Highway Safety Improvement Program

Data Driven Decisions

Arizona
Highway Safety Improvement Program
2015 Annual Report

Prepared by: AZ

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

This annual report has been prepared by Arizona Department of Transportation (ADOT) Traffic Safety Section (TSS) based on best available data and information collected from various internal and external sources.

Arizona DOT is continuing to make progress in the HSIP implementation on all public roads statewide. ADOT-TSS has been leading the efforts to deliver the HSIP program. ADOT Local Public Agency (LPA) Section tracks local HSIP funded projects and works with stakeholders to ensure successful project delivery. Apart from core HSIP funded projects, High Risk Rural Roads Program (HRRRP) was implemented to the extent projects were eligible and justified. Road Safety Assessment (RSA) program is very well established with several successful RSAs conducted within State, city/town, county and tribal jurisdictions. Many of the safety projects funded through HSIP were developed based on the RSA recommendations.

Arizona SHSP has been updated in October 2014 to reflect MAP-21 requirements and FHWA guidance. The formal kick-off of the SHSP implementation phase began in early 2015. This annual report reflects Arizona 2007 SHSP emphasis areas and performance measures.

NOTE: Data are presented by different reporting periods, e.g. funding data or project listing is given by Federal Fiscal Year whereas annual fatality and serious injury data is by Calendar Year. Several fatality and serious injury tables and charts in the output report are given in 5-year rolling average.

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

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

Eighty percent (80%) of Arizona's HSIP funds are set aside for statewide safety projects and twenty percent (20%) for local governments after 10% Flex funds has been removed per MAP-21. This 80/20 split was adopted to address traffic safety on all public roads with both ADOT and local public agencies (i.e. cities, towns, counties, tribal agencies). This split was re-evaluated as part of the Arizona SHSP update process followed by revision in the Arizona HSIP Manual published in May 2015. As ADOT and local public agencies identify high crash locations using any acceptable screening method and develop safety improvement projects, ADOT reviews them on a statewide basis and prioritize projects for

funding. ADOT LPA, in consultation with MPOs and COGs, provides assistance to local agencies throughout the process of identifying and developing the projects.

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

☐ Design

☐ Planning

☐ Maintenance

☐ Operations

☐ Governors Highway Safety Office

☒ Other: Other-ADOT Traffic Safety Section (TSS) and Local Public Agency Section (LPAS)

☒ Other: Other-Department of Public Safety (State enforcement agency)

Briefly describe coordination with internal partners.

Safety analyses begin with the compilation and correlation of data elements on a statewide system. Coordination takes place within ADOT including the State Engineer's Office, the Director's Office, Project Managers, District Engineers and others involved in safety projects as well as the Department of Public Safety (State enforcement agency). Once the project is identified, depending on the nature of the project, justification of HSIP funding through evaluation and formal eligibility process is established by ADOT and FHWA Arizona Division Office.

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

☒ Metropolitan Planning Organizations

☐ Governors Highway Safety Office

☐ Local Government Association

☒ Other: Other-Council of Governments

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

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: Other-RSA	☒ Other: Other-Tree Removal	

Program: **Roadway Departure**

Date of Program Methodology: **6/29/2012**

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

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

If no, describe the methodology used to identify local road projects as part of this program.

Local public agencies develop systemic safety projects - (1) shoulder/edge line rumble strips and (2) delineation - based on pavement condition, proximity to urban areas and bicycle community input.

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-Based on B/C Ratio and systemic projects based on crash type.

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 2

☒ Available funding 1

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Shoulder Improvement**

Date of Program Methodology: **4/30/2010**

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

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

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-Based on B/C Ratio and systemic projects based on crash type.

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 2

☒ Available funding 1

☐ Incremental B/C

☐ Ranking based on net benefit

☐ Other

Program: **Other-RSA**

Date of Program Methodology: **1/10/2006**

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

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-Based on B/C Ratio and systemic projects based on crash type.

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 2
- ☒ Available funding 1
- ☐ Incremental B/C
- ☐ Ranking based on net benefit
- ☐ Other

Program: **Other-Tree Removal**

Date of Program Methodology: **6/15/2010**

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

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

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-Based on B/C Ratio and systemic projects based on crash type.

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 2
- ☒ Available funding 1
- ☐ Incremental B/C
- ☐ Ranking based on net benefit
- ☐ Other

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

13

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

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-None

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)	42000000	100 %	66448895.37	86 %
HRRRP (SAFETEA-LU)	0	0 %	938470	1 %
HRRR Special Rule				
Penalty Transfer - Section 154				
Penalty Transfer – Section 164				
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds	0	0 %	9927595.23	13 %

Totals	42000000	100%	77314960.6	100%

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

$5,900,000.00

How much funding is obligated to local safety projects?

$22,893,406.00

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

$0.00

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

$2,583,231.00

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.

None to report.

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

None.

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
I-10, US-191 to East Wilcox Traffic Interchange (MP 333 - 344.90) -- Pavement Preservation]	Shoulder treatments Widen shoulder - paved or other	11.9 Miles	943400	1000000	HSIP (Section 148)	Rural Principal Arterial - Interstate	10472	75	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
I-40/US 93 West Kingman TI--SPOT SAFETY IMPROVEMENTS	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	200859	213000	HSIP (Section 148)	Urban Principal Arterial - Interstate	33120	75	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
I-40;WALNUT CANYON (MP 204) to TWIN ARROWS	Roadway delineation Longitudin	14 Miles	1470425	1470425	HSIP (Sectio	Rural Principal Arterial -	17533	75	State Highway	Roadway/Roadside (lane departure	Minimizing the consequen

(MP218) E/O FLAGSTAFF--PAVEMENT PRESERVATION	al pavement markings - new				n 148)	Interstate			Agency	and intersections)	ces of leaving the road
US60;Oak Flat(MP229.4)-Miami (MP 242.4),East of Superior- WB PASSING LANE	Shoulder treatments Widen shoulder - paved or other	13 Miles	708209	2236936	HSIP (Section 148)	Rural Principal Arterial - Interstate	7335	55	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
US 70 and Bylas-Design Intersection Improvement	Intersection geometry Intersection geometry - other	1 Numbers	220662	234000	HSIP (Section 148)	Rural Minor Arterial	3383	50	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SR79 at SR79B Roundabout	Intersection geometry Intersection geometry - other	1 Numbers	660100	700000	HSIP (Section 148)	Rural Minor Arterial	2354	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve

											geometric configuration
SR 87; MP 226 to MP 229.4 (Slate Creek Canyon)--Horizontal Curve Improvement & Truck Escape Ramp	Alignment Horizontal curve realignment	3.4 Miles	9021800	9567127	HSIP (Section 148)	Rural Minor Arterial	7335	55	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
SR88/ Superstition Blvd Roundabout	Intersection geometry Intersection geometry - other	1 Numbers	154000	154000	HSIP (Section 148)	Rural Minor Arterial	4332	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SR-89 @ ROAD FOUR NORTH north of CHINO VALLEY - new roundabout	Intersection geometry Intersection geometry - other	1 Numbers	4046576	4046576	HSIP (Section 148)	Rural Minor Arterial	11035	55	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric

											configuration
SR92; Giulio Cesare Ave (MP 321.5 - 322.5)in Sierra Vista--Roadway Lighting, Pedestrian Hybrid Beacon, and Shared Use Pathway	Lighting Lighting - other	1 Miles	2146712	2194972	HSIP (Section 148)	Urban Principal Arterial - Other	25440	45	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
US 93; South of SR 71 (MP 185.3) to North of SR 89 (MP 190.5) north of Wickenburg - Roadway Widening from 2 lanes to 4 lanes	Roadway Roadway widening - add lane(s) along segment	5.2 Miles	22629221	23997052	HSIP (Section 148)	Rural Principal Arterial - Other	9316	65	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
US 93 Willow Beach to White Hills Road	Shoulder treatments Widen shoulder - paved or other	41 Miles	301760	320000	HSIP (Section 148)	Rural Principal Arterial - Other	12399	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
SR 95 and Mohave	Intersection geometry	1 Numb	130000	13000	HSIP (Sectio	Urban Principal	745	35	State Highwa	Roadway/Roadside (lane	Reduce the number of

Rd	Intersection geometry - other	ers		0	n 148)	Arterial - Other	3		y Agency	departure and intersections)	intersection related fatalities through improve geometric configuration
SR-264;Cross Canyon(MP459)to Summit(MP 465.5)W of WINDOW ROCK-PE for adding Safety Shoulder Widening and rumble strips to Project	Shoulder treatments Widen shoulder - paved or other	6.5 Miles	4670050	4952333	HSIP (Section 148)	Rural Minor Arterial	5094	65	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
I-17;FROM MP 305 - 311.6 AND I-40; FROM MP 217.90-221--INLAID PAVEMENT MARKINGS	Roadway delineation Improve retroreflectivity	6.6 Miles	1627715	1627715	HSIP (Section 148)	Rural Principal Arterial - Interstate	15462	75	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
Statewide Strategic Highway Safety Plan	Non-infrastructure Transportation safety	1 Numbers	86756	92000	HSIP (Section 148)	Various locations	0	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through

	planning										improve geometric configuration
HS020 Statewide RSA Road Safety Plan	Miscellaneous	1 Numbers	277242	294000	HSIP (Section 148)	Various locations	0	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
AZ Strategic Highway Safety Implementation Plan 2014	Non-infrastructure Transportation safety planning	1 Numbers	943000	1000000	HSIP (Section 148)	Various locations	0	0	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
HX242 SR 69, 281.05 TO 292.12 MODIFY SIGNALS MODIFY	Intersection traffic control	4 Numbers	16419	16419	HSIP (Section 148)	Urban Principal Arterial -	35818	55	State Highway	Roadway/Roadside (lane departure	Reduce the number of intersectio

SIGNALS	Modify traffic signal timing - left-turn phasing (permissive to protected-only)					Other			Agency	and intersections)	n related fatalities through improve geometric configuration
HX253 SR69 KACHINA PLACE TO HEATHER HEIGHTS	Intersection traffic control Modify traffic signal timing - left-turn phasing (permissive to protected-only)	4 Numbers	45000	45000	HSIP (Section 148)	Urban Principal Arterial - Other	37125	55	State Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
M5149 Walnut Canyon to Twin Arrows	Non-infrastructure Data/traffic	1 Numbers	130000	130000	HSIP (Section 148)	Various locations	0	0	State Highway Agency	Data Improvement	Creating more effective processes and safety

	records										management system
M5125 MARICOPA COUNTY AREA--ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	78835	83000	HSIP (Section 148)	Various locations	0	0	County Highway Agency	Data Improvement	Creating more effective processes and safety management system
M5121 Tucson ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	47150	50000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
M5124 Chandler ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	47150	50000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
M5128 City of Peoria ESTABLISH ELECTRONIC CRASH	Non-infrastructure Data/traffic	1 Numbers	47150	50000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highwa	Data Improvement	Creating more effective processes

DATA RECORDING	records								y Agency		and safety manageme nt system
M5117 City of Mesa ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	47150	50000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety manageme nt system
M5145 City of Buckeye ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	23575	25000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety manageme nt system
M5146 City of Thatcher ESTABLISH ELECTRONIC CRASH DATA RECORDING	Non-infrastructure Data/traffic records	1 Numbers	23575	25000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety manageme nt system
M5147 Town of Payson ESTABLISH ELECTRONIC CRASH	Non-infrastructure	1 Numb	23575	25000	HSIP (Sectio	Various locations	0	0	Town or Townsh	Data Improvement	Creating more effective

DATA RECORDING	Data/traffic records	ers			n 148)				ip Highway Agency		processes and safety management system
CAG Safety Plan	Non-infrastructure Data/traffic records	1 Numbers	178425.37	188595.6	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
Sun Corridor Safety Plan	Non-infrastructure Data/traffic records	1 Numbers	314393	324001	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
YMPO Safety Plan	Non-infrastructure Data/traffic records	1 Numbers	300000	318134	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
SH474 Dewey Humbold Various	Roadway signs and	748 Numb	15000	15000	HSIP (Sectio	Various	0	0	City of Municip	Roadway/Roadside (lane	Reduce the number of

locations	traffic control Sign sheeting - upgrade or replacement	ers			n 148)	locations			al Highway Agency	departure and intersections)	intersection related fatalities through improve geometric configuration
SH476 CYMPO Various locations	Roadway signs and traffic control Sign sheeting - upgrade or replacement	4169 Numbers	12151	12151	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SH494 City of Globe Various locations	Roadway signs and traffic control Sign sheeting - upgrade or replacement	200 Numbers	4000	4000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configurati

											on
SH497 City of Coolidge	Roadway signs and traffic control Sign sheeting - upgrade or replacement	1650 Numbers	20000	20000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SH501 City of Peoria	Intersection traffic control Modify traffic signal - replace existing indications (incandescent-to-LED and/or 8-to-12 inch dia.)	104 Numbers	16000	16000	HSIP (Section 148)	Urban Major Collector	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SH547 City of Chandler, Sign	Roadway signs and	2260 Numb	39286	39286	HSIP (Sectio	Various locations	0	0	City of Municip	Roadway/Roadside (lane	Reduce the number of

upgrade	traffic control Sign sheeting - upgrade or replacement	ers			n 148)				al Highway Agency	departure and intersections)	intersection related fatalities through improve geometric configuration
SH571 GRAHAM City Reay Lane Ditch	Roadway Roadway - other	1 Numbers	54000	57264	HSIP (Section 148)	Rural Minor Collector	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SH590 County Rte 1/Golden Shore Intersection	Intersection geometry Intersection geometry - other	1 Numbers	827841	827841	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configurati

											on
SH594 City of Tempe - Emergency Preemption Cards/Tester	Roadway signs and traffic control Sign sheeting - upgrade or replacement	20 Numbers	38000	38000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SH616 Globe Sign and Pavement Markings Inventory	Intersection geometry Intersection geometry - other	1 Numbers	181115	181115	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
SS914 Alma School Rd and Chandler Blvd Intersection	Intersection geometry Intersection geometry - other	1 Numbers	1184190	1184190	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through

											improve geometric configuration
VARIOUS LOCATIONS IN APACHE COUNTY--PAVEMENT MARKING UPGRADE	Roadway delineation Longitudinal pavement markings - new	27 Miles	34000	34000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
SR88; IDAHO ROAD AT OLD WEST HWY, (APACHE JUNCTION)--MEDIAN & Intersection Improvement	Intersection geometry Intersection geometry - other	1 Numbers	462415	504434	HSIP (Section 148)	Urban Principal Arterial - Other	0	35	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
VARIOUS LOCATIONS IN THE CITY OF AVONDALE--SIGN INVENTORY MANAGEMENT SYSTEM -Sign Panel Replacement Phase	Roadway signs and traffic control Sign sheeting -	4734 Numbers	115000	115000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Improve retroreflectivity and visibility

