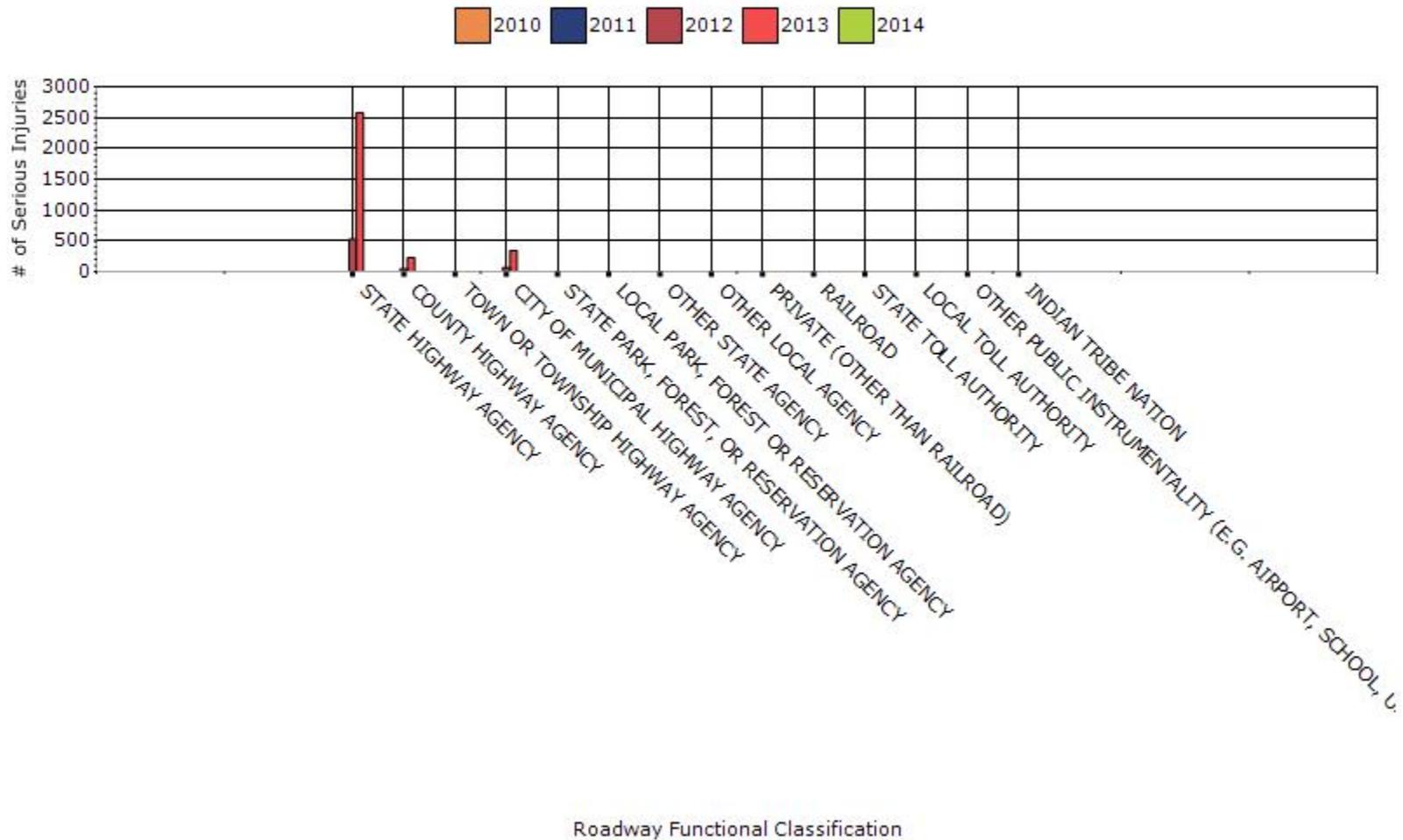
Year - 2013

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	415	2576	1.64	10.18
COUNTY HIGHWAY AGENCY	63.5	227	2.03	7.26
CITY OF MUNICIPAL HIGHWAY AGENCY	51	343	0.96	6.47

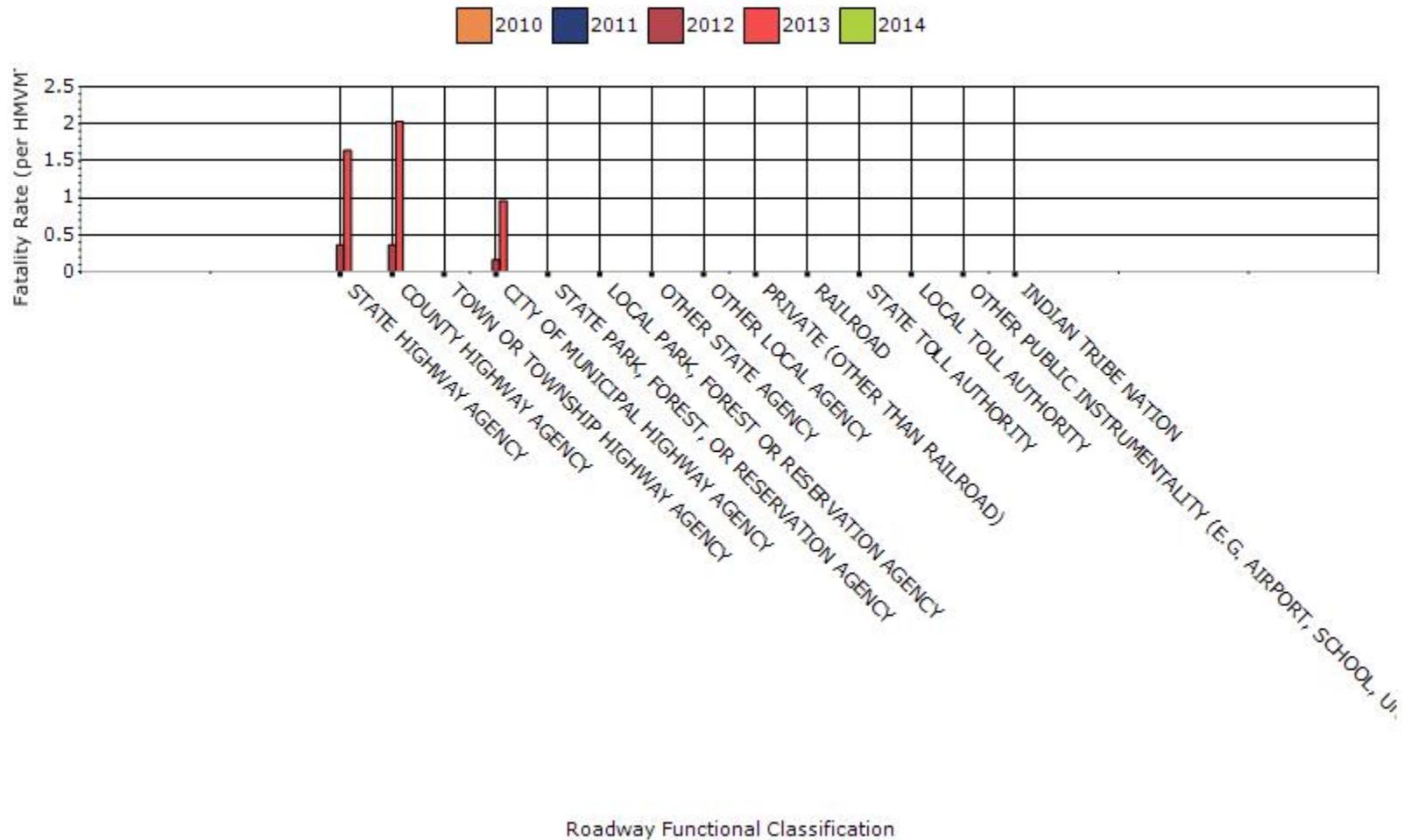
Number of Fatalities by Roadway Ownership 5-yr Average Measure Data



