Highway Safety Improvement Program

Data Driven Decisions

Utah
Highway Safety Improvement Program
2016 Annual Report

Prepared by: UT

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

Executive Summary

The State of Utah has experienced an increase in traffic fatalities the past two years. We are hopeful that our efforts to prioritize safety projects that have the greatest potential to reduce fatalities will result in a resumption of our downward trend. We continue to use both crash analysis and systemic modeling to identify the projects most likely to reduce fatalities and serious injuries.

The recent FAST Act approved by Congress removes our ability to fund education and enforcement efforts with HSIP funds. We have been working on other ways to continue these programs. Education and enforcement are an important parts of our comprehensive safety strategy to reduce fatalities.

Introduction

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

Program Structure

Program Administration

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

Central

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

Local roads are eligible for HSIP funds if projects meet program requirements. UDOT currently lacks comprehensive roadway data for local roads (non-State and non-Federal Aid) that would make it easier

to compare relative safety needs on State roads and local roads, especially for systemic treatments. However, efforts are underway to work with other State agencies, local governments, and emergency dispatch centers to develop more complete roadway inventory data on local roads. In the mean time we will continue to perform hot-spot analysis on all public roads, including locals.

UDOT does perform crash analysis on non-State Federal Aid routes and accepts applications from local agencies for HSIP funding consideration on all public roads. We have also begun the process of applying the usRAP safety protocol to select non-State Federal Aid and local routes. We are currently working with Cache County and will then apply it to other counties in the future.

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

Design
Planning
Maintenance
Operations

Briefly describe coordination with internal partners.

Planning
UDOT uses two methods to plan HSIP projects. For the first method, each UDOT region sends an annual submittal to the Traffic & Safety Division that identifies their priority projects for HSIP funding consideration. The Traffic & Safety Division then screens the crash data, traffic data, and input from the region offices. A meeting is then held with each region office to identify safety projects based on the screened data and the region submittals. Although the annual submittal is the primary mechanism by which the regions request HSIP funding, the regions may request other projects mid-year and the same process is conducted to analyze, prioritize, program, and implement them. For the second method, the Traffic & Safety Division employs a systemic approach to identify projects. This is done by looking at crash and roadway attribute data from a statewide perspective. UDOT has several efforts underway to identify projects systemically, including the usRAP model and BYU crash prediction model.

Design
After projects are programmed, project managers from the applicable UDOT region offices are assigned to each project. These project managers then shepherd the projects through UDOT's standard federal environmental, design, and construction processes. Project managers generally invite Traffic & Safety staff to attend scoping and design review meetings to make sure that the safety elements are properly incorporated into the project.

Maintenance & Operations
Each region office works with their maintenance and operations staff to give them an opportunity to suggest safety projects based on their experience maintaining the state roadway network every day. Periodic meetings are held between region traffic and safety engineers and maintenance crews. Their

round of meetings in the fall is where engineers specifically solicit safety project ideas from maintenance staff. Following these meetings, region traffic and safety engineers submit safety project applications for projects they believe merit funding. These applications are then reviewed by Central Traffic & Safety as described above.

Access to Data

In order to assist each of our internal partners in this process, we have developed an online crash reporting and analysis tool so everyone has equal access to safety data.

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

Metropolitan Planning Organizations
Governors Highway Safety Office
Other-SHSP Partners

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

Other-None

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

UDOT focuses its infrastructure improvements primarily on the Roadway Departure Crashes, Drowsy Driving, Distracted Driving, and Intersection Safety emphasis areas. The other emphasis areas (Public Outreach and Education, Use of Safety Restraints, Impaired Driving, Aggressive Driving, Pedestrian Safety, Teen Driving Safety, Motorcycle Safety, and Speed Management) are addressed primarily through non-infrastructure efforts such as education, media, and enforcement campaigns. UDOT partners with other state, local, and federal agencies to implement the non-infrastructure components of the SHSP. The recent FAST Act approved by Congress removed UDOT's ability to fund education and enforcement efforts with HSIP, so we have been working on ways to find state funds to continue those programs.

A "Zero Fatalities" goal (ut.zerofatalities.com) is also part of the SHSP. UDOT began displaying weekly safety messages on variable message signs during the summer of 2015 to encourage safe driving behaviors such as seat belt use.

Program Methodology

Select the programs that are administered under the HSIP.

Low-Cost Spot Improvements	Other-Reduce Serious & Fatal Injuries

Program: **Low-Cost Spot Improvements**
Date of Program Methodology: **3/5/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic Volume	Median width
		Horizontal curvature
Fatal and serious injury crashes only	Lane miles	Functional classification
		Roadside features

What project identification methodology was used for this program?

Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types
Other-Hierarchical Bayesian Model

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

Yes
If yes, are local road projects identified using the same methodology as state roads?
No
If no, describe the methodology used to identify local road projects as part of this program.
We accept safety project applications from local government agencies that submit them through their respective region offices.

How are highway safety improvement projects advanced for implementation?

Competitive application 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

Ranking based on B/C	20
Available funding	20
Ranking based on net benefit	20
Time to Completion	20
Coordination with other Projects	20

Program: **Other-Reduce Serious & Fatal Injuries**
Date of Program Methodology: **3/5/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic Volume	Median width Horizontal curvature
Fatal and serious injury crashes only	Lane miles	Functional classification Roadside features

What project identification methodology was used for this program?
Crash frequency
Relative severity index
Crash rate
Critical rate
Excess proportions of specific crash types
Other-Hierarchical Bayesian
Other-usRAP model

Are local roads (non-state owned and operated) included or addressed in this program?
Yes
If yes, are local road projects identified using the same methodology as state roads?
No
If no, describe the methodology used to identify local road projects as part of this program.
We accept safety project applications from local government agencies that submit them through their respective region offices. We are also working on applying the usRAP systemic model to federal aid routes in counties across the state.

How are highway safety improvement projects advanced for implementation?
Competitive application process
Other-usRAP model outputs

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

Ranking based on B/C	20
Available funding	20
Ranking based on net benefit	20
Timeline to completion	20
Coordination with other projects	20

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

27%

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

Cable Median Barriers
Rumble Strips
Pavement/Shoulder Widening
Install/Improve Signing
Upgrade Guard Rails
Add/Upgrade/Modify/Remove Traffic Signal
Other-Structure Protection on Interstate Freeways

What process is used to identify potential countermeasures?

Engineering Study
Road Safety Assessment
Other-Systemic modeling

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

Other-use of usRAP model on non-State network

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

Non-Infrastructure Projects

UDOT uses some of its HSIP funding for eligible non-infrastructure projects that aid roadway safety efforts. Such projects include:

Integrating Safety Into Planning
UDOT Traffic & Safety Division personnel work internally with other UDOT divisions to integrate safety planning into their core processes. UDOT also works with MPOs and other safety partners across the state to supply them with needed data and tools so they can better integrate safety into their internal planning processes. UDOT continues to partner with the MPOs in order to provide them with tools to incorporate safety into their transportation planning efforts. Integrating safety into UDOT and MPO planning processes helps all agencies proactively address safety.

Improving Crash Data Analysis
HSIP funding is also used to improve UDOT's crash database. The ability to accurately locate crashes and understand crash characteristics is vital to programming HSIP funds.

University & Consultant Support
The Traffic & Safety Division uses HSIP funding to contract with universities and consultants who assist with various HSIP functions. The functions include items such as program management, project management, crash data mapping, statistical analysis, safety modeling, report preparation, SPF/CMF development, training, and HSM analysis.

UDOT previously used HSIP funding for education and enforcement efforts that fall within the State's Zero Fatalities effort umbrella. With passage of the FAST Act and the recent ineligibility of those activities, UDOT has been working to identify State funds to continue those efforts.

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

Federal Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	$22,149,150.00	77 %	$15,861,789.00	80 %
HRRRP (SAFETEA-LU)	$1,175,000.00	4 %	$804,267.00	4 %
Penalty Transfer – Section 164	$732,171.00	3 %	$0.00	0 %
State and Local Funds	$4,564,907.00	16 %	$3,206,654.00	16 %
Totals	$28,621,228.00	100%	$19,872,710.00	100%

How much funding is programmed to local (non-state owned and operated) safety projects?
$3,510,607.00
How much funding is obligated to local safety projects?
$2,862,664.00

How much funding is programmed to non-infrastructure safety projects?
$1,387,776.00
How much funding is obligated to non-infrastructure safety projects?
$1,387,776.00

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.

A specific challenge we face is the FAST Act language that made education and enforcement ineligible activities for HSIP funds. We had been counting on using approximately 10-15% of our HSIP allocation on education and enforcement efforts so we had to regroup and find other projects to obligate the money towards.

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

Project delivery is administered through the UDOT region offices. We are working closely with our region counterparts to make sure safety projects are addressed in a timely manner. After projects are programmed, project managers from the applicable UDOT region offices are assigned to each project. These project managers then shepherd the projects through UDOT's standard federal environmental, design, and construction processes.

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
SR-71/Ellerby Ave Intersection Imps (PIN 11391)	Intersection geometry Splitter island - install on one or more approaches	1 Numbers	500000	513743	HSIP (Section 148)	Urban Principal Arterial - Other	25625	45	State Highway Agency	Intersections	Intersection Geometry
SR-111; SR-209 to 3500 S (PIN 11498)	Shoulder treatments Widen shoulder - paved or other	9 Miles	2000000	7400000	HSIP (Section 148)	Urban Principal Arterial - Other	13000	60	State Highway Agency	Roadway Departure	Shoulder Widening
US-191; Mormon Tank Wash to Kanes Spring (PIN 1152	Shoulder treatments Shoulder grading	2 Miles	500000	3645000	HSIP (Section 148)	Rural Principal Arterial - Other	4505	65	State Highway Agency	Roadway Departure	Shoulder flattening
SR-20; MP 6.83-13.66, Roadside Improvements (PIN 1	Roadside Barrier- metal	6.8 Miles	450000	450000	HSIP (Section 148)	Rural Principal Arterial - Other	2035	65	State Highway Agency	Roadway Departure	Guardrail & Friction Pvmt
I-15, I-215, I-80;	Roadside Barrier - concrete	117 Miles	3000000	3000000	HSIP (Sectio	Urban Principal	140000	70	State Highway	Roadway Departure	Roadside Barrier

Interstate Structure Protection					n 148)	Arterial - Interstate			Agency		
I-15; Scipio to Juab County Line (PIN 13331)	Shoulder treatments Shoulder treatments - other	6 Miles	500000	1750000	HSIP (Section 148)	Rural Principal Arterial - Interstate	9720	80	State Highway Agency	Roadway Departure	Shoulder Stabilization
US-91; SR-13 to Mantua (PIN 13441)	Roadside Barrier - concrete	4.6 Miles	3500000	5050000	HSIP (Section 148)	Rural Principal Arterial - Other Freeways and Expressways	29485	60	State Highway Agency	Roadway Departure	Roadside Barrier
SR-35; MP 17.30-20.75, Motorcycle -Safe Guardrail (	Roadside Barrier- metal	3 Miles	600000	600000	HSIP (Section 148)	Rural Major Collector	445	40	State Highway Agency	Roadway Departure	Guardrail
SR-20; MP 0.50-2.00, Runaway Truck Ramp (PIN 13491	Speed management Speed management - other	1 Numbers	400000	400000	HSIP (Section 148)	Rural Principal Arterial - Other	2035	65	State Highway Agency	Roadway Departure	Runaway Truck Ramp
Various Routes; No-Pass Pennant Signing (PIN 13492	Roadway signs and traffic control Roadway signs and traffic control - other	1 Numbers	250000	250000	HSIP (Section 148)	Various	4000	60	State Highway Agency	Lane Departure	No-Pass Pennants

SR-95; MP 16-117, Curve Signage (PIN 13493)	Roadway signs and traffic control Curve-related warning signs and flashers	101 Miles	250000	250000	HSIP (Section 148)	Rural Minor Arterial	500	65	State Highway Agency	Lane Departure	Curve signs
US-191; MP 356.6-359.4, Motorcycle -Safe Guardrail	Roadside Barrier- metal	2.8 Miles	200000	200000	HSIP (Section 148)	Rural Minor Arterial	1750	65	State Highway Agency	Roadway Departure	Guardrail
BYU Safety Modeling FY17 (PIN 13572)	Non-infrastructure Transportation safety planning	1 Numbers	120000	120000	HSIP (Section 148)	n/a	0	0	State Highway Agency	Safety Modeling	Crash Mapping & Analysis
usRAP Model Development (PIN 13574)	Non-infrastructure Transportation safety planning	1 Numbers	150000	150000	HSIP (Section 148)	n/a	0	0	State Highway Agency	Safety Modeling	Crash Mapping & Analysis
FY 2016 Research Work Program (PIN 13702)	Non-infrastructure Transportation safety planning	1 Numbers	90000	255555 50	HSIP (Section 148)	n/a	0	0	State Highway Agency	Pedestrians	Safety Study
US-40; Daniels Canyon Shoulder Repair (PIN 13721)	Shoulder treatments Widen shoulder - paved or other	8.3 Miles	200000 00	800000 00	HSIP (Section 148)	Rural Principal Arterial - Other	5815	60	State Highway Agency	Roadway Departure	Shoulder Widening
SR-128; Jct US-191 to	Roadside Barrier- metal	34 Miles	500000	364500	HSIP (Sectio	Rural Major	640	50	State Highway	Roadway Departure	Guardrail

Dewey Bridge (PIN 13782)					n 148)	Collector			Agency		
Bike Improvements on SR-113 & SR-114 (PIN 13900)	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	400000	647000	HSIP (Section 148)	Urban Minor Arterial	7700	35	State Highway Agency	Intersections	Left Turn Striping
2016 Statewide Pavement Condition Data Collection	Non-infrastructure Data/traffic records	1 Numbers	430000	1465000	HSIP (Section 148)	n/a	0	0	State Highway Agency	Data	Roadway Data Collection
Protected Bike Lanes & Raised Medians Bulldog Blvd	Access management Raised island - install new	0.7 Miles	1500000	4500000	HSIP (Section 148)	Urban Principal Arterial - Other	21000	35	City of Municipal Highway Agency	Intersections	Raised Medians
SR-21; SR-130 & Flat Rd Intersection Study (PIN 14	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	2 Numbers	50000	50000	Penalty Transfer – Section 164	Rural Minor Arterial	1685	65	State Highway Agency	Intersections	Safety Study
US-91; MP 28.44-28.70, Medians, Turn Lanes, & Sign	Intersection traffic control Systemic improvements - signal-controlled	1 Numbers	1065000	1065000	HSIP (Section 148)	Urban Principal Arterial - Other	18530	45	State Highway Agency	Intersections	Intersection Signalization