2 of 4	upgrade or replacement										
CITY OF AVONDALE--CRASH MAGIC ONLINE SOFTWARE	Non-infrastructure Data/traffic records	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
VARIOUS LOCATIONS IN THE CITY OF AVONDALE--PEDESTRIAN SIGNALS	Pedestrians and bicyclists Pedestrian signal	388 Numbers	90000	90000	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Making walking and street crossing easier
City of Buckeye; Various Locations Sign Inventory Management System	Roadway signs and traffic control Sign sheeting - upgrade or replacement	2490 Numbers	220500	220500	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
CITY OF BULLHEAD CITY-BULLHEAD	Intersection geometry	3 Numb	558609	59237	HSIP (Sectio	Urban Principal	0	0	City of Municip	Roadway/Roadside (lane	Making walking

PKWY/SILVER CREEK RD, BULLHEAD PKWY/ ADOBE RD, MIRACLE MILE/ MOVAVE DR-INTERSECTION IMPROVEMENTS	Intersection geometry - other	ers		5	n 148)	Arterial - Other			al Highway Agency	departure and intersections)	and street crossing easier
Leupp Rd: Townsend-Winona Rd to the Navajo Reservation Boundary Near Flagstaff--Pavement marking, guardrail, rumble strips	Roadway Roadway - other	15 Miles	938470	939799	HRRRP (SAFETEA-LU)	Rural Minor Collector	0	0	Indian Tribe Nation	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
COCONINO COUNTY-STREET NAME SIGN UPGRADE	Roadway signs and traffic control Sign sheeting - upgrade or replacement	940 Numbers	64803	64803	HSIP (Section 148)	Various locations	0	0	County Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
COCONINO COUNTY; VARIOUS LOCATIONS--	Roadway signs and traffic	940 Numb	60000	60000	HSIP (Sectio	Various locations	0	0	County Highway	Roadway/Roadside (lane departure	Reduce the number of intersectio

COUNTY-WIDE SIGN REPLACEMENT PROJECT	control Sign sheeting - upgrade or replacement	ers			n 148)				Agency	and intersections)	n related fatalities through improve geometric configuration
Ocotillo Rd;Arizona Ave-Mcqueen Rd, in Chandler--Utility Relocation Intersection Safety Improvements(Rd Widening)	Intersection geometry Intersection geometry - other	1 Numbers	3973634	9433897	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF CHANDLER--PE FOR CRASH MAGIC ONLINE SOFTWARE	Non-infrastructure Data/traffic records	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
THE TOWN OF CLIFTON; VARIOUS LOCATIONS--TOWN-	Roadway signs and traffic	377 Numbers	10000	10000	HSIP (Section 148)	Various locations	0	0	Town or Townsh	Roadway/Roadside (lane departure	Improve retroreflectivity and

WIDE SIGN REPLACEMENT PROJECT	control Sign sheeting - upgrade or replacement								ip Highway Agency	and intersections)	visibility
CITY OF COOLIDGE--PAVEMENT STRIPING AND MARKINGS	Roadway delineation Improve retroreflectivity	73 Miles	245075	245075	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Improve retroreflectivity and visibility
Various Locations:(Chino Val,Dewey-Humboldt,Prescott Valley,Yavapai County)--Regional Sign and Post Replacement	Roadway signs and traffic control Roadway signs (including post) - new or updated	4587 Numbers	1166665	116665	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Improve retroreflectivity and visibility
VARIOUS LOCATIONS IN THE CITY OF ELOY--SIGN UPGRADE	Roadway signs and traffic control Sign sheeting -	797 Numbers	61860	61860	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Improve retroreflectivity and visibility

	upgrade or replacement										
BEULAH BLVD FROM WOODLANDS VILLAGE BLVD TO MCCONNEL DR IN CITY OF FLAGSTAFF--BIKE LANES	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.23 Miles	302118	320381	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF FLAGSTAFF(VARIOUS LOCATIONS)--Sign Improvements	Roadway signs and traffic control Sign sheeting - upgrade or replacement	5759 Numbers	300000	300000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
TOWN OF FOUNTAIN HILLS--CRASH MAGIC ONLINE SOFTWARE	Non-infrastructure Data/traffic	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	Town or Township	Data Improvement	Creating more effective processes

	records								Highway Agency		and safety management system
CITY OF GOODYEAR-SIGN INVENTORY MANAGEMENT SYSTEM	Roadway signs and traffic control Sign sheeting - upgrade or replacement	1000 Numbers	180000	180000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF GLENDALE; VARIOUS LOCATION--SIGN INVENTORY MANAGEMENT SYSTEM	Roadway signs and traffic control Sign sheeting - upgrade or replacement	1000 Numbers	245000	245000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
INTERSECTION AT 59TH & OLIVE AVENUES IN THE CITY OF GLENDALE--	Intersection geometry Intersection geometry	1 Numbers	309332	331360	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highwa	Roadway/Roadside (lane departure and	Reduce the number of intersection related

INTERSECTION IMPROVEMENTS	- other								y Agency	intersections)	fatalities through improve geometric configuration
CITY OF KINGMAN-PROCUREMENT OF SIGN INVENTORY SOFTWARE, TRAINING, MAINTENANCE, SIGNS AND REFLECTOMETER	Roadway signs and traffic control Sign sheeting - upgrade or replacement	300 Numbers	90000	90000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
INTERSECTION @BEVERLY AVE & HARRISON ST;INTERSECTION@ AIRWAY AVE &HARRISON ST(CITY OF KINGMAN)	Intersection geometry Intersection geometry - other	1 Numbers	30000	30000	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
Litchfield Park,	Roadway	1	205000	20500	HSIP	Various	0	0	City of	Roadway/Roa	Reduce the

Various Locations-Sign Managmenet Inventory System & Sign Upgrades	signs and traffic control Sign sheeting - upgrade or replacement	Numbers		0	(Section 148)	locations			Municipal Highway Agency	dside (lane departure and intersections)	number of intersection related fatalities through improve geometric configuration
CITY OF MESA--Crash Magic Online Software	Non-infrastructure Data/traffic records	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Reduce the number of intersection related fatalities through improve geometric configuration
Various Locations in Mohave County--Engineer Grade Sign Upgrade	Roadway signs and traffic control Sign sheeting - upgrade or replaceme	999 Numbers	195685	195685	HSIP (Section 148)	Various locations	0	0	County Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configurati

	nt										on
MOHAVE COUNTY(VARIOUS LOCATION)--LED ENHANCED SPEED LIMIT SIGNS	Roadway signs and traffic control Sign sheeting - upgrade or replacement	1 Numbers	160310	170000	HSIP (Section 148)	Various locations	0	0	County Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF NOGALES; VARIOUS LOCATIONS--CITY-WIDE TRAFFIC SIGN UPGRADES	Roadway signs and traffic control Sign sheeting - upgrade or replacement	569 Numbers	15000	15000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
NACOG REGION; VARIOUS LOCATIONS--REGIONAL SIGN PANEL PROCUREMENT	Roadway signs and traffic control Sign sheeting -	1 Numbers	58000	58000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through

	upgrade or replacement										improve geometric configuration
TOWN OF PAYSON--VARIOUS LOCATIONS--UPGRADE TRAFFIC CONTROL WARNING SIGNS	Roadway signs and traffic control Sign sheeting - upgrade or replacement	633 Numbers	79088	79088	HSIP (Section 148)	Various locations	0	0	Town or Township Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
TOWN OF PAYSON--COLLECTOR'S STRIPING UPGRADE	Roadway delineation Improve retroreflectivity	3.8 Miles	121561	121561	HSIP (Section 148)	Various locations	0	0	Town or Township Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF PEORIA--CRASH MAGIC ONLINE SOFTWARE.	Roadway Roadway - other	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal	Roadway/Roadside (lane departure	Creating more effective

									Highway Agency	and intersections)	processes and safety management system
Dunlap Ave from 31st Ave to 43rd Ave in City of Phoenix--STREET LIGHTS, DUAL LEFT TURN LANES, PROTECTED ONLY LEFT TURN PHASING	Lighting Continuous roadway lighting	0.5 Miles	745115	972445	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF PHOENIX--CRASH MAGIC ONLINE SOFTWARE	Roadway Roadway - other	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
VARIOUS LOCATIONS IN PIMA COUNTY--REGIONAL SYSTEMATIC SIGN & STRIPING	Roadway signs and traffic control Sign sheeting -	1 Numbers	374000	374000	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through

	upgrade or replacement										improve geometric configuration
S.CAMINO DE LA TIERRA/HIGHWAY DRIVE/CURTIS RD; RIVER RD TO SHANNON RD--REALIGN CENTERLINE TO ACCOMMODATE PAVED SHOULDERS	Alignment Alignment - other	1.1 Miles	142393	151000	HSIP (Section 148)	Urban Minor Collector	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Minimizing the consequences of leaving the road
The Town of Quartzsite; Various Locations--Design Inventory & Software for Signage	Roadway signs and traffic control Sign sheeting - upgrade or replacement	1 Numbers	185000	185000	HSIP (Section 148)	Various locations	0	0	Town or Township Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
Main St. @ 6th, 5th & Central Avenues Intersection in the City of Safford--Traffic Signals	Intersection traffic control Modify traffic	3 Numbers	717060	717060	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	City of Municipal Highway	Roadway/Roadside (lane departure and	Reduce the number of intersection related fatalities

including removal and replacement.	signal - replace existing indications (incandescent-to-LED and/or 8-to-12 inch dia.)								Agency	intersections)	through improve geometric configuration
THE TOWN OF SAFFORD; VARIOUS LOCATION; TOWN OF SAFFORD-SIGN REPLACEMENT PROJECT	Roadway signs and traffic control Sign sheeting - upgrade or replacement	874 Numbers	10000	10000	HSIP (Section 148)	Various locations	0	0	Town or Township Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF SCOTTSDALE--CRASH MAGIC ONLINE SOFTWARE	Non-infrastructure Data/traffic records	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	City of Municipal Highway Agency	Data Improvement	Creating more effective processes and safety management system
CITY OF SIERRA	Pedestrian	174	115000	11500	HSIP	Various	0	0	City of	Roadway/Roa	Reduce the

VISTA--REPLACEMENT OF PEDESTRIAN SIGNAL MODULES	s and bicyclists Pedestrian signal	Numbers		0	(Section 148)	locations			Municipal Highway Agency	dside (lane departure and intersections)	number of intersection related fatalities through improve geometric configuration
BROADWAY ROAD; RURAL RD TO MILL AVNUE--PED AND BICYCLE FACILITY IMPROVEMENTS AND INSTALL NEW STREET LIGHTING.	Pedestrians and bicyclists Pedestrian signal	0.8 Miles	637317	675840	HSIP (Section 148)	Urban Major Collector	0	0	City of Municipal Highway Agency	Roadway/Roadside (lane departure and intersections)	Reduce the number of intersection related fatalities through improve geometric configuration
CITY OF TEMPE--PE FOR CRASH MAGIC ONLINE SOFTWARE	Non-infrastructure Data/traffic records	1 Numbers	27111	28750	HSIP (Section 148)	Various locations	0	0	Town or Township Highway Agency	Data Improvement	Creating more effective processes and safety management system

