Highway Safety Improvement Program

Data Driven Decisions

Massachusetts
Highway Safety Improvement Program
2015 Annual Report

Prepared by: MA

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."

Table of Contents

Disclaimer ii

Executive Summary 1

Introduction 2

Program Structure 2

- Program Administration 2
- Program Methodology 4

Progress in Implementing Projects 23

- Funds Programmed 23
- General Listing of Projects 26

Progress in Achieving Safety Performance Targets 36

- Overview of General Safety Trends 36
- Application of Special Rules 51

Assessment of the Effectiveness of the Improvements (Program Evaluation) 53

- SHSP Emphasis Areas 54
- Groups of similar project types 59
- Systemic Treatments 64
- Project Evaluation 70

Glossary 72

Executive Summary

In 2009, under Safetea-LU, Massachusetts began obligating funds from the HSIP funding category, only after an HSIP Task Force was developed and HSIP guidelines were implemented. HSIP projects and programs must have been identified through our Strategic Highway Safety Plan and consisted of a combination of high crash locations and systemic projects. The HSIP program consisted mainly of infrastructure projects but there have been some programs that involved enforcement, education and awareness. The HSIP is a much needed program to bring down our fatalities and injuries in order to achieve our Towards Zero Death goal. This report summarizes the HSIP management and structure in Massachusetts as well as describing the selected HSIP programs and projects.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP MAP-21 Reporting Guidance dated February 13, 2013 and consists of four sections: program structure, progress in implementing HSIP projects, progress in achieving safety performance targets, and assessment of the effectiveness of the improvements.

Program Structure

Program Administration

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

☐ Central

☐ District

☒ Other The STIP provided for approximately $33 million in 2015 HSIP funds. $18.7M administered in HQ and $14.6M was allocated to the regions (by MARPA formula) through MPO project selection process.

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

The HSIP project selection criteria were based on locations being identified as top crash locations (based on the number and severity of crashes) regardless of road ownership. Additionally, programs were established to reduce injuries and fatalities based on several key focus areas based on our Strategic Highway Safety Plan, regardless of roadway jurisdiction. There is an ongoing Bicycle - Pedestrian safety program that works at the community level to address enforcement, education, awareness and infrastructure and in most cases, these areas are focused on locally owned roads. Finally, other eligible

projects / programs were selected based on HSIP-eligible criteria such as statewide improvements to data or assistance with SHSP. These programs impact safety on all roadways regardless of roadway jurisdiction

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

☒ Design

☒ Planning

☒ Maintenance

☒ Operations

☐ Governors Highway Safety Office

☐ Other:

Briefly describe coordination with internal partners.

The HSIP Task Force consists of seven members: 2 FHWA representatives (one from Massachusetts Division Office in Planning and one from the Massachusetts Division Office in Safety), 2 representatives from MassDOT Highway Division (Chief Engineer and Safety Engineer), one from MassDOT Office of Transportation Planning and two representatives from the Regional Planning Agencies (RPAs), the technical arm of the Metropolitan Planning Organizations (MPOs). The initial role of the Task Force was to establish HSIP guidelines based on input and feedback from others. Once the guidelines were finalized, the role of the Task Force is to meet annually or more frequently, ("meetings" could be via email or in person) and to confirm the selection of HSIP projects and update the guidelines as needed. The HSIP Guidelines were updated based on MAP-21. Program and project selection occurs both in MassDOT HQ and at the regional MPO level (MassDOT District and MassDOT Planning sit on the MPOs). There is funding set aside for each MPO. The statewide HSIP, administered through MassDOT HQ, involves systemic projects and high crash locations as well as programs and strategies based on the SHSP. The programs and strategies from the SHSP are developed through the SHSP Emphasis Area teams with input from many.

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

☒Metropolitan Planning Organizations

☒Governors Highway Safety Office

☒Local Government Association

☒Other: Other-FHWA

☒Other: Other-SHSP Emphasis area team members

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

☐Multi-disciplinary HSIP steering committee

☒Other: Other-none known

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

None

Program Methodology

Select the programs that are administered under the HSIP.

☐Median Barrier	☒Intersection	☒Safe Corridor
☐Horizontal Curve	☒Bicycle Safety	☐Rural State Highways
☒Skid Hazard	☐Crash Data	☐Red Light Running Prevention
☐Roadway Departure	☐Low-Cost Spot Improvements	☒Sign Replacement And

		Improvement
☐ Local Safety	☒ Pedestrian Safety	☐ Right Angle Crash
☒ Left Turn Crash	☐ Shoulder Improvement	☐ Segments
☐ Other:		

Program: **Intersection**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☐ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☐ Volume	☐ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☒ Other-CRASH SEVERITY WEIGHTING	☐ Lane miles	☐ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☒ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐ No

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

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-MPO

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical

rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

☒ PROJECT READINESS

Program: **Safe Corridor**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☐ Volume	☐ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☒ Other-truck crashes and State Police feedback on places problem corridors and where enforcement can easily and	☐ Lane miles	☐ Roadside features

safely take place

☐ Other ☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-police feedback on locations

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

☐ Yes

☒ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-MassDOT worked with State POlice for this program to identify corridors

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

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

☒ where variable message boards can be visible and police can enforce

---

Program: **Bicycle Safety**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☐ All crashes	☐ Traffic	☐ Median width

☐ Fatal crashes only	☐ Volume	☐ Horizontal curvature
☒ Fatal and serious injury crashes only	☒ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☒ Other-percent commuting by biking	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-proportion of non-motorist crashes, EMS non-motorist crashes, percent commuting by bike

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

☒ Yes

☐ No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-participating communities based on data driven process

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

☐Relative Weight in Scoring

☒Rank of Priority Consideration

☐Ranking based on B/C

☐Available funding

☐Incremental B/C

☐Ranking based on net benefit

☐Other

Program: **Skid Hazard**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☒ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☐ Volume	☒ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☐ Other	☒ Other-pavement condition could accommodate HFST

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-combination of horizontal curve with crash history and pavement condition

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

☐ Yes

☒ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-The District Office selected the 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).

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Sign Replacement And Improvement**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☐ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☐ Volume	☐ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☒ Functional classification
☒ Other-SYSTEMATIC APPROACH NOT BASED ON CRASHES	☐ Lane miles	☐ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒Other-ALL SECONDARY STATE HIGHWAYS

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

☐Yes

☒No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-ALL SECONDARY ROADS

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

☐Relative Weight in Scoring

☐Rank of Priority Consideration

☐Ranking based on B/C

☐Available funding

☐Incremental B/C

☐Ranking based on net benefit

☐Other

☒ALL SECONDARY ROADS

Program: **Pedestrian Safety**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
☐ All crashes	☐ Traffic	☐ Median width
☐ Fatal crashes only	☐ Volume	☐ Horizontal curvature
☒ Fatal and serious injury crashes only	☒ Population	☐ Functional classification
☒ Other-ratio of ped crashes to all crashes by town	☐ Lane miles	☐ Roadside features
	☒ Other-commuting by walking (journey to work census data)	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-EMS data on pedestrians, ratio of pedestrian crashes to all crashes, commuting rates of pedestrians by towns

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

☒ Yes

☐ No

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

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-based on priority of towns selected by above criteria

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

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

☒ number of communities invovled in programs is based on available funding

---

Program: **Left Turn Crash**

Date of Program Methodology: **10/1/2014**

What data types were used in the program methodology?

Crashes

☐ All crashes

☐ Fatal crashes only

☐ Fatal and serious injury crashes only

☐ Other

Exposure

☐ Traffic

☐ Volume

☐ Population

☐ Lane miles

☐ Other

Roadway

☐ Median width

☐ Horizontal curvature

☐ Functional classification

☐ Roadside features

☐ Other

☒ Other-Systemic approach for all State signals with left turn lanes and protected-permissive phasing to install FYA

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☒ Probability of specific crash types

☐ Excess proportions of specific crash types

☒ Other-using systemic approach for all eligible state signals

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

☐ Yes

☒ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-SHSP emphasis area strategy

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

☐ Relative Weight in Scoring

☐ Rank of Priority Consideration

☐ Ranking based on B/C

☐ Available funding

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

☒ working on all state signals where the flashing yellow arrow can be added easily (no new mast arms, no R-O-W, etc)

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

18

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

☐ Cable Median Barriers

☐ Rumble Strips

☐ Traffic Control Device Rehabilitation

☐ Pavement/Shoulder Widening

☒ Install/Improve Signing

☒ Install/Improve Pavement Marking and/or Delineation

☐ Upgrade Guard Rails

☐ Clear Zone Improvements

☐ Safety Edge

☐ Install/Improve Lighting

☒Add/Upgrade/Modify/Remove Traffic Signal ☒Other Other-bicycle and pedestrian safety

What process is used to identify potential countermeasures?

☒Engineering Study

☒Road Safety Assessment

☐Other:

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

☐Highway Safety Manual

☐Road Safety audits

☐Systemic Approach

☒Other: Other-We have increased our systemic approach

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

None

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

☐ Calendar Year

☐ State Fiscal Year

☒ Federal Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	29958730	44 %	27955925.78	43 %
HRRRP (SAFETEA-LU)				
HRRR Special Rule				
Penalty Transfer - Section 154				
Penalty Transfer – Section 164	0	0 %	17399.22	0 %
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)	27269255.2	40 %	25904952.31	39 %
State and Local Funds	10146062	15 %	11813363.48	18 %

Totals	67374047.2	100%	65691640.79	100%

Please note that there are a few projects that have not yet been obligated for this Federal Fiscal Year but are planned to be obligated during the months of August and September. Therefore, the "obligated" amount, includes those projects and programs.

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

20 %

How much funding is obligated to local safety projects?

15 %

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

7 %

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

7 %

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

period?

0 %

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

0 %

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

MassDOT is very interested in having more low cost systemic approach projects on local roads, to address the safety concerns based on the data. However, many local communities do not have roadway layouts so that the specific rights-of-way are not defined. FHWA Division Office has asked us to perform surveys on each of the roadways for the systemic projects. This would push systemic low cost projects into a more costly program. We are working with our division office to enable us to do what many other states do (having locals certify that all signs and markings will occur within the local public right of way) or on another solution so that Massachusetts can fully utilize and implement low cost systemic approaches to safety for locally owned roadways

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

The first HSIP project was obligated in 2009 and completed in 2011. The Registry of Motor Vehicles just closed the 2013 crash file in June 2015. Therefore, in the coming year or two, MassDOT will be able to begin performing an evaluation of the effectiveness of the HSIP projects by using 3 years of pre-implementation crash data and comparing to 3 years of post-implementation crash data.

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
605657- MEDWAY - RECONSTRUCTION ON ROUTE 109, FROM HOLLISTON STREET TO 100 FT. WEST OF HIGHLAND STREET, INCLUDES REHAB OF M-13-012	Roadway Roadway - other	1.501 Miles	3000000	13382439.6	HSIP (Section 148)	Urban Principal Arterial - Other	20800	35	Town or Township Highway Agency	Intersections	
605146- SALEM- RECONSTRUCTION ON CANAL STREET, FROM WASHINGTON STREET & MILL STREET TO LORING AVENUE & JEFFERSON	Roadway Roadway - other	1.339 Miles	2000000	10835675.66	HSIP (Section 148)	Rural Minor Arterial	19000	35	State Highway Agency	Roadway Departure	

AVENUE											
606394-BARNSTABLE-INTERSECTION IMPROVEMENTS AT FALMOUTH ROAD (ROUTE 28) AND BEARSES WAY	Intersection geometry Intersection geometry - other	1 Numbers	4237130	8052365.3	HSIP (Section 148)	Rural Principal Arterial - Other	15542	35	State Highway Agency	Intersections	
606485-MILLBURY-SUTTON-MEDIAN BARRIER REPLACEMENT ON ROUTE 146, FROM ROUTE 122A TO BOSTON ROAD	Roadside Barrier - other	2.742 Miles	2250000	6091525	HSIP (Section 148)	Rural Principal Arterial - Other	44200	50	State Highway Agency	Roadway Departure	
606347-STURBRIDGE-RESURFACING AND RELATED WORK ON ROUTE 20, FROM ROUTE 49 TO I-84	Roadway Pavement surface - high friction surface	0 Miles	1000000	2836751.77	HSIP (Section 148)	Rural Principal Arterial - Other	19200	50	State Highway Agency	Roadway Departure	

607072-DISTRICT 1-2 -3 - IMPLEMENT (PHASE III) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASURES	Intersection traffic control Modify traffic signal - add flashing yellow arrow	9 Numbers	1170000	1300000	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	
608269-DISTRICT 4 -6 - IMPLEMENT (PHASE III) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASU	Intersection traffic control Modify traffic signal - add flashing yellow arrow	13 Numbers	450000	500000	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	

RES											
607222- GREENFIELD- INTERSECTION IMPROVMENTS AT ROUTE/5/10 & CHAPSIDE STREET	Intersection geometry Intersection geometry - other	1 Numbers	300449	629039.75	HSIP (Section 148)	Urban Minor Arterial	11000	35	State Highway Agency	Intersections	
604035- HADLEY- SIGNAL & INTERSECTION IMPROVEMENT AT ROUTE 9 (RUSSELL STREET) & ROUTE 47 (MIDDLE STREET)	Intersection traffic control Intersection traffic control - other	1 Numbers	1201102	4319150.1	HSIP (Section 148)	Urban Principal Arterial - Other	25000	45	State Highway Agency	Intersections	
606729- TAUNTON- COUNTY STREET (RTE 140) RECONSTRUCTION FORM RTE 24 TO MOZZONE BLVD TO WIDEN RR TRACKS AREA	Roadway Roadway - other	0.262 Miles	1560000	3634748.14	HSIP (Section 148)	Rural Minor Arterial	30000	45	State Highway Agency	Roadway Departure	