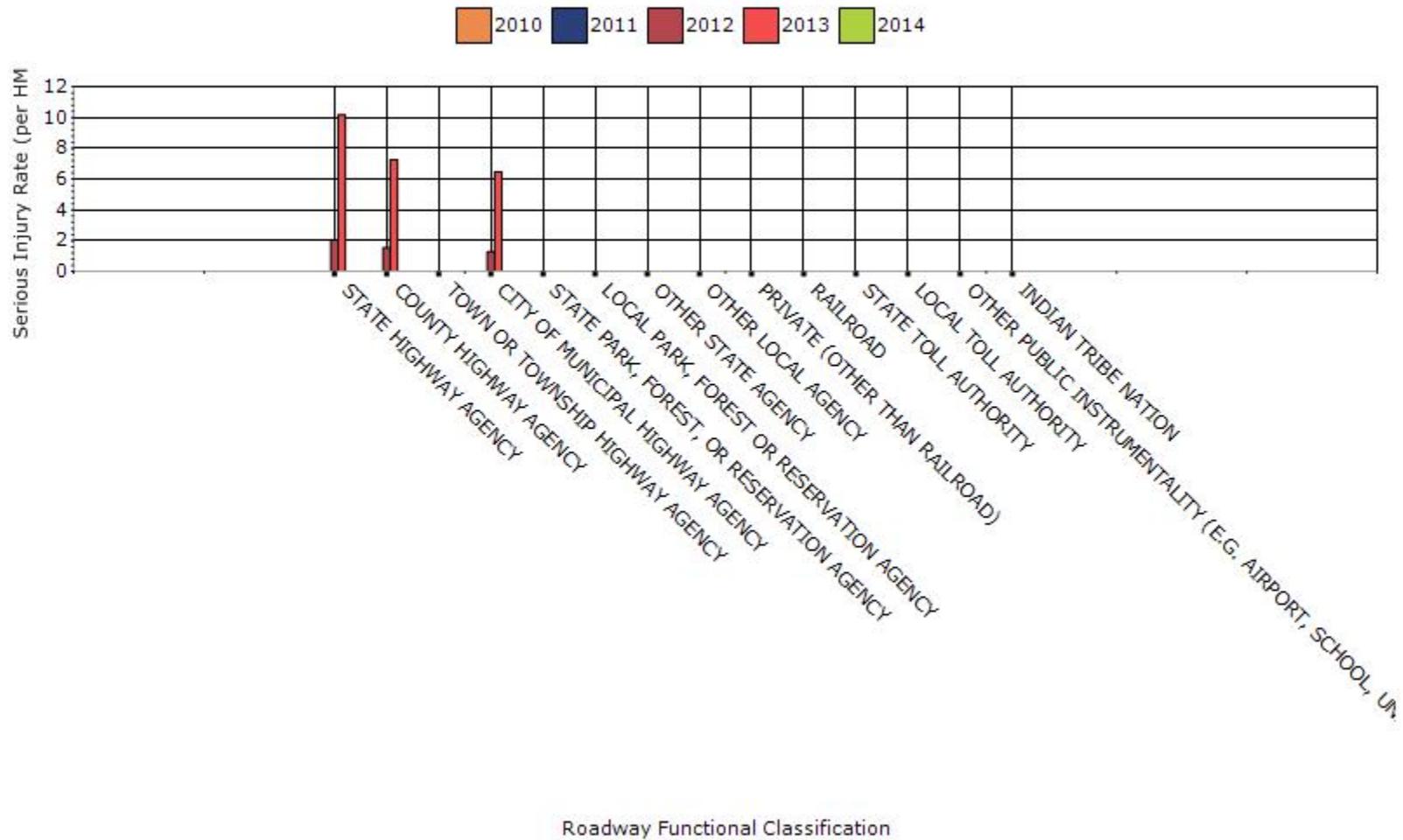
Number of Serious Injuries by Roadway Ownership 5-yr Average Measure Data



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.

The definition for reporting incapacitating injuries (which we use for reporting serious injuries) was updated in 2007 by Arkansas State Police. The trend for incapacitating injuries has followed fatalities except for the jump in 2008 and 2009. We think this can be partly explained by the updated definition used by law enforcement officers from 2007. The fatality data from the ASP shows an increase in 2015 and the upward trend appears to be continuing in 2016.

- 2009 – 596
- 2010 – 571
- 2011 – 551
- 2012 – 560
- 2013 – 498
- 2014 – 466
- 2015 - 531

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	2010	2011	2012	2013	2014
Performance Measures					
Fatality rate (per capita)	0.094	0.124	0.158	0.152	0.148
Serious injury rate (per capita)	0.258	0.334	0.406	0.458	0.44
Fatality and serious injury rate (per capita)	0.342	0.448	0.55	0.598	0.578

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

2014 233/465=.501 or .50
 2013 329/454=.724 or .72
 2012 227/441=.514 or .51
 2011 228/429=.531 or .53
 2010 266/420=.633 or .63

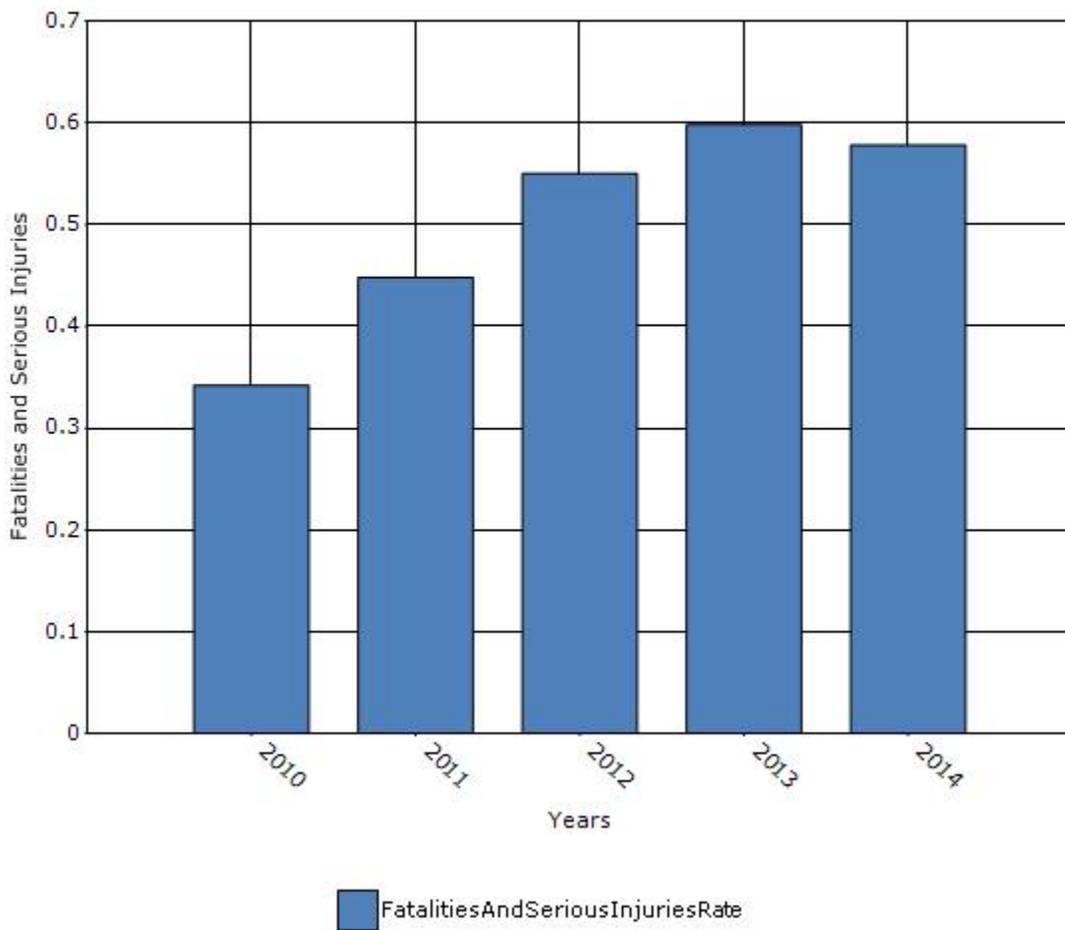
2009 $249/413=.602$ or .60

2008 $194/404=.480$ or .48

2014= $.50+.72+.51+.53+.63/5=.578$ or .6

2012= $.51+.53+.63+.60+.48/5=.550$ or .6

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



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?