SR-201; MP 2.8-3.5, Barrier Extension (PIN 14455)	Roadside Barrier - concrete	0.74 Miles	900000	900000	HSIP (Section 148)	Rural Principal Arterial - Other Freeways and Expressways	17250	60	State Highway Agency	Roadway Departure	Roadside Barrier
SR-201; MP 11.2-12.7, Shoulder Cable Barrier (PIN	Roadside Barrier - cable	3 Miles	1000000	1000000	HSIP (Section 148)	Urban Principal Arterial - Other Freeways and Expressways	62895	65	State Highway Agency	Roadway Departure	Roadside Barrier
4100 S/3200 W Signal Upgrade (PIN 14457)	Intersection traffic control Modify traffic signal - add flashing yellow arrow	1 Numbers	850000	850000	HSIP (Section 148)	Urban Minor Arterial	26555	40	City of Municipal Highway Agency	Intersections	Signal Control
US-89; Orem Raised Medians Univ. Pkwy to Center St	Access management Raised island - install new	4.38 Miles	2200000	3700000	HSIP (Section 148)	Urban Principal Arterial - Other	45500	40	State Highway Agency	Intersections	Raised Medians
SR-173; MP 9.29-9.41, Signal Improvements (PIN 149	Intersection traffic control Modify traffic signal - add additional signal heads	1 Numbers	600000	600000	HSIP (Section 148)	Urban Principal Arterial - Other	26820	40	State Highway Agency	Intersections	Signal Control

Progress in Achieving Safety Performance Targets

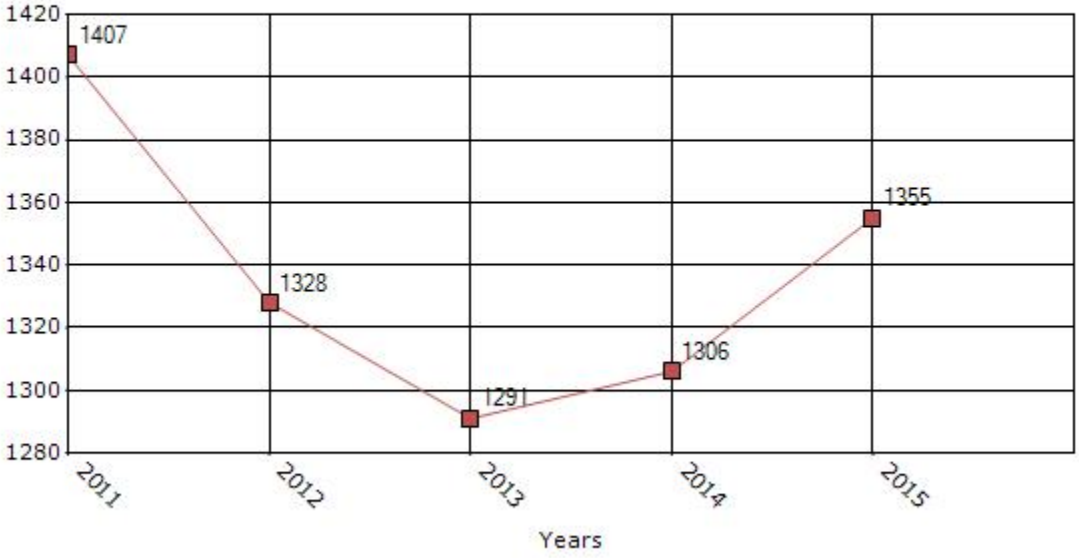
Overview of General Safety Trends

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

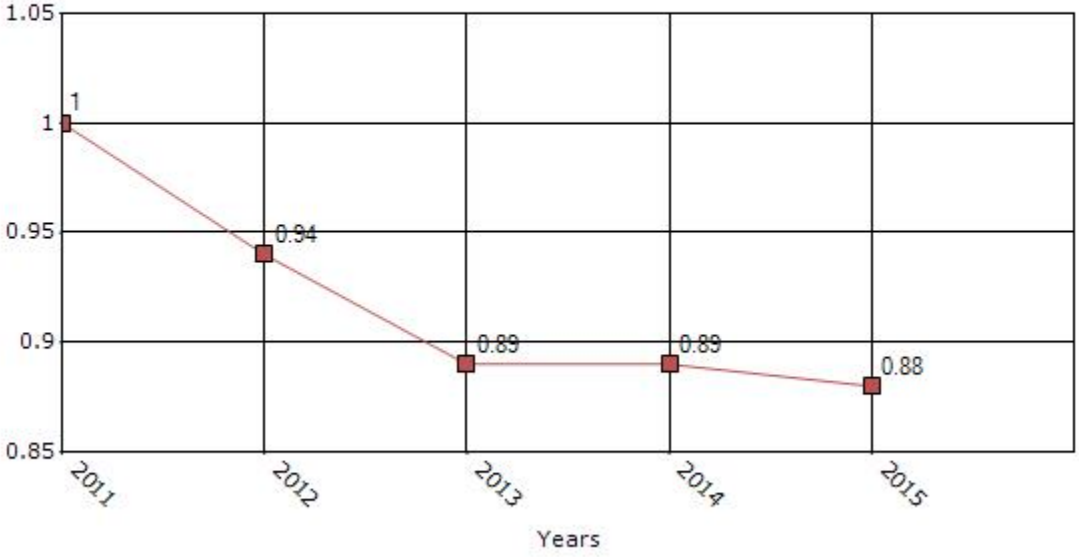
Performance Measures*	2011	2012	2013	2014	2015
Number of fatalities	263	247	235	238	243
Number of serious injuries	1407	1328	1291	1306	1355
Fatality rate (per HMVMT)	1	0.94	0.89	0.89	0.88
Serious injury rate (per HMVMT)	5.33	5.04	4.86	4.86	4.93

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

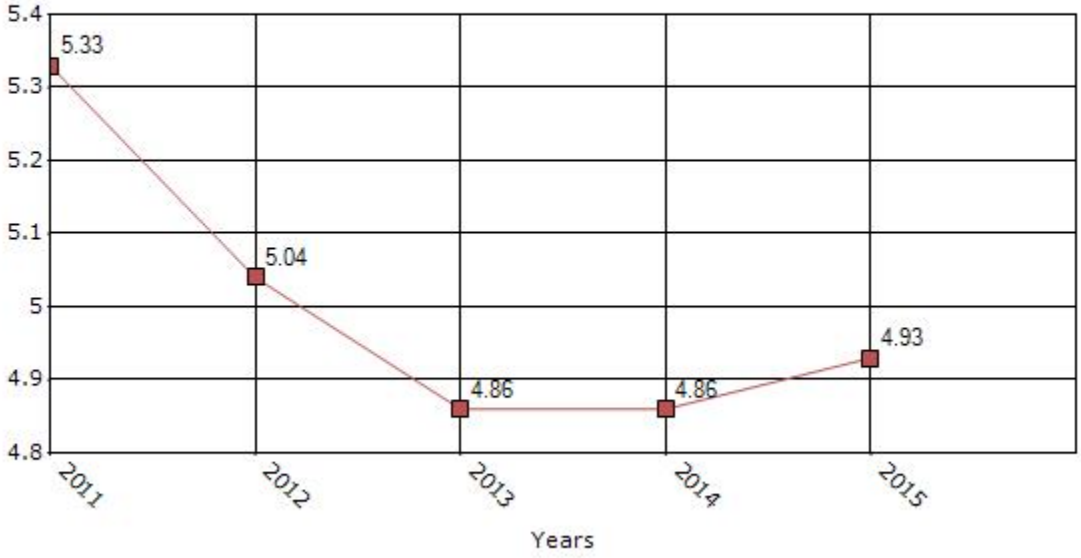
Number of Serious Injuries for the Last Five Years
5-yr Average Measure Data



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



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

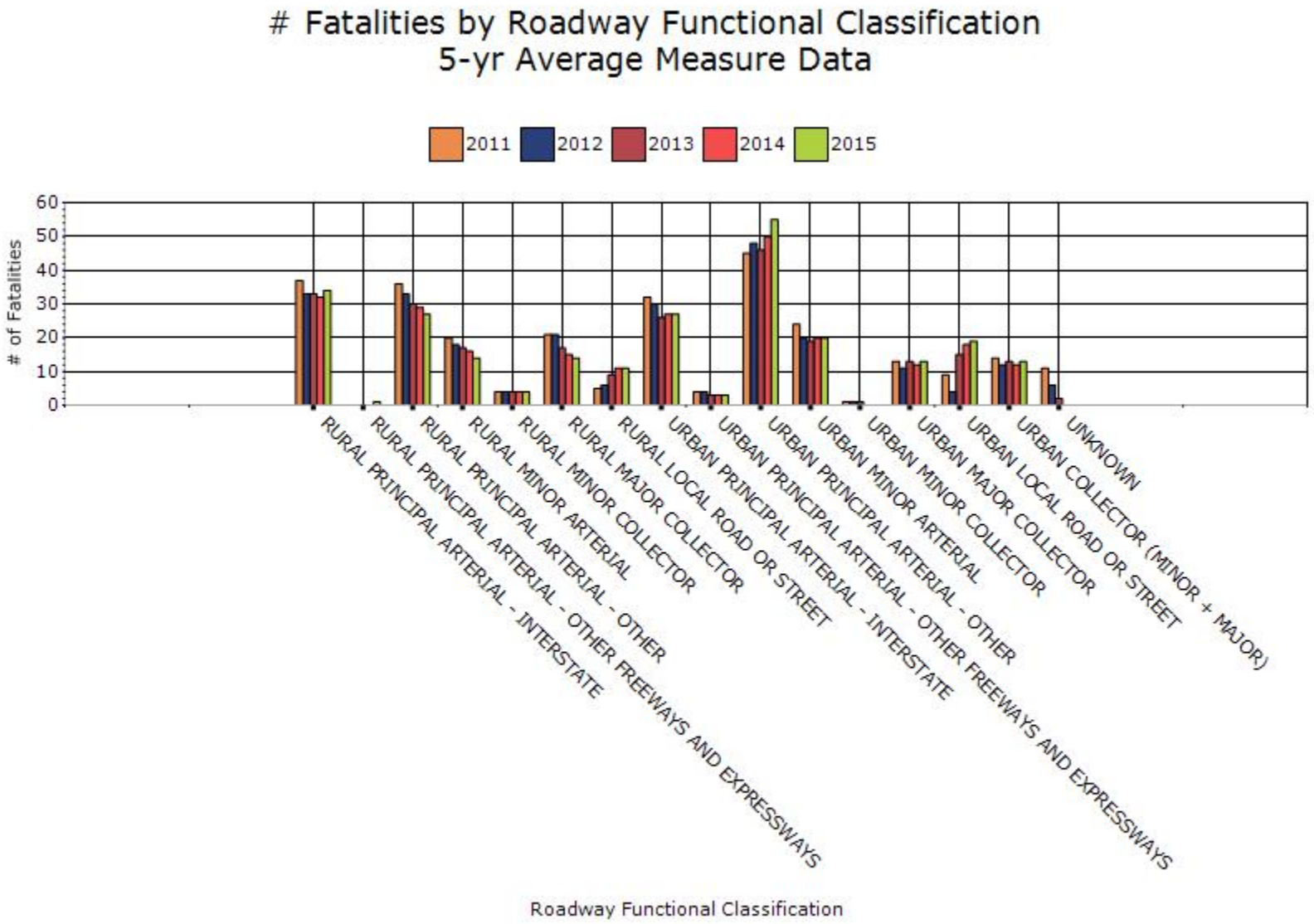


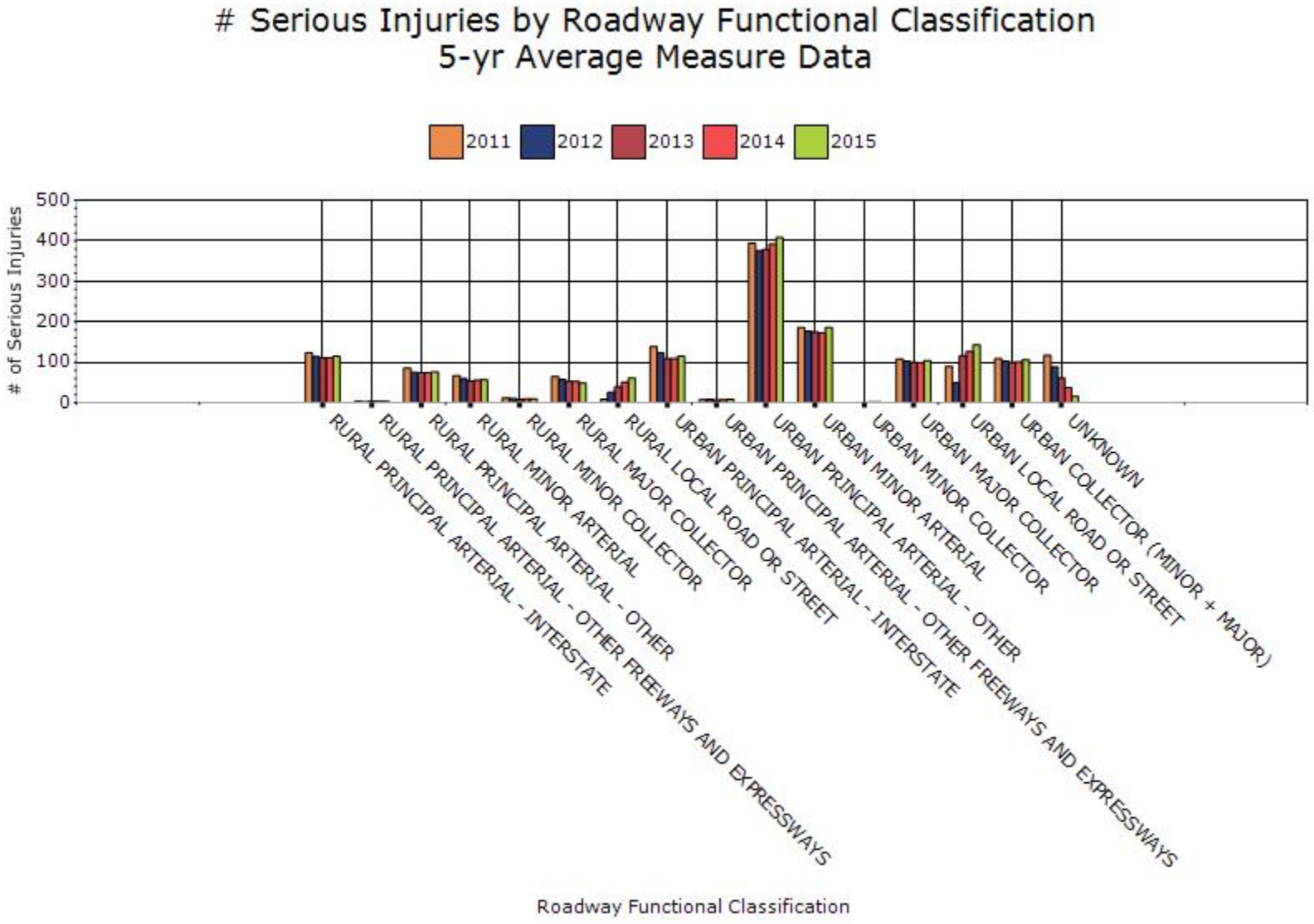
To the maximum extent possible, present performance measure* data by functional classification and ownership.