608024-STATEWIDE-CONVERSION OF INTERSTATE AND FREEWAY EXIT NUMBERS TO MILEPOST-BASED	Roadway signs and traffic control Roadway signs (including post) - new or updated	0	3555556	5995280	HSIP (Section 148)		0	0	State Highway Agency		
SHSP- PROJECT HSI-002S(361), Statewide, MassDOT / Mass. State Police Work Zone Safety Enforcement Program	Work Zone	1 Numbers	449585.18	499439	HSIP (Section 148)	mostly on controlled access roadways: interstates and principal arterials	0	0	State Highway Agency	Work Zones	
SHSP- HSI-002S(678), Statewide-Pedestrian & Bicycle Traffic Safety Prog. w/ seven RPAs,Pittsfield Police, MA Bike Coalition &	Non-infrastructure Enforcement	19 Numbers	631463.4	701626	HSIP (Section 148)	this is a non-infrastructure project and the work will pertain to all roads	0	0	this is a non-infrastructure project and the work will pertain to all roads	Pedestrians	

WalkBoston											
SHSP- HSI-002S(809), Statewide - Agree. #87077 with City of Boston for Crash Data Reporting System Improvements	Non-infrastructure Data/traffic records	1 Numbers	69667.2	77408	HSIP (Section 148)	this is a non-infrastructure project and the work will pertain to all roads in Boston	0	0	City of Municipal Highway Agency	Data	
SHSP- STATEWIDE - DESIGN CONSULTING SERVICES FOR LOCAL COMMUNITIES ON BICYCLE PEDESTRIAN SAFETY ISSUES	Non-infrastructure Road safety audits	1 Numbers	315000	350000	HSIP (Section 148)	this is a non-infrastructure project and the work will pertain to all roads in local communities involved in this program	0	0	City of Municipal Highway Agency	Pedestrians	
SHSP- STATEWIDE - DESIGN CONSULTING SERVICES AND	Non-infrastructure Transportati	1 Numbers	450000	500000	HSIP (Section 148)	this is a non-infrastructure project	0	0	this is a non-infrastructure project	Data and general SHSP help	

SAFETY ENGINEERING FOR HSM AND OTHER SAFETY PLANNING	on safety planning					and the work will pertain to all roads			and the work will pertain to all roads		
608152- DISTRICT 4 - HIGH FRICTION SURFACE TREATMENT AND RELATED WORK AT 3 LOCATIONS	Roadway Pavement surface - high friction surface	3 Numbers	2052000	2280000	HSIP (Section 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Lane Departure	
608110- DISTRICT 1-2 - IMPLEMENT (PHASE II) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASURES	Intersection traffic control Modify traffic signal - add flashing yellow arrow	52 Numbers	517770	575316.75	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	

608111- DISTRICT 3 - IMPLEMENT (PHASE II) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASURES	Intersection traffic control Modify traffic signal - add flashing yellow arrow	59 Numbers	482886	536556	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	
608112- DISTRICT 4 - IMPLEMENT (PHASE II) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASU	Intersection traffic control Modify traffic signal - add flashing yellow arrow	88 Numbers	1012716	1125258	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	

RES											
608113-DISTRICT 5-6 - IMPLEMENT (PHASE II) OF THE FLASHING YELLOW ARROW AT SIGNALIZED INTERSECTIONS VARIOUS LOCATIONS - ONE OF THE FHWA NINE PROVEN COUNTERMEASURES	Intersection traffic control Modify traffic signal - add flashing yellow arrow	70 Numbers	653985	726662.5	HSIP (Section 148)	varies	0	0	State Highway Agency	Intersections	
608087-BROCKTON-PEDESTRIAN IMPROVEMENTS AT VARIOUS LOCATIONS	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	1 Numbers	506616	625000	HSIP (Section 148)	varies	0	0	Town or Township Highway Agency	Pedestrians	
SHSP - STATEWIDE - SUPPORT FOR TRAFFIC	Work Zone	1 Numbers	90000	100000	HSIP (Section 148)	varies			for traffic incident management on all	Work Zones	

INCIDENT MANAGEMENT									roads in which State Police respond		

Progress in Achieving Safety Performance Targets

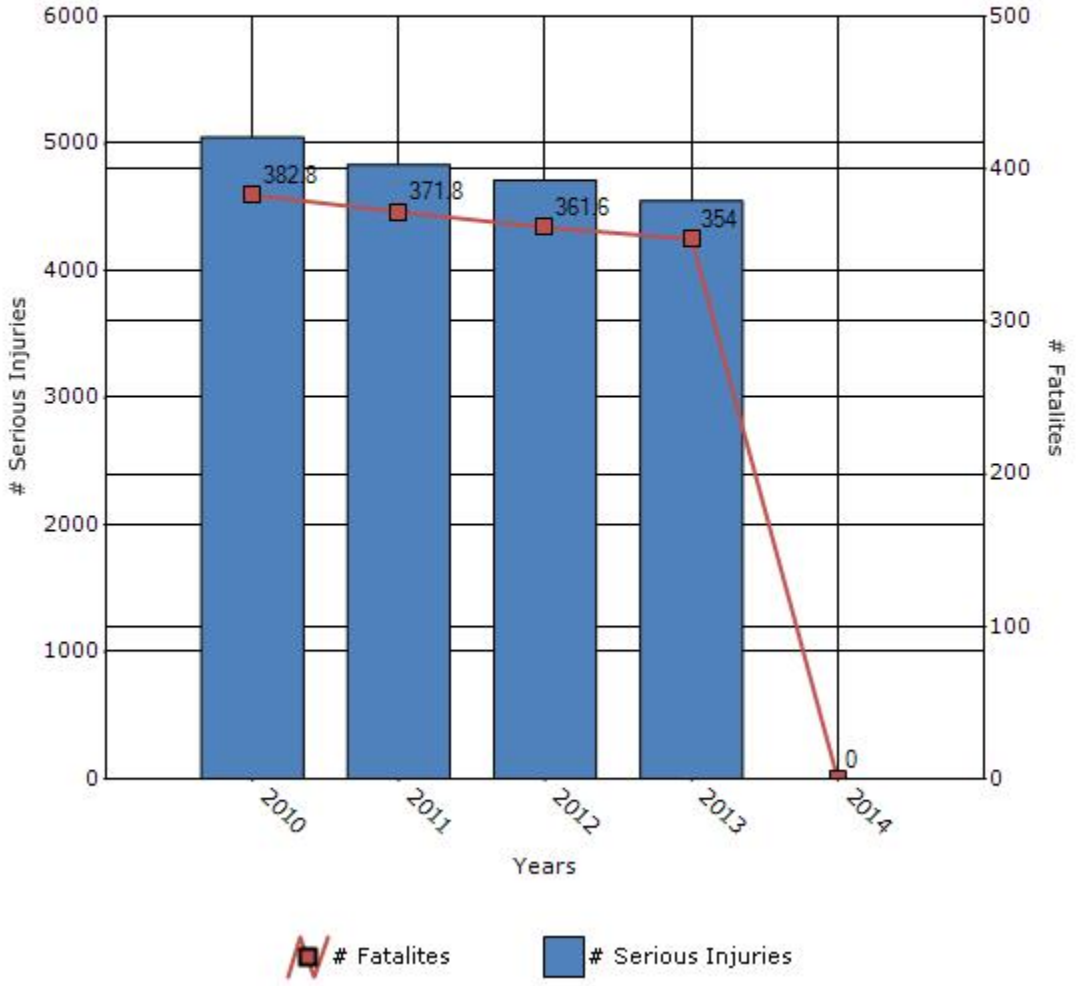
Overview of General Safety Trends

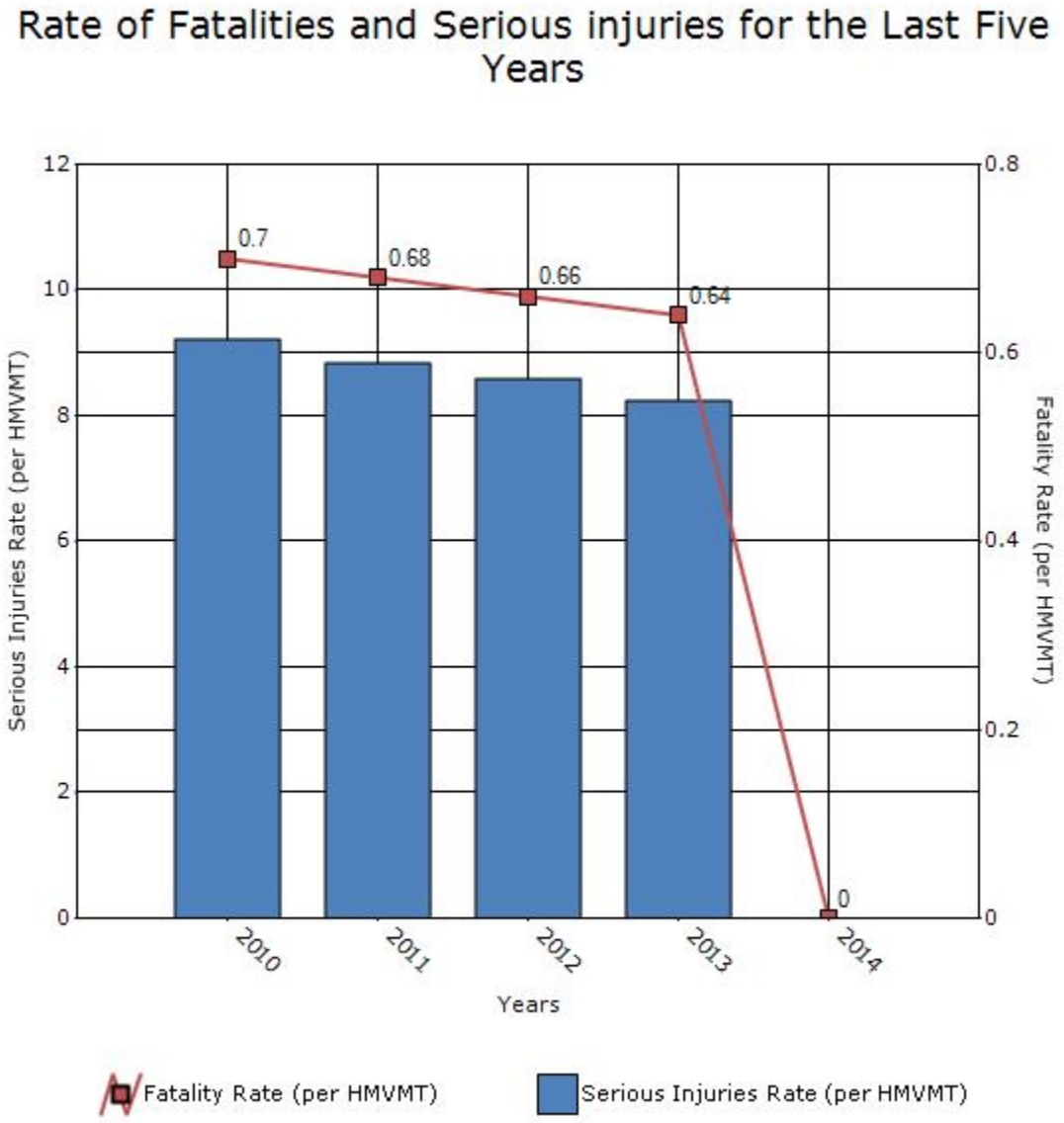
Present data showing the general highway safety trends in the state for the past five years.

Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	382.8	371.8	361.6	354	0
Number of serious injuries	5050.4	4833.6	4710.6	4548.2	0
Fatality rate (per HMVMT)	0.7	0.68	0.66	0.64	0
Serious injury rate (per HMVMT)	9.22	8.84	8.59	8.24	0

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

Number of Fatalities and Serious injuries for the Last Five Years





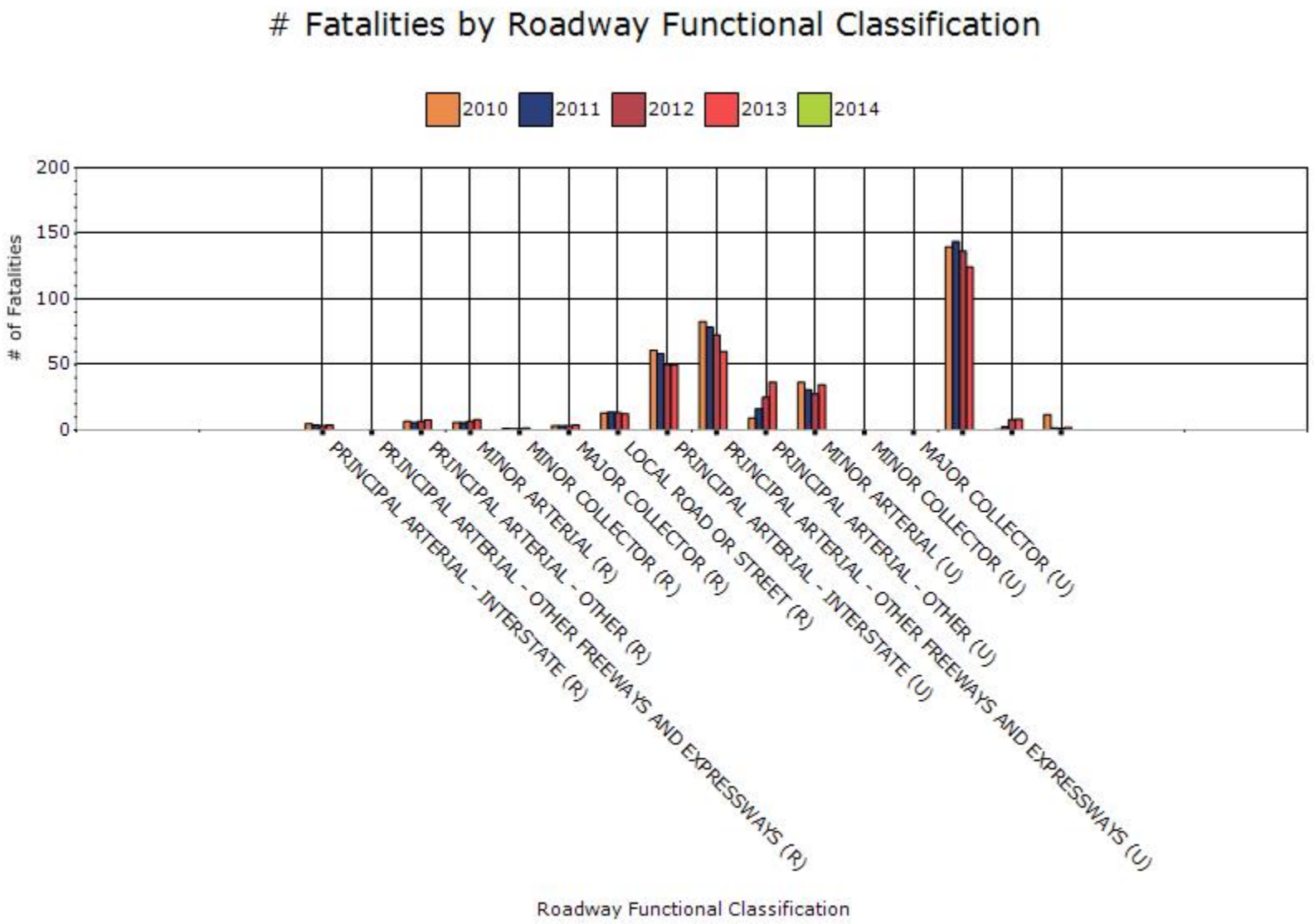
The fatality information came directly from the FARS website (7/21/15) and may reflect draft numbers only. The serious injury data was provided from Department of Public Health for MA Hospital Inpatient Discharge and MA Outpatient Observation Stay Databases, MA Center for Health Information and Analysis.