Progress in Achieving Safety Performance Targets

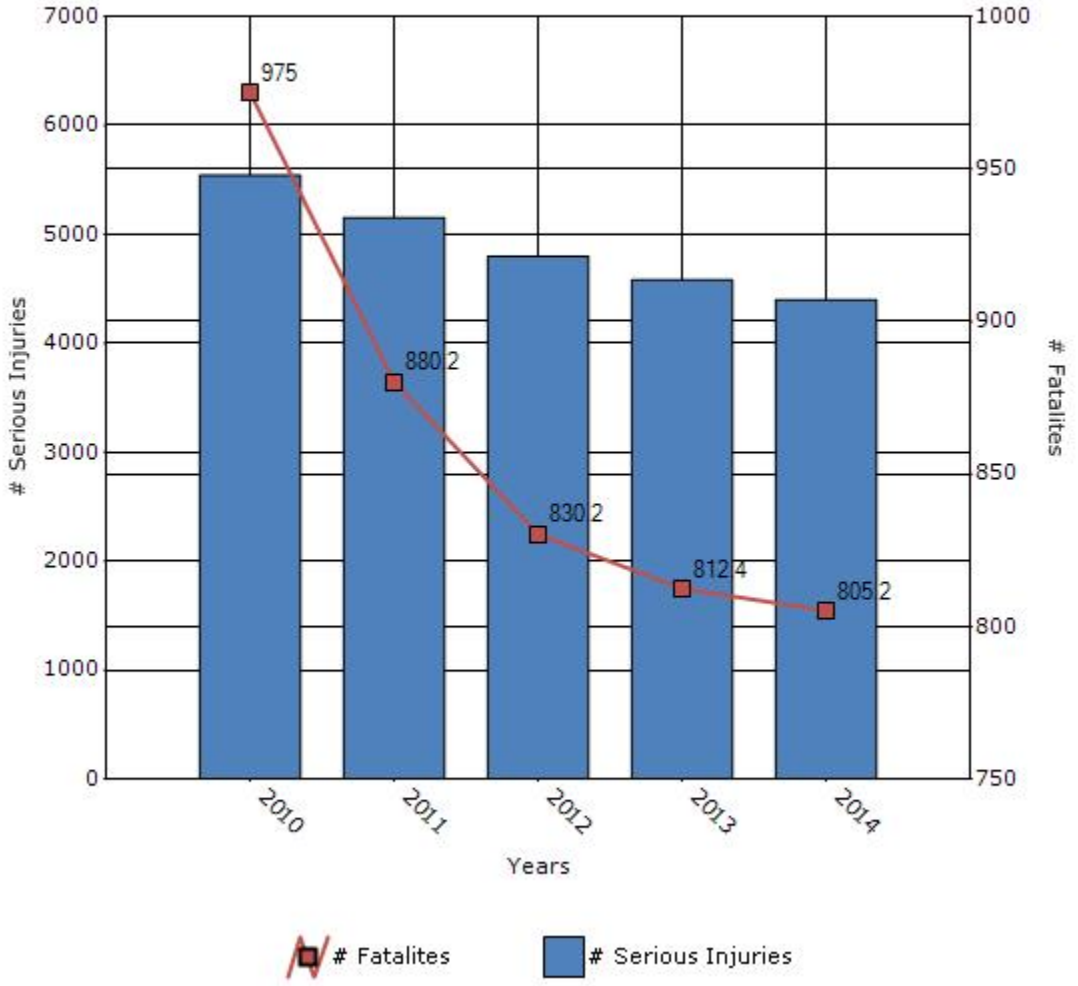
Overview of General Safety Trends

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

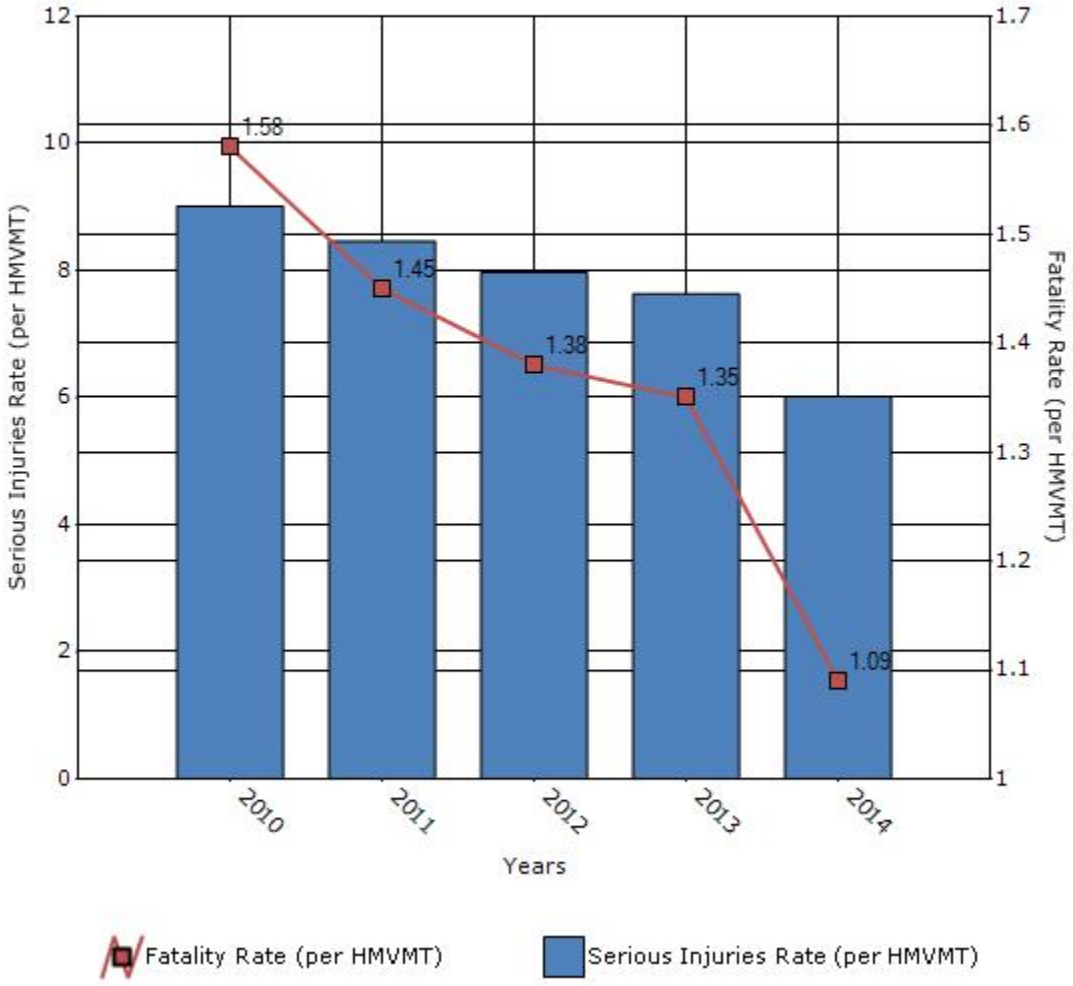
Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	975	880.2	830.2	812.4	805.2
Number of serious injuries	5541.4	5152.6	4796.8	4579.8	4399.2
Fatality rate (per HMVMT)	1.58	1.45	1.38	1.35	1.09
Serious injury rate (per HMVMT)	9.01	8.46	7.97	7.63	6.02

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

Number of Fatalities and Serious injuries for the Last Five Years



Rate of Fatalities and Serious injuries for the Last Five Years

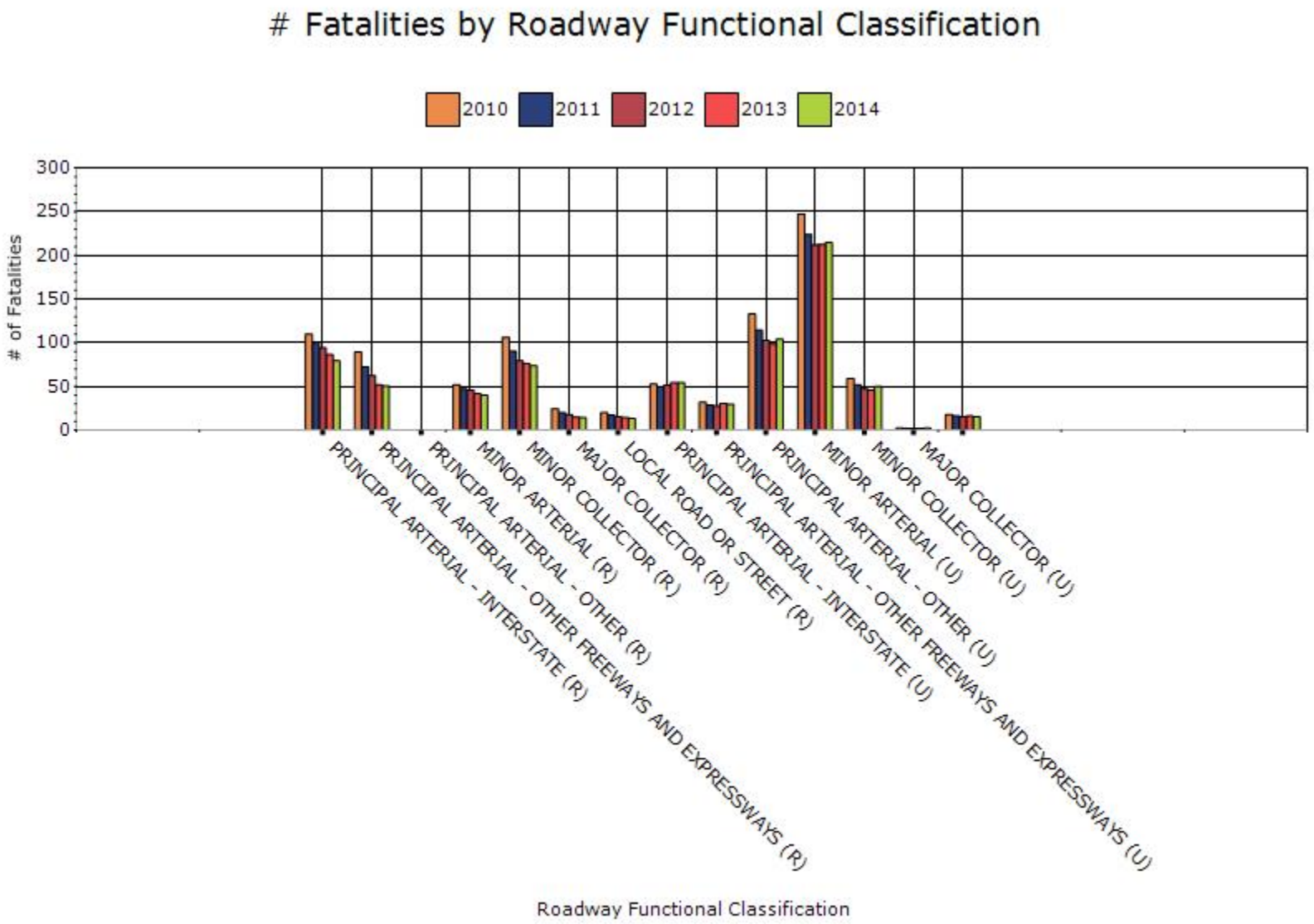


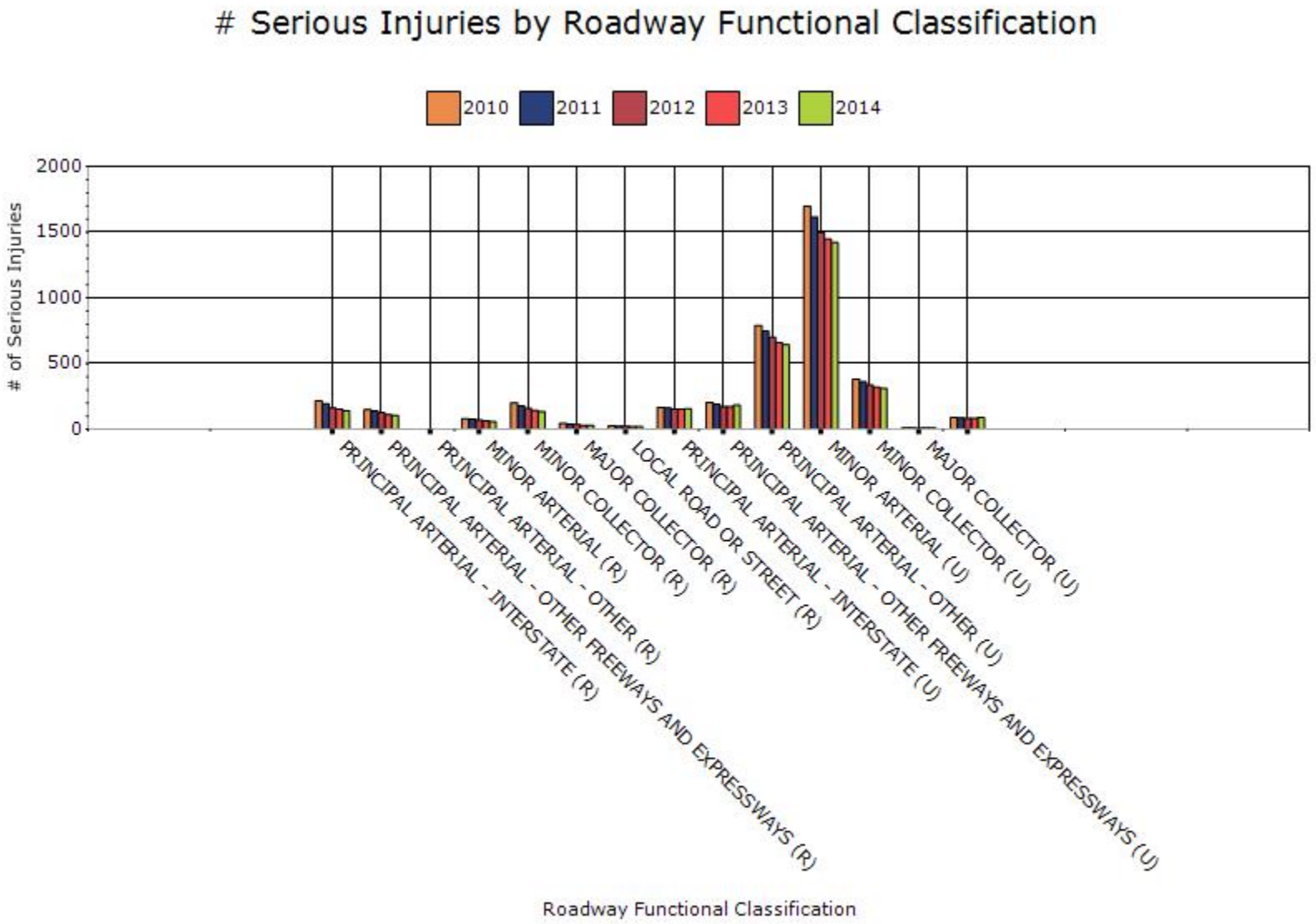
To the maximum extent possible, present performance measure* data by functional classification and ownership.