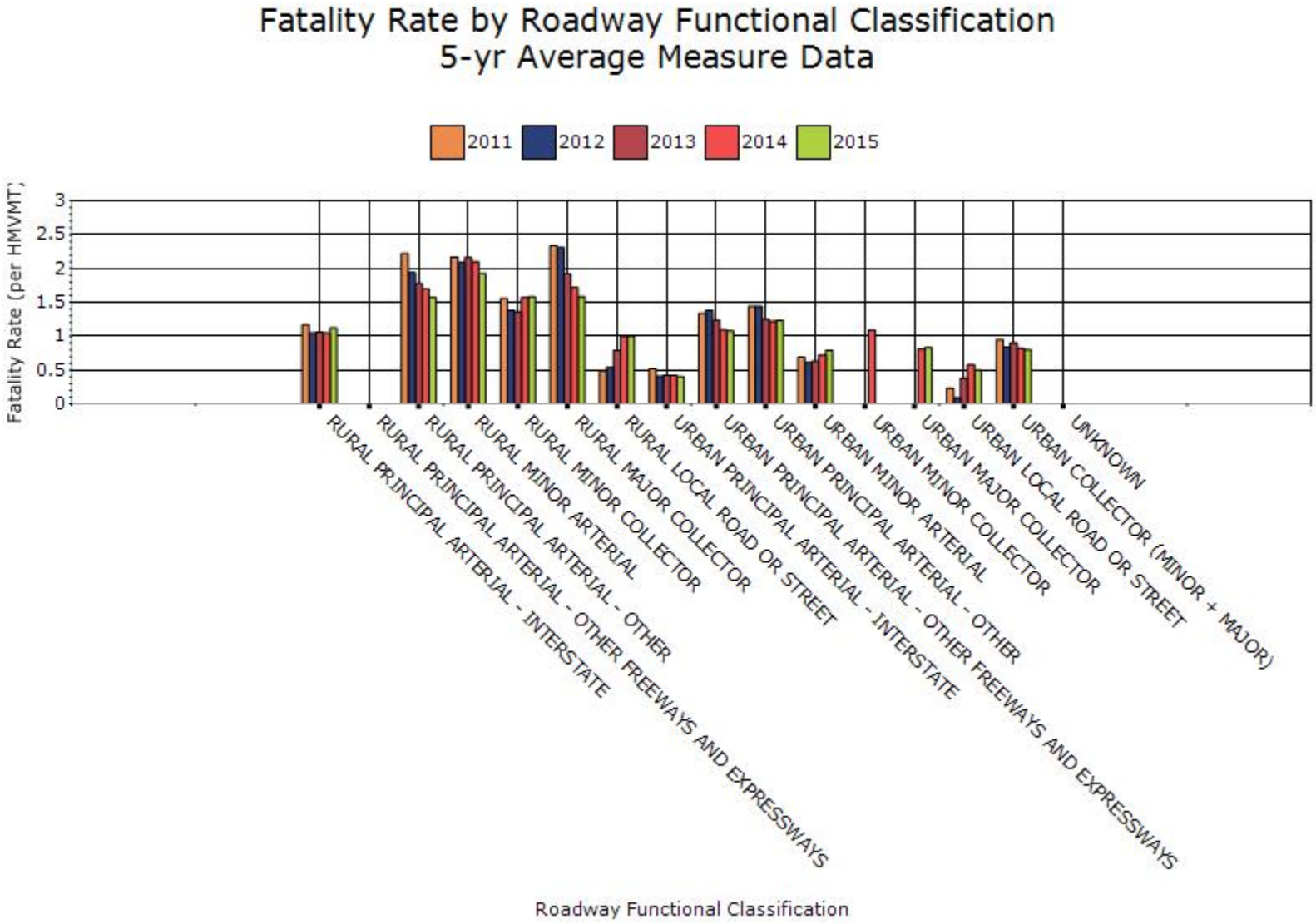
Year - 2015

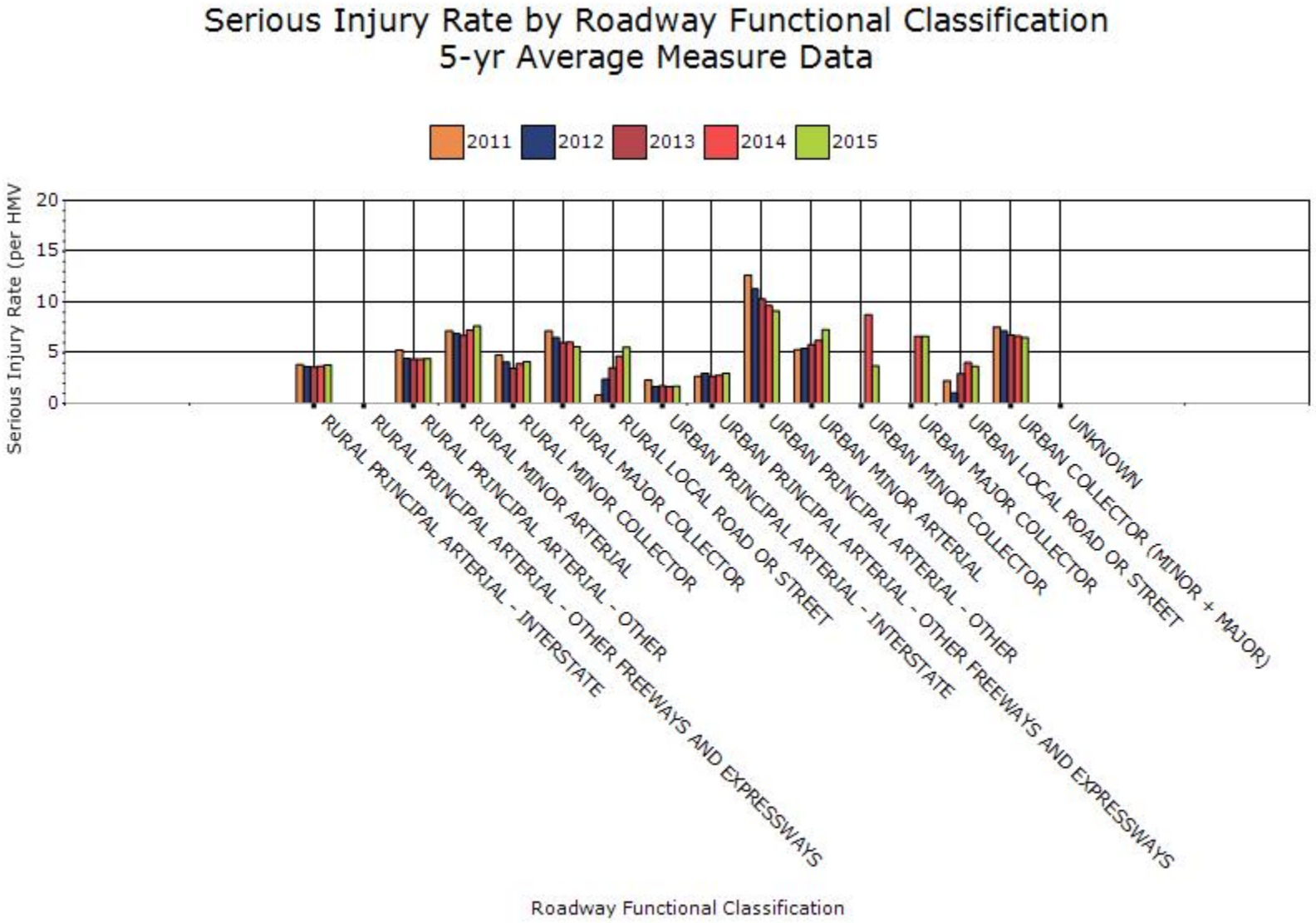
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	34	115	1.12	3.8
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	1	4		
RURAL PRINCIPAL ARTERIAL - OTHER	27	76	1.57	4.42
RURAL MINOR ARTERIAL	14	57	1.93	7.63
RURAL MINOR COLLECTOR	4	10	1.58	4.11
RURAL MAJOR COLLECTOR	14	49	1.58	5.6
RURAL LOCAL ROAD OR STREET	11	61	1	5.55
URBAN PRINCIPAL ARTERIAL - INTERSTATE	27	115	0.4	1.72

URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	3	9	1.08	2.99
URBAN PRINCIPAL ARTERIAL - OTHER	55	408	1.23	9.12
URBAN MINOR ARTERIAL	20	186	0.79	7.26
URBAN MINOR COLLECTOR		2		3.71
URBAN MAJOR COLLECTOR	13	104	0.83	6.63
URBAN LOCAL ROAD OR STREET	19	143	0.5	3.66
URBAN COLLECTOR (MINOR + MAJOR)	13	106	0.8	6.51
UNKNOWN		16		


Fatalities by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Fatalities
60
50
40
30
20
10
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR COLLECTOR
RURAL MAJOR COLLECTOR
RURAL LOCAL ROAD OR STREET
URBAN PRINCIPAL ARTERIAL - INTERSTATE
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
URBAN PRINCIPAL ARTERIAL - OTHER
URBAN MINOR ARTERIAL
URBAN MINOR COLLECTOR
URBAN MAJOR COLLECTOR
URBAN LOCAL ROAD OR STREET
URBAN COLLECTOR (MINOR + MAJOR)
UNKNOWN
Roadway Functional Classification

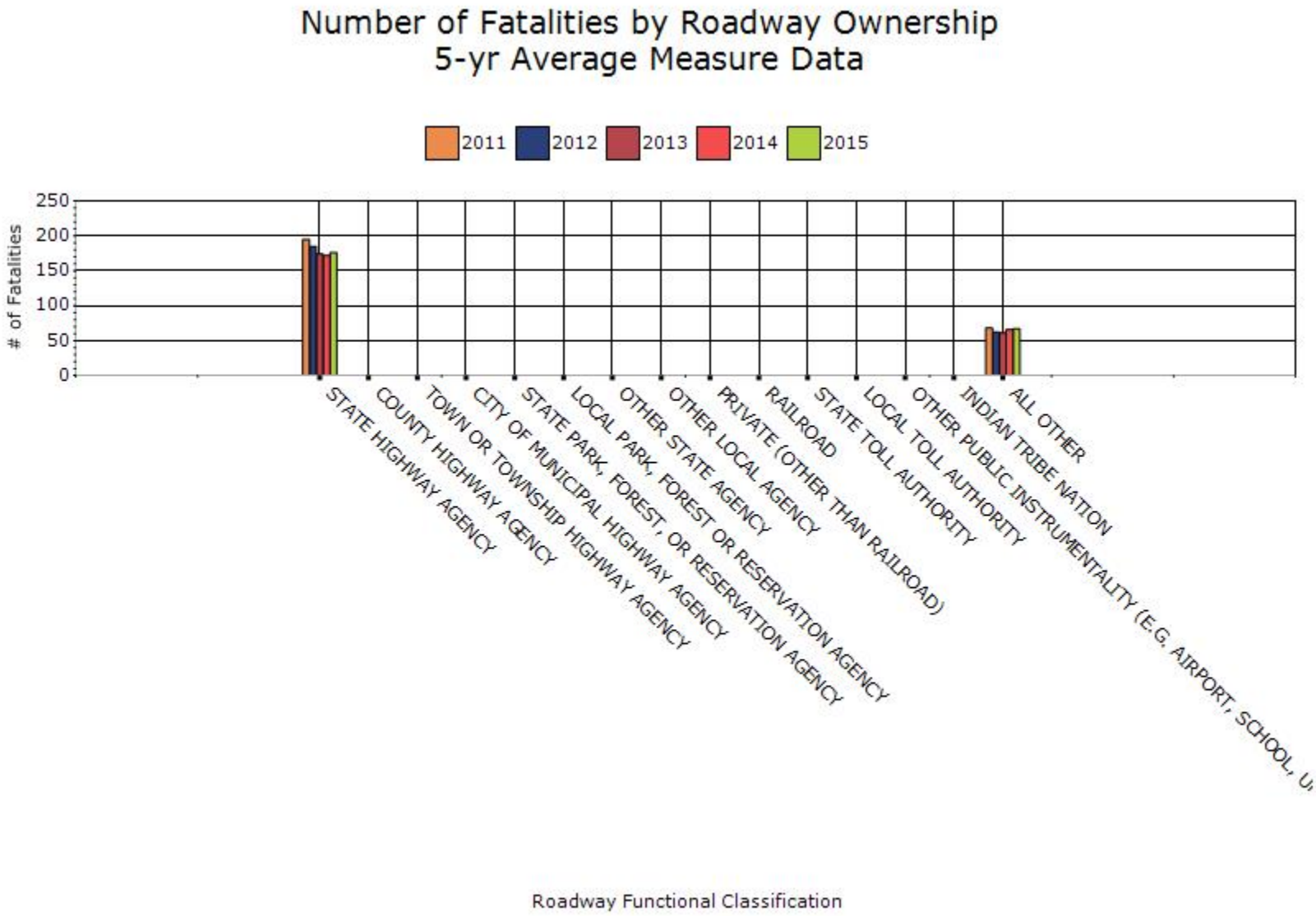

Serious Injuries by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
500
400
300
200
100
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR COLLECTOR
RURAL MAJOR COLLECTOR
RURAL LOCAL ROAD OR STREET
URBAN PRINCIPAL ARTERIAL - INTERSTATE
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
URBAN PRINCIPAL ARTERIAL - OTHER
URBAN MINOR ARTERIAL
URBAN MINOR COLLECTOR
URBAN MAJOR COLLECTOR
URBAN LOCAL ROAD OR STREET
URBAN COLLECTOR (MINOR + MAJOR)
UNKNOWN
Roadway Functional Classification