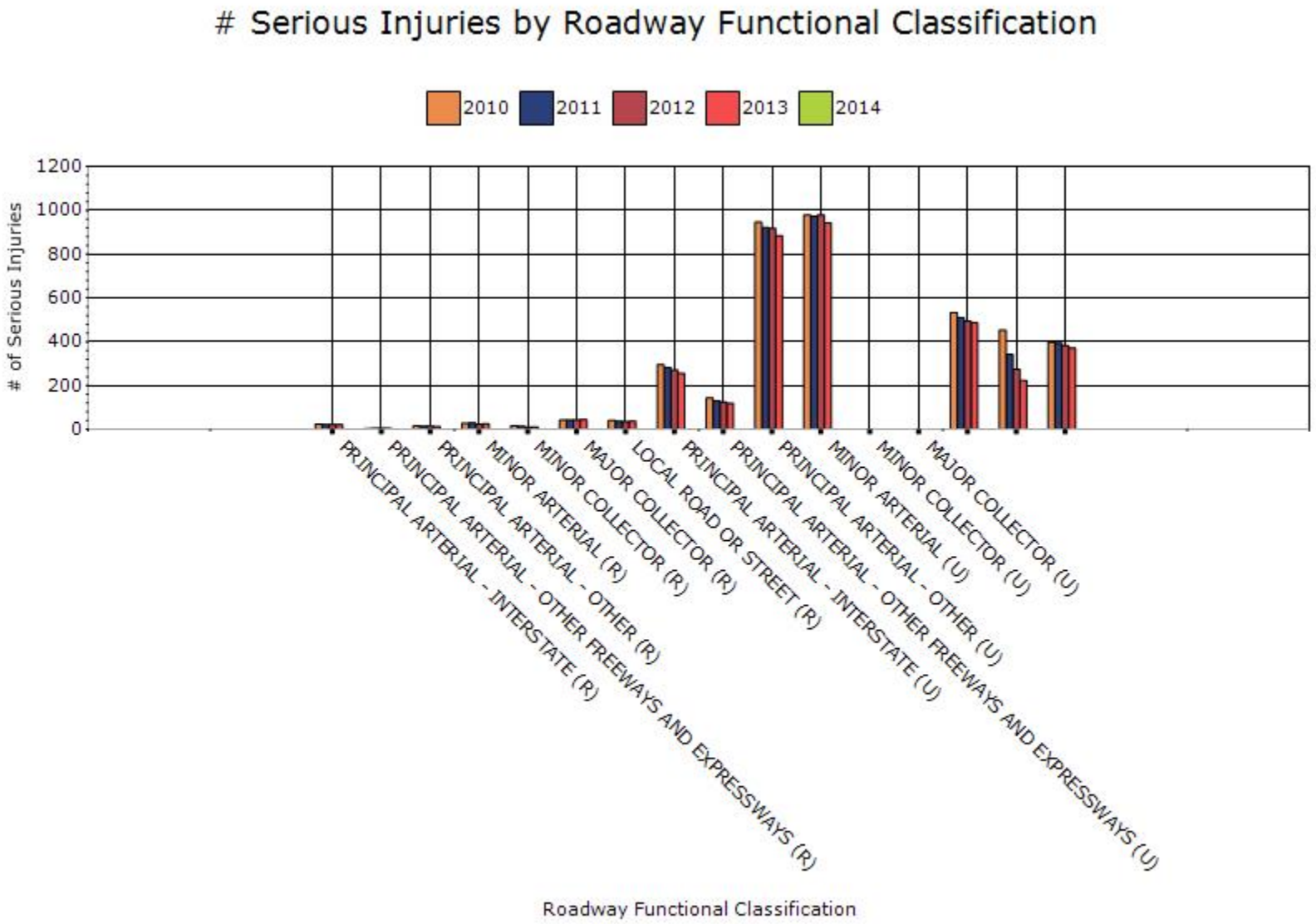
To the maximum extent possible, present performance measure* data by functional classification and ownership.

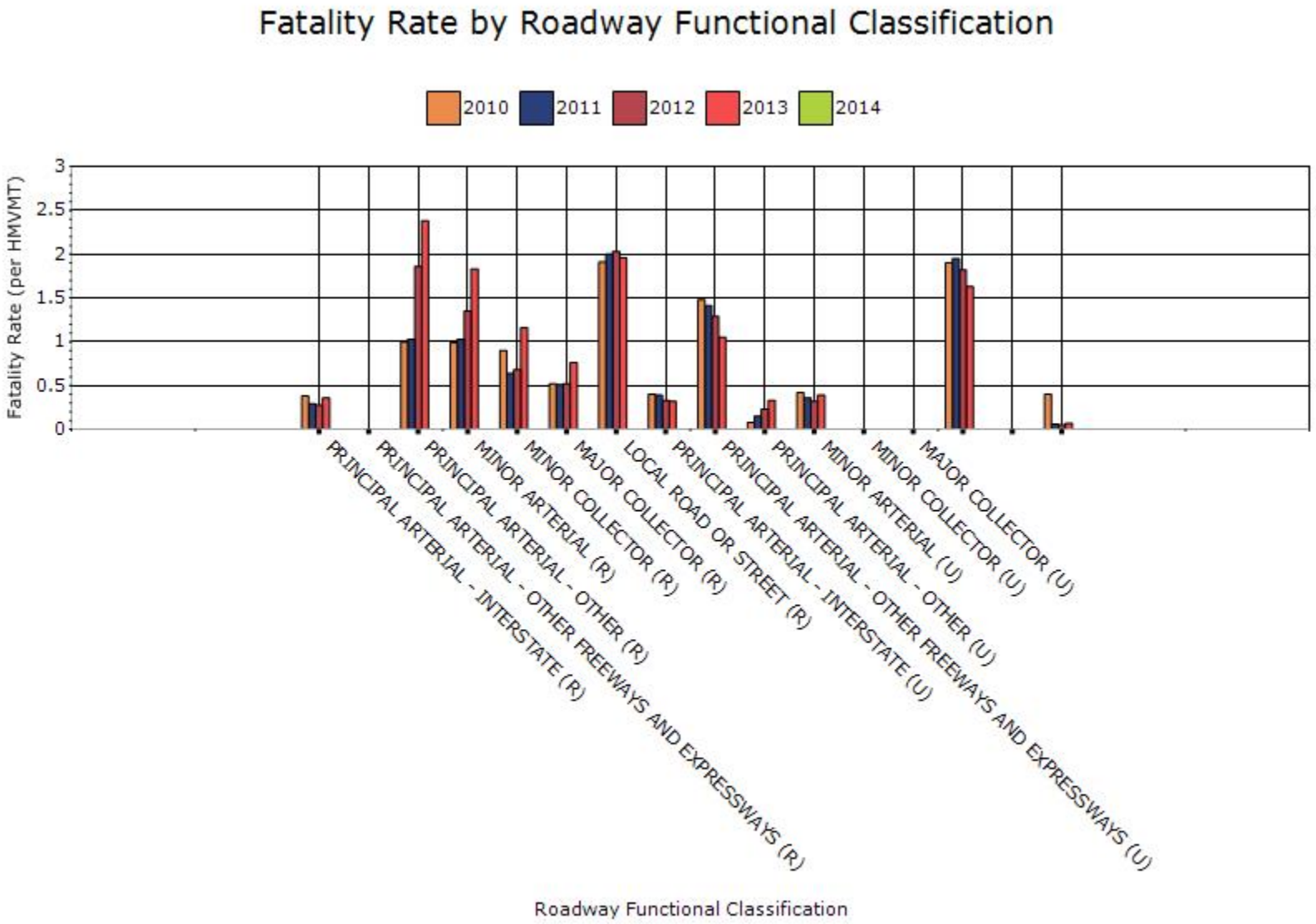
Year - 2013

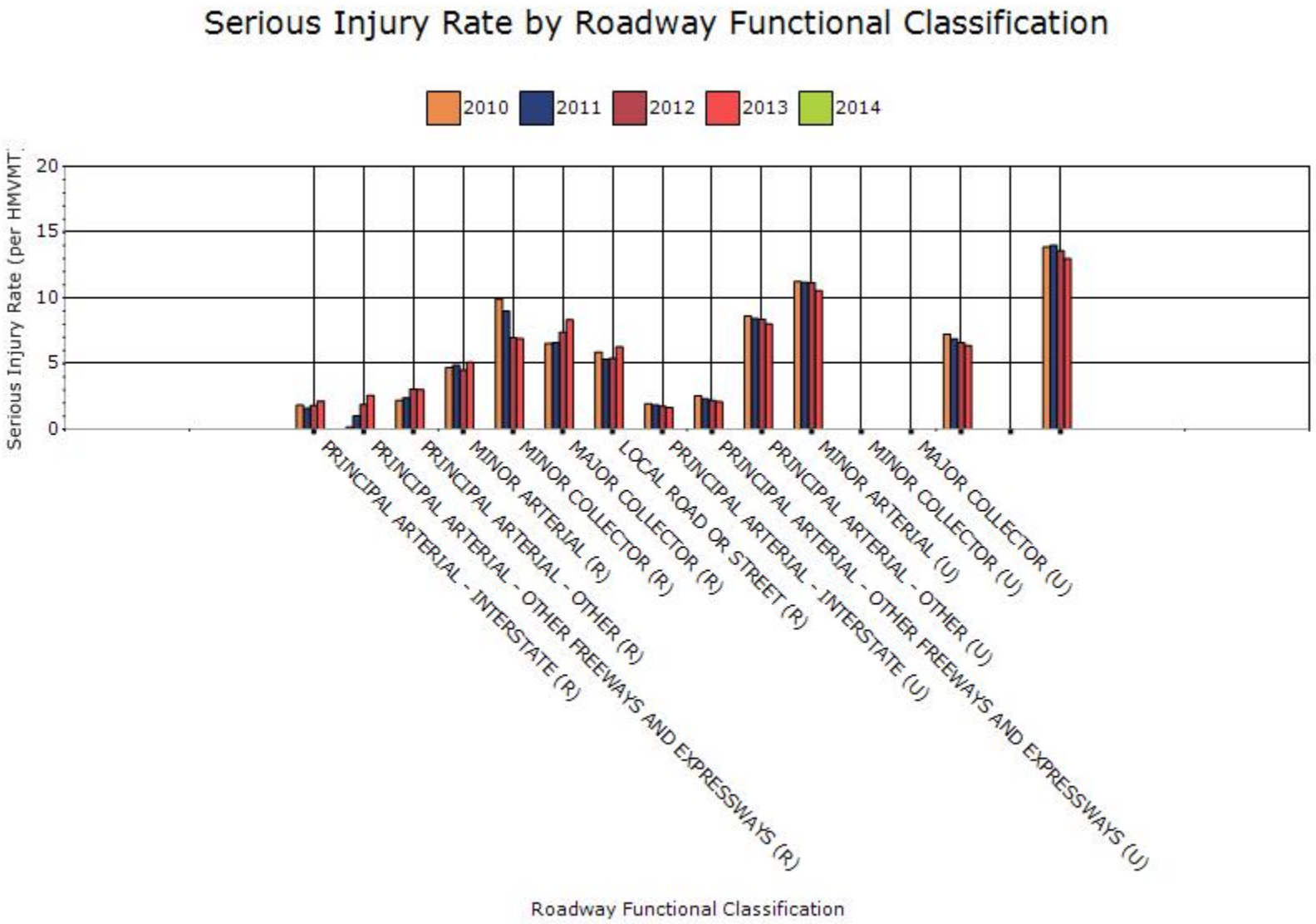
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	4	21.8	0.36	2.15
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	5.2	0	2.59
RURAL PRINCIPAL ARTERIAL - OTHER	7.8	12	2.38	3.02
RURAL MINOR ARTERIAL	8.2	25	1.83	5.1
RURAL MINOR COLLECTOR	1.6	9.6	1.16	6.9
RURAL MAJOR COLLECTOR	3.8	44	0.76	8.33
RURAL LOCAL ROAD OR STREET	12.4	37.8	1.96	6.27
URBAN PRINCIPAL	49.8	255	0.32	1.65