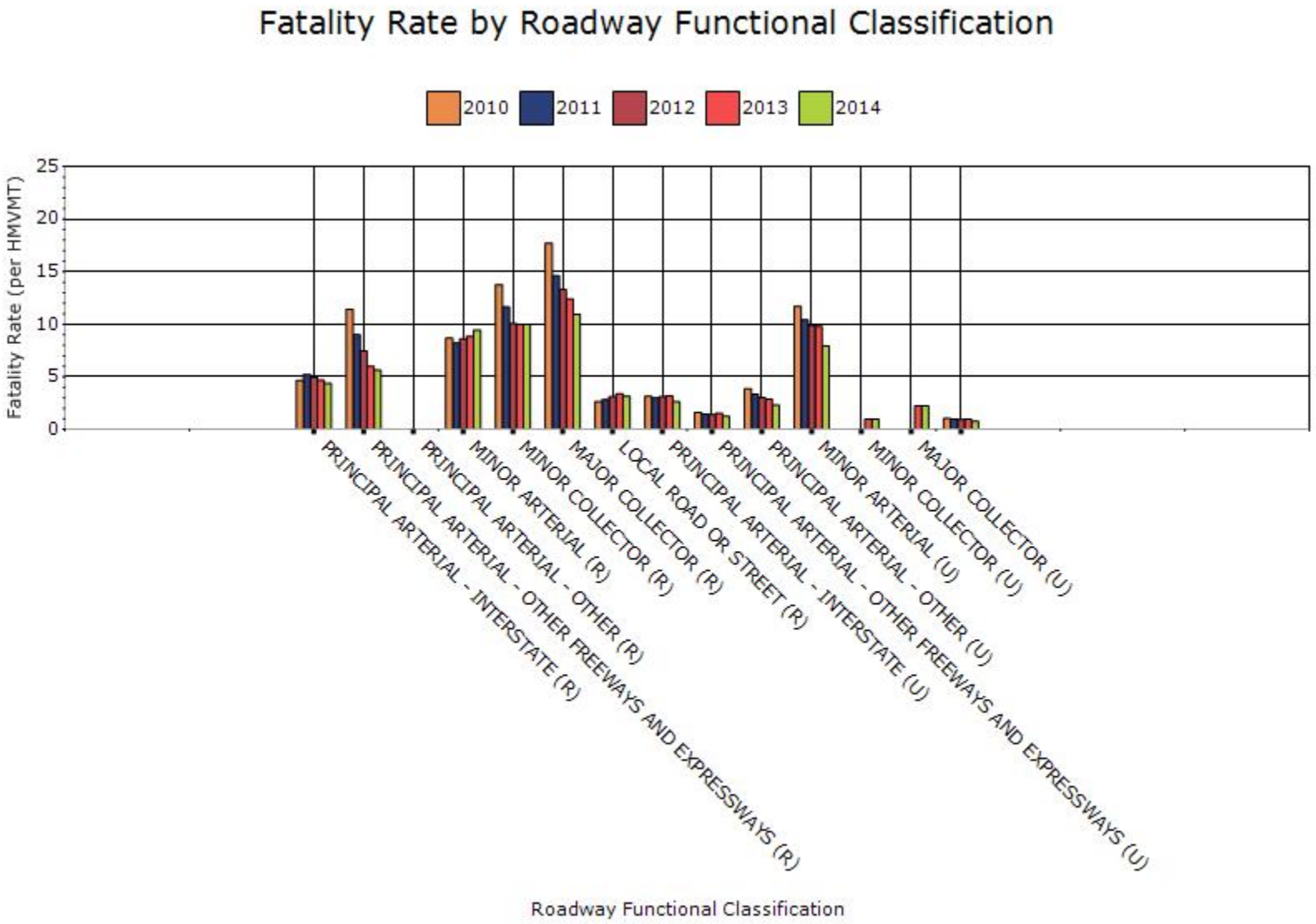
Year - 2014

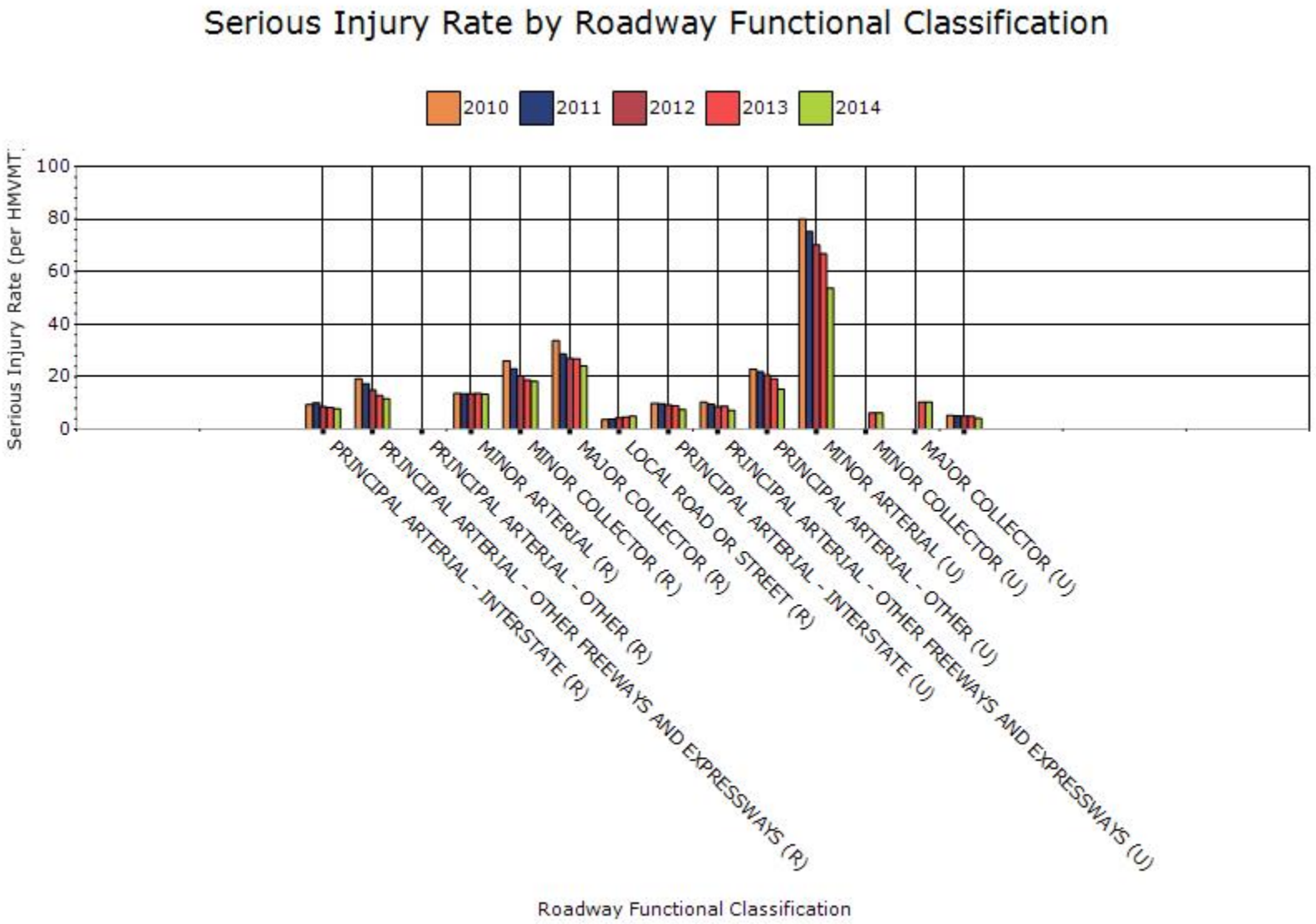
Function C	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	79.4	140.4	4.36	7.8
R A F E	50.6	104.8	5.62	11.62
RURAL PRINCIPAL ARTERIAL - OTHER	0	0	0	0
R A	40.2	57.2	9.45	13.3
RURAL MINOR COLLECTOR	74	136	9.97	18.31
R C	14.4	29.6	10.95	24.08
RURAL LOCAL ROAD OR STREET	13.4	20.8	3.16	4.96
U	54.2	155.6	2.64	7.52

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	29.6	183.6	1.25	7.23
URBAN PRINCIPAL ARTERIAL - OTHER	104	643.2	2.33	15.28
URBAN MINOR ARTERIAL	214.6	1421.2	7.92	53.72
URBAN MINOR COLLECTOR	50.2	311.2	0.98	6.22
URBAN MAJOR COLLECTOR	2.4	9.8	2.22	10.37
URBAN LOCAL ROAD OR STREET	15.6	89	0.76	4.19


Fatalities by Roadway Functional Classification
2010
2011
2012
2013
2014
300
250
200
150
100
50
0
# of Fatalities
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

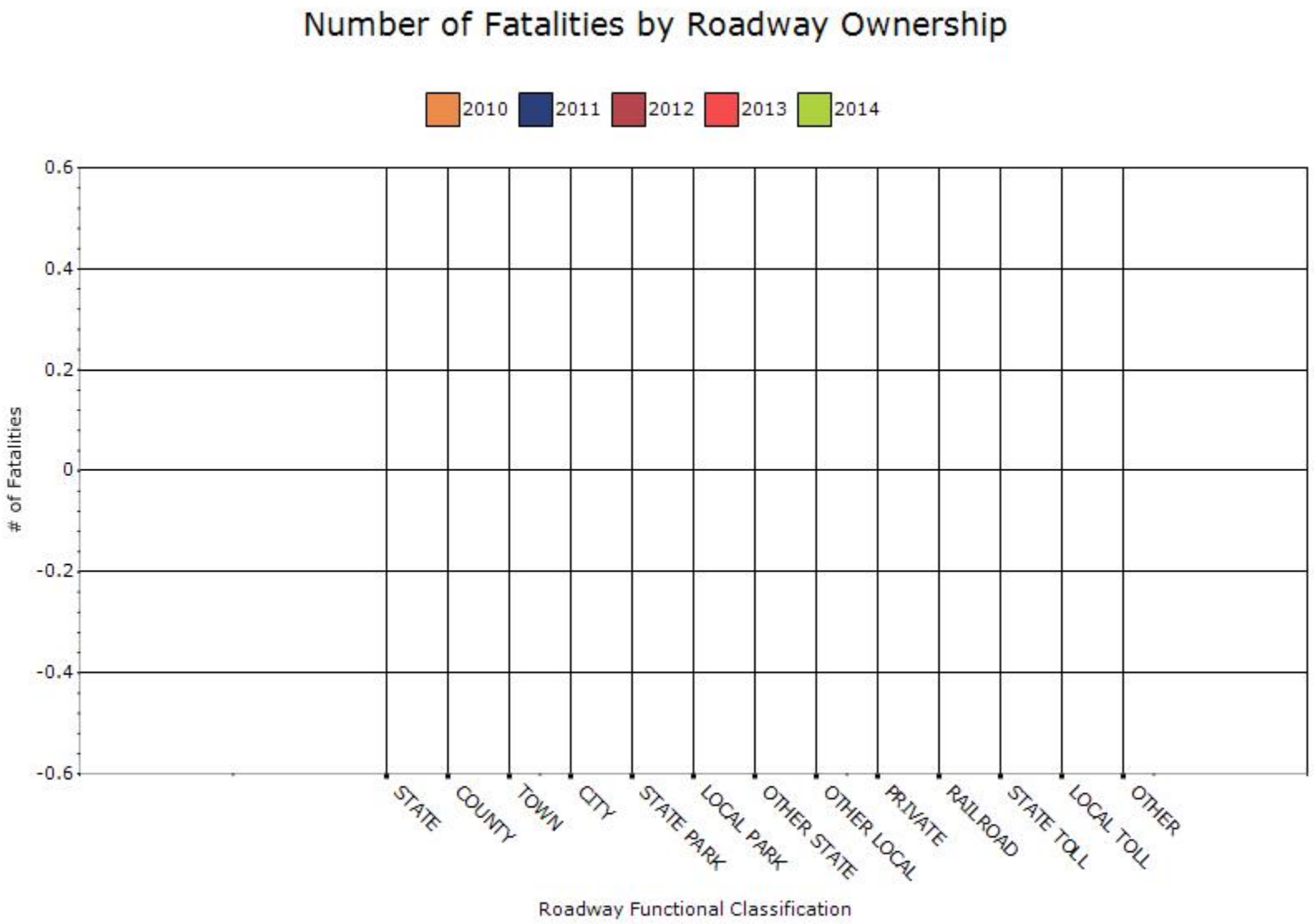

Serious Injuries by Roadway Functional Classification
2010
2011
2012
2013
2014
# of Serious Injuries
2000
1500
1000
500
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
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

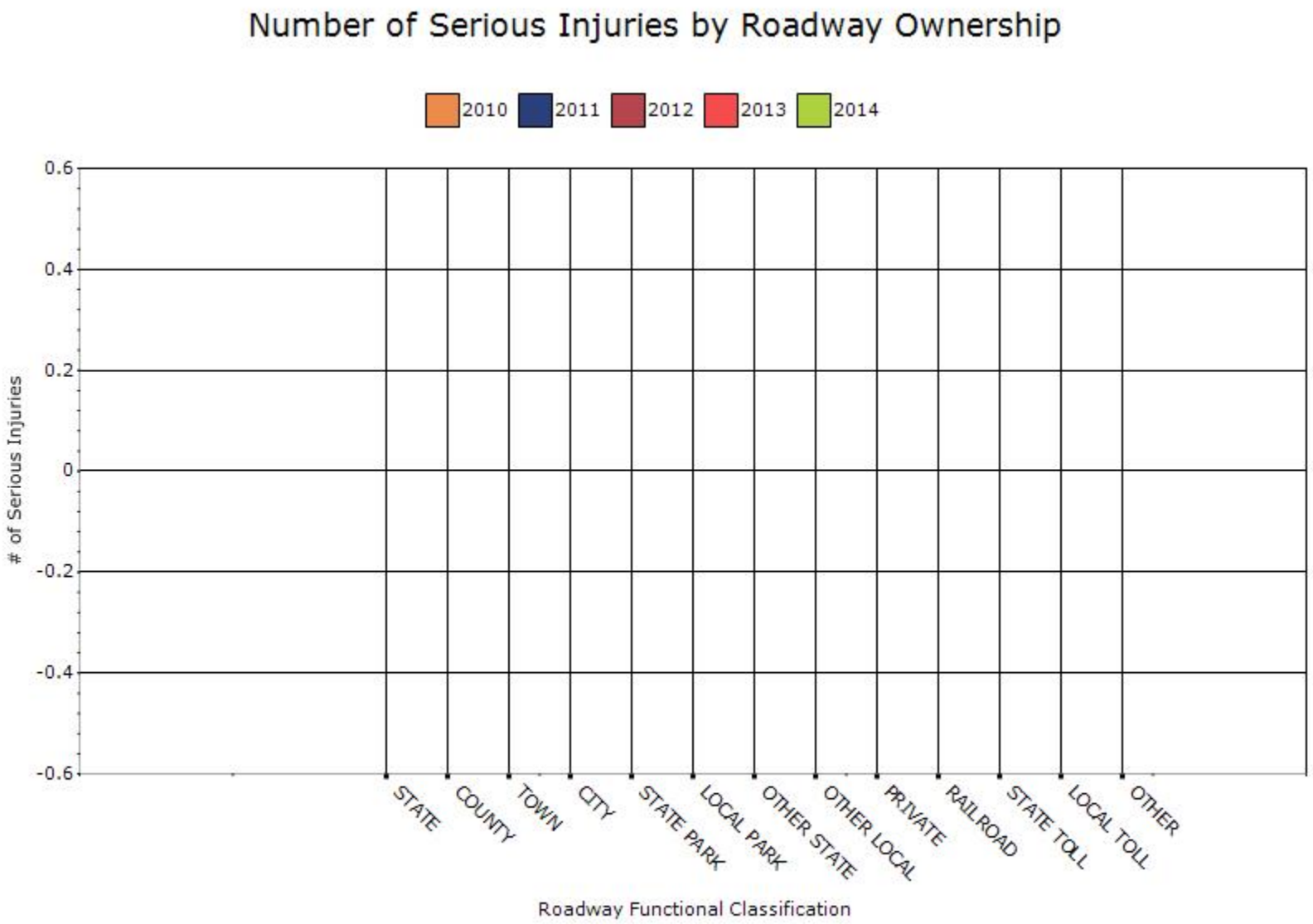

Fatality Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Fatality Rate (per HMVMT)
25
20
15
10
5
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification