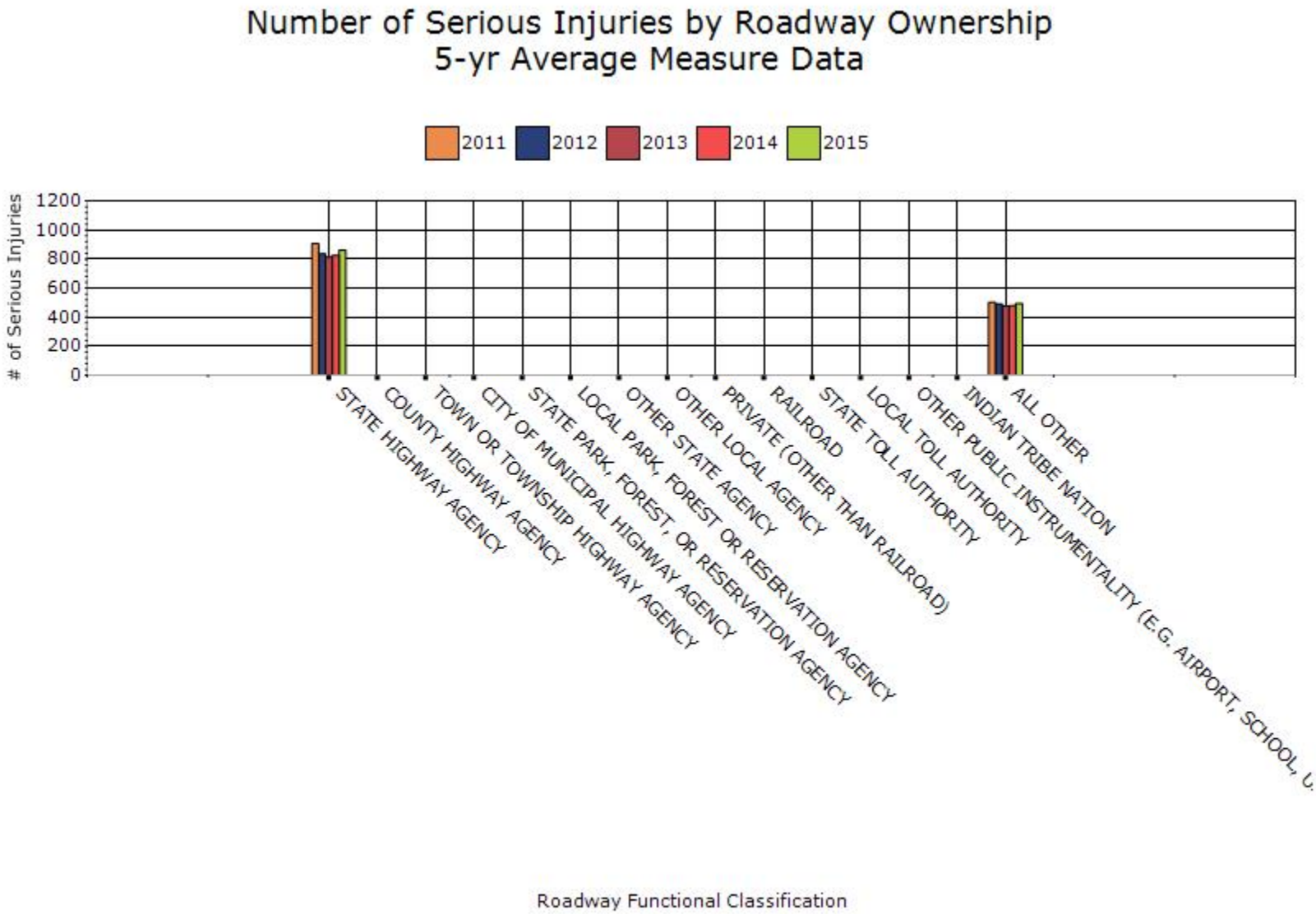

Fatality Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVMT)
3
2.5
2
1.5
1
0.5
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR COLLECTOR
RURAL MAJOR COLLECTOR
RURAL LOCAL ROAD OR STREET
URBAN PRINCIPAL ARTERIAL - INTERSTATE
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
URBAN PRINCIPAL ARTERIAL - OTHER
URBAN MINOR ARTERIAL
URBAN MINOR COLLECTOR
URBAN MAJOR COLLECTOR
URBAN LOCAL ROAD OR STREET
URBAN COLLECTOR (MINOR + MAJOR)
UNKNOWN
Roadway Functional Classification

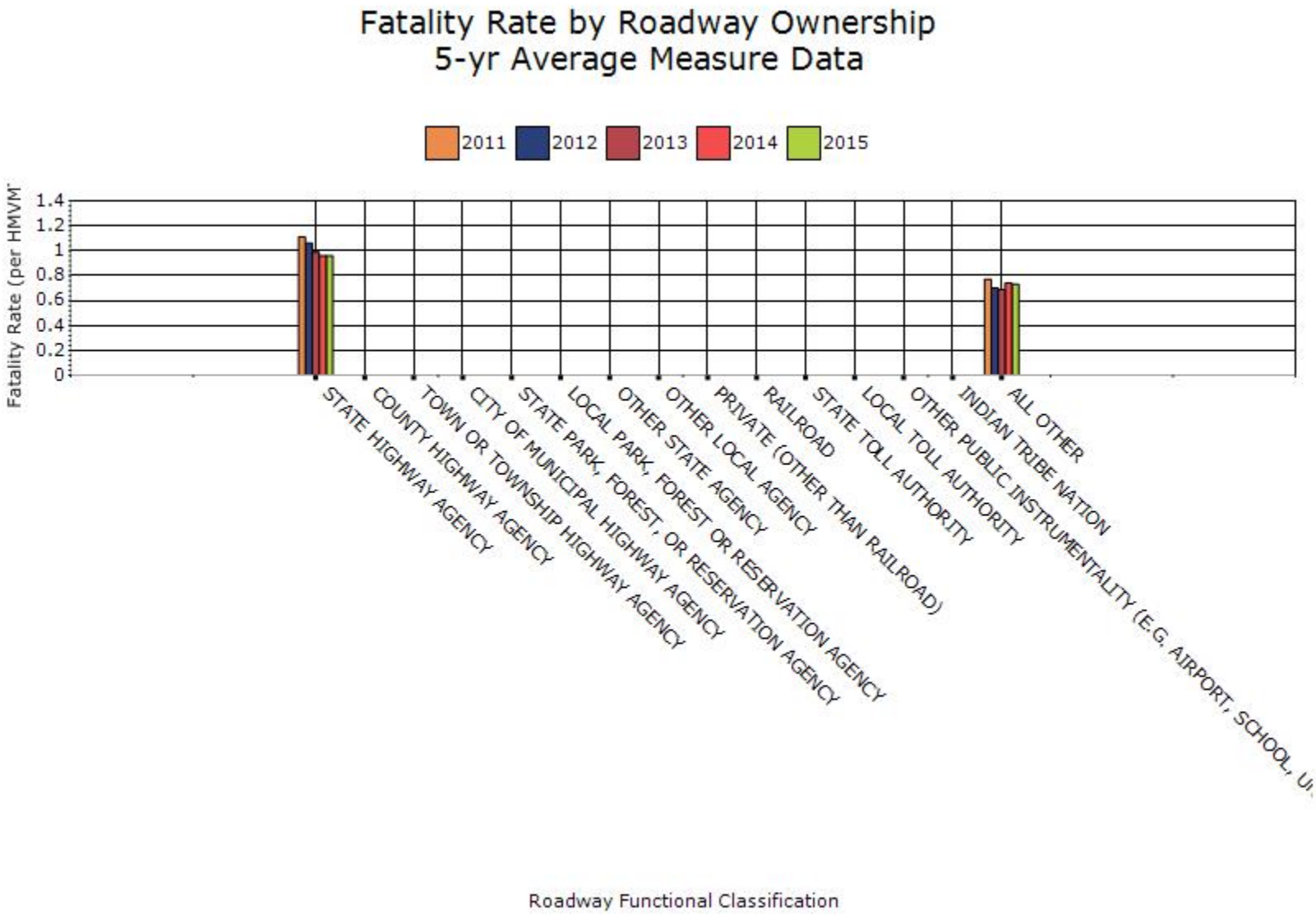

Serious Injury Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Serious Injury Rate (per HMV
20
15
10
5
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR COLLECTOR
RURAL MAJOR COLLECTOR
RURAL LOCAL ROAD OR STREET
URBAN PRINCIPAL ARTERIAL - INTERSTATE
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
URBAN PRINCIPAL ARTERIAL - OTHER
URBAN MINOR ARTERIAL
URBAN MINOR COLLECTOR
URBAN MAJOR COLLECTOR
URBAN LOCAL ROAD OR STREET
URBAN COLLECTOR (MINOR + MAJOR)
UNKNOWN
Roadway Functional Classification

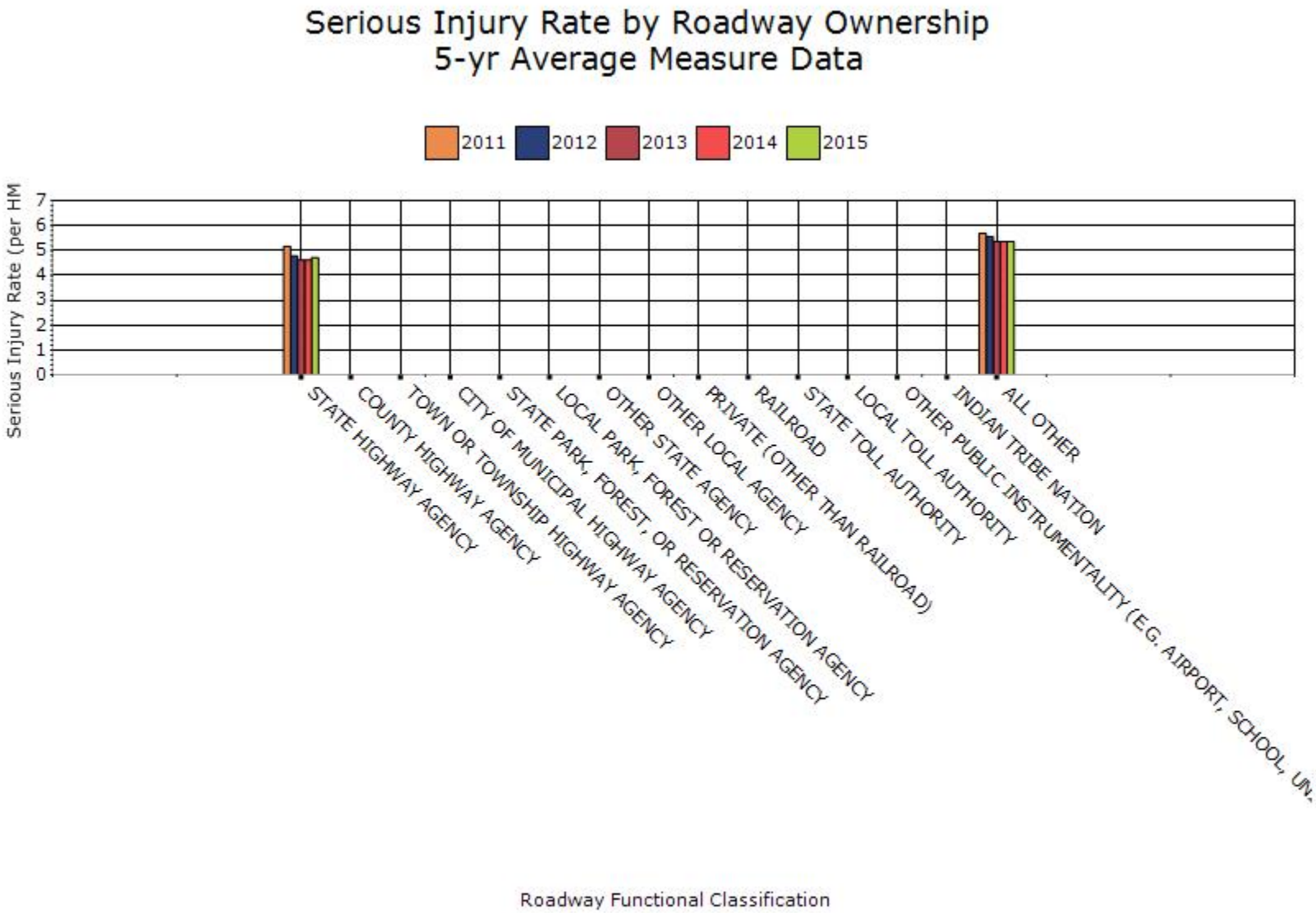
Year - 2015

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	176	861	0.96	4.71
ALL OTHER	67	495	0.73	5.35


Number of Fatalities by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Fatalities
250
200
150
100
50
0
STATE HIGHWAY AGENCY
COUNTY HIGHWAY AGENCY
TOWN OR TOWNSHIP HIGHWAY AGENCY
CITY OF MUNICIPAL HIGHWAY AGENCY
STATE PARK, FOREST, OR RESERVATION AGENCY
LOCAL PARK, FOREST OR RESERVATION AGENCY
OTHER STATE AGENCY
OTHER LOCAL AGENCY
PRIVATE (OTHER THAN RAILROAD)
RAILROAD
STATE TOLL AUTHORITY
LOCAL TOLL AUTHORITY
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, U
INDIAN TRIBE NATION
ALL OTHER
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
1200
1000
800
600
400
200
0
STATE HIGHWAY AGENCY
COUNTY HIGHWAY AGENCY
TOWN OR TOWNSHIP HIGHWAY AGENCY
CITY OF MUNICIPAL HIGHWAY AGENCY
STATE PARK, FOREST, OR RESERVATION AGENCY
LOCAL PARK, FOREST OR RESERVATION AGENCY
OTHER STATE AGENCY
OTHER LOCAL AGENCY
PRIVATE (OTHER THAN RAILROAD)
RAILROAD
STATE TOLL AUTHORITY
LOCAL TOLL AUTHORITY
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, U
INDIAN TRIBE NATION
ALL OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVM
1.4
1.2
1
0.8
0.6
0.4
0.2
0
STATE HIGHWAY AGENCY
COUNTY HIGHWAY AGENCY
TOWN OR TOWNSHIP HIGHWAY AGENCY
CITY OF MUNICIPAL HIGHWAY AGENCY
STATE PARK, FOREST, OR RESERVATION AGENCY
LOCAL PARK, FOREST OR RESERVATION AGENCY
OTHER STATE AGENCY
OTHER LOCAL AGENCY
PRIVATE (OTHER THAN RAILROAD)
RAILROAD
STATE TOLL AUTHORITY
LOCAL TOLL AUTHORITY
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, U
INDIAN TRIBE NATION
ALL OTHER
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
Serious Injury Rate (per HM
0
1
2
3
4
5
6
7
STATE HIGHWAY AGENCY
COUNTY HIGHWAY AGENCY
TOWN OR TOWNSHIP HIGHWAY AGENCY
CITY OF MUNICIPAL HIGHWAY AGENCY
STATE PARK, FOREST, OR RESERVATION AGENCY
LOCAL PARK, FOREST OR RESERVATION AGENCY
OTHER STATE AGENCY
OTHER LOCAL AGENCY
PRIVATE (OTHER THAN RAILROAD)
RAILROAD
STATE TOLL AUTHORITY
LOCAL TOLL AUTHORITY
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UN.
INDIAN TRIBE NATION
ALL OTHER
Roadway Functional Classification

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

The number of fatalities and serious injuries in Utah have increased for the past two years. We will continue to install low-cost safety improvements and other proven safety countermeasures to reverse this recent trend.