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	60	119.6	1.05	2.1
URBAN PRINCIPAL ARTERIAL - OTHER	36.6	884.4	0.33	8.01
URBAN MINOR ARTERIAL	34.8	942.2	0.39	10.56
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	0	0	0	0
URBAN LOCAL ROAD OR STREET	124.4	486.4	1.63	6.38
OTHER	8.4	223.8	0	0
URBAN COLLECTOR (COMBINED MAJOR + MINOR)	2.2	371.2	0.07	12.99


Fatalities by Roadway Functional Classification
2010
2011
2012
2013
2014
# of Fatalities
200
150
100
50
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

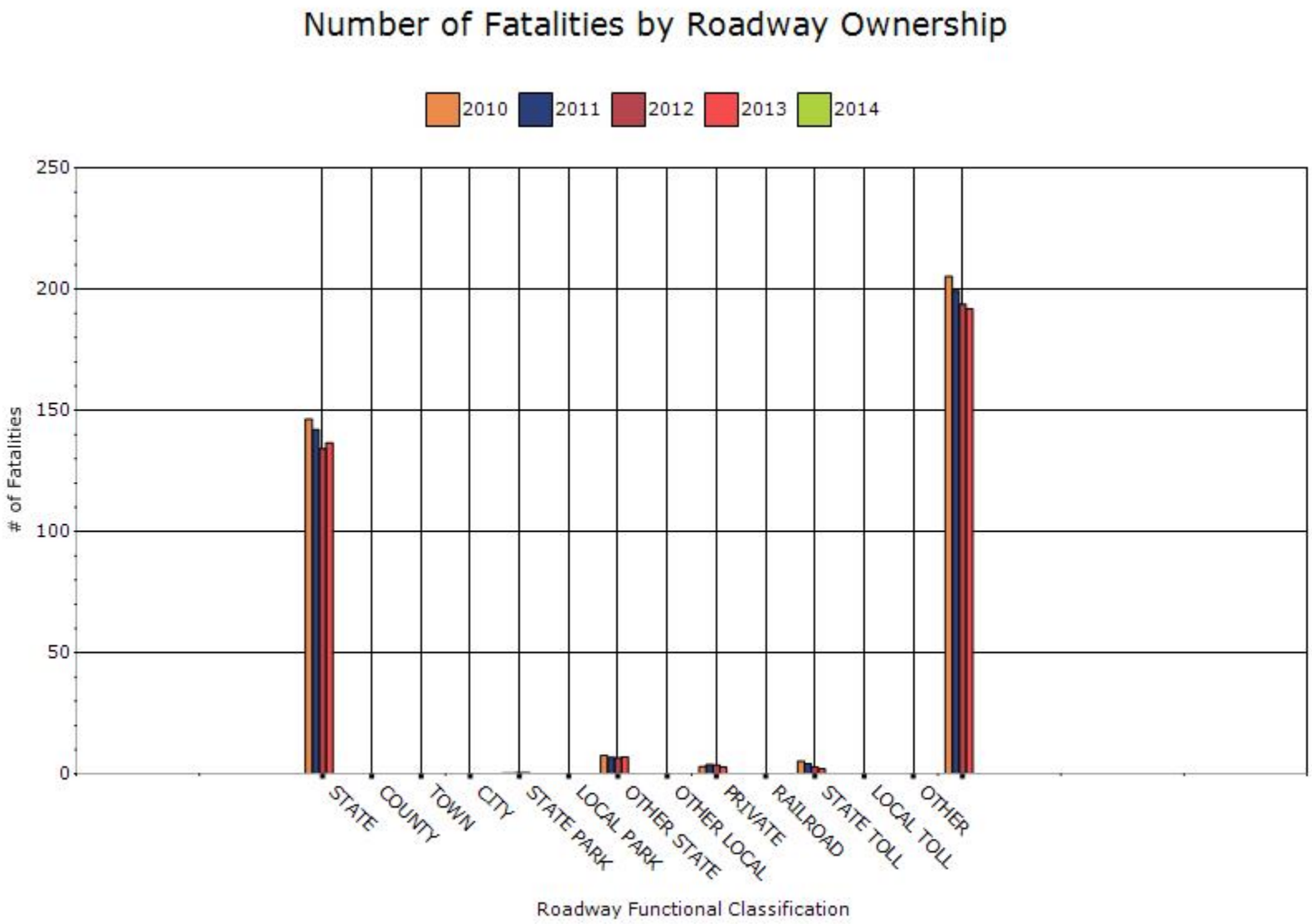

Serious Injuries by Roadway Functional Classification
2010
2011
2012
2013
2014
# of Serious Injuries
1200
1000
800
600
400
200
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

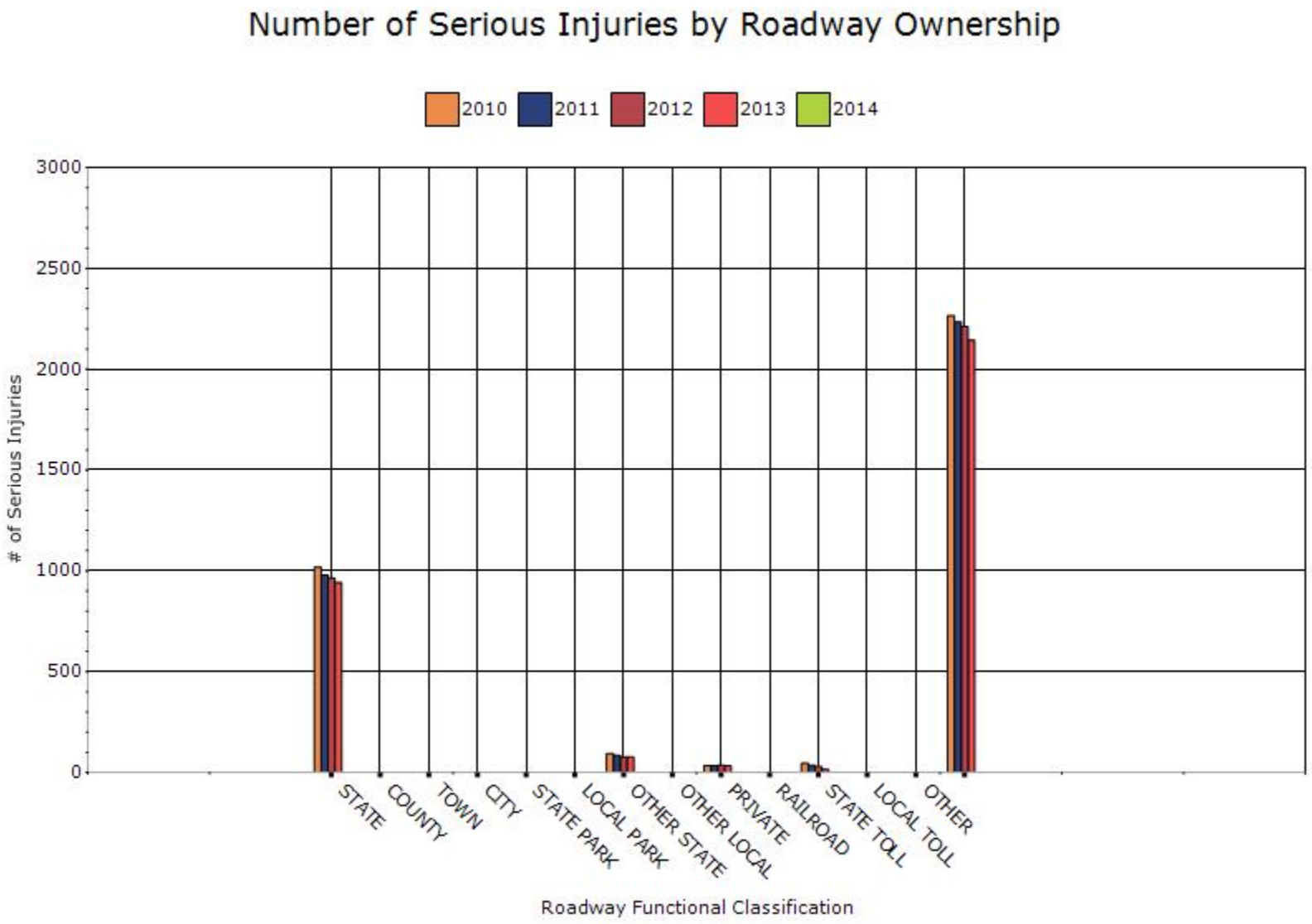

Fatality Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Fatality Rate (per HMVMT)
3
2.5
2
1.5
1
0.5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

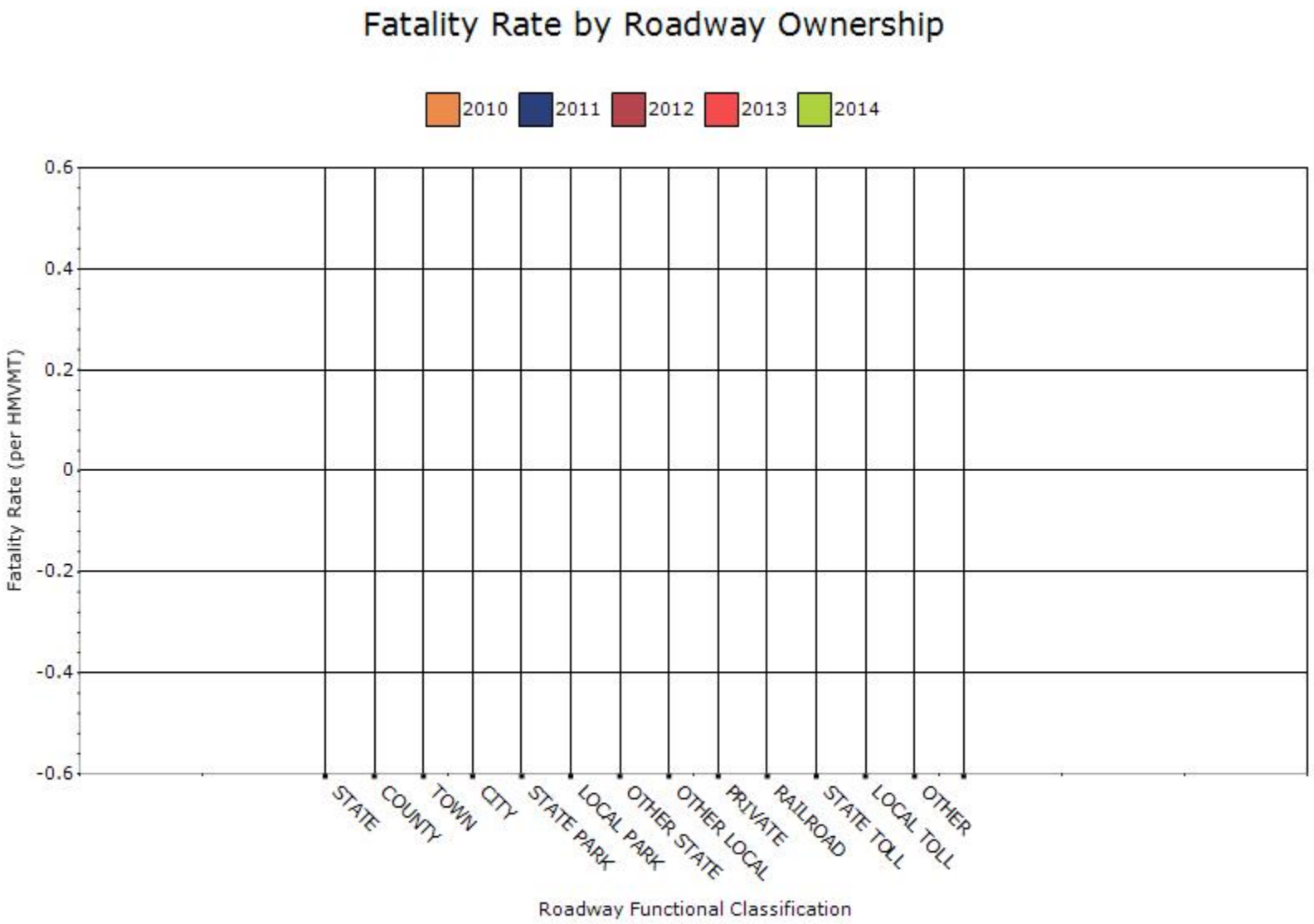

Serious Injury Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Serious Injury Rate (per HMVMT)
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