Policy change

if 'policy change', list the policy changes made.

AHTD is working on revising the pavement striping maintenance policy to reduce the cost of striping by using alternate low cost materials. This will not only stretch the state maintenance funds but will help the HSIP with improving safety through better maintenance. These policy change decisions were based on benefit-cost analysis using the Highway Safety Manual.

Other-AHTD moving toward a systemic and risk-based approach to address safety.

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

Organizational Changes

Other-More systemic programs included in HSIP.

Other-HSIP jobs are now prioritized based on benefit-cost ratio instead of considering other factors.

Other-Local Road Safety Program efforts are underway to include local roads in the Highway Safety Improvement Program

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

More systemic projects have been programmed. Specifically, continued system-wide implementation of cable median barriers and commencement of a system-wide implementation of shoulder rumble strips/stripes, minor shoulder widening, and enhanced pavement markings to address fatal and serious injuries.

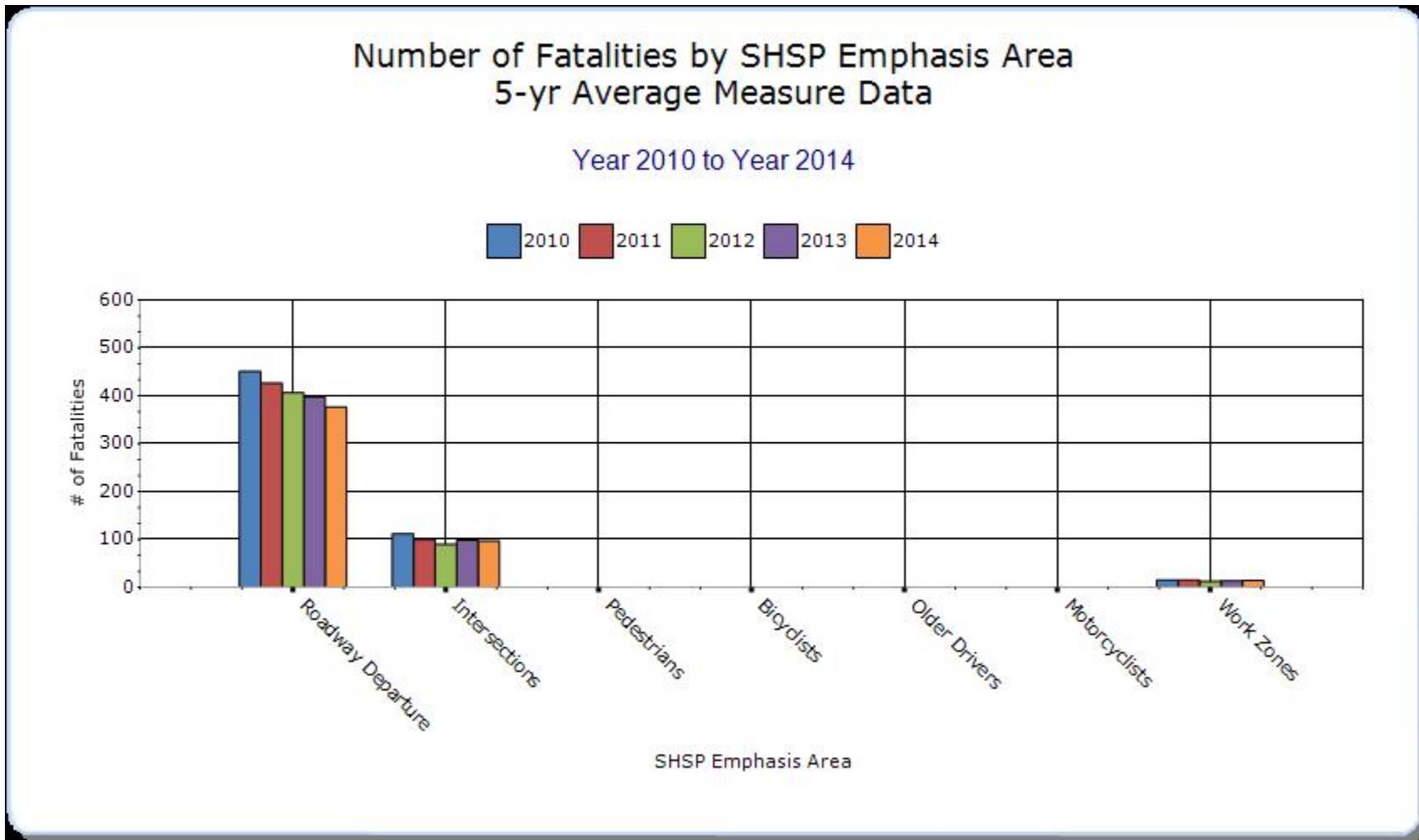
Department policy changes are underway to improve maintenance of state routes. HSIP jobs are now prioritized based on benefit-cost ratio instead of considering other factors. Local Road Safety Program efforts are underway to include local roads in the Highway Safety Improvement Program