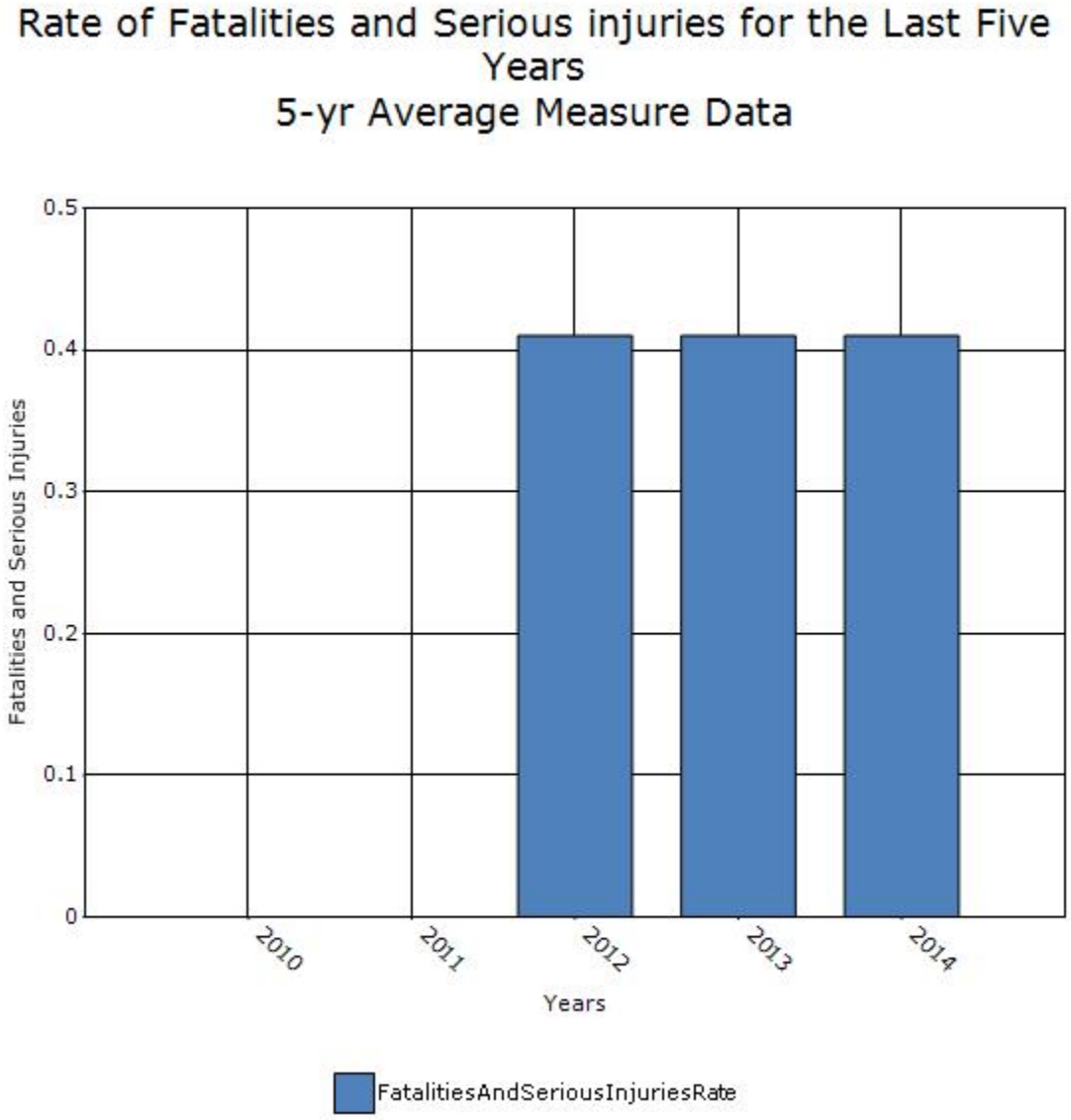
Application of Special Rules

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

Older Driver Performance Measures	2010	2011	2012	2013	2014
Fatality rate (per capita)			0.11	0.11	0.11
Serious injury rate (per capita)			0.3	0.3	0.3
Fatality and serious injury rate (per capita)			0.41	0.41	0.41

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

We followed the guidance on the FHWA website for the older driver special rule. Each year's fatalities and serious injuries were divided by the "Number of People 65 Years of Age and Older (per 1,000 total population)" figures for each of the respective years, as instructed in the guidance. Those are the values we entered in the spreadsheet above.



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?

Benefit/cost

If 'benefit/cost', indicate the overall Highway Safety Improvement Program benefit/cost ratio.

2.05

Other-Reduction of fatalities and serious injuries

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

None

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

None.

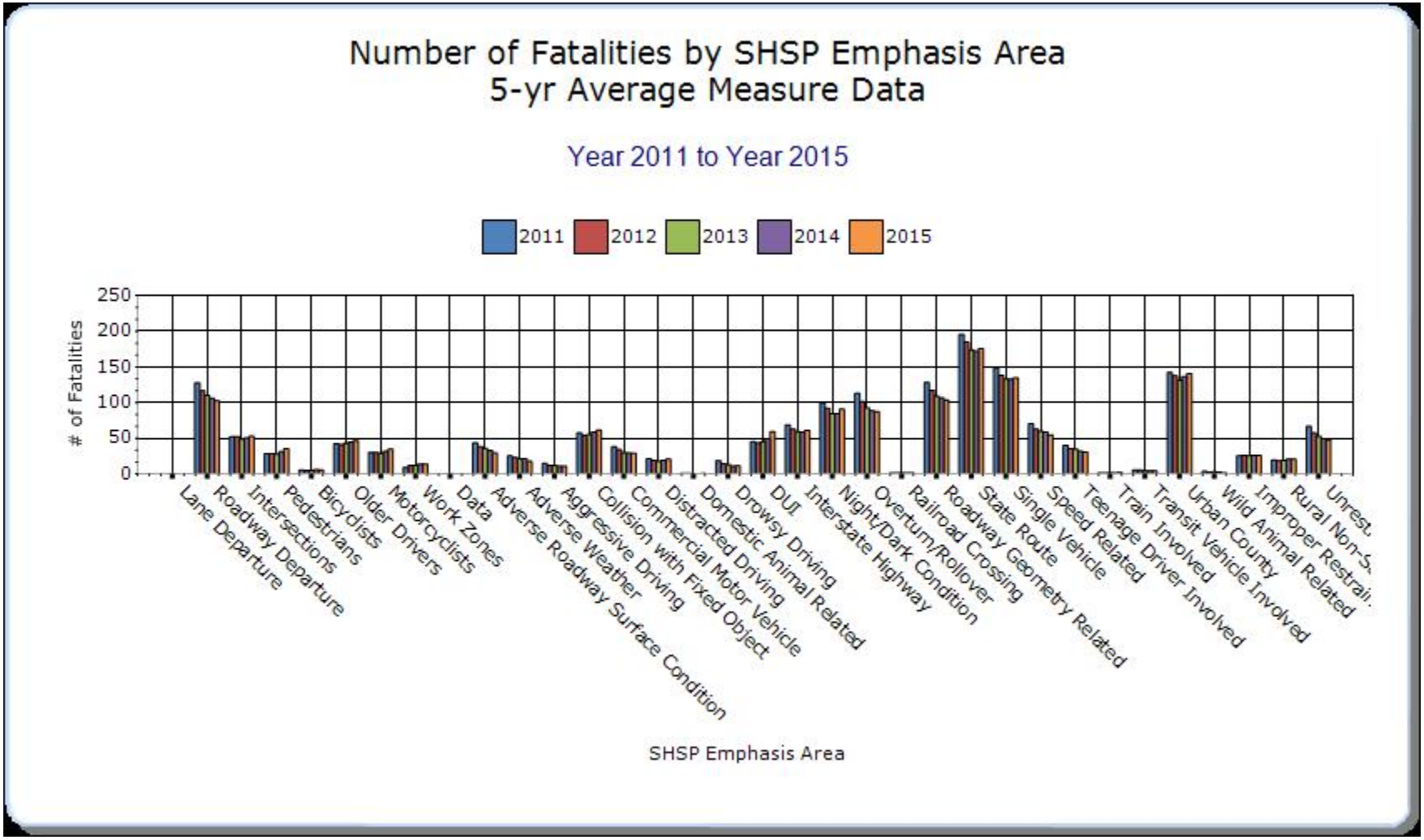
SHSP Emphasis Areas

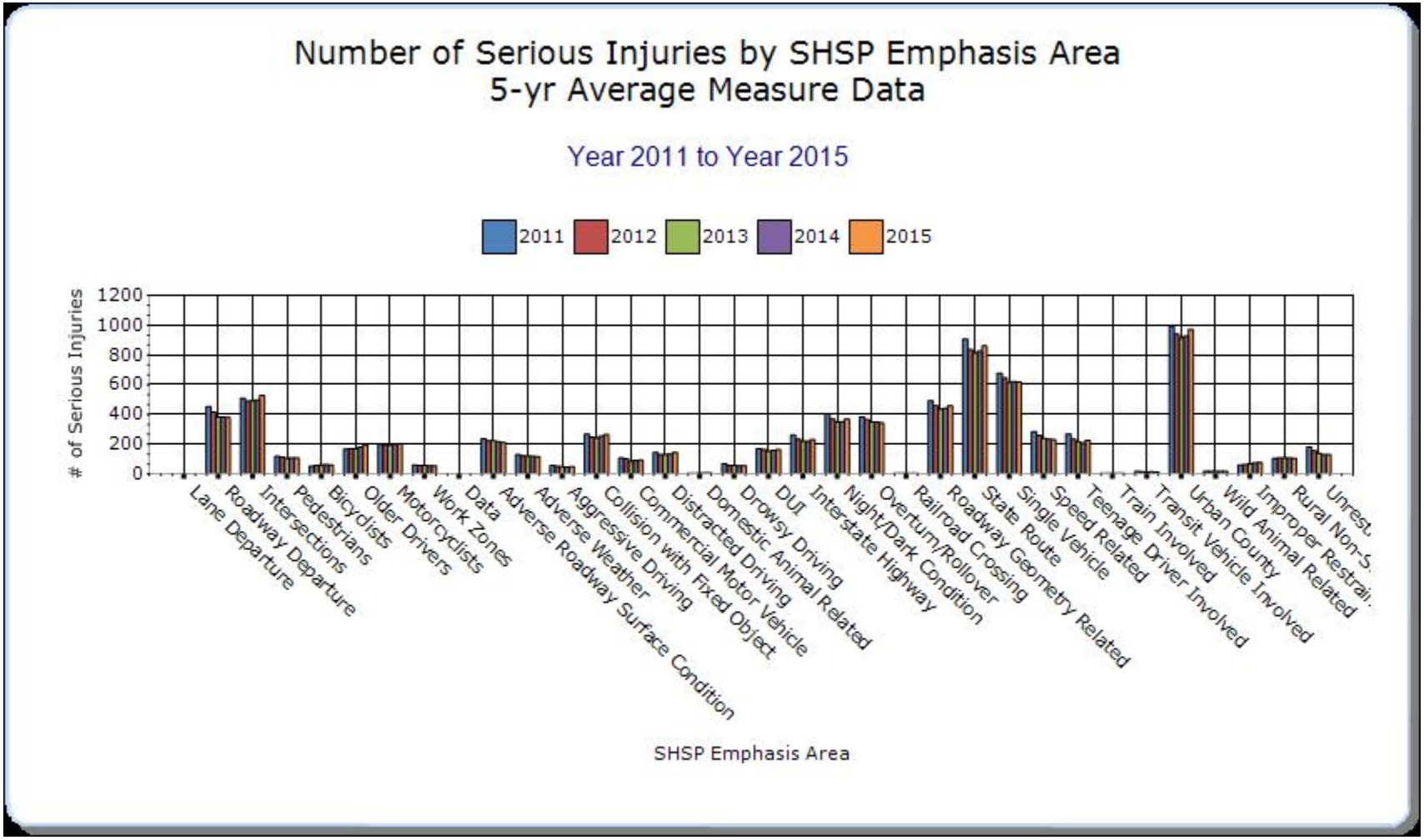
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