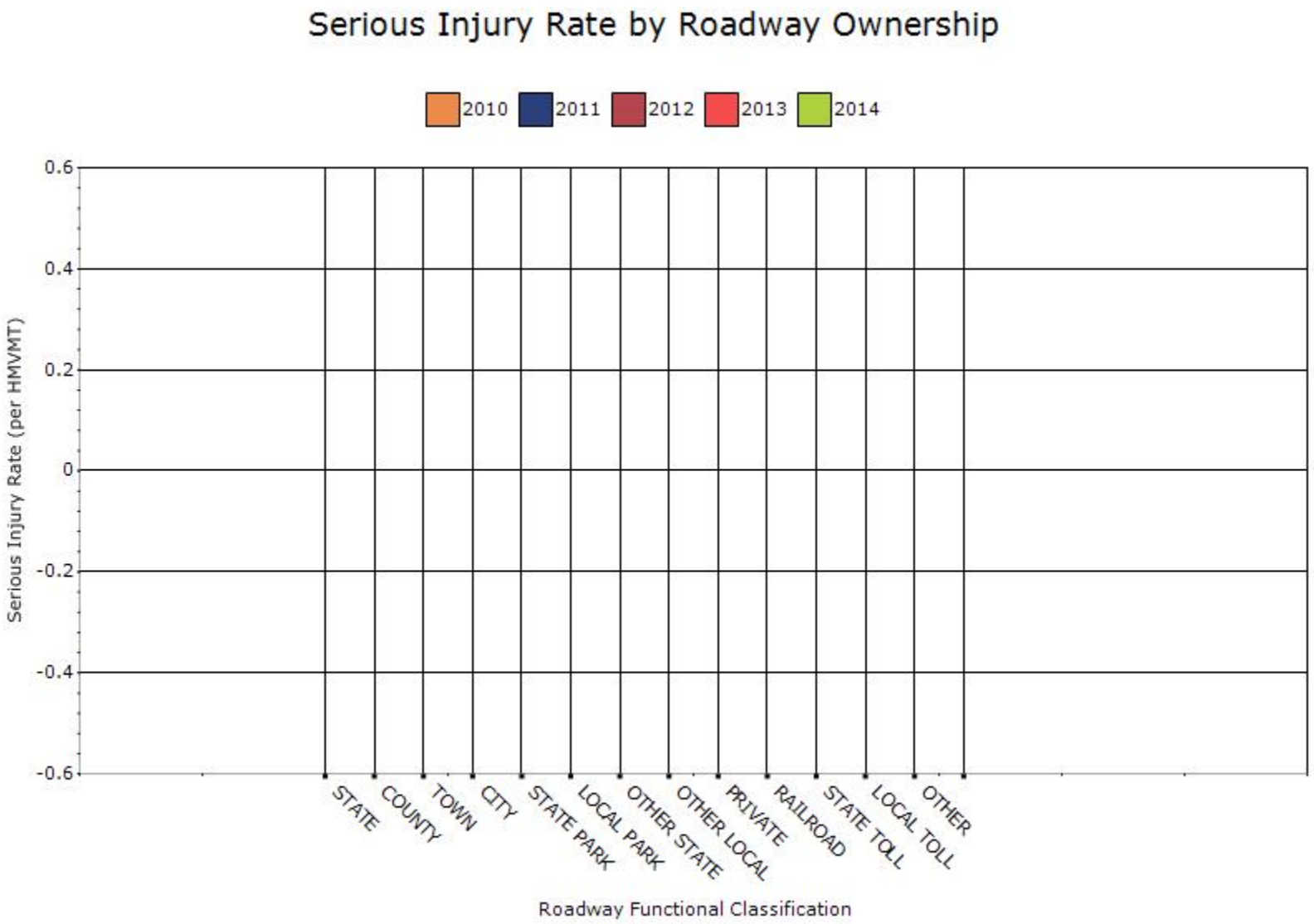
Year - 2013

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	136.6	942.6	0	0
COUNTY HIGHWAY AGENCY	0	0	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	0	0	0	0
CITY OF MUNICIPAL HIGHWAY AGENCY	0	0	0	0
STATE PARK, FOREST, OR RESERVATION AGENCY	0.4	0.8	0	0
LOCAL PARK, FOREST OR RESERVATION AGENCY	0	0	0	0
OTHER STATE AGENCY	7	76.4	0	0
OTHER LOCAL AGENCY	0	0	0	0
PRIVATE (OTHER THAN RAILROAD)	2.8	33	0	0
RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	2.2	14.6	0	0
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0.6	0	0
CITY OR TOWN HIGHWAY AGENCY	191.8	2143.6	0	0


Number of Fatalities by Roadway Ownership
2010
2011
2012
2013
2014
250
200
150
100
50
0
# of Fatalities
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
2010
2011
2012
2013
2014
3000
2500
2000
1500
1000
500
0
# of Serious Injuries
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
2010
2011
2012
2013
2014
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Fatality Rate (per HMVMT)
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
2010
2011
2012
2013
2014
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Serious Injury Rate (per HMVMT)
STATE
COUNTY
TOWN
CITY
STATE PARK
LOCAL PARK
OTHER STATE
OTHER LOCAL
PRIVATE
RAILROAD
STATE TOLL
LOCAL TOLL
OTHER
Roadway Functional Classification

The rates for jurisdiction were not available because VMT per jurisdiction is not calculated or known in MA. The rates for functional classification use the fatality and injury data as well as the VMTs of that particular functional classification. The fatality and serious injury data for jurisdiction came from the Statewide Crash Data System (not FARS). The data included in the tables does NOT include those crashes which were not able to be located or are on a roadway in which there is not a data element (like Federal Park land). The fatality functional classification data came directly from FARS (queried on 7/20/15) although note that the 2013 data are only draft/preliminary.

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

None

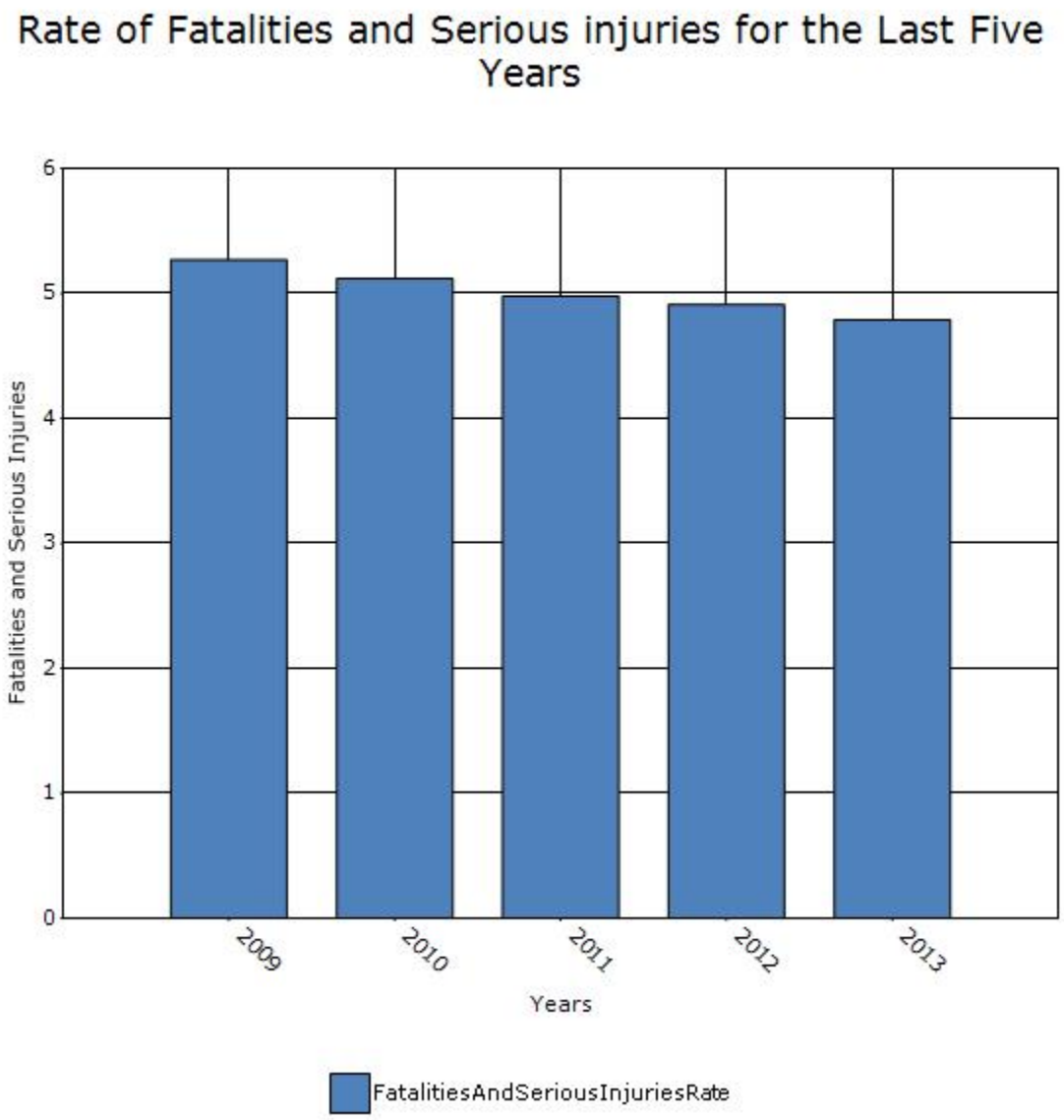
Application of Special Rules

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

Older Driver Performance Measures	2009	2010	2011	2012	2013
Fatality rate (per capita)	0.46	0.43	0.44	0.45	0.44
Serious injury rate (per capita)	4.82	4.69	4.54	4.45	4.34
Fatality and serious injury rate (per capita)	5.27	5.12	4.98	4.91	4.79

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

See attached



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?

☐ None

☐ Benefit/cost

☐ Policy change

☒ Other: Other-We are working with CDC and Public Health to evaluate our Bike / Ped Safety program using DPH's contracted evaluator