Serious Injury Rate by Roadway Functional Classification
2010
2011
2012
2013
2014
Serious Injury Rate (per HMVMT)
100
80
60
40
20
0
PRINCIPAL ARTERIAL - INTERSTATE (R)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
PRINCIPAL ARTERIAL - OTHER (R)
MINOR ARTERIAL (R)
MINOR COLLECTOR (R)
MAJOR COLLECTOR (R)
LOCAL ROAD OR STREET (R)
PRINCIPAL ARTERIAL - INTERSTATE (U)
PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
PRINCIPAL ARTERIAL - OTHER (U)
MINOR ARTERIAL (U)
MINOR COLLECTOR (U)
MAJOR COLLECTOR (U)
Roadway Functional Classification

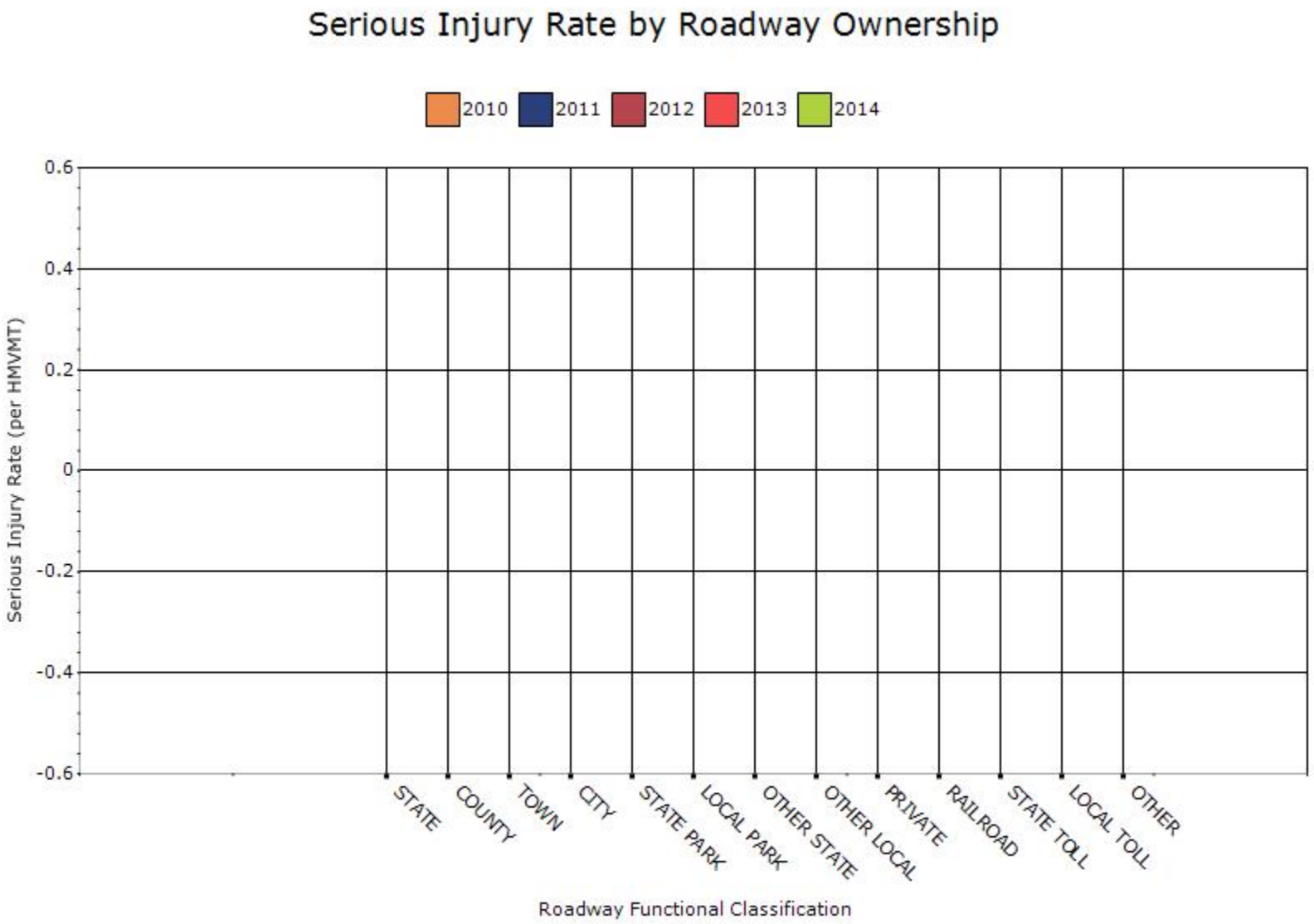
Year - 2010

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	0	0	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	0	0	0
LOCAL PARK, FOREST OR RESERVATION AGENCY	0	0	0	0
OTHER STATE AGENCY	0	0	0	0
OTHER LOCAL AGENCY	0	0	0	0
PRIVATE (OTHER THAN RAILROAD)	0	0	0	0
RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	0	0	0	0
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0	0	0


Number of Fatalities by Roadway Ownership
2010
2011
2012
2013
2014
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
# 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
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
# 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

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

NOTE on crash data by Functional Classification (Question #25):

The annual number of fatalities and incapacitating injuries for 2007-2014 by functional classification of roadways in Arizona was derived spatially by joining the crash co-ordinates and the roadway network using ArcGIS. While executing this process, we found quite a few number of crashes for which the coordinates were missing. As a result, the annual number of fatalities and incapacitating injuries by functional classification of roadways do not sum up to the total annual fatalities and incapacitating injuries for each year reported in the Arizona Crash Facts.

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)	0.81	0.77	0.76	0.73	0.71
Serious injury rate (per capita)	2.84	2.75	2.67	2.54	2.49
Fatality and serious injury rate (per capita)	3.64	3.52	3.43	3.26	3.2

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

Formula used in the calculation of Fatality (F) and Serious Injury (SI) Rate per Capita (an example for 2010 rate calculation):

F+SI 2010 Rate =

((F+SI 2010 Drivers and Pedestrians 65 years of age and older/2010 Population Figure*) + (F+SI 2009 Drivers and Pedestrians 65 years of age and older /2009 Population Figure) + (F+SI 2008 Drivers and Pedestrians 65 years of age and older/2008 Population Figure) + (F+SI 2007 Drivers and Pedestrians 65 years of age and older/2007 Population Figure) + (F+SI 2006 Drivers and Pedestrians 65 years of age and older/2006 Population Figure)) / 5

Applying the above equation given in Special Rule Attachment 1 yields the following:

2010 Value = (420/138 + 452/131 +476/133 + 490/129 + 477/128)/5 = 17.60/5 = 3.52

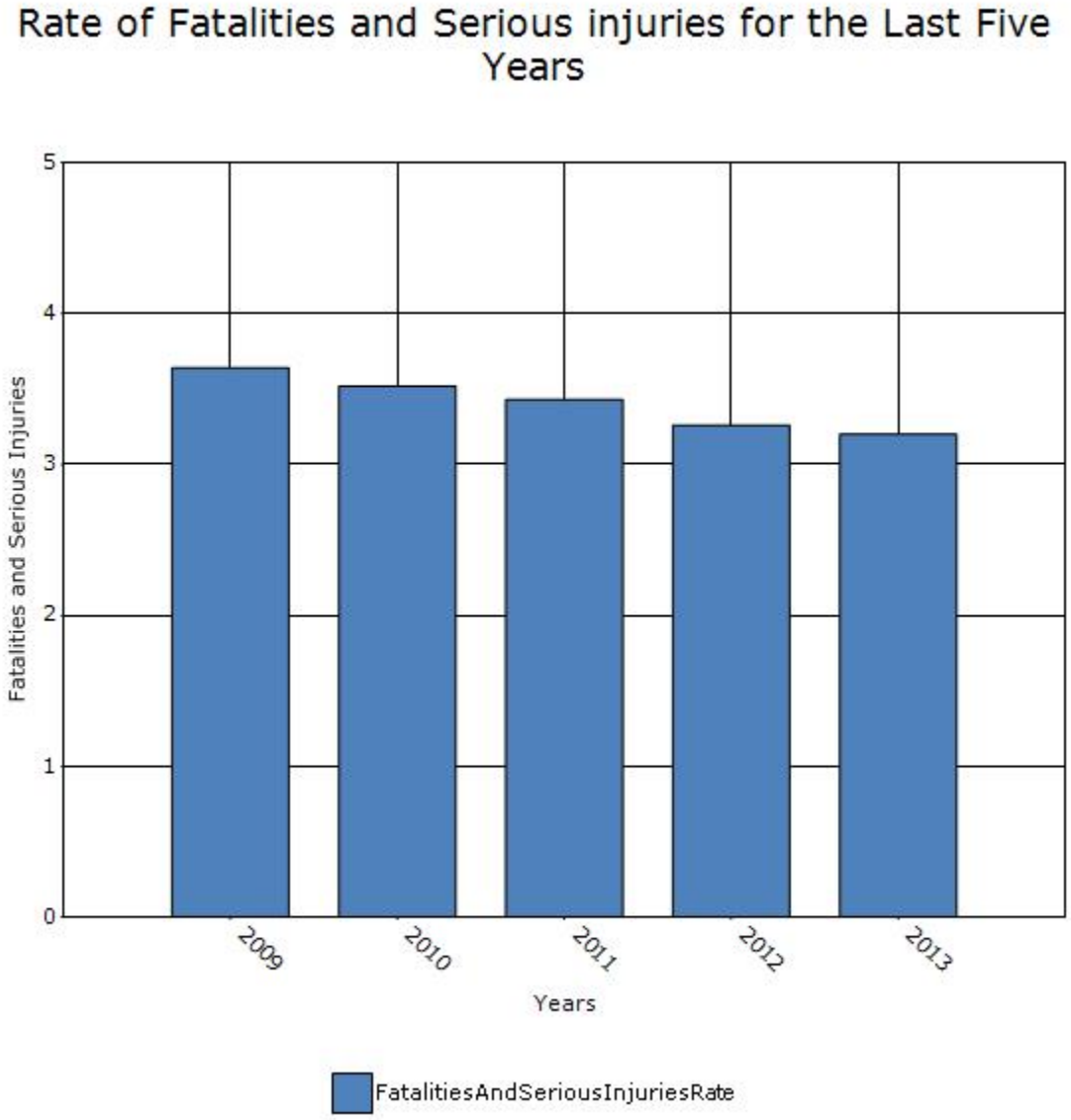
2012 Value = (439/148 + 465/142 + 420/138 + 452/131 +476/133)/5 = 16.31/5 = 3.26

Change = -0.26 use: -0.3 Special Rule does not apply to the State of Arizona in FFY15.

2011 Value = (465/142 + 420/138 + 452/131 +476/133 + 490/129)/5 = 17.15/5 = 3.43

2013 Value = (504/154 + 439/148 +465/142 +420/138 + 452/131)/5 = 18.20/5 = 3.20

Change = -0.23 use: -0.2 Special rule does not apply to the State of Arizona in FFY16.



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program

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

☐ None

☒ Benefit/cost

☐ Policy change

☐ Other:

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

☒ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☐ Organizational Changes

☐ None

☐ Other:

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

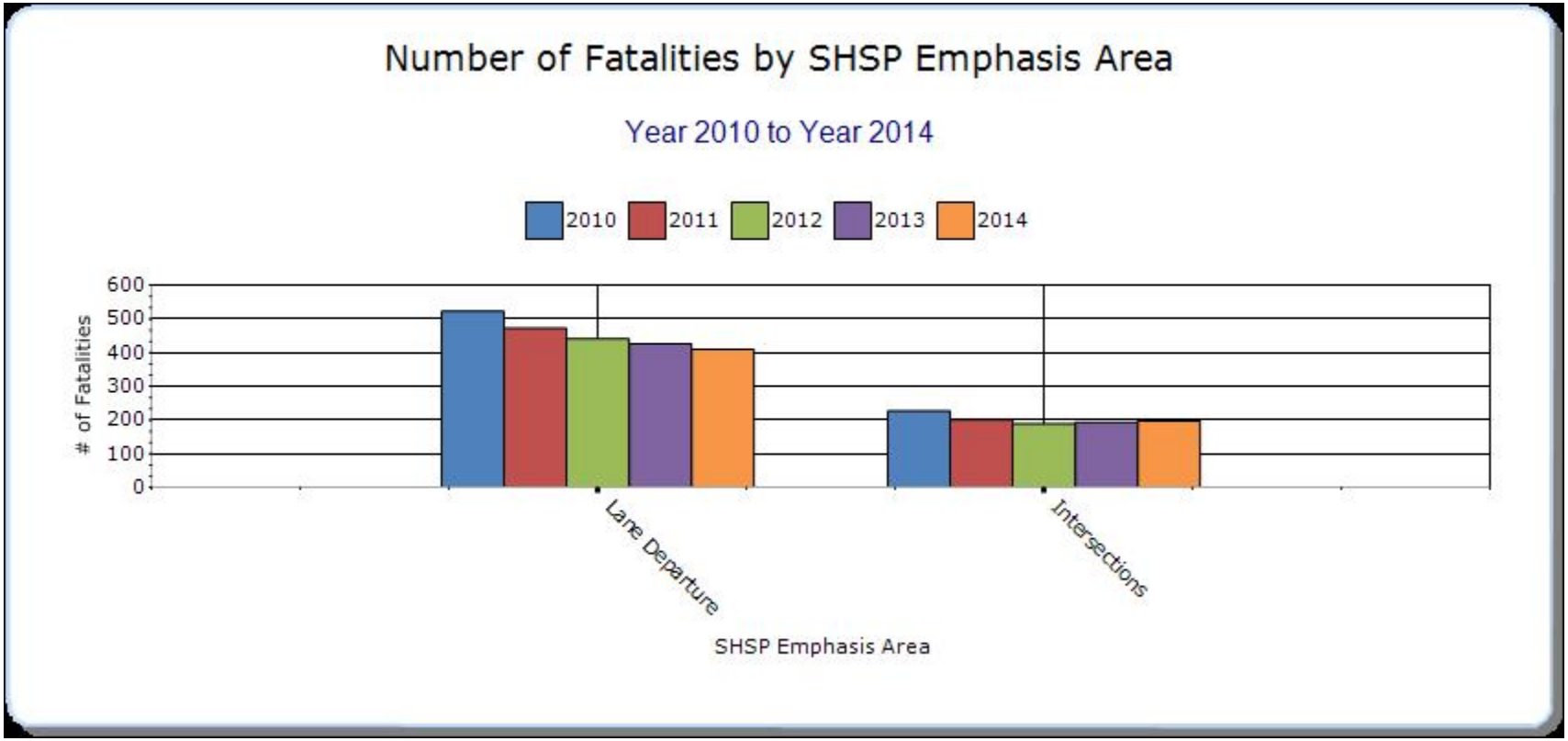
None to report.