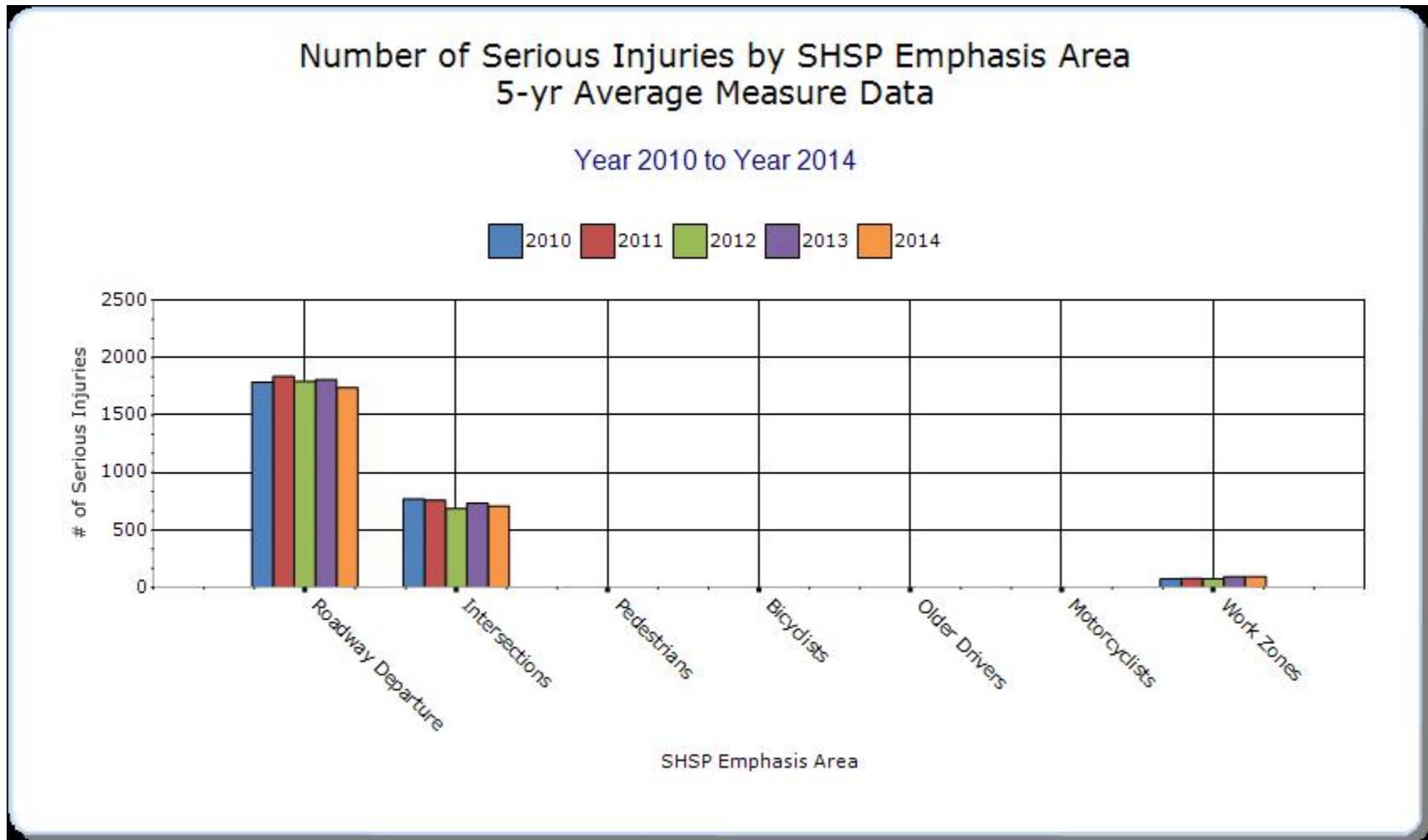
SHSP Emphasis Areas

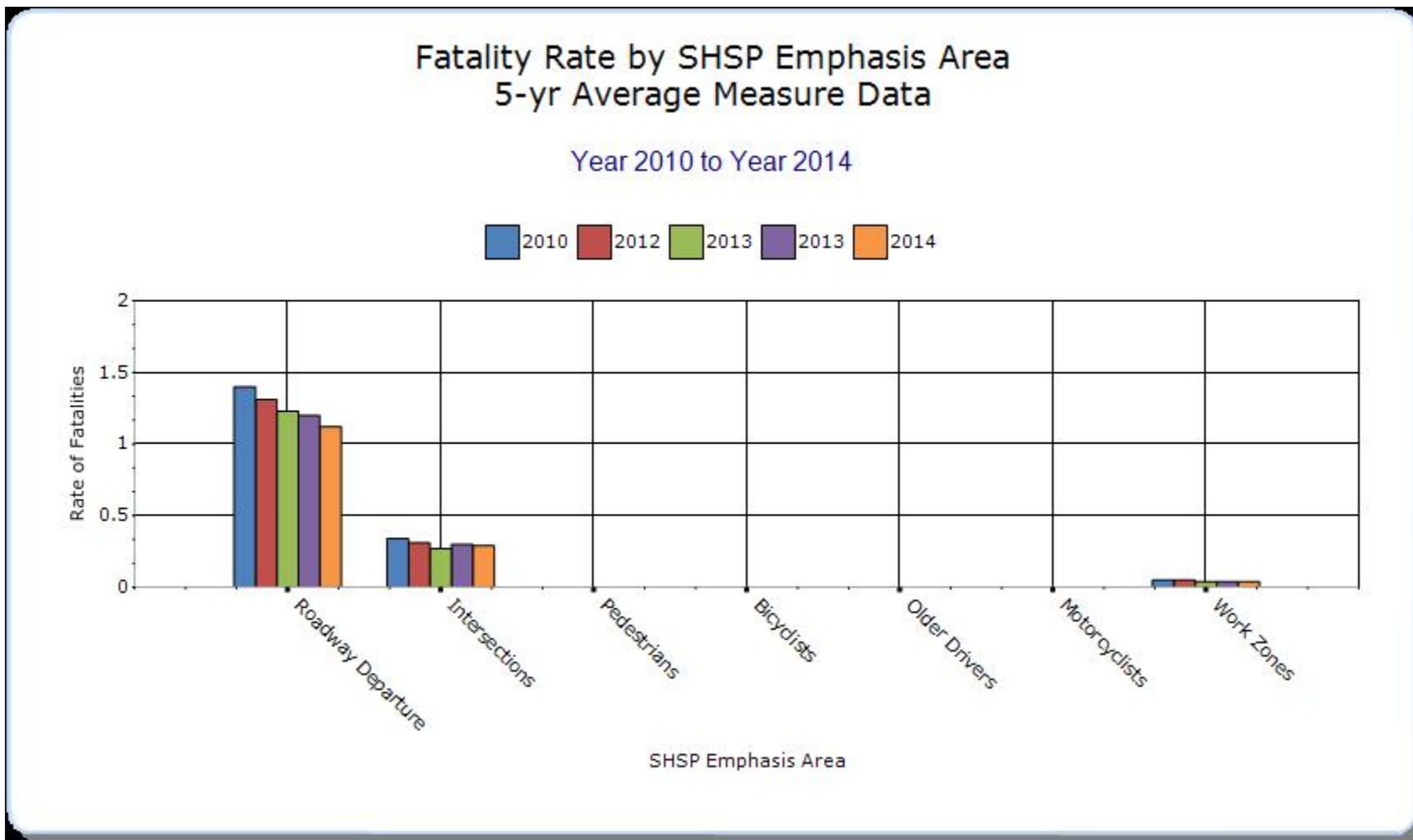
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

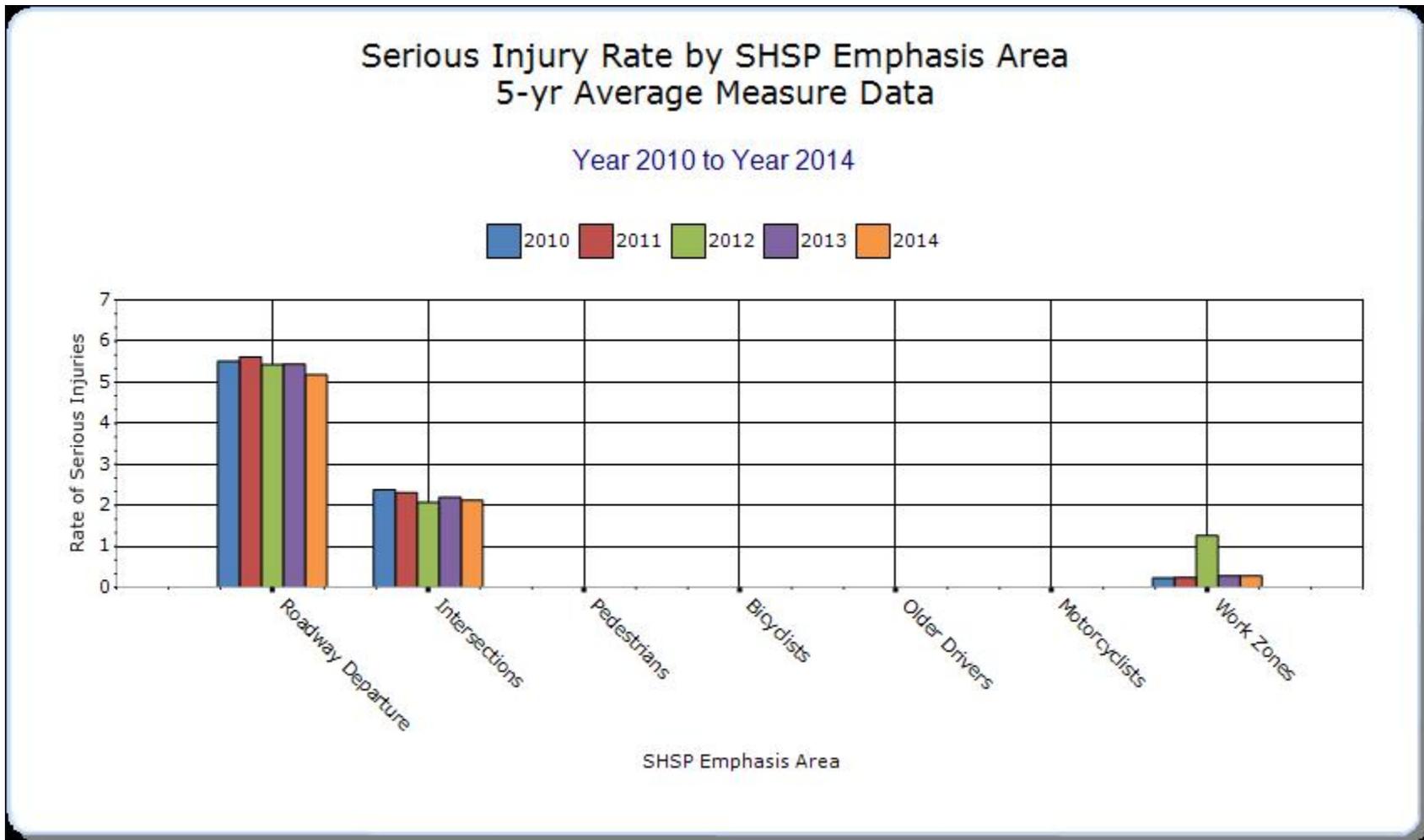
Year - 2014

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
Roadway Departure	All	376.4	1738.6	1.12	5.18			
Intersections	Intersections	97.2	708.6	0.29	2.12			
Work Zones	All	14.8	94.8	0.04	0.28			