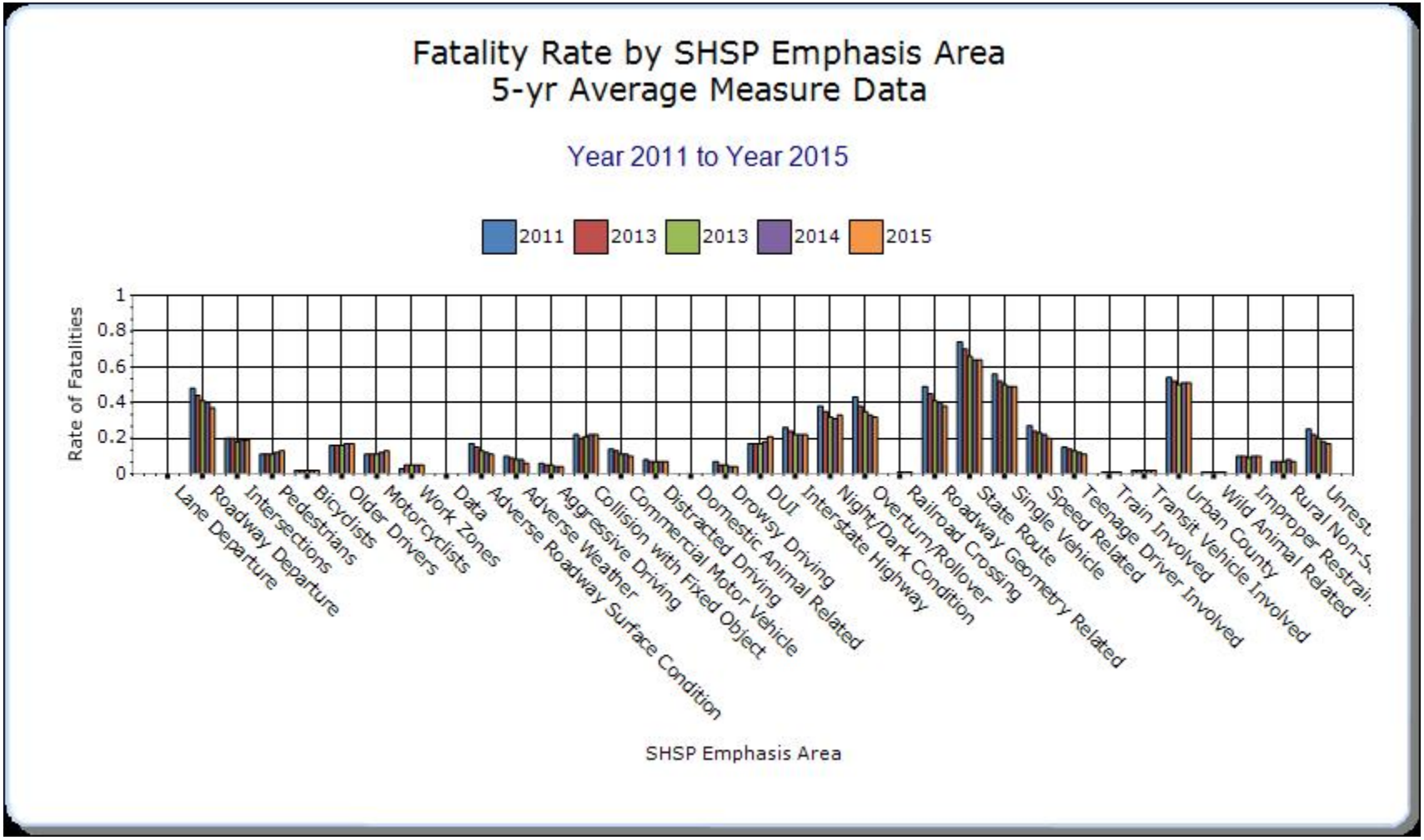
Year - 2015

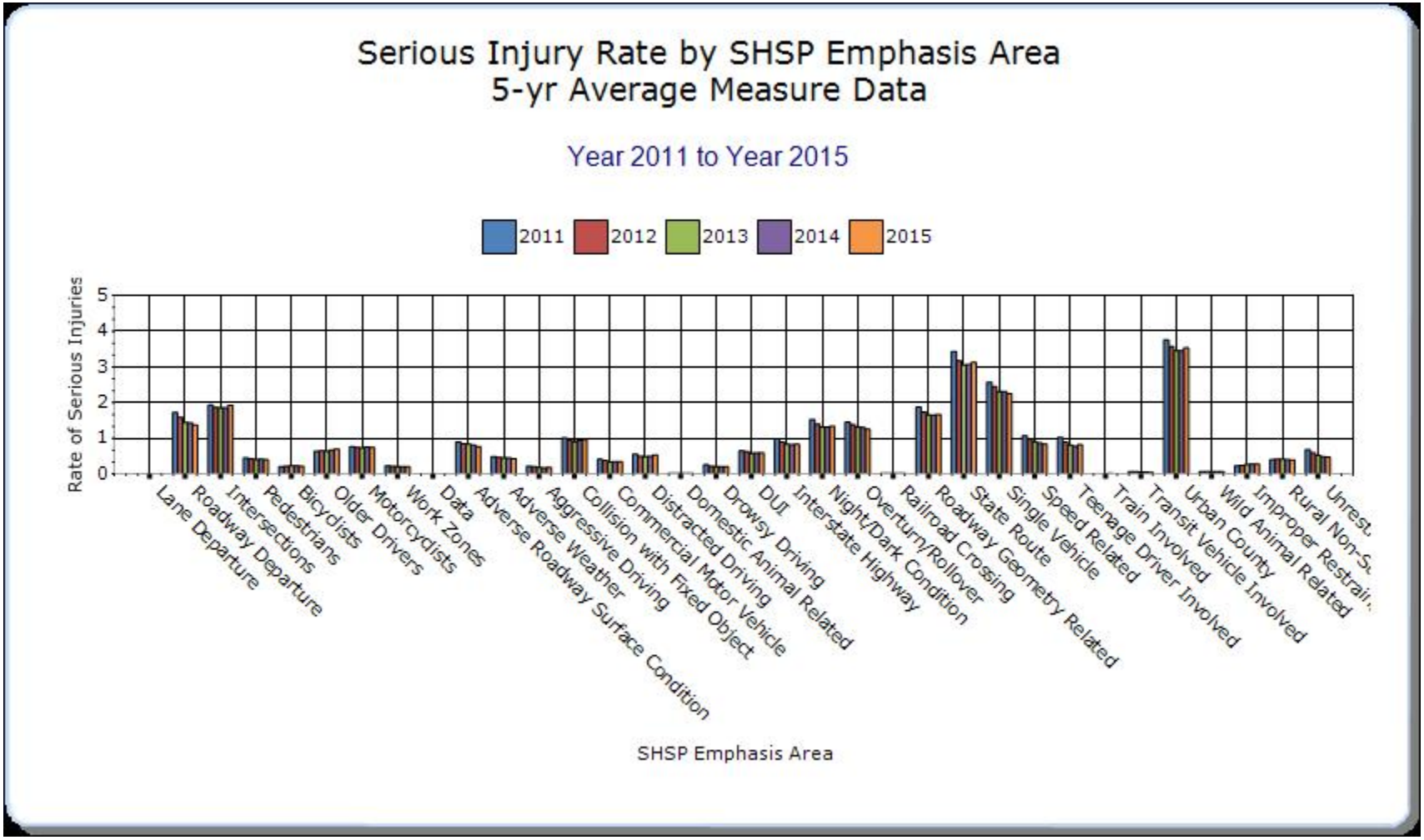
HSIP-related SHSP Emphasis Areas	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Roadway Departure		102.6	378.6	0.37	1.37			
Intersections		52.8	527.4	0.19	1.92			
Pedestrians		35.6	109.2	0.13	0.4			
Bicyclists		5.6	59.8	0.02	0.22			
Older Drivers		46.6	194.4	0.17	0.7			
Motorcyclists		34.6	203.6	0.13	0.74			
Work Zones		14	55.6	0.05	0.2			
Adverse Roadway Surface Condition		29.4	212	0.11	0.77			
Adverse Weather		17.8	117.6	0.06	0.43			
Aggressive Driving		11	49.8	0.04	0.18			
Collision with Fixed Object		61.4	265.6	0.22	0.96			
Commercial Motor Vehicle		28.8	93.2	0.1	0.34			
Distracted Driving		20.6	145.2	0.07	0.53			
Domestic Animal Related		0.6	5.8		0.02			
Drowsy Driving		11.2	55	0.04	0.2			
DUI		59.2	162.8	0.21	0.59			
Interstate Highway		61	230.2	0.22	0.83			
Night/Dark Condition		90.6	369.6	0.33	1.34			

Overturn/Rollover		87.4	343.2	0.32	1.25			
Railroad Crossing		1.6	4.4	0.01	0.02			
Roadway Geometry Related		103.8	459.2	0.38	1.67			
State Route		175.6	860.8	0.64	3.12			
Single Vehicle		134.4	618.4	0.49	2.25			
Speed Related		54.8	230.4	0.2	0.84			
Teenage Driver Involved		30.6	226.4	0.11	0.82			
Train Involved		2	3.6	0.01	0.01			
Transit Vehicle Involved		4.2	12.2	0.02	0.04			
Urban County		140.4	972	0.51	3.53			
Wild Animal Related		1.6	18.6	0.01	0.07			
Improper Restraint		26.2	75.8	0.1	0.28			
Rural Non-State		20.6	106.4	0.07	0.39			
Unrestrained		47.6	129.2	0.17	0.47			


Number of Fatalities by SHSP Emphasis Area
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Fatalities
250
200
150
100
50
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
Adverse Roadway Surface Condition
Adverse Weather
Aggressive Driving
Collision with Fixed Object
Commercial Motor Vehicle
Distracted Driving
Domestic Animal Related
Drowsy Driving
DUI
Interstate Highway
Night/Dark Condition
Overturn/Rollover
Railroad Crossing
Roadway Geometry
State Route
Single Vehicle
Speed Related
Teenage Driver Involved
Train Involved
Transit Vehicle Involved
Urban County
Wild Animal Related
Improper Restrai
Rural Non-S
Unrest
SHSP Emphasis Area


Number of Serious Injuries by SHSP Emphasis Area
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Serious Injuries
1200
1000
800
600
400
200
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
Adverse Roadway Surface Condition
Adverse Weather
Aggressive Driving
Collision with Fixed Object
Commercial Motor Vehicle
Distracted Driving
Domestic Animal Related
Drowsy Driving
DUI
Interstate Highway
Night/Dark Condition
Overturn/Rollover
Railroad Crossing
Roadway Geometry Related
State Route
Single Vehicle
Speed Related
Teenage Driver Involved
Train Involved
Transit Vehicle Involved
Urban County
Wild Animal Related
Improper Restrai
Rural Non-S
Unrest
SHSP Emphasis Area


Fatality Rate by SHSP Emphasis Area
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2013
2013
2014
2015
Rate of Fatalities
1
0.8
0.6
0.4
0.2
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
Adverse Roadway Surface Condition
Adverse Weather
Aggressive Driving
Collision with Fixed Object
Commercial Motor Vehicle
Distracted Driving
Domestic Animal Related
Drowsy Driving
DUI
Interstate Highway
Night/Dark Condition
Overturn/Rollover
Railroad Crossing
Roadway Geometry Related
State Route
Single Vehicle
Speed Related
Teenage Driver Involved
Train Involved
Transit Vehicle Involved
Urban County
Wild Animal Related
Improper Restrai
Rural Non-S
Unrest
SHSP Emphasis Area