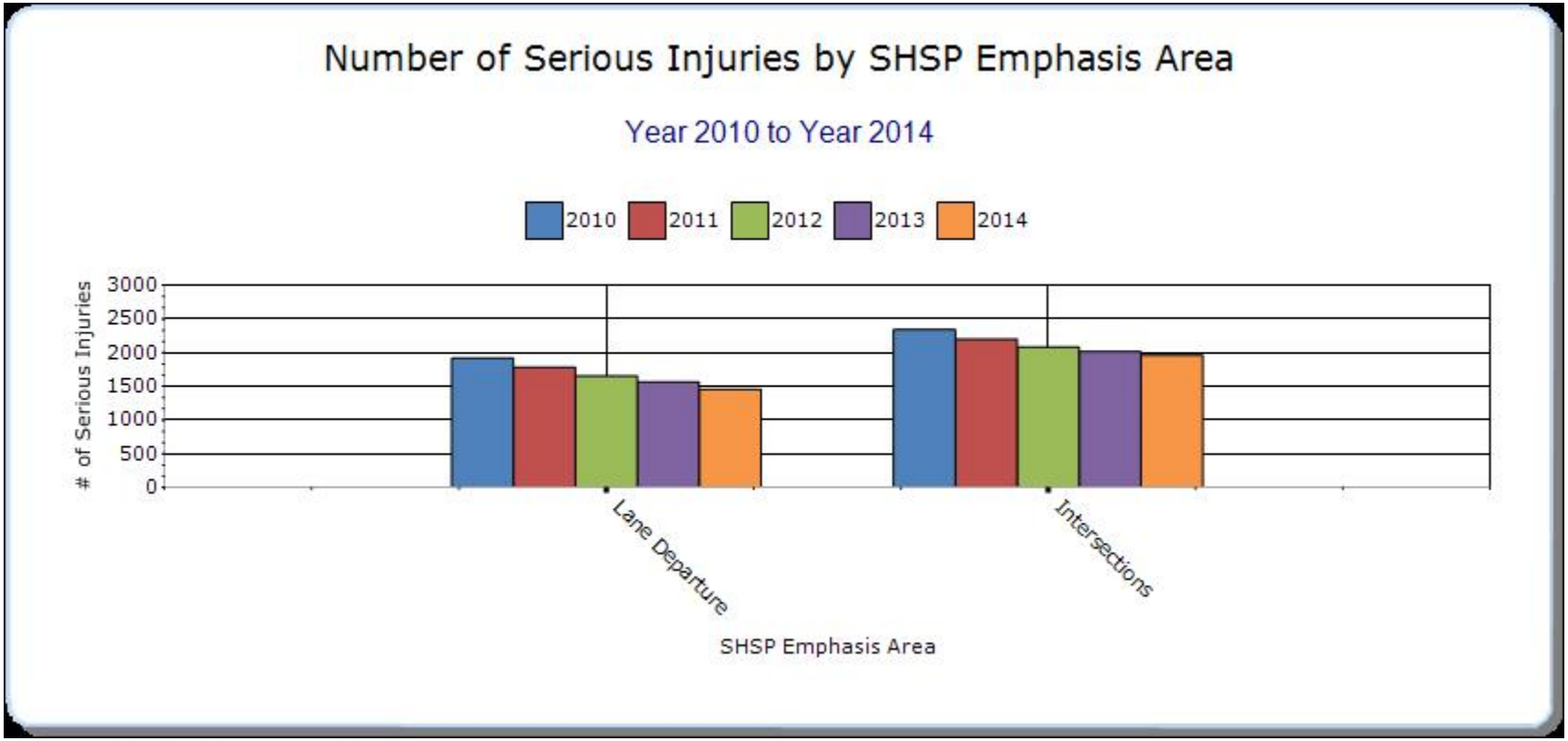
SHSP Emphasis Areas

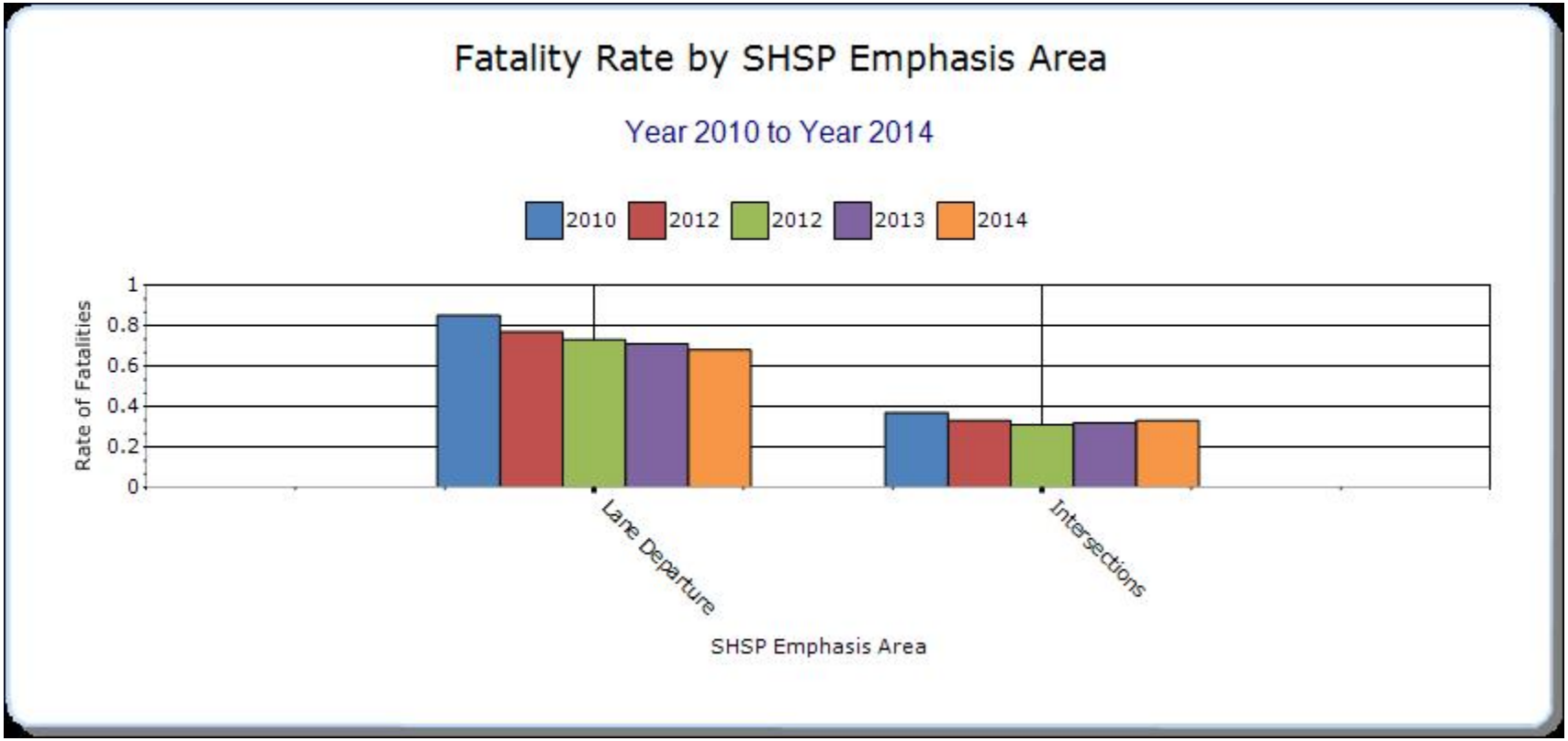
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

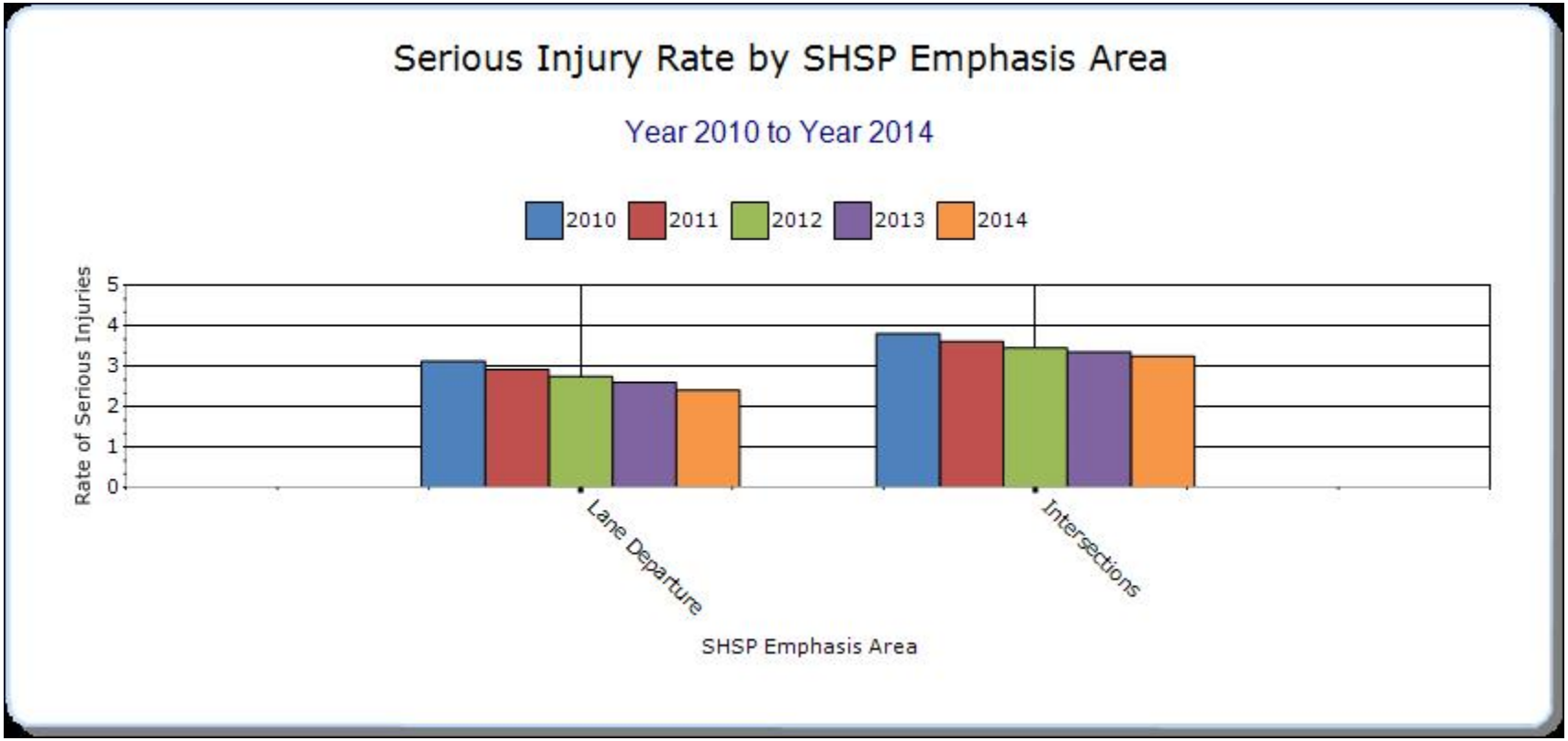
Year - 2014

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
Lane Departure	Run-off-road	409.2	1453.8	0.68	2.4	0	0	0
Intersections	Intersections	197.2	1958.8	0.33	3.24	0	0	0


Number of Fatalities by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
600
500
400
300
200
100
0
# of Fatalities
Lane Departure
Intersections
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
# of Serious Injuries
3000
2500
2000
1500
1000
500
0
Lane Departure
Intersections
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
1
0.8
0.6
0.4
0.2
0
Lane Departure
Intersections
SHSP Emphasis Area

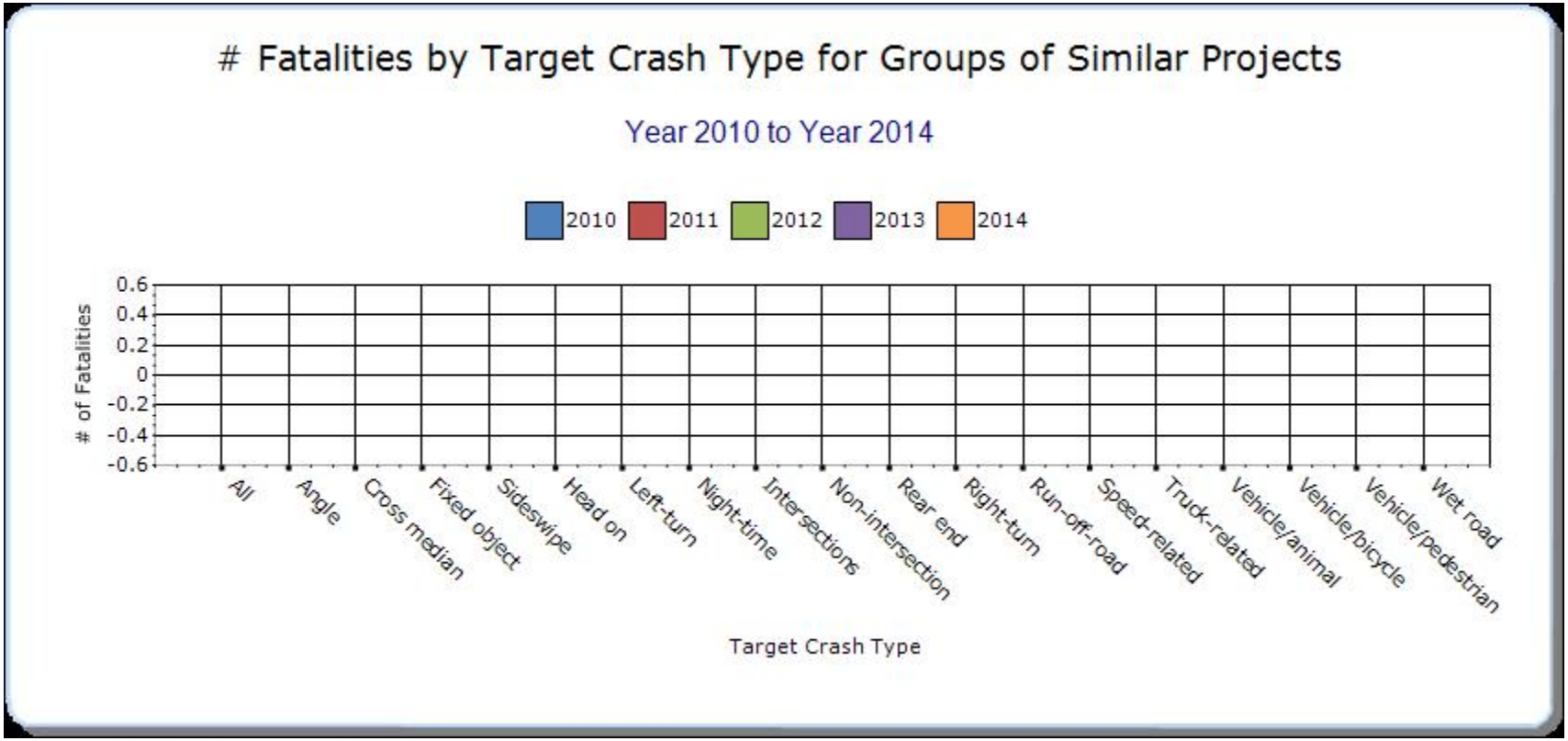

Serious Injury Rate by SHSP Emphasis Area
Year 2010 to Year 2014
2010
2011
2012
2013
2014
Rate of Serious Injuries
5
4
3
2
1
0
Lane Departure
Intersections
SHSP Emphasis Area

