Highway Safety Improvement Program

Data Driven Decisions

Virginia
Highway Safety Improvement Program
2016 Annual Report

Prepared by: VA

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 Fiscal Year (FY) 2016 annual report to the Federal Highway Administration (FHWA) describes the Virginia Department of Transportation (VDOT)'s strategic use of MAP-21 funding of the Commonwealth's Highway Safety Improvement Programs (HSIP) for the period July 2015 to June 2016.

MAP-21 continued the HSIP as a core program under Sections 148 and 130 of US Code Title 23. Under Section 154, surface transportation program and national highway performance program funds are transferred to be used for HSIP eligible proposals because Virginia does not have all the required components in its Open Container legislation. As a result, VDOT's HSIP is composed of the following sub-programs utilizing the above mentioned federal funding sources (23 USC Sections):

A) Highway Safety Projects (HSP): Section 148
B) Bicycle and Pedestrian Safety Projects (BPSP): Section 148
C) Penalty Transfer-Open Container (OC) Projects: Section 154

A link to the HSIP guidelines, safety proposal submission documentation, and resource information is provided on-line at http://www.virginiadot.org/business/ted_app_pro.asp

Virginia's Strategic Highway Safety Plan

Virginia is currently updating its SHSP. In 2013, VDOT completed a multi-agency and disciplinary update of the Commonwealth's Strategic Highway Safety Plan (SHSP). In 2013, FHWA's Virginia Division approved Virginia's SHSP. VDOT continues to coordinate with its safety partners and implement the SHSP engineering strategies to drive investment decisions to improve safety and reduce deaths and injuries for this FY2016 reporting period.

Many safety partners are working towards reducing the number and severity of vehicle crashes on the Commonwealth's highways. Virginia's HSIP is structured to focus on infrastructure safety emphasis areas that may be improved with low cost minimal environmental impact (no right of way) engineering countermeasures, namely:

A) Intersection geometry and traffic control
B) Roadway and roadside improvements

C) Bicycle and pedestrian risk reductions

New FY2017 Projects

The Commonwealth of Virginia is committed to developing and maintaining a safe, multimodal transportation system. The VDOT district offices spending targets are based on level FHWA funding in future years. Districts considered systemic, corridor and intersection improvements for all users on priority routes and intersections identified in the crash data. Districts submitted safety proposals and these proposals included high crash locations, long roadway segments, and systemic highway and pedestrian risk locations. New HSIP project planning and development processes for HSIP program have been developed in consultation with FHWA given the MAP-21 and FAST ACT guidelines, final ruling (policy) and funding provided. As such, adding new safety projects to Virginia's Six-Year Improvement Program (SYIP) and Statewide Transportation Improvement Plan (STIP) will only be considered if Virginia's Highway Safety Improvement Program Implementation Guidelines and requirements of the Freedom of Information Act (FOIA) are followed.

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?

District

If District, how are the HSIP funds allocated?
Formula

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

Local roads safety proposals when submitted are required to follow the same prioritization method as VDOT proposals. The proposed project must fit into the localities strategic safety plan. It should be data driven as well as have the support of the local governing body. Localities submit their proposals through the local VDOT District Office for inclusion in the district submittal for review. The locality maintains its own data system with regards to crash history and local support for the proposal. Local roads account for 40 percent of all crashes and 20 percent of all fatal and serious injury crashes on Virginia's highways. However, local safety projects have received up to 30 percent of Virginia's HSIP funds for implementation and completion of their safety projects. VDOT has been providing the state match to these safety projects for the past several years.

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

Design
Planning
Maintenance
Operations

Briefly describe coordination with internal partners.

VDOT provides statewide data analysis to develop the Potential for Safety Improvements (PSI) locations for all state routes. This information is provided to the Districts and local agencies through avenues such as webinars and the Virginiadot.org website Safety Portal.

The HSIP are programmed through the Six-Year Improvement Program. Projects were programmed with the appropriate FY allocations needed for a specific phase to be delivered.

Central Office Traffic Engineering HSIP staff shared information with each District regarding MAP-21 requirements, the SHSP