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

☐ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☐ Organizational Changes

☐ None

☒ Other: Other-WE can shortly begin to perform evaluations of our HSIP programs

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

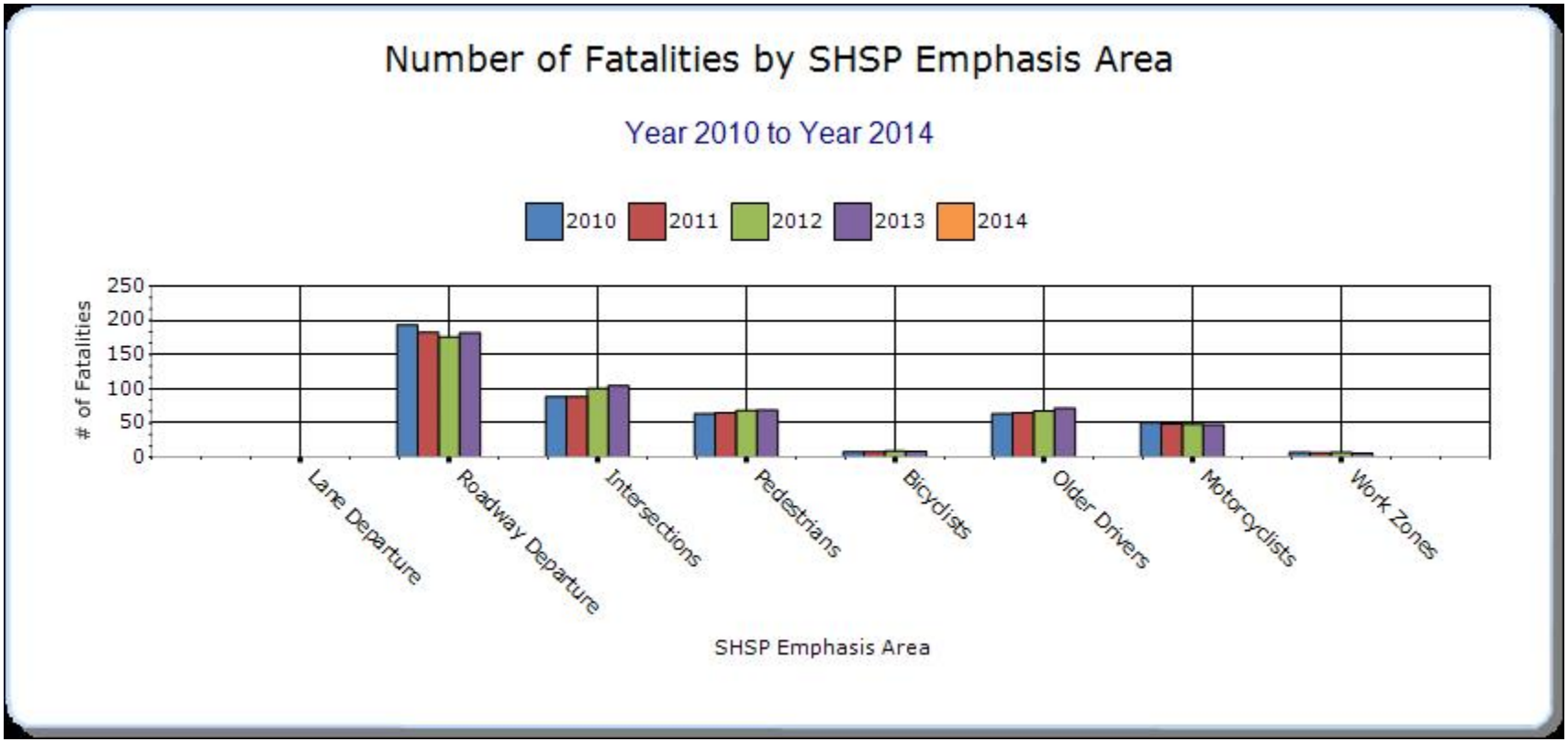
None

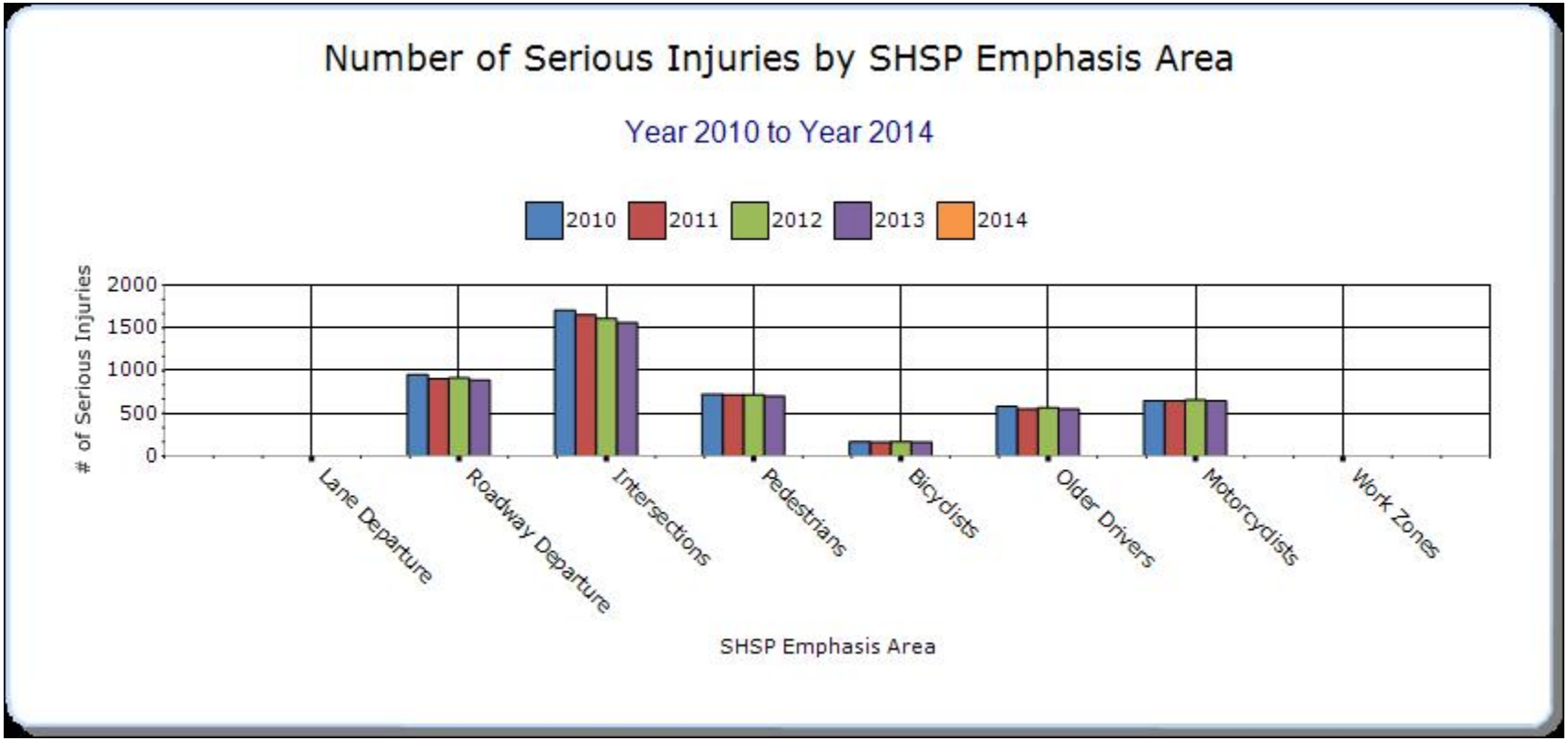
SHSP Emphasis Areas

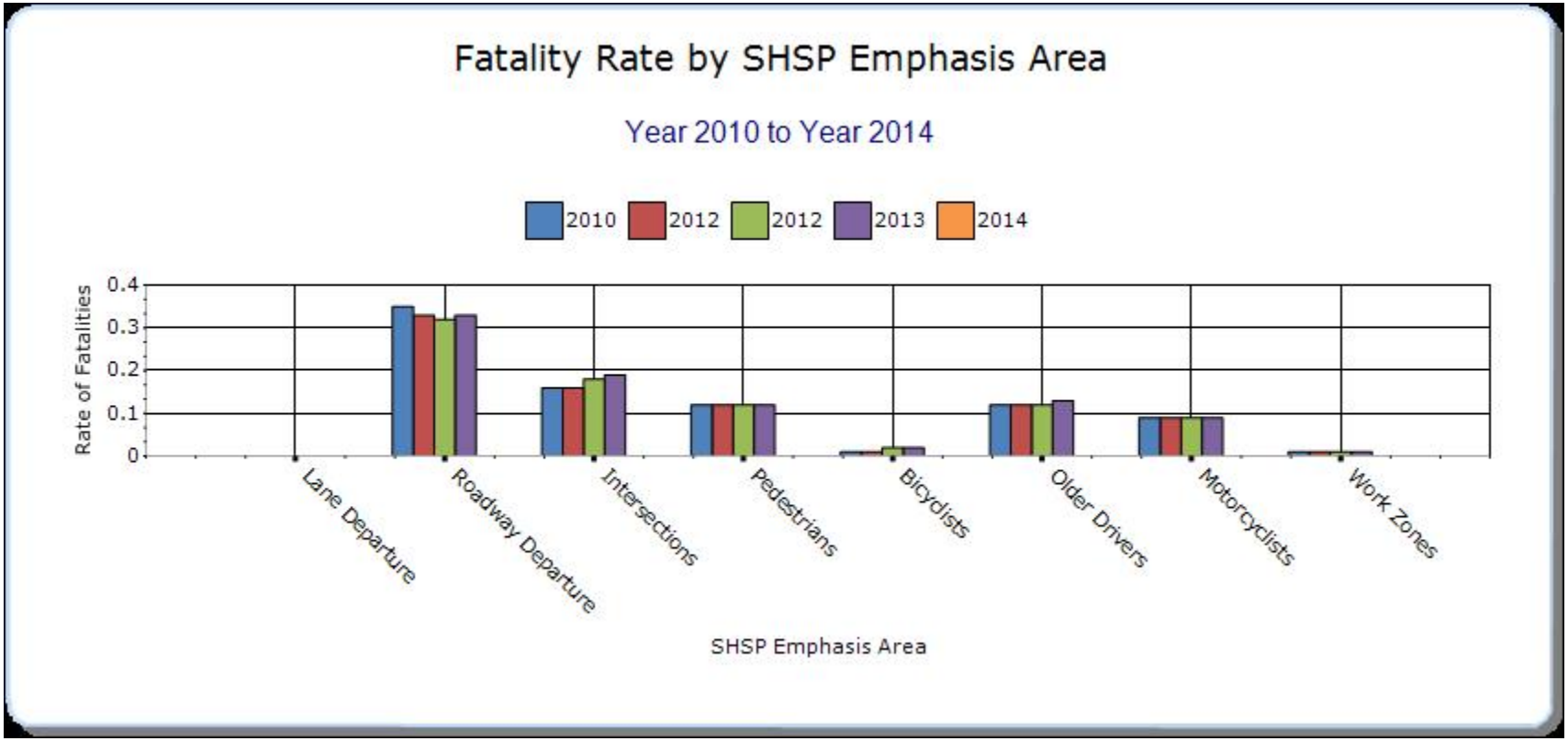
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

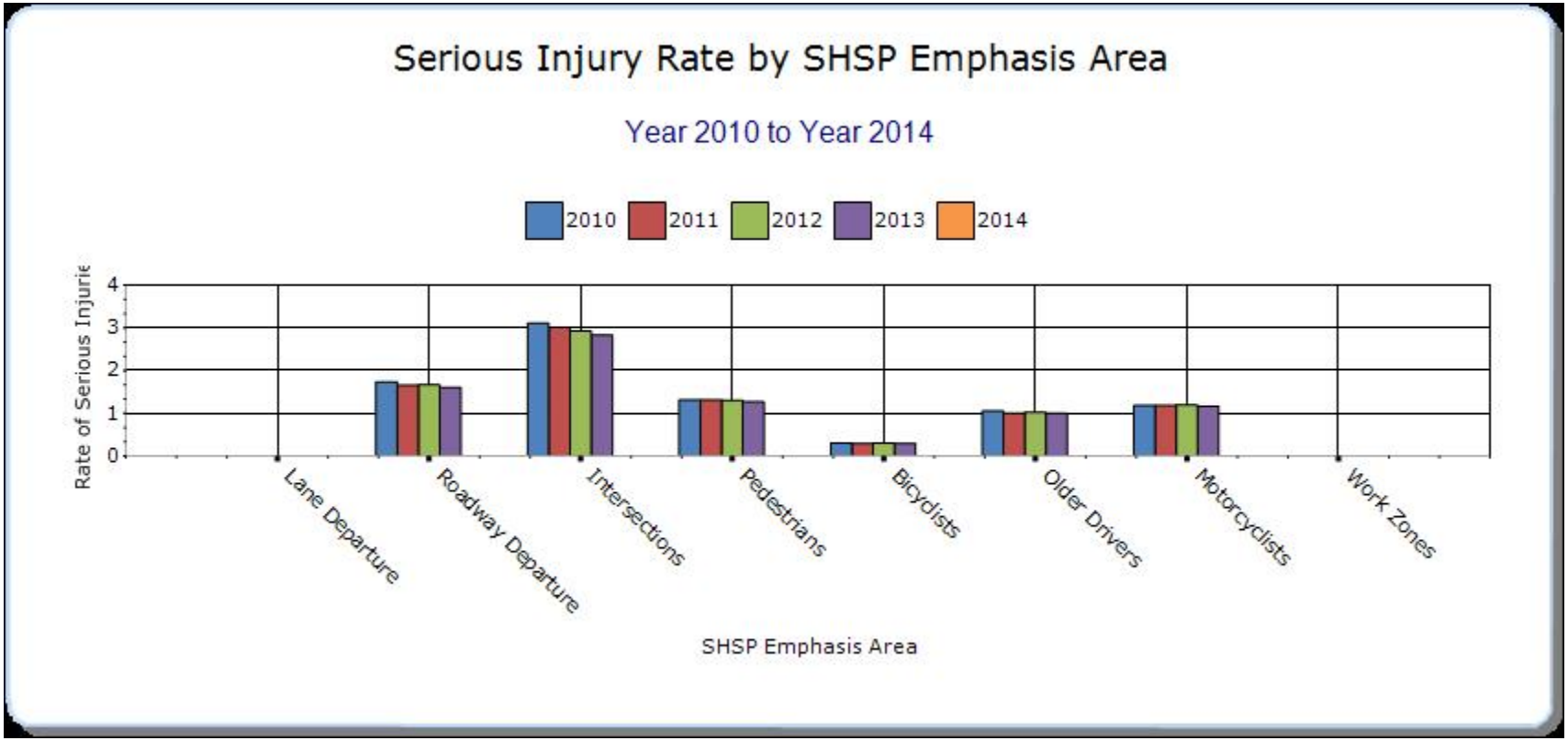
Year - 2013

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		181.8	888.2	0.33	1.61	0	0	0
Intersections		104.4	1560.8	0.19	2.83	0	0	0
Pedestrians		68.8	702	0.12	1.27	0	0	0
Bicyclists		8.4	166.4	0.02	0.3	0	0	0
Older Drivers		71.4	550.8	0.13	1	0	0	0
Motorcyclists		47.6	646	0.09	1.17	0	0	0
Work Zones		6	0	0.01	0	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
250
200
150
100
50
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
2000
1500
1000
500
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.4
0.3
0.2
0.1
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
SHSP Emphasis Area



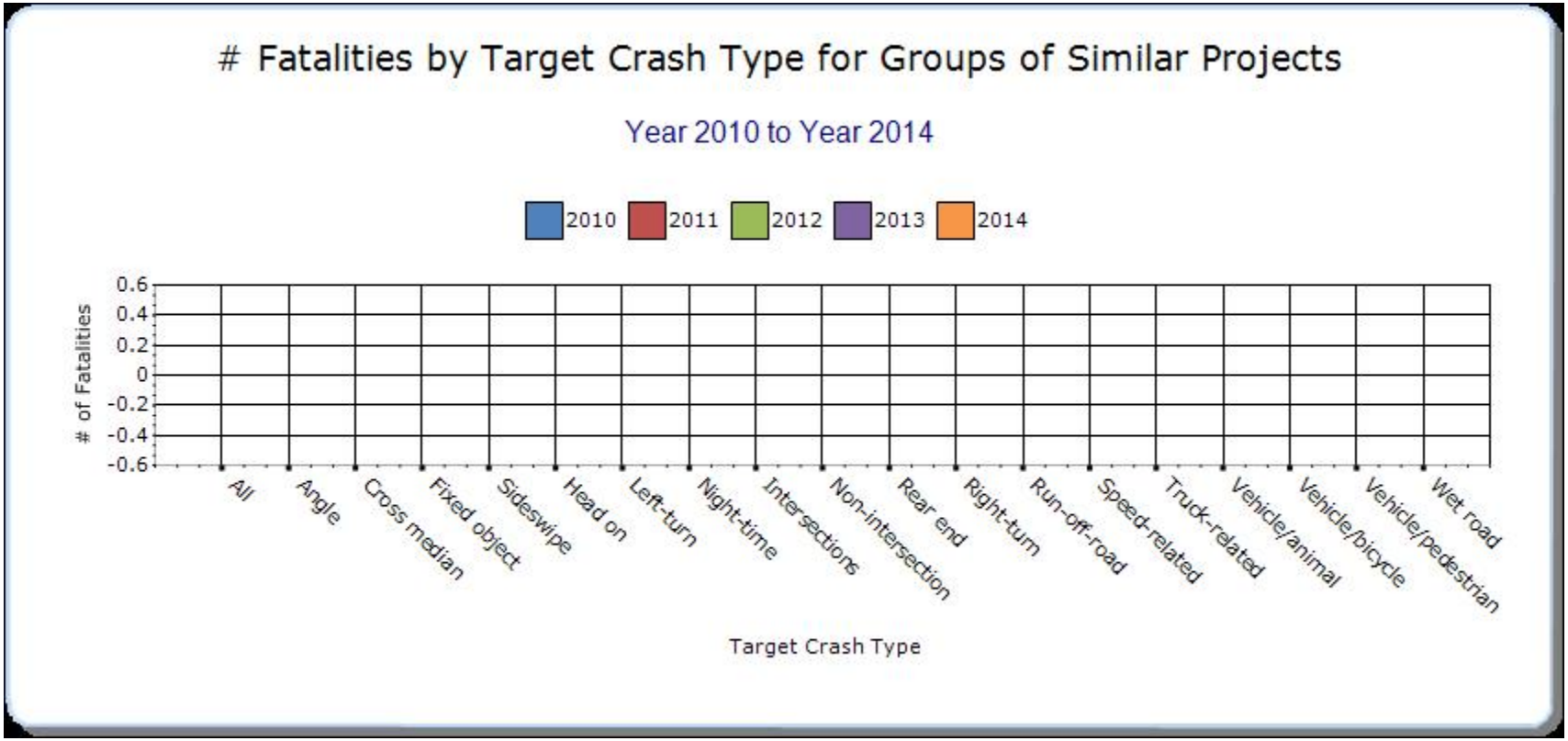
Fatality data comes from FARS website, except for 2013 which comes from a combination of FARS website and MA FARS analyst. Older driver serious injury data comes from Crash Data System. Pedestrian, bicyclist and motorcyclist serious injury comes from Department of Public Health. Serious injury data for work zone crashes was not a reliable field in the State's Crash Data System and is therefore not presented.