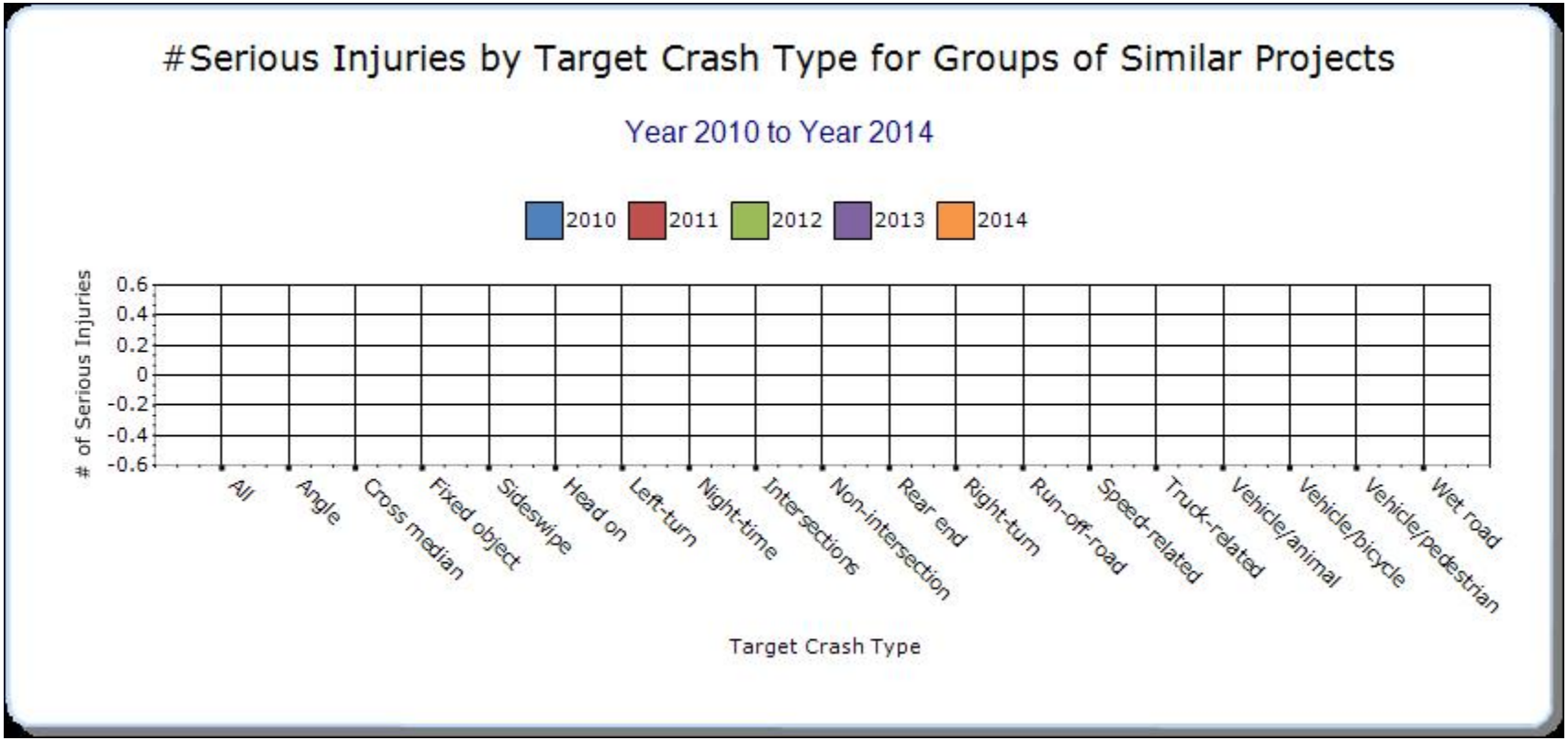
Groups of similar project types

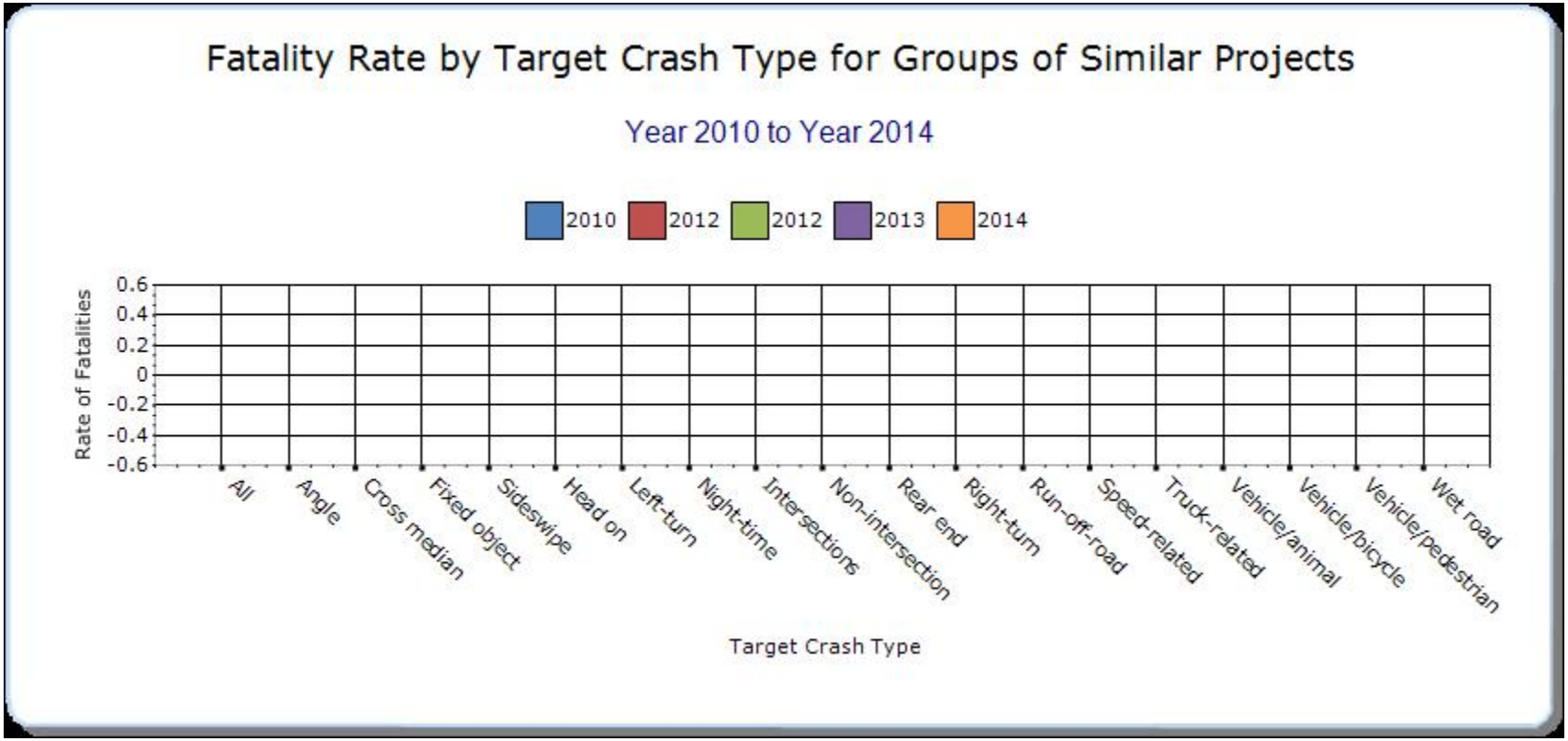
Present the overall effectiveness of groups of similar types of projects.

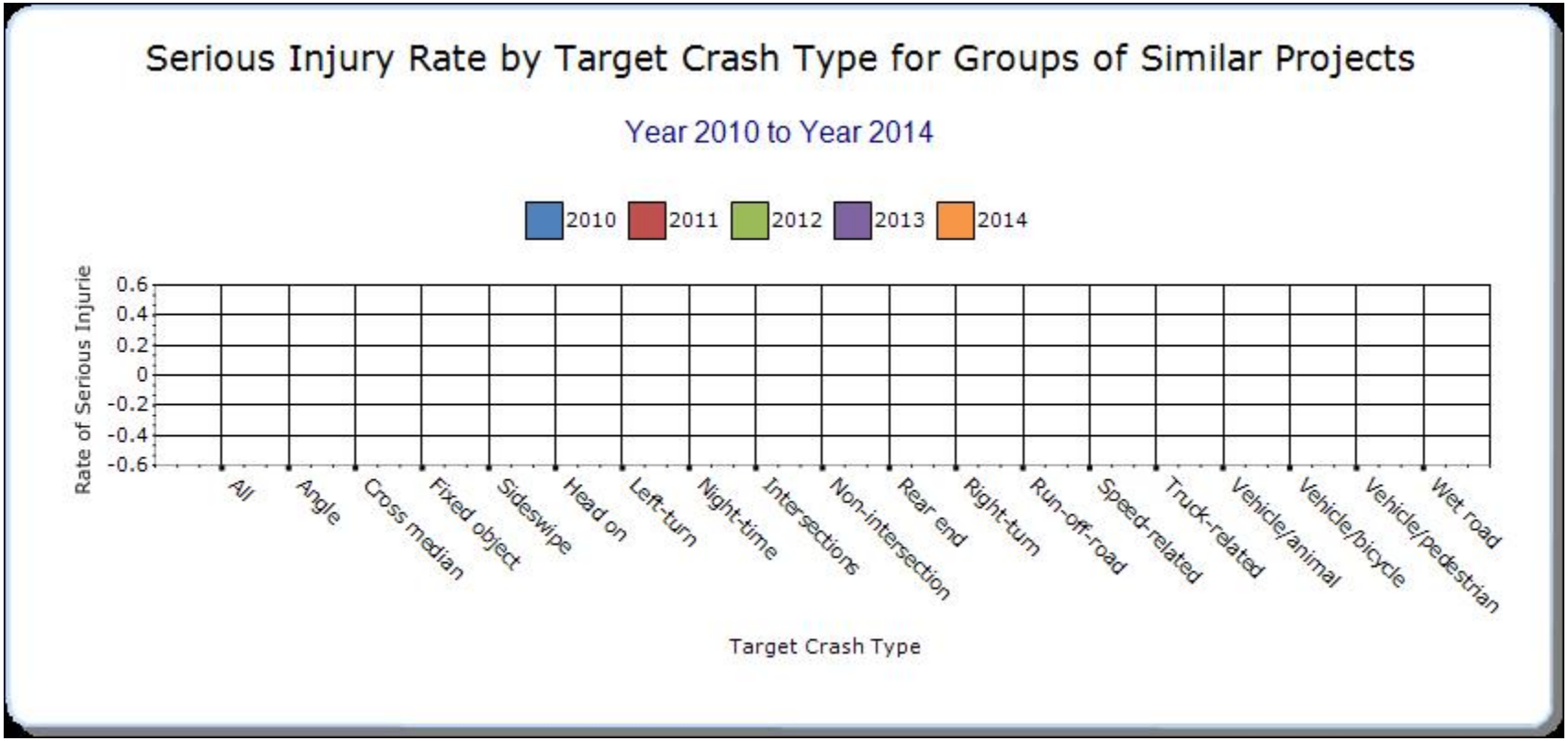
Year - 2014

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
Roadway Departure		409.2	1453.8	0.68	2.4	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