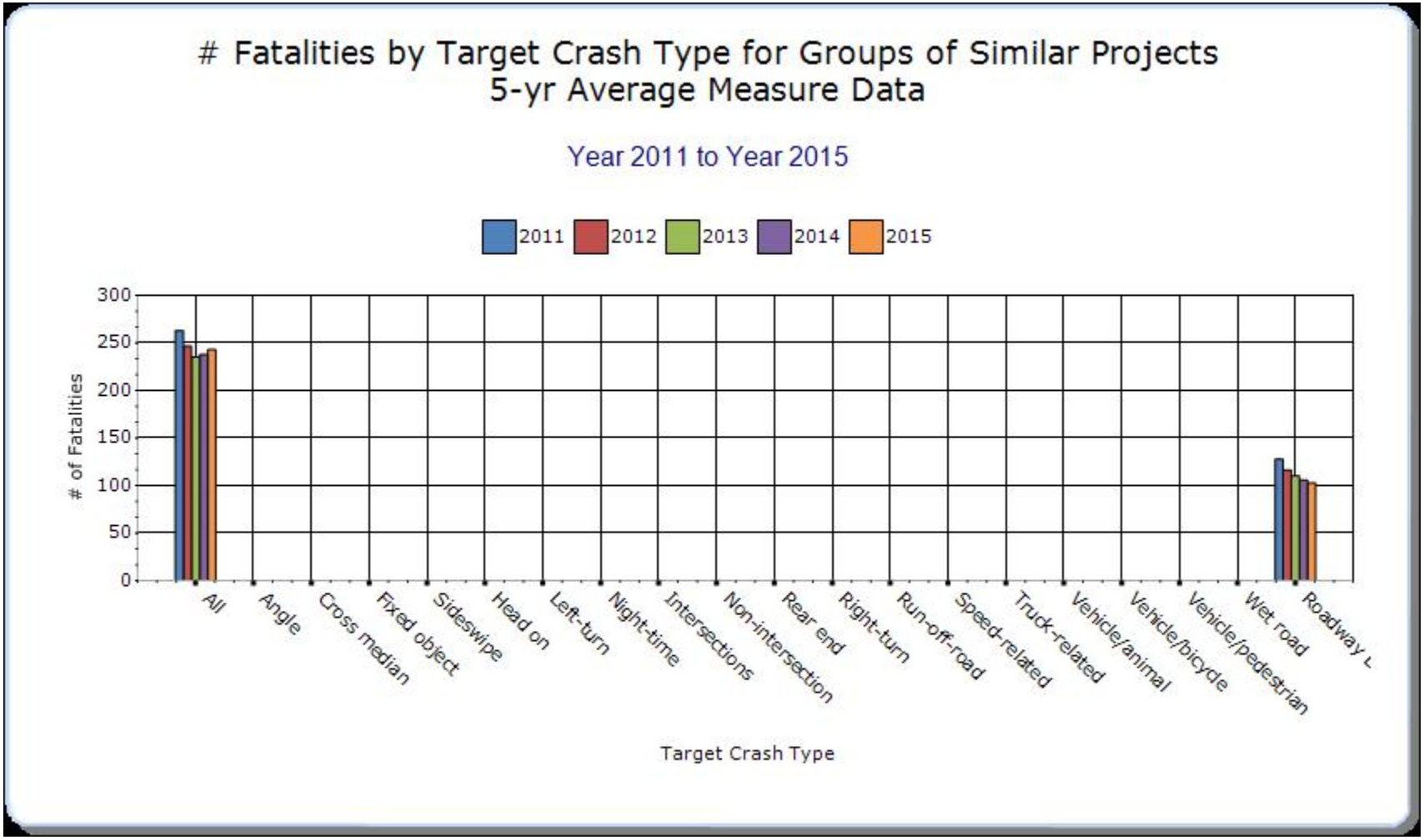


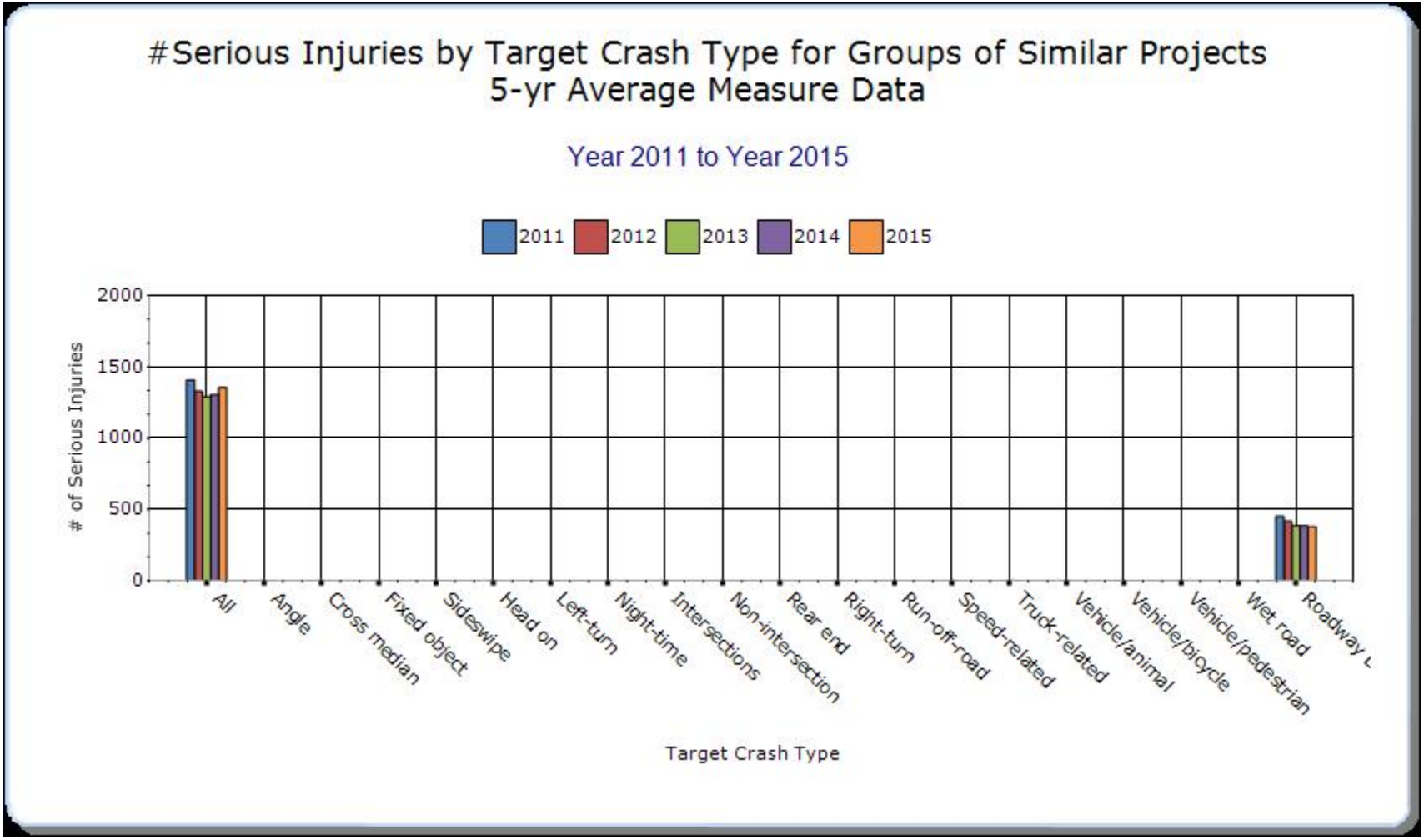
Groups of similar project types

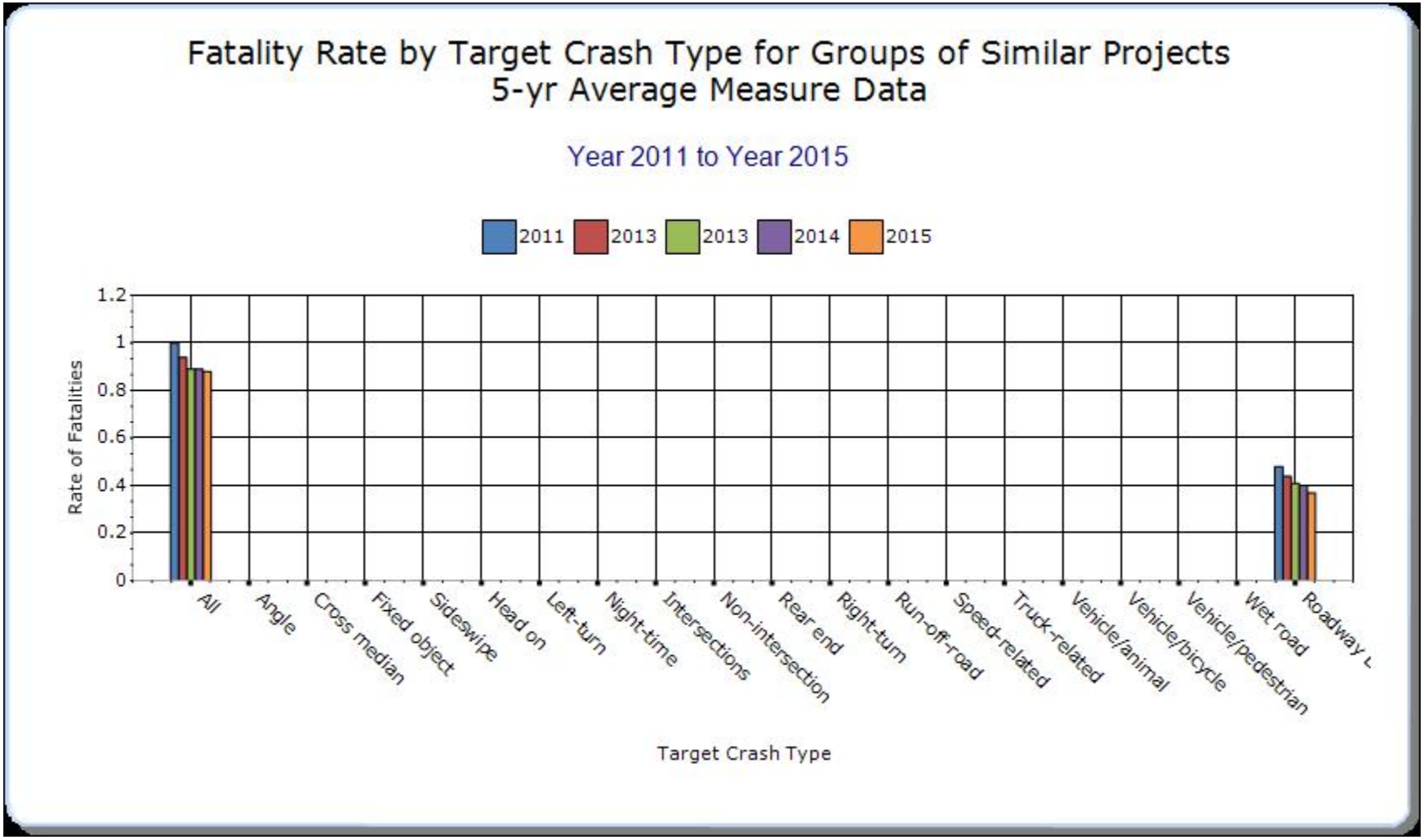
Present the overall effectiveness of groups of similar types of projects.

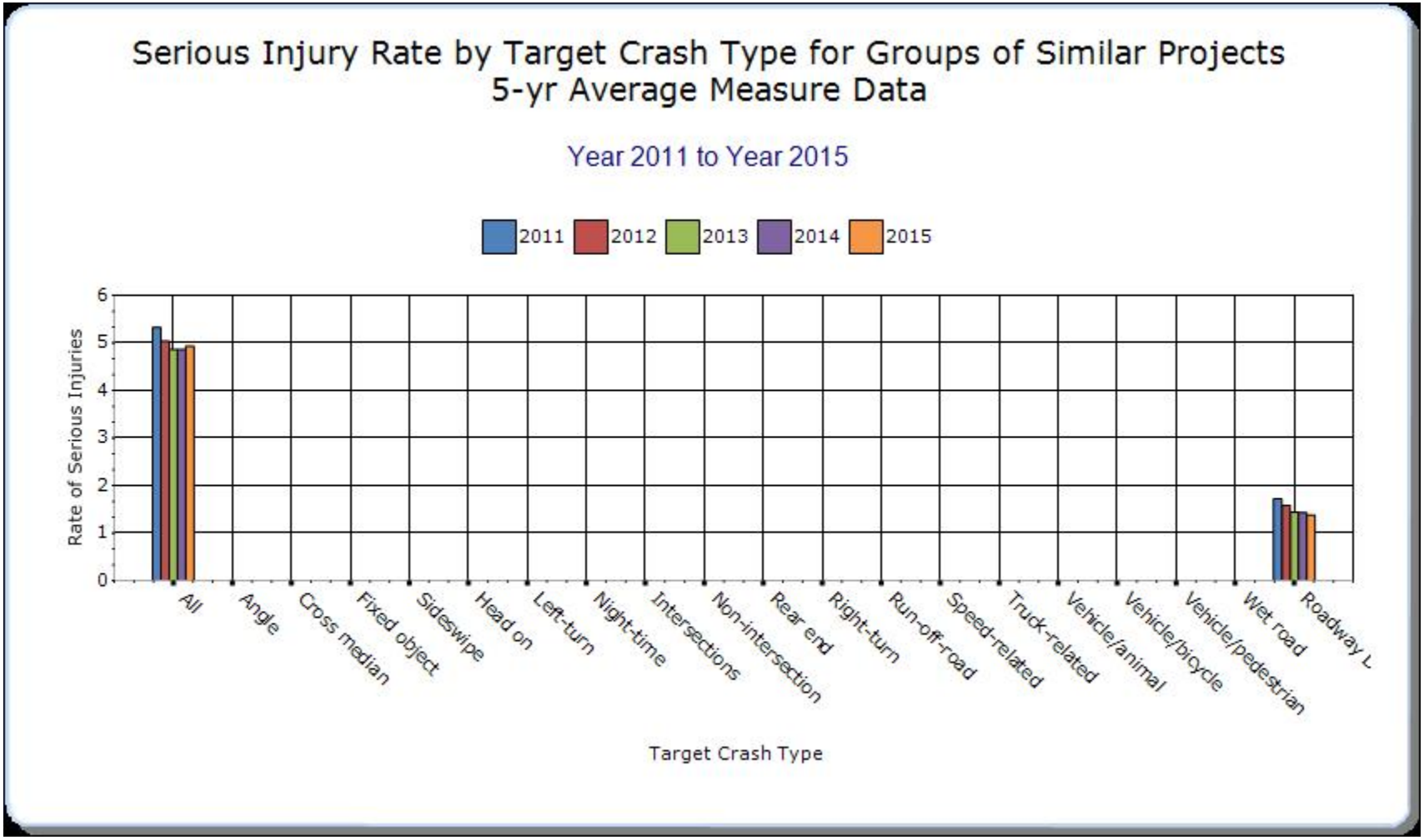
Year - 2015

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
Low-Cost Spot Improvements	Roadway Departure	103	379	0.37	1.38			
Other-Reduce Serious & Fatal Injuries	All	243	1355	0.88	4.93			


Fatalities by Target Crash Type for Groups of Similar Projects
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
300
250
200
150
100
50
0
# of Fatalities
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
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Serious Injuries
2000
1500
1000
500
0
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
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2013
2013
2014
2015
Rate of Fatalities
1.2
1
0.8
0.6
0.4
0.2
0
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