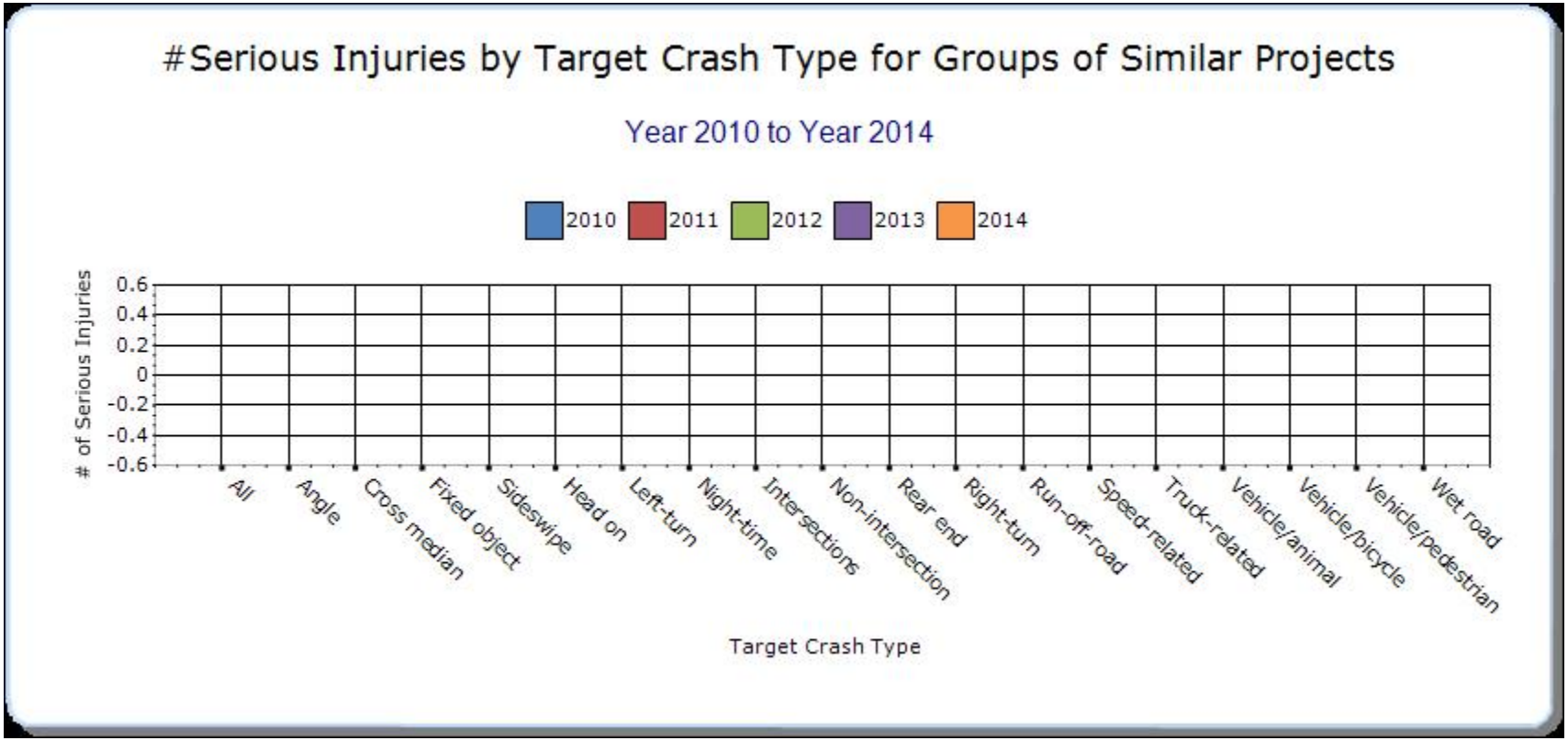
Groups of similar project types

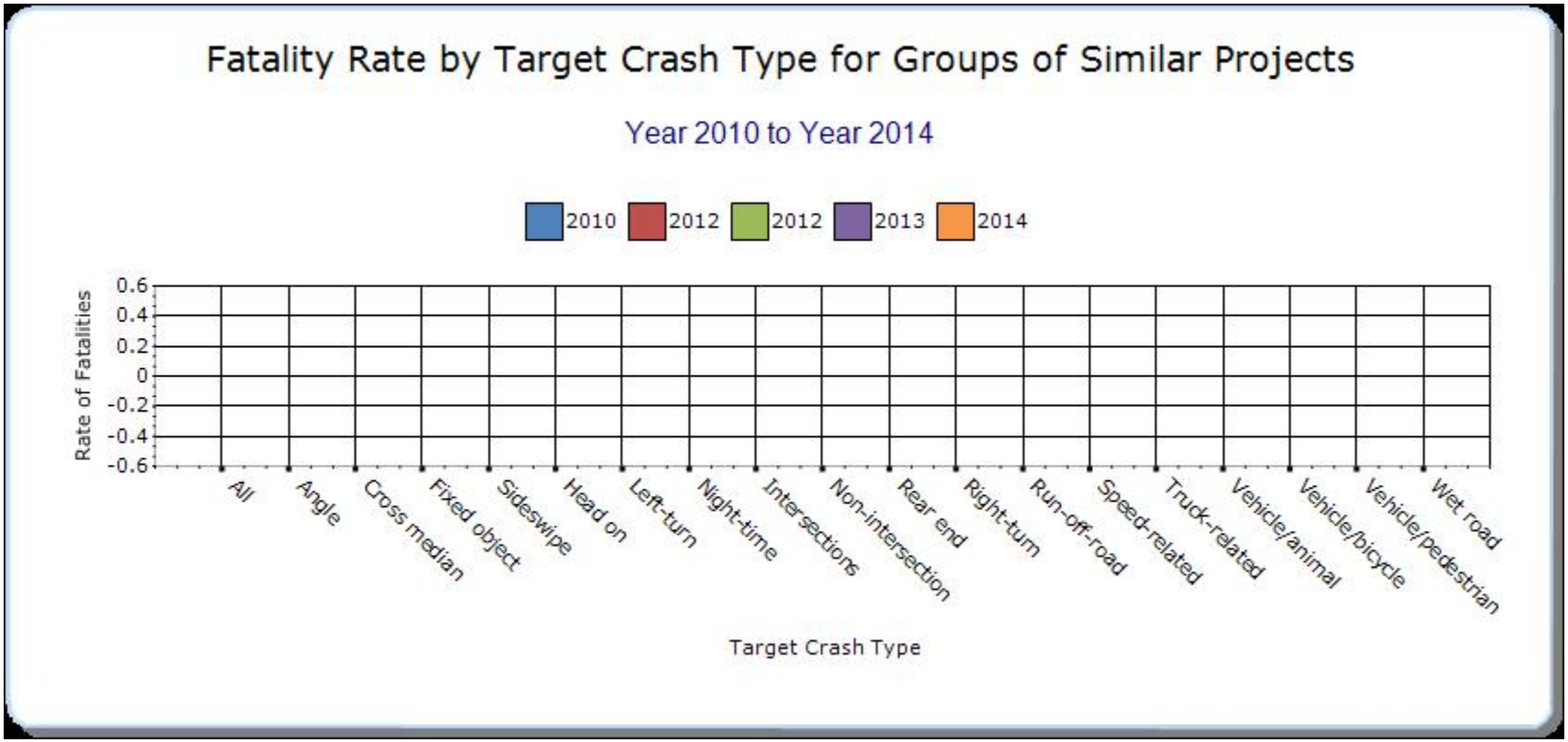
Present the overall effectiveness of groups of similar types of projects.

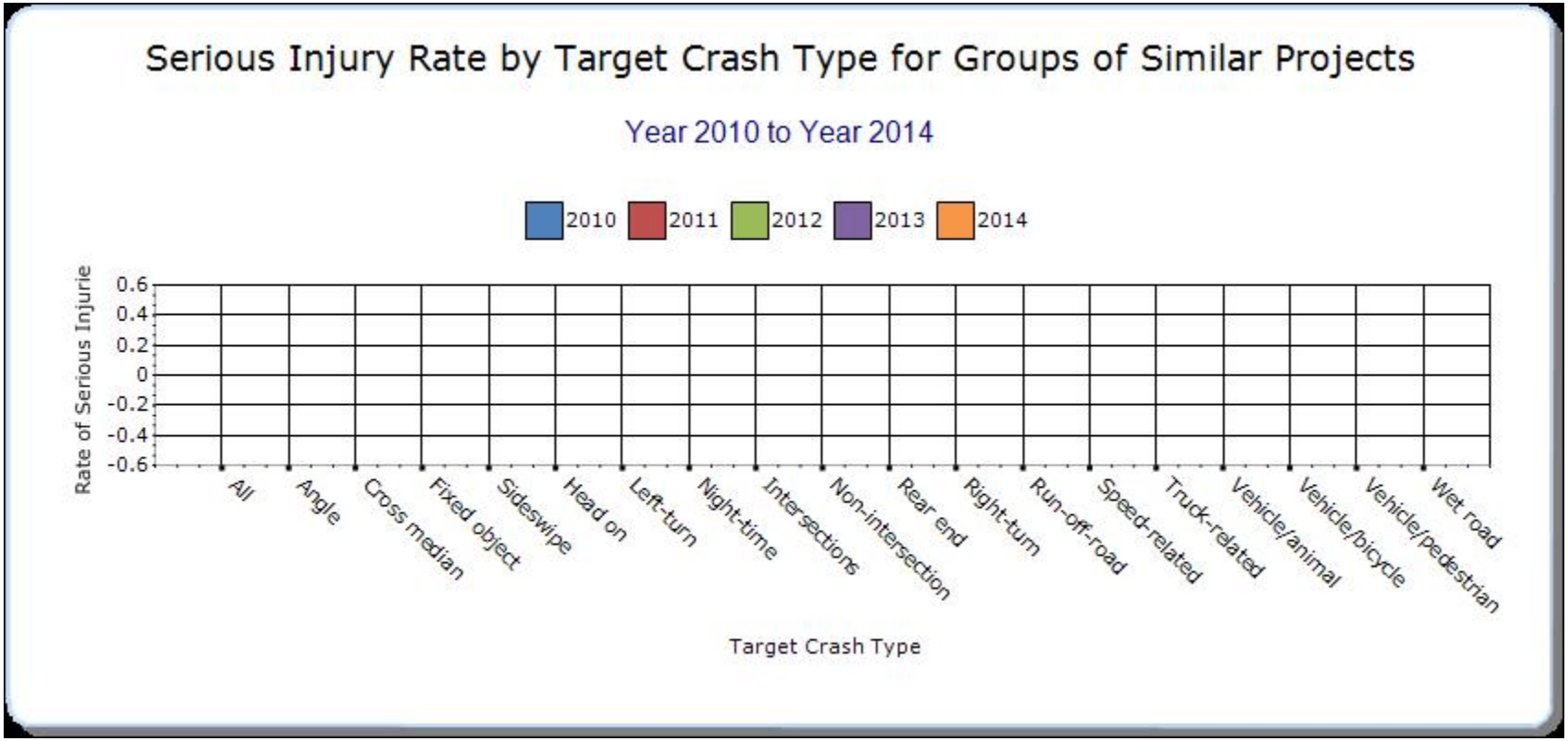
Year - 2013

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
Sign Replacement And Improvement		65.4	311.2	0.12	0.56	0	0	0
Intersection		104.4	1560.8	0.19	2.83	0	0	0
Bicycle Safety		8.4	166.4	0.02	0.3	0	0	0
Pedestrian Safety		68.8	702	0.12	1.27	0	0	0


Fatalities by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


#Serious Injuries by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type



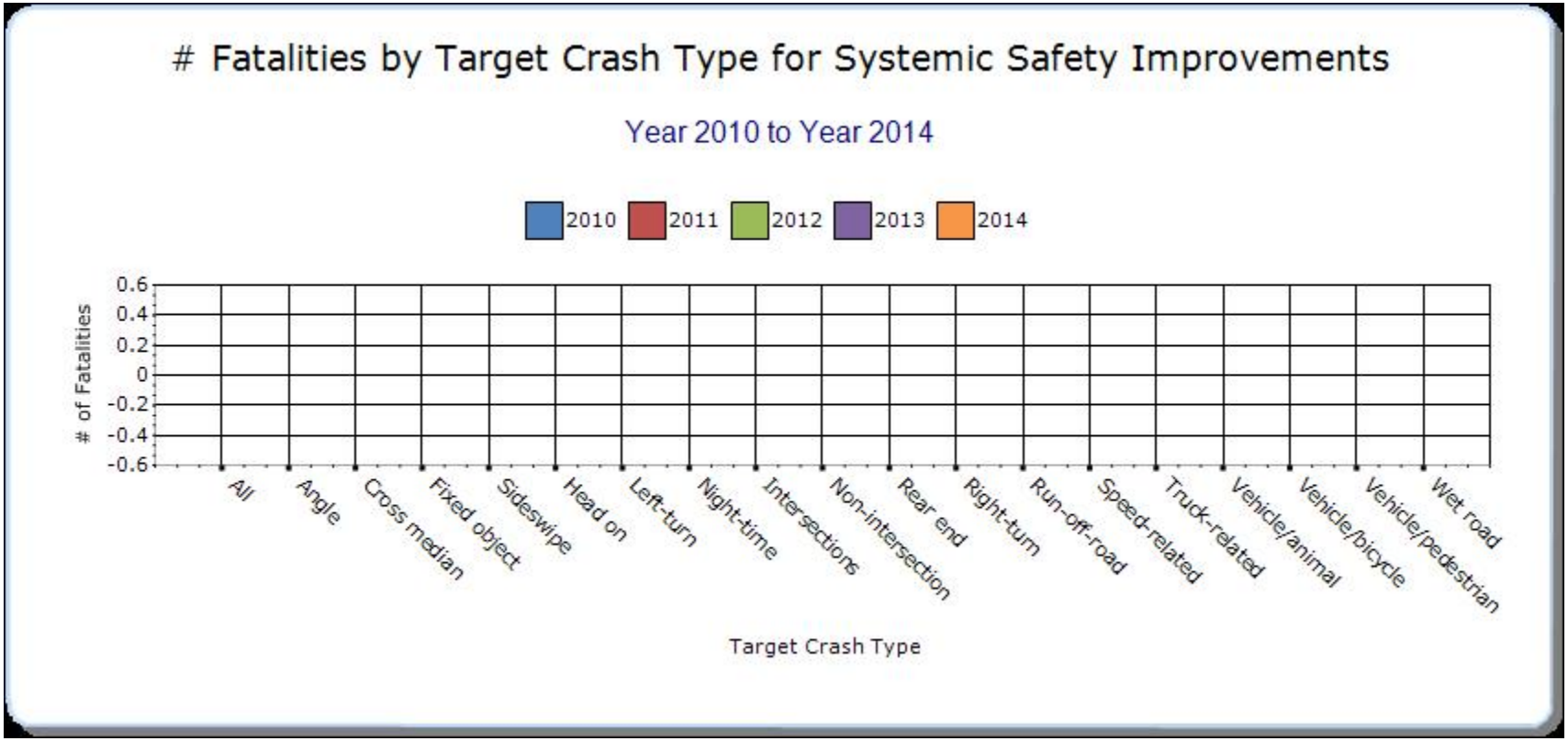
2013 Intersection fatality data is based FARS from the public facing website which is based on preliminary information only and is not the final number.