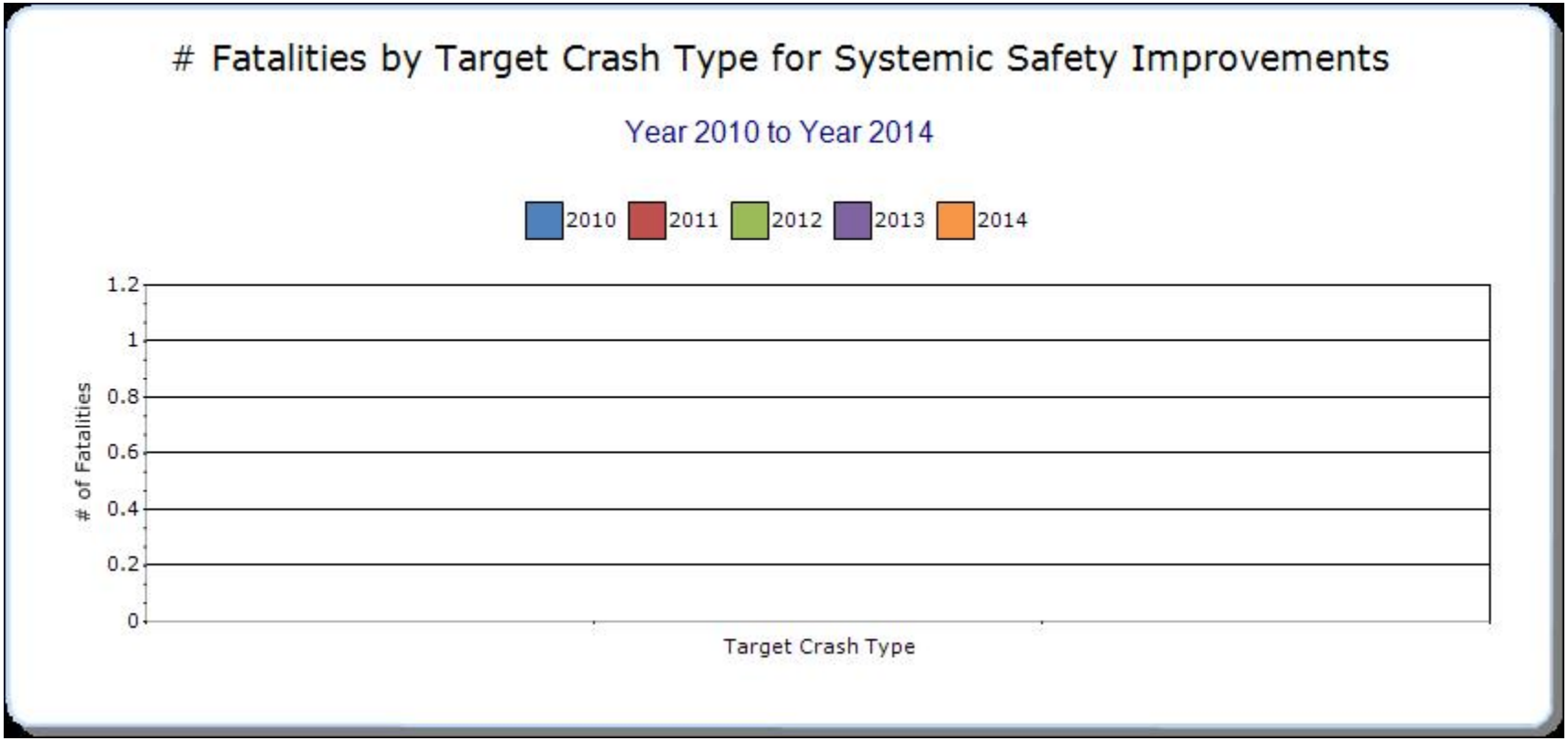

Fatality Rate by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2012
2012
2013
2014
Rate of Fatalities
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road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

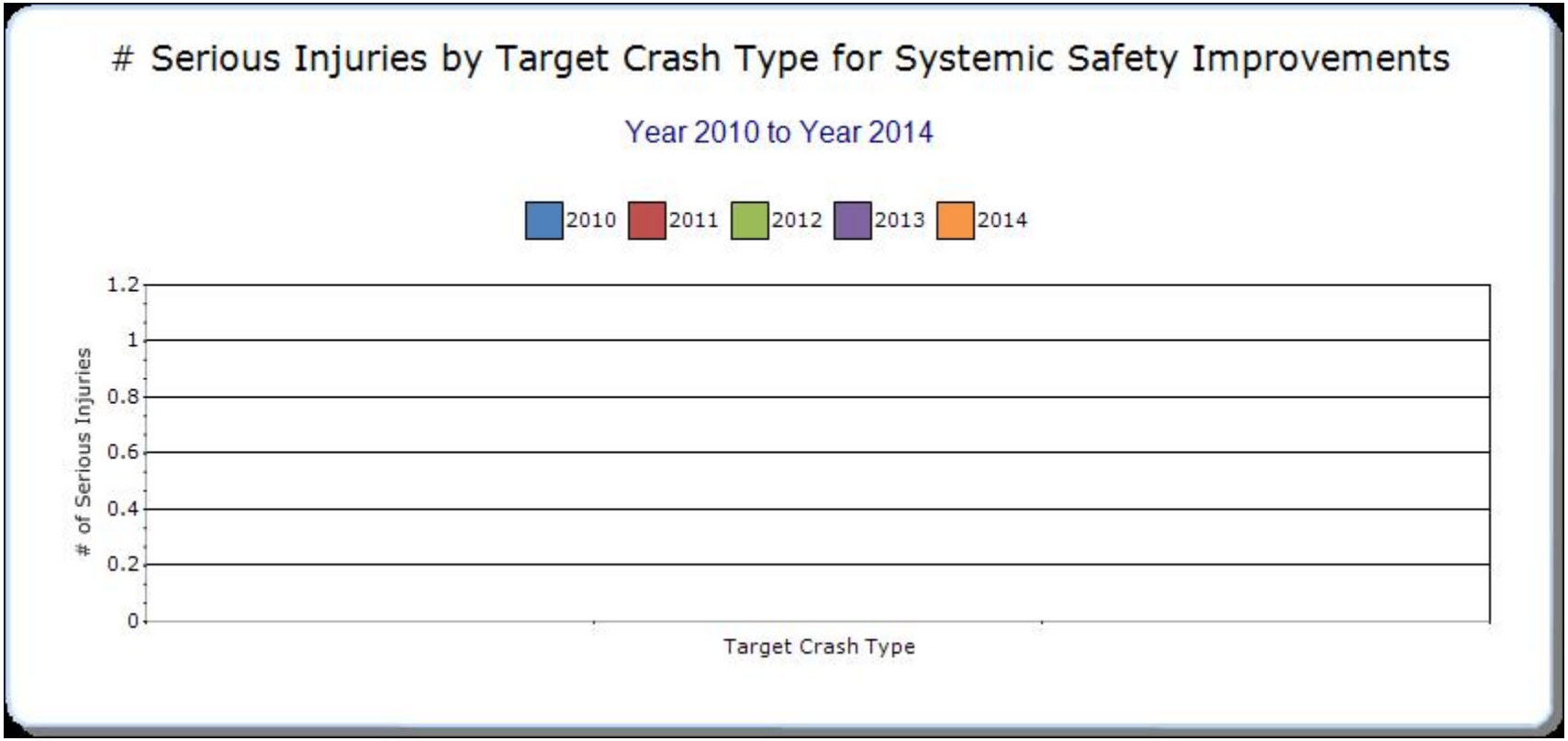

Serious Injury Rate by Target Crash Type for Groups of Similar Projects
Year 2010 to Year 2014
2010
2011
2012
2013
2014
Rate of Serious Injurie
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
All
Angle
Cross median
Fixed object
Sideswipe
Head on
Left-turn
Night-time
Intersections
Non-intersection
Rear end
Right-turn
Run-off-road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

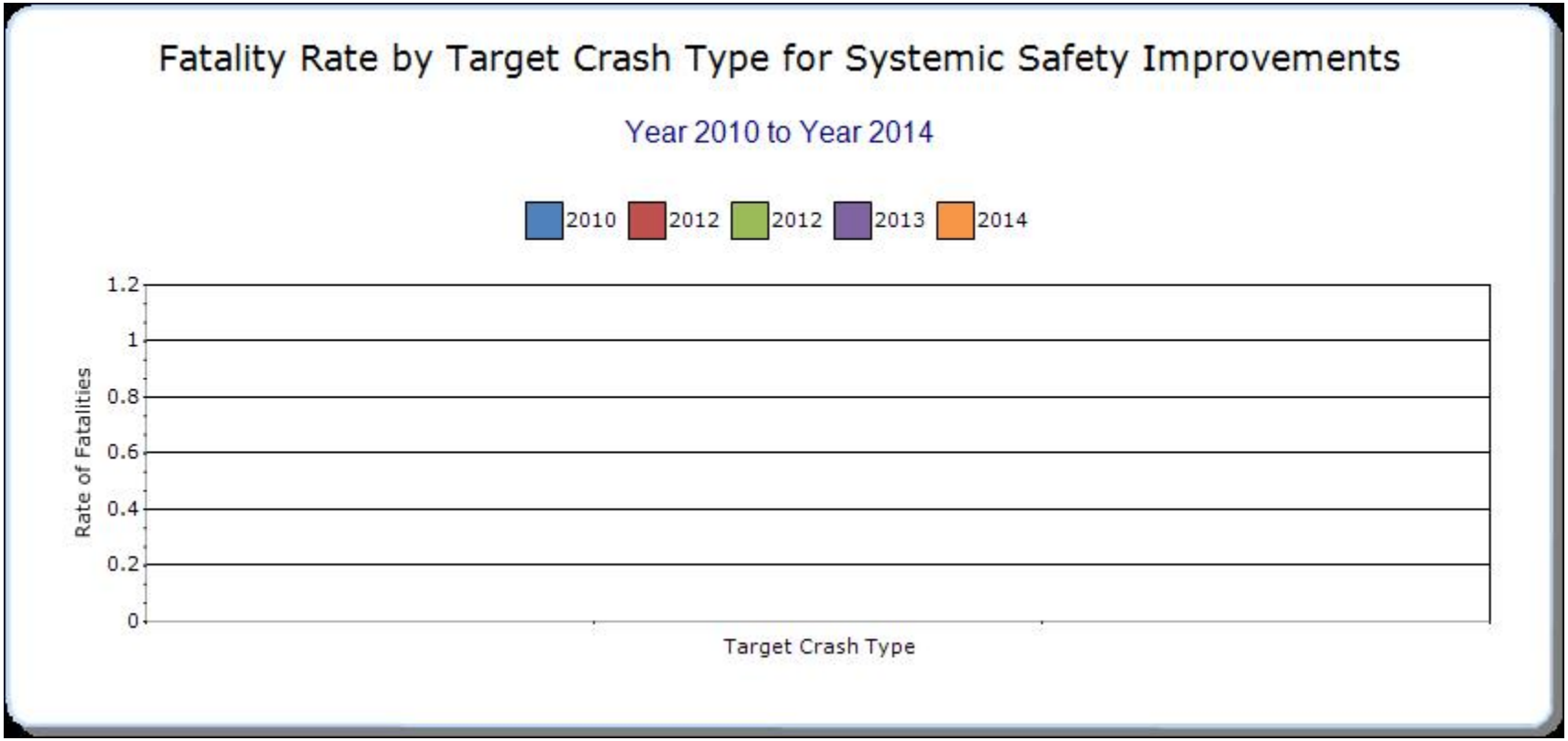
Systemic Treatments

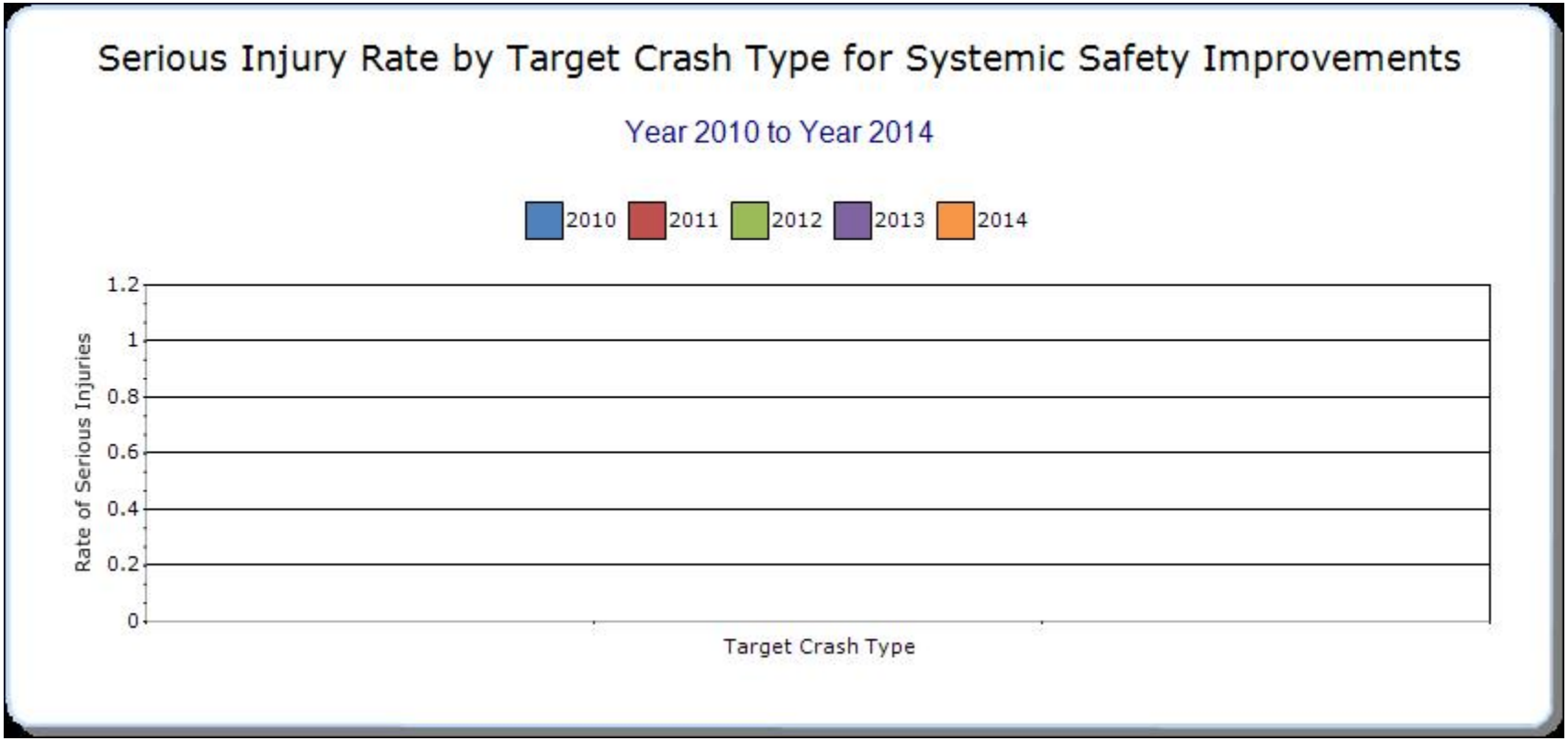
Present the overall effectiveness of systemic treatments.

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


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
1.2
1
0.8
0.6
0.4
0.2
0
# of Fatalities
Target Crash Type


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
1.2
1
0.8
0.6
0.4
0.2
0
# of Serious Injuries
Target Crash Type


Fatality Rate by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2012
2012
2013
2014
1.2
1
0.8
0.6
0.4
0.2
0
Rate of Fatalities
Target Crash Type


Serious Injury Rate by Target Crash Type for Systemic Safety Improvements
Year 2010 to Year 2014
2010
2011
2012
2013
2014
1.2
1
0.8
0.6
0.4
0.2
0
Rate of Serious Injuries
Target Crash Type

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

None.

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)
Data N/A														

Optional Attachments

Sections	Files Attached

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.