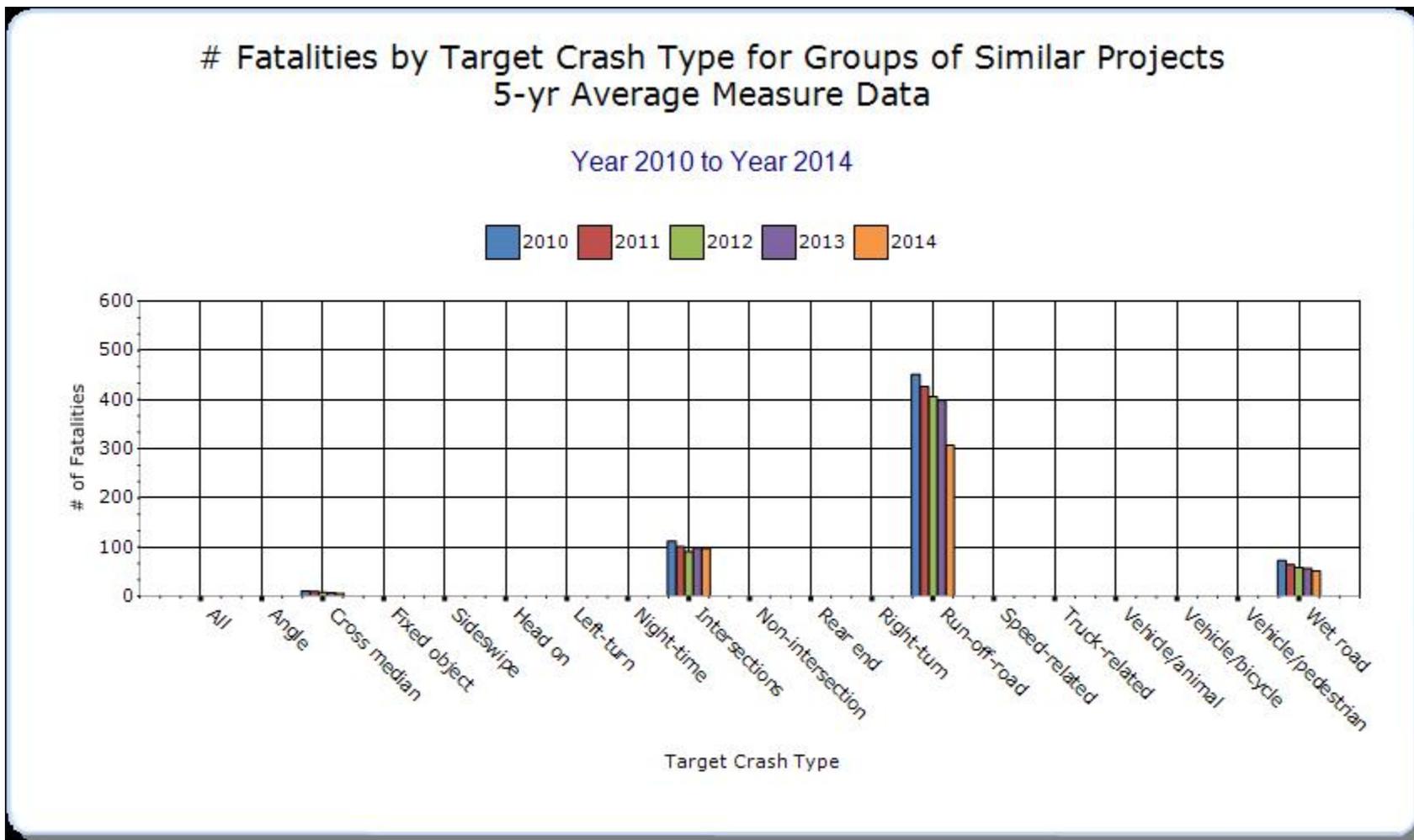


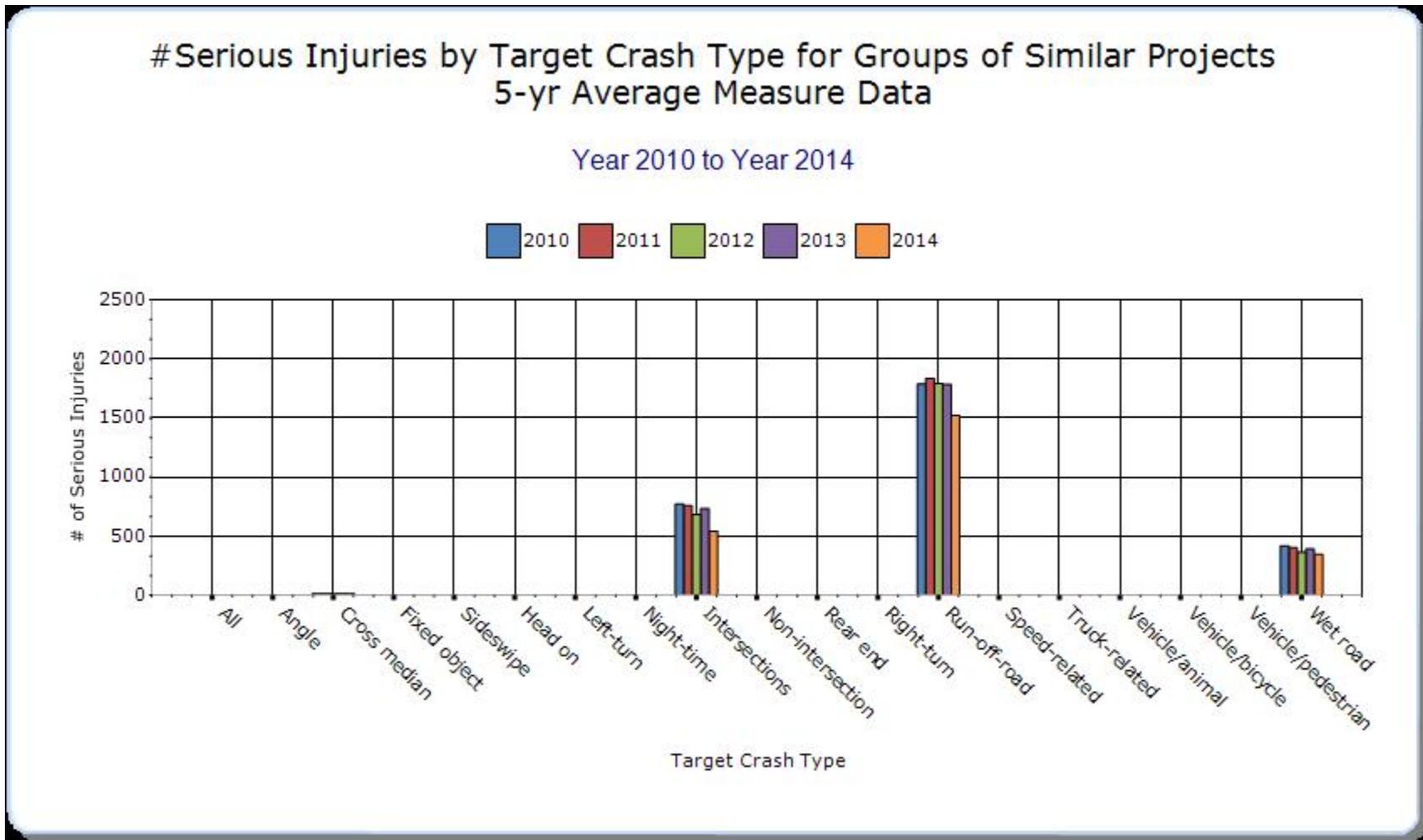
Groups of similar project types

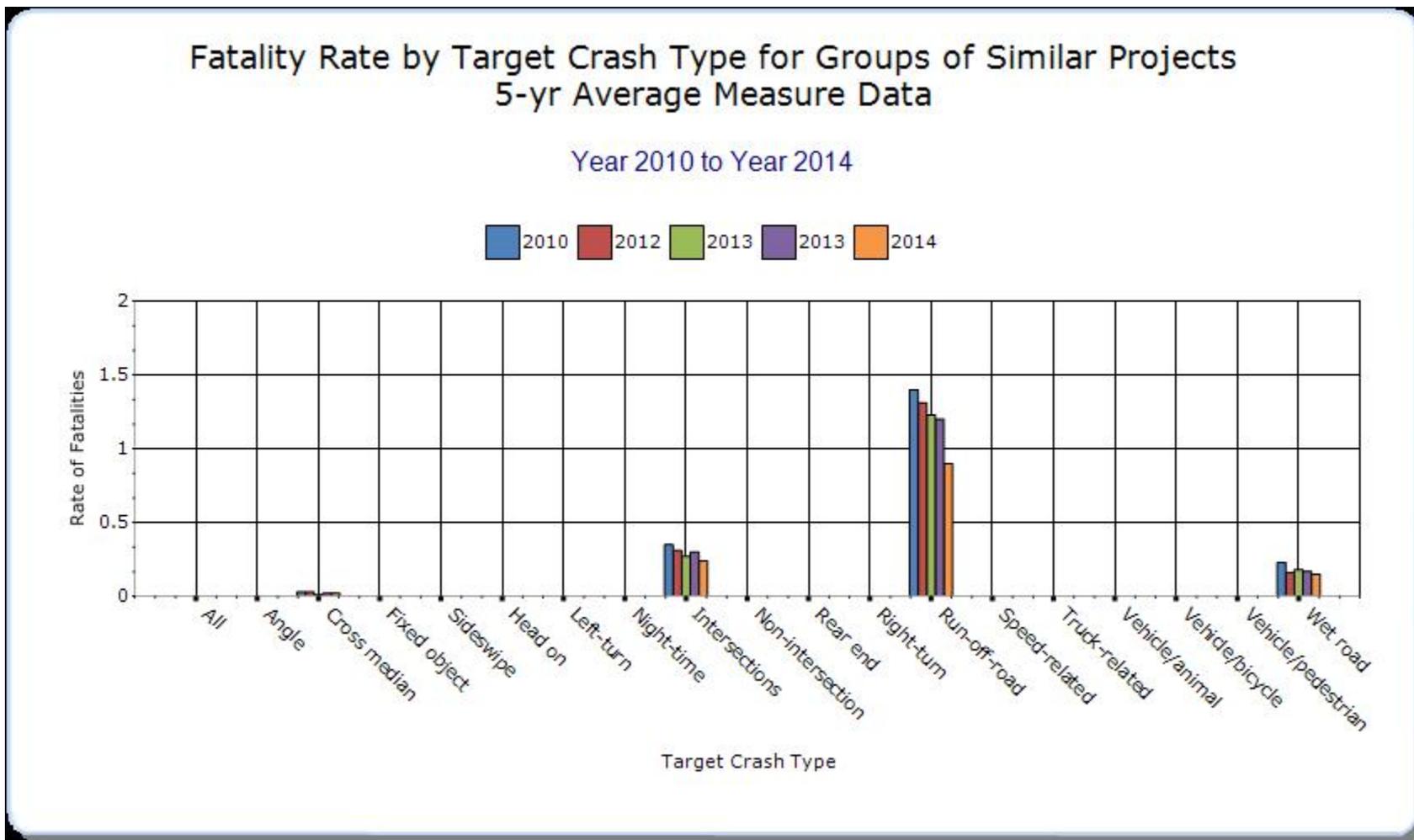
Present the overall effectiveness of groups of similar types of projects.

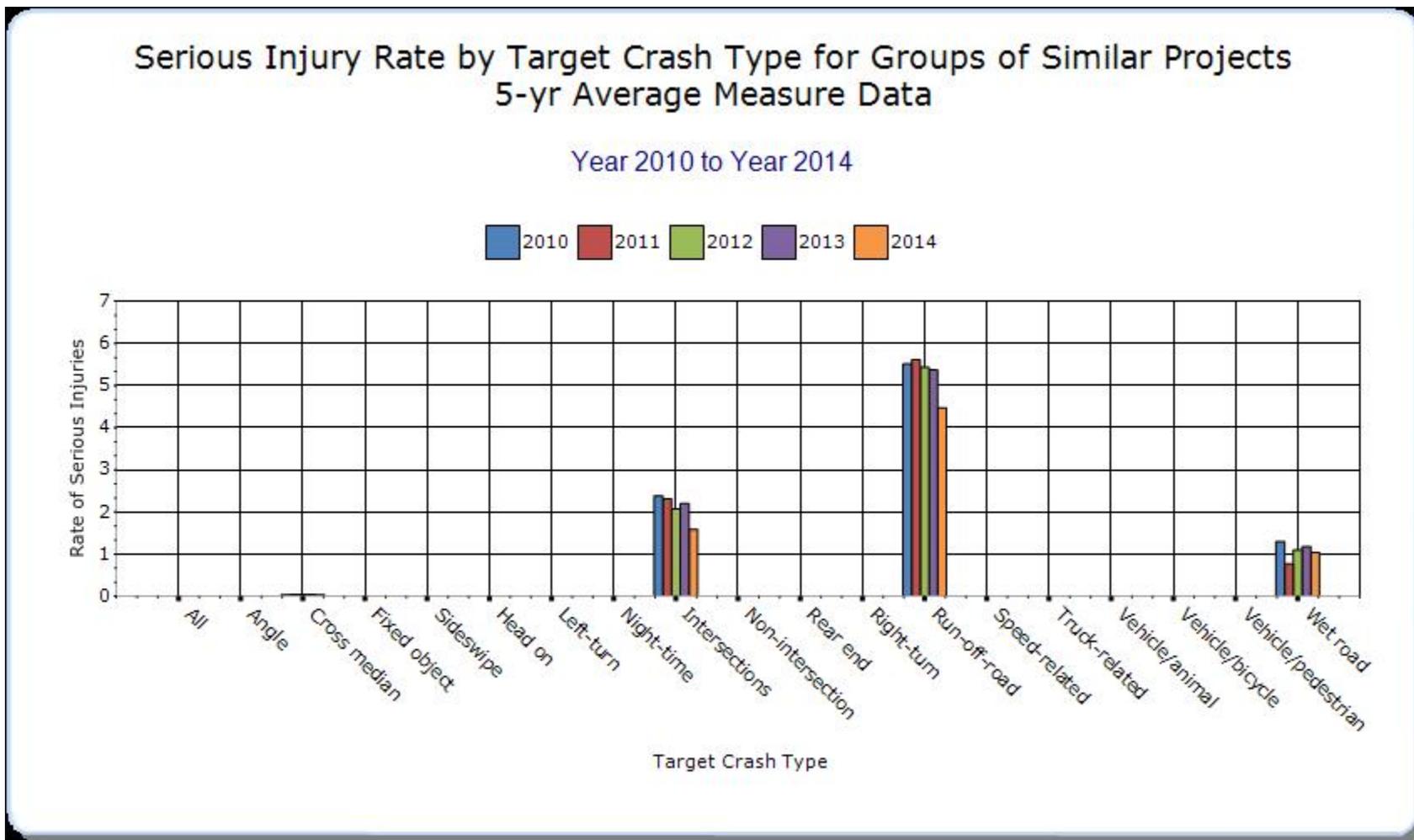
Year - 2014

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
Median Barrier	Cross median	5.8	12.6	0.02	0.03			
Intersection	Intersections	97.2	542	0.24	1.59			
Skid Hazard	Wet road	51.6	347.6	0.15	1.04			
Roadway Departure	Run-off-road	307	1521	0.9	4.47			