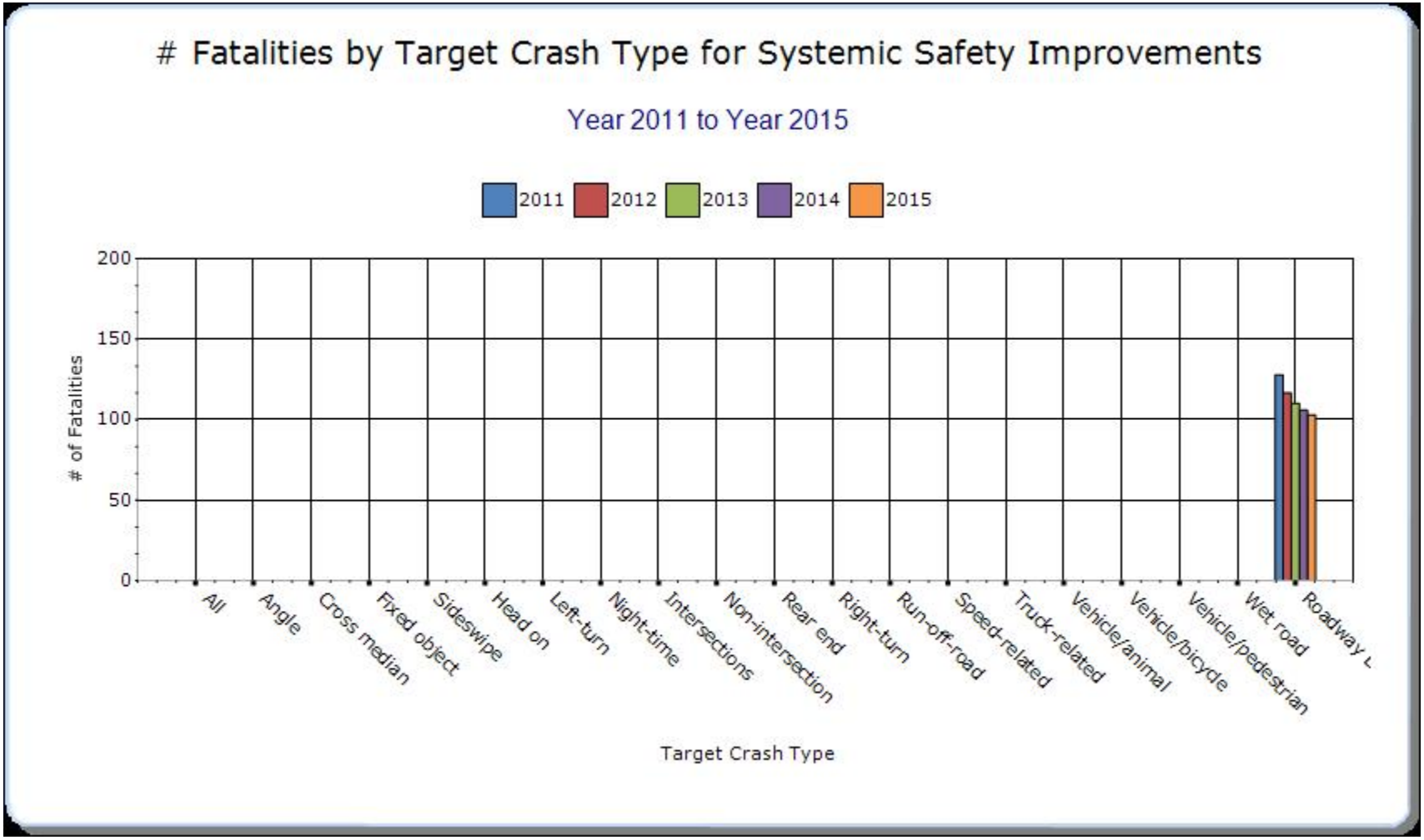


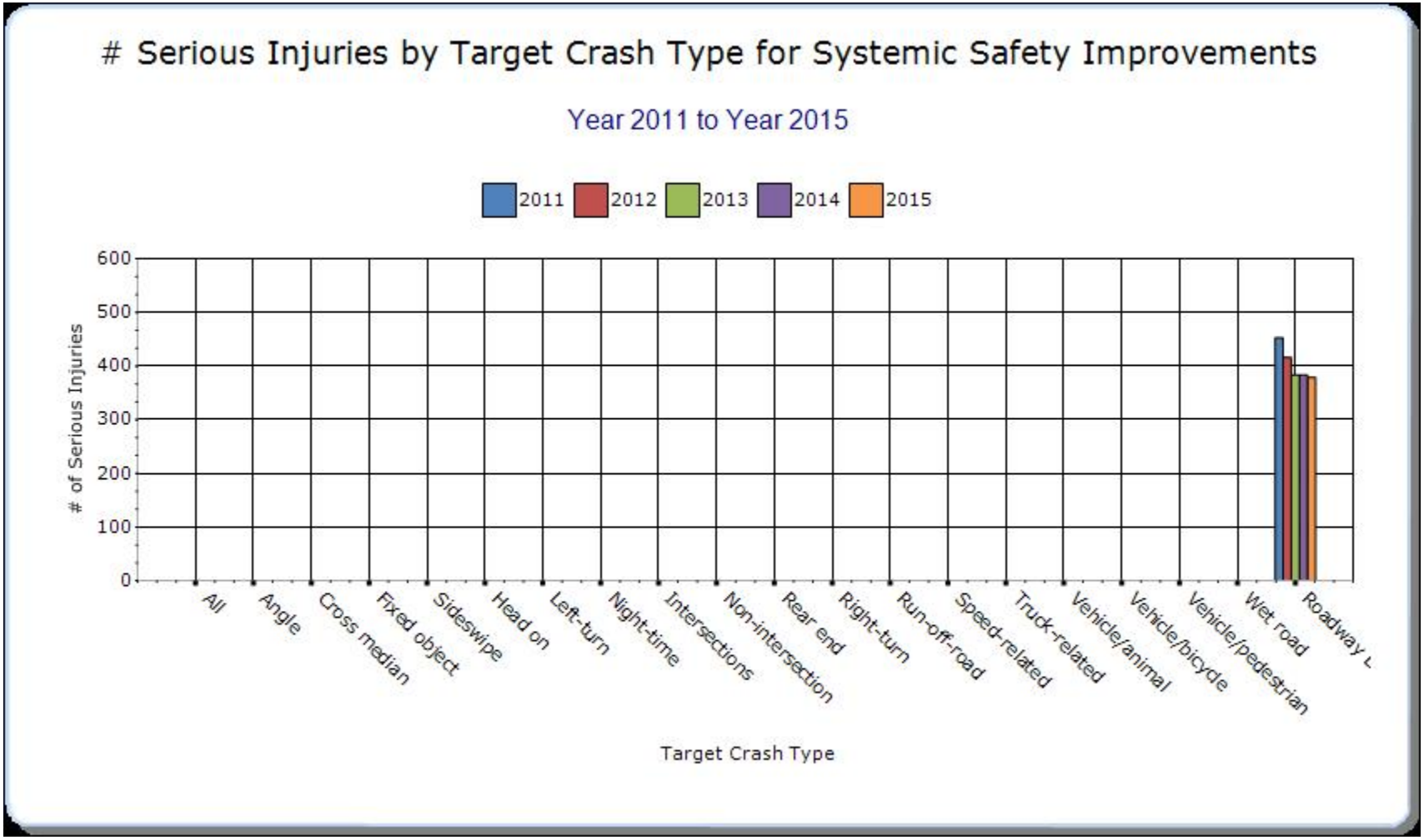
Systemic Treatments

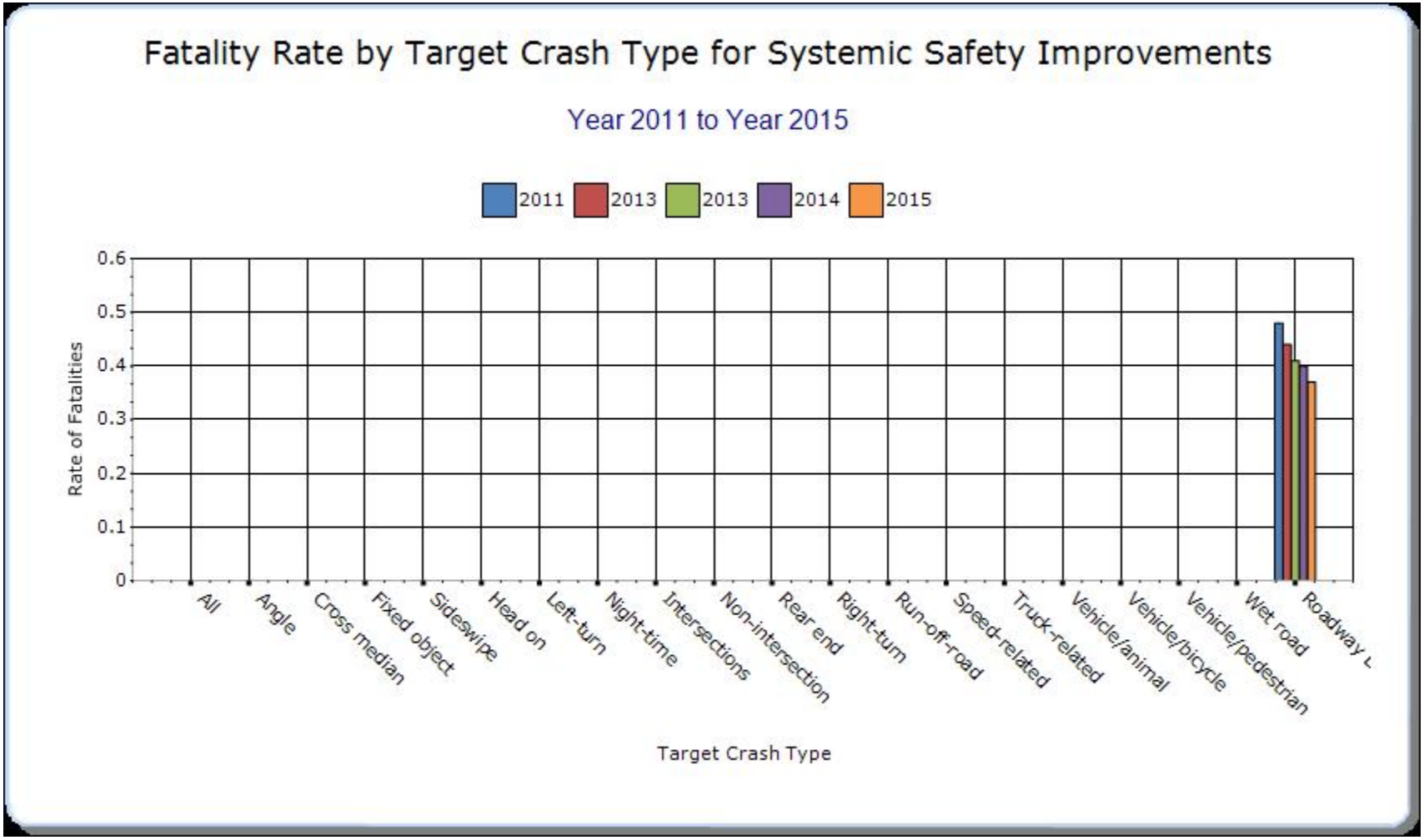
Present the overall effectiveness of systemic treatments.

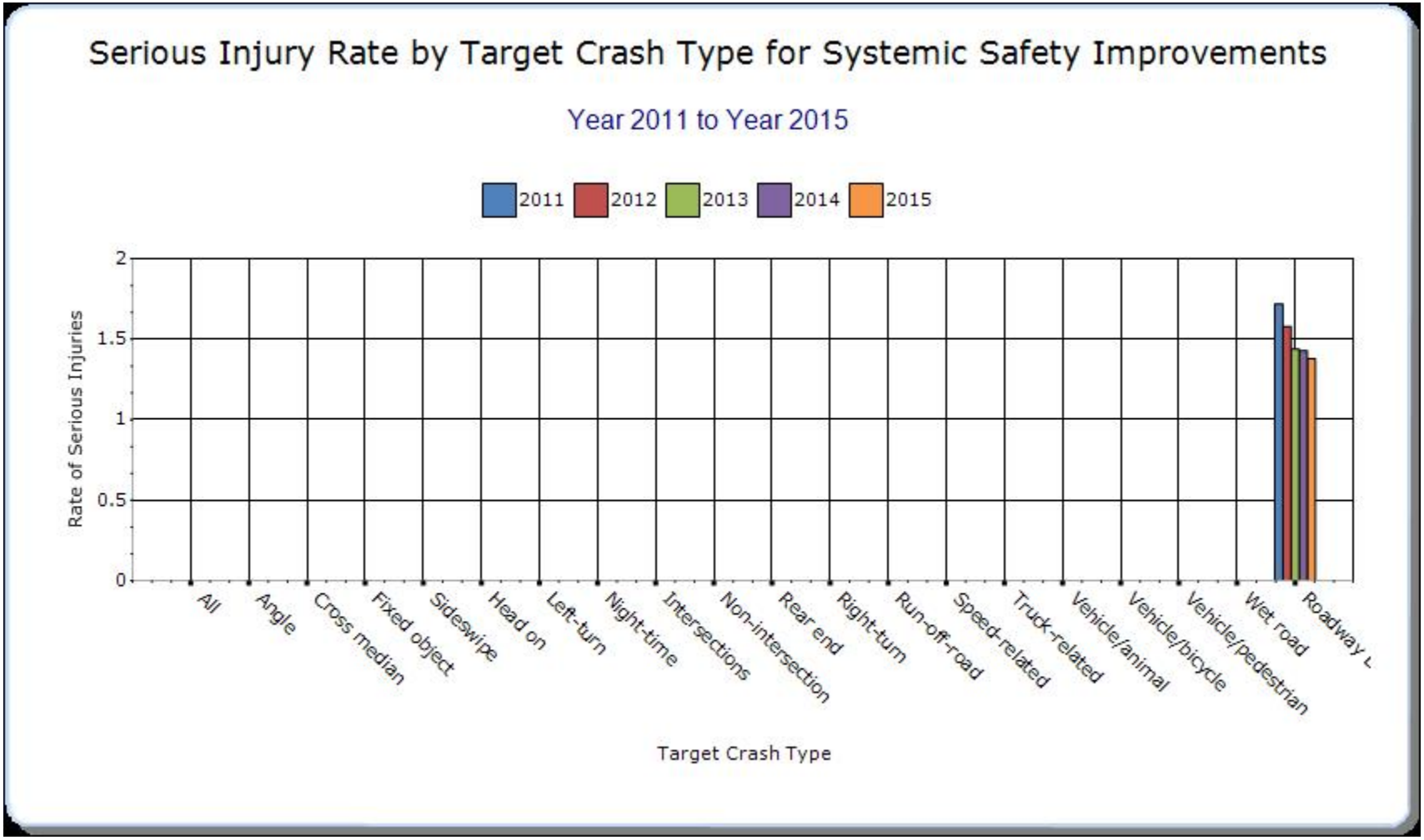
Year - 2015

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
Median Barriers, Rumble Strips, Guardrails	Roadway Departure	103	379	0.37	1.38			


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2011 to Year 2015
2011
2012
2013
2014
2015
200
150
100
50
0
# of Fatalities
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 2011 to Year 2015
2011
2012
2013
2014
2015
# of Serious Injuries
600
500
400
300
200
100
0
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 2011 to Year 2015
2011
2013
2013
2014
2015
Rate of Fatalities
0.6
0.5
0.4
0.3
0.2
0.1
0
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
Roadway
Target Crash Type


Serious Injury Rate by Target Crash Type for Systemic Safety Improvements
Year 2011 to Year 2015
2011
2012
2013
2014
2015
Rate of Serious Injuries
2
1.5
1
0.5
0
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
Roadway
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)
Dummy Project	Rural Minor Collector													

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.
Systematic refers to an approach where an agency deploys countermeasures at all locations across a system.
Systemic safety improvement means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.
Transfer means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.