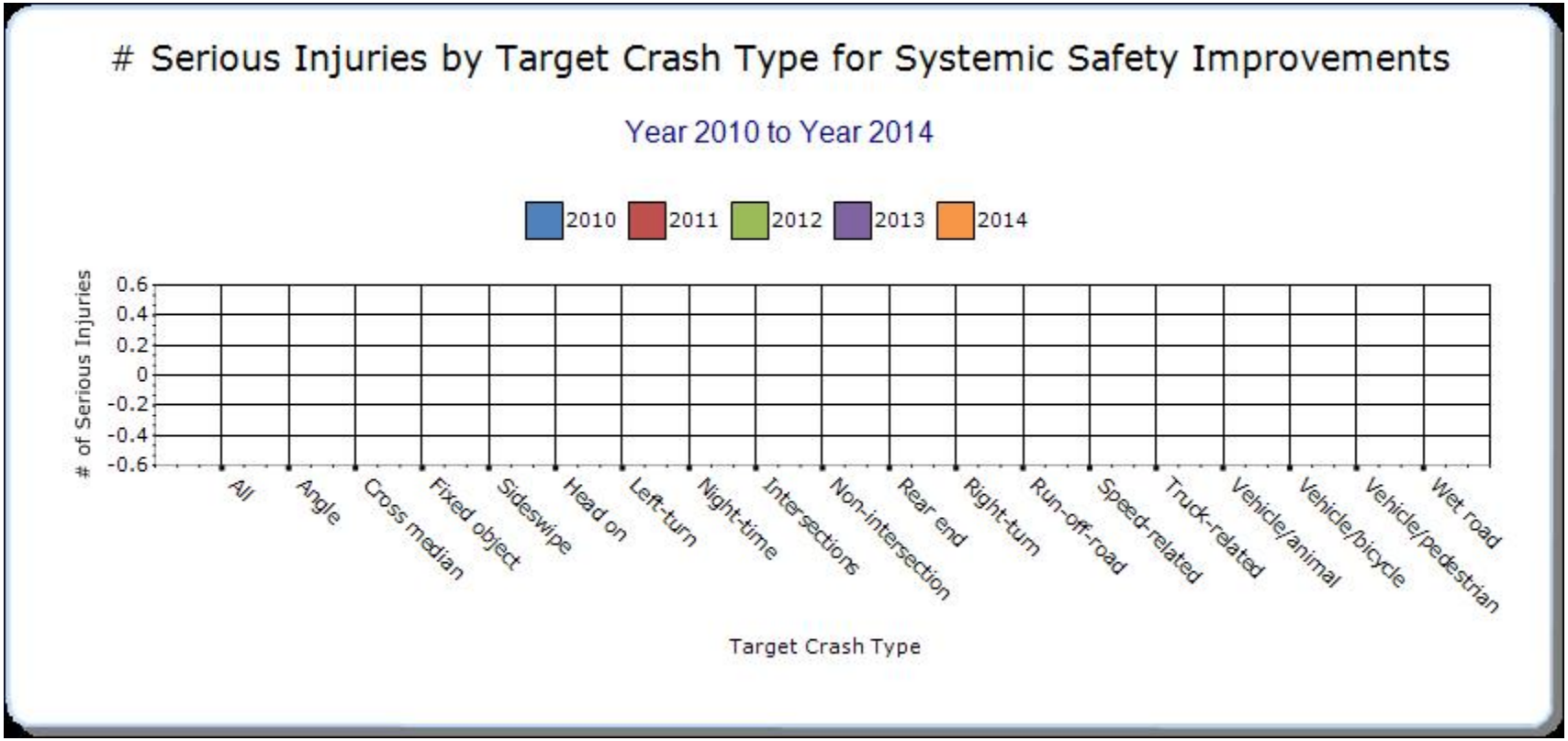
Systemic Treatments

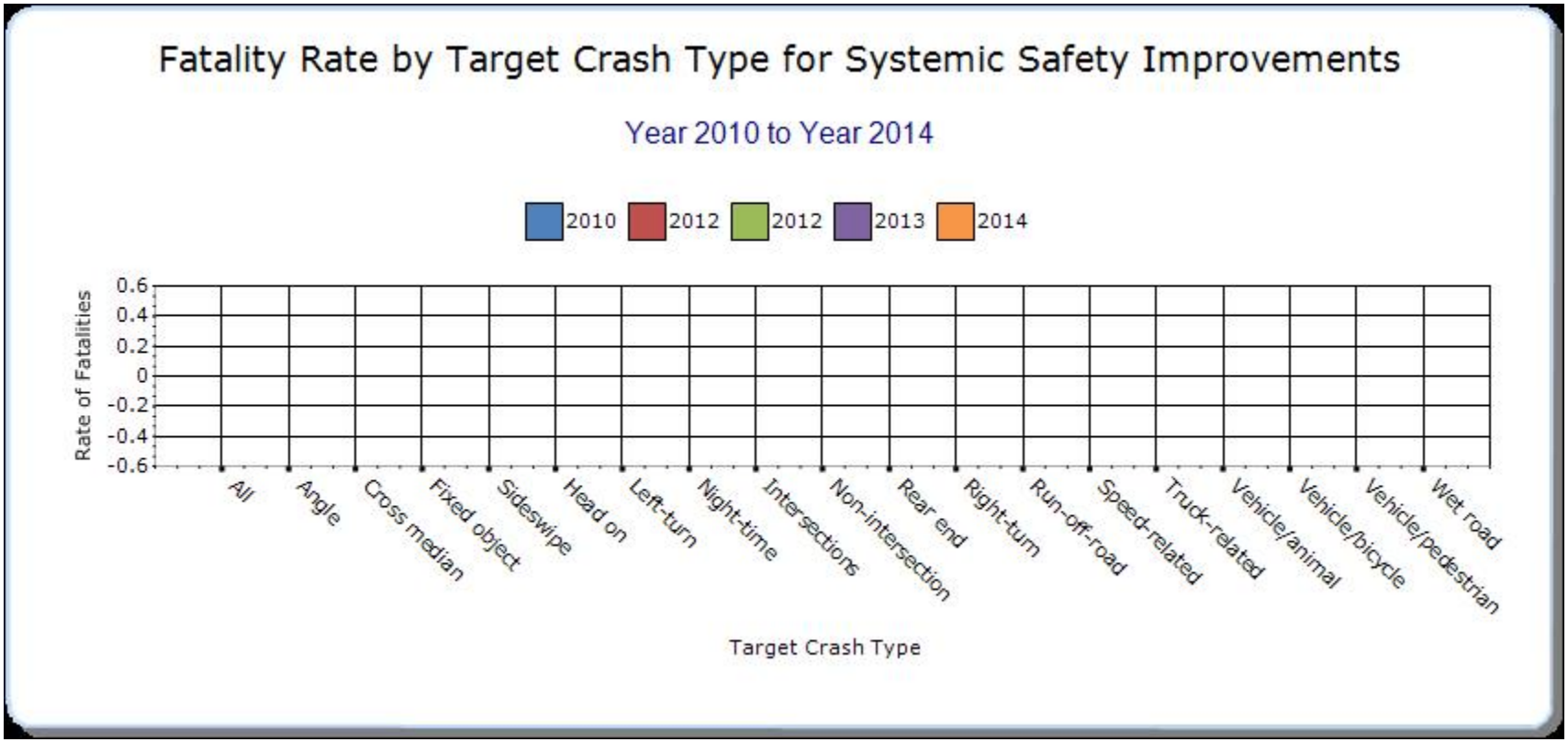
Present the overall effectiveness of systemic treatments.

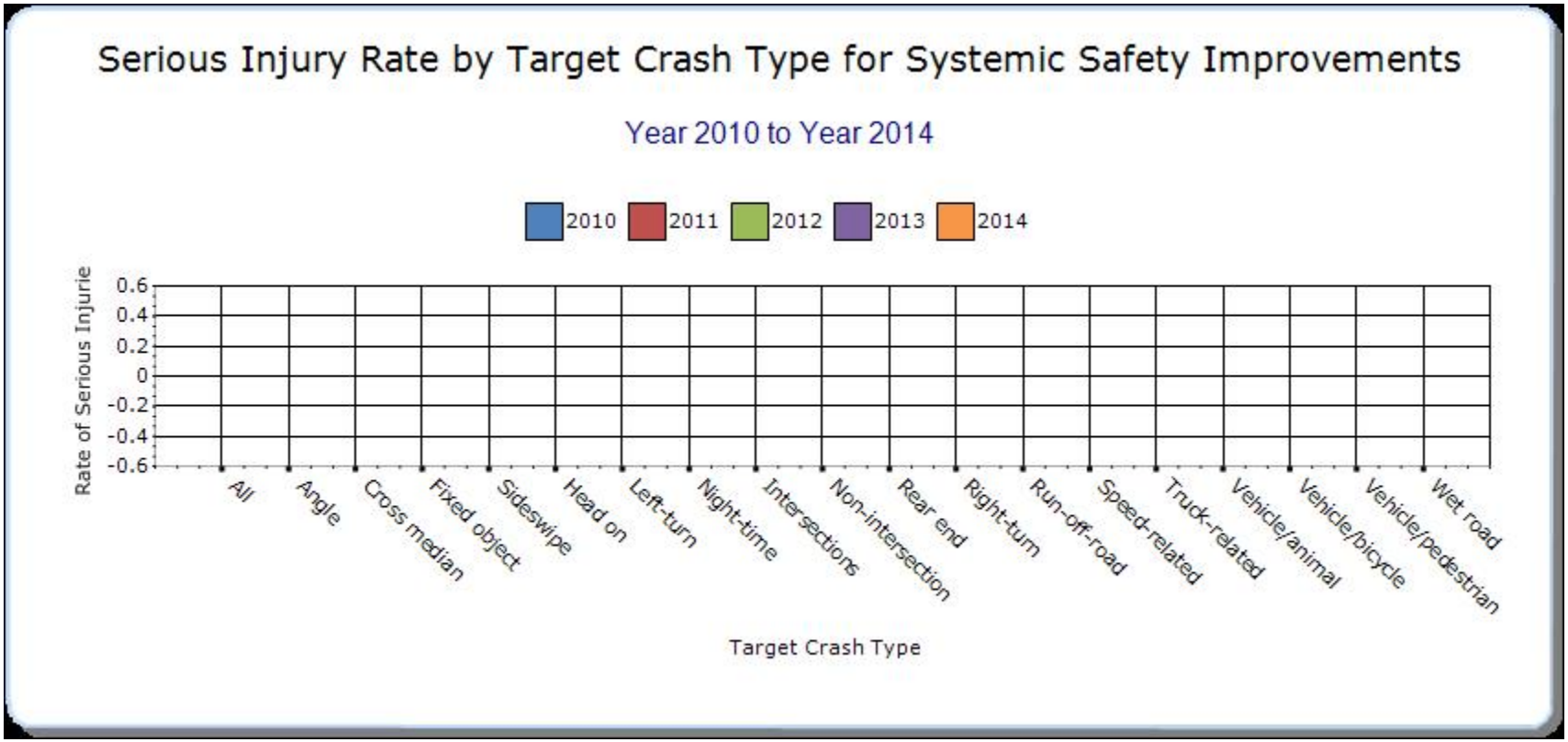
Year - 2013

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
Install/Improve Pavement Marking and/or Delineation		0	0	0	0	0	0	0
Other-bicycle and pedestrian safety		77.6	868.4	0.14	1.57	0	0	0
Install/Improve Signing		65.4	311.2	0.12	0.56	0	0	0


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Fatality Rate by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type


Serious Injury Rate by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
Rate of Serious Injurie
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road
Speed-related
Truck-related
Vehicle/animal
Vehicle/bicycle
Vehicle/pedestrian
Wet road
Target Crash Type

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

As noted earlier, the first HSIP project was obligated in 2009 and completed in 2012. The Registry of Motor Vehicles just closed the 2013 crash file in June 2015. Therefore, in 2017, MassDOT will be able to begin performing an evaluation of the effectiveness of the HSIP hotr spot projects by using 3 years of pre-implementation crash data and comparing to 3 years of post-implementation crash data.

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)

Optional Attachments

Sections	Files Attached
Progress in Achieving Safety Performance Targets: Application of Special Rules	Attachment for Q27.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.

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.