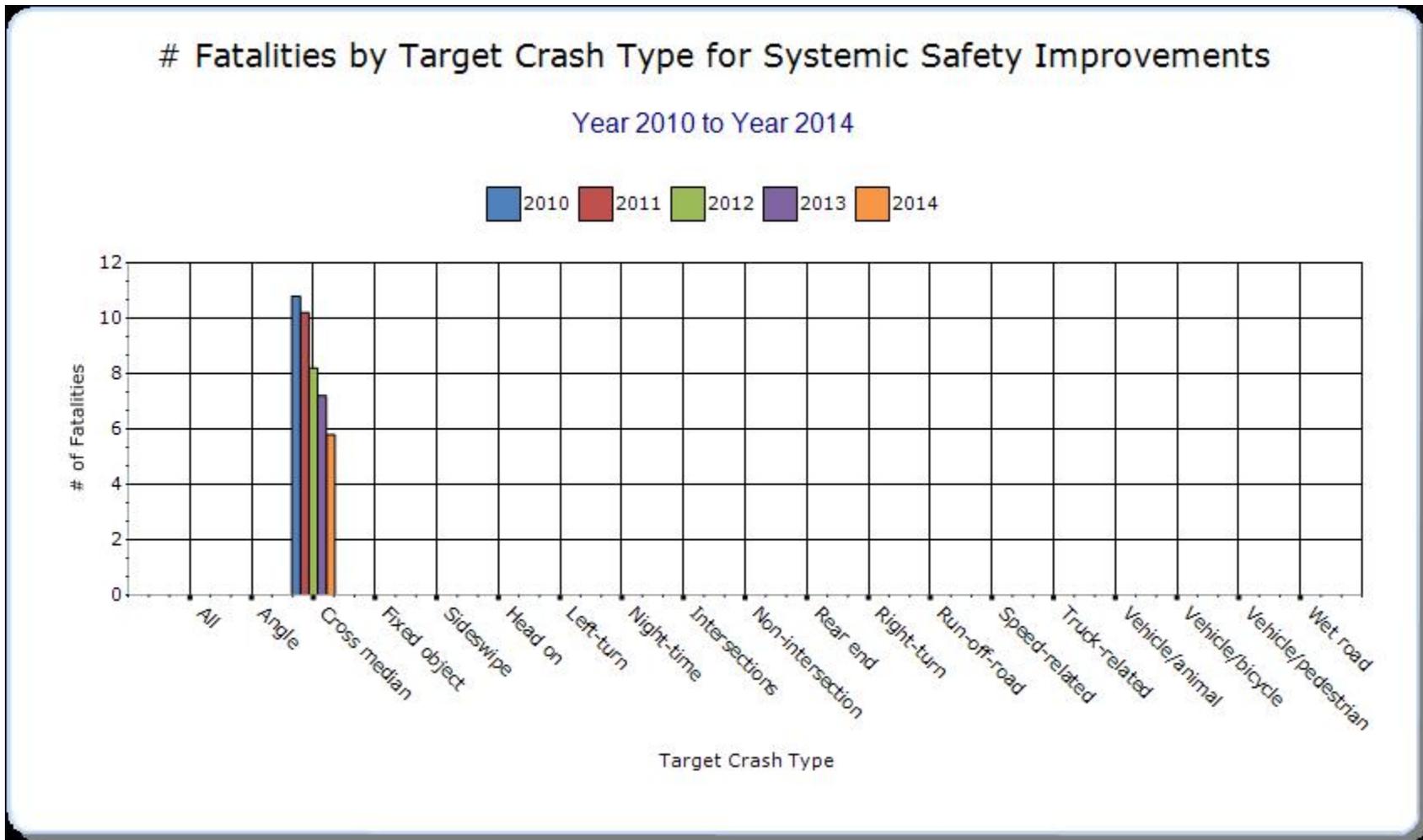


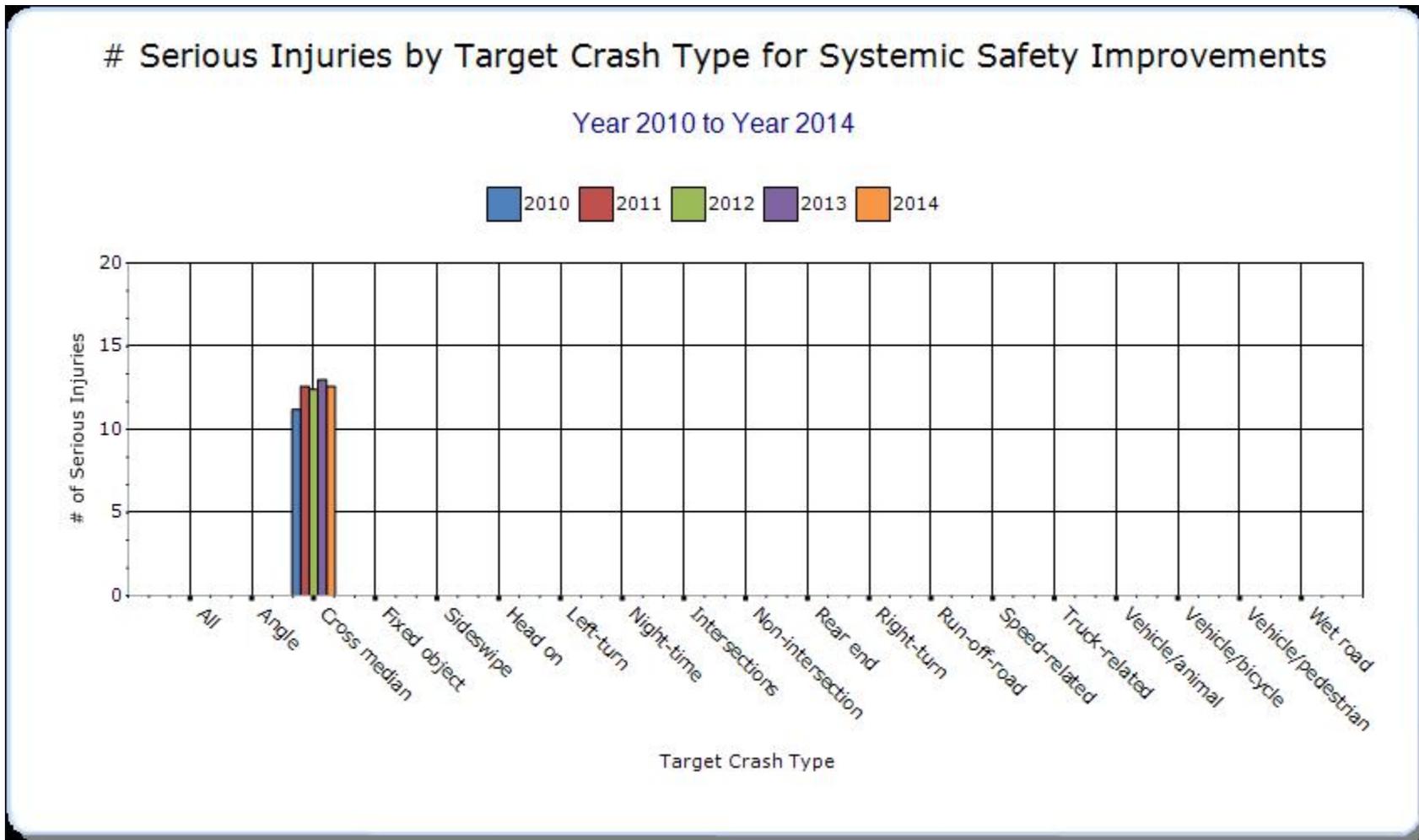
Systemic Treatments

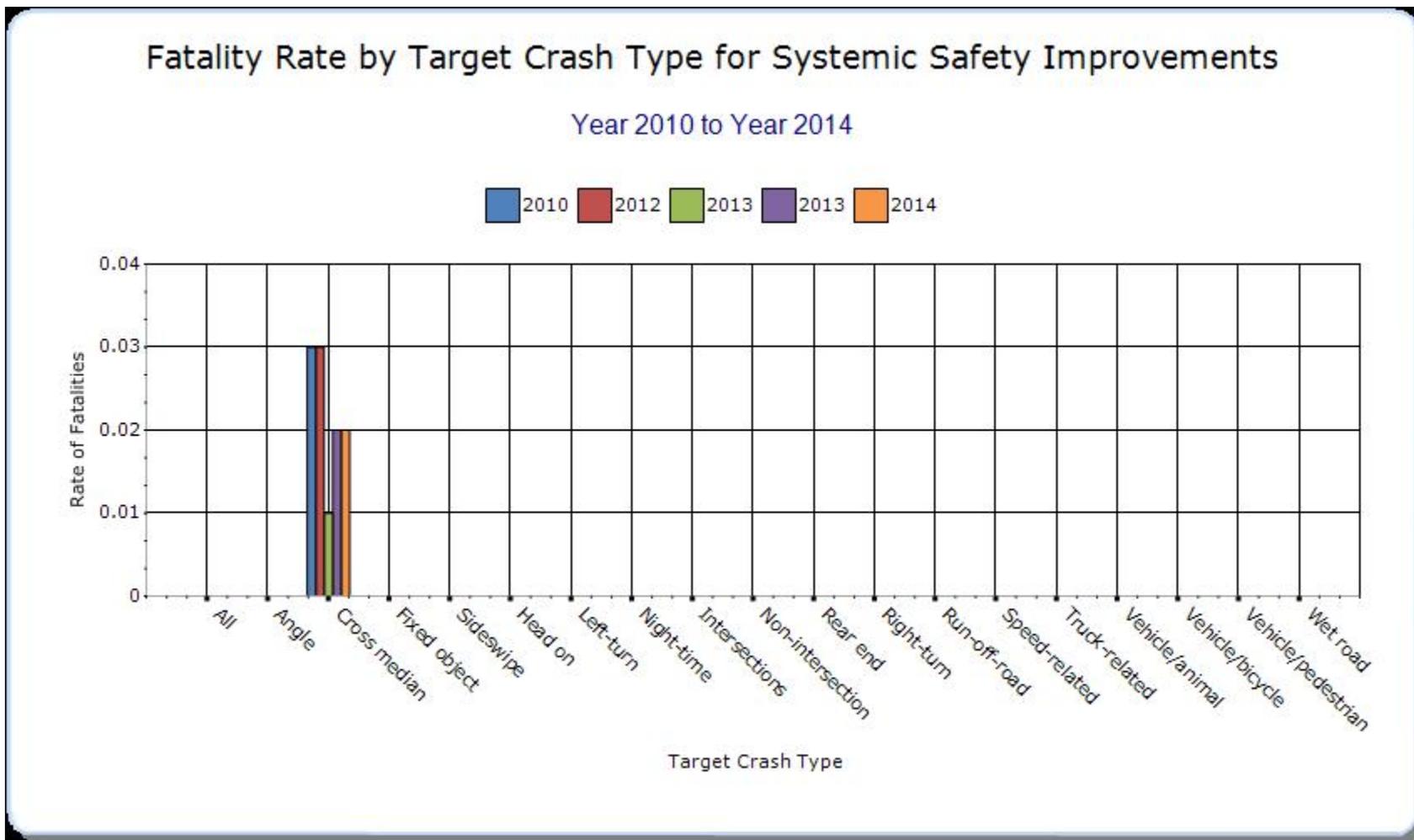
Present the overall effectiveness of systemic treatments.

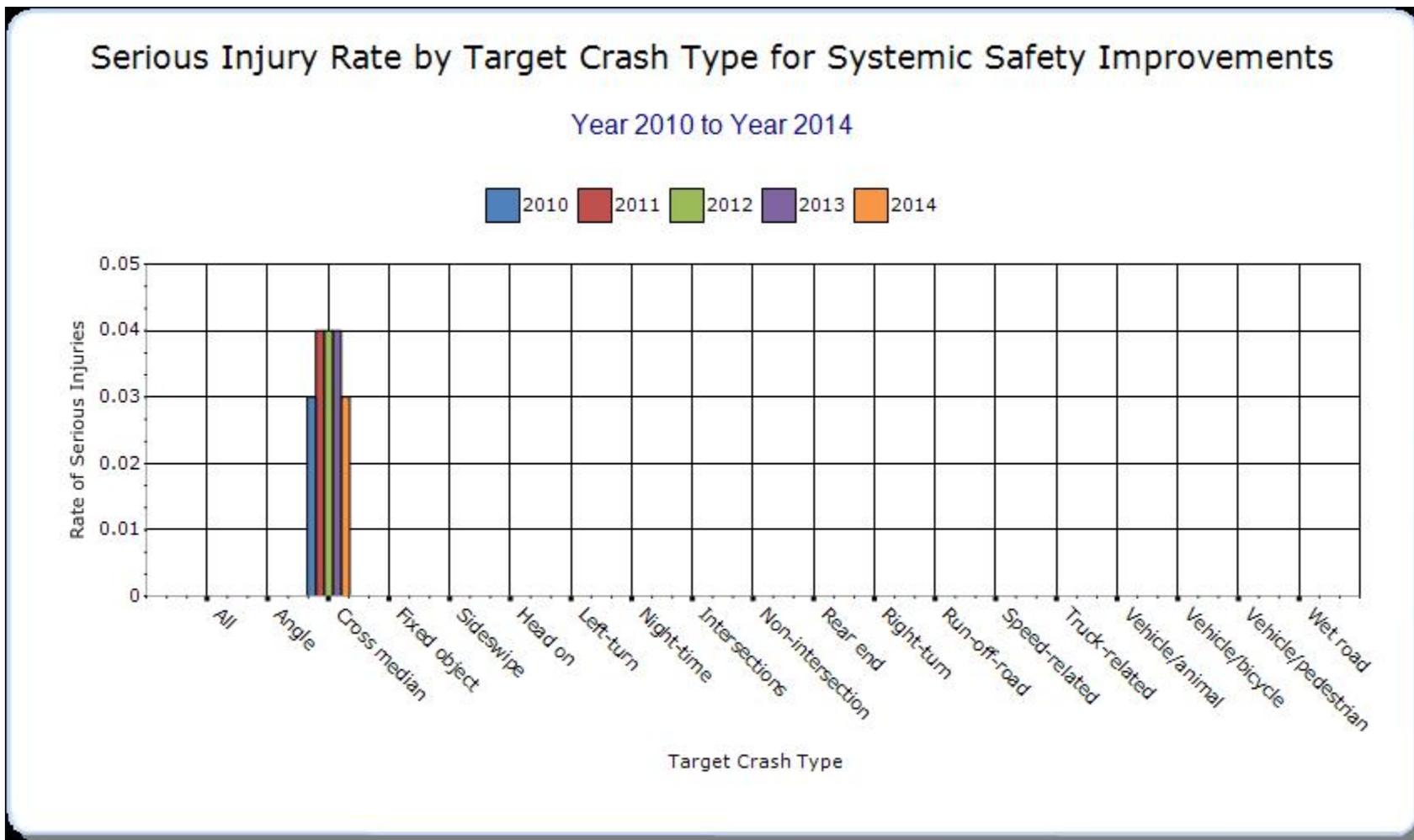
Year - 2014

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
Cable Median Barriers	Cross median	5.8	12.6	0.02	0.03			









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

Previous implementation of cable median barrier, enhanced pavement markings, HFST and rumble strip projects has shown a clear reduction in fatal and serious injury crashes. Analysis recently presented to the Highway Commission helped justify additional system-wide projects of these types, which are being implemented.

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)
Interstate 49, Section 28, Log Mile 41.44-45.74	Rural Principal Arterial - Interstate	Roadway	Pavement surface - high friction surface		2	16	42	60		1	12	15	28	3.77
Interstate 430, Section 21, Log mile 8.96-9.86	Urban Principal Arterial - Interstate	Roadway	Pavement surface - high friction surface	1	5	52	114	172		2	35	96	133	115.47

<p>Interstate 40, Sections 43 and 51, Log mile 216.10 to 220.71</p>	<p>Rural Principal Arterial - Interstate</p>	<p>Roadway</p>	<p>Pavement surface - high friction surface</p>			<p>4</p>	<p>9</p>	<p>13</p>			<p>4</p>	<p>7</p>	<p>11</p>	<p>0.05</p>
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Optional Attachments

Sections

**Progress in Achieving Safety Performance
Targets: Overview of General Safety Trends**

Files Attached

[Setting Safety PM Targets - FY 2017.docx](#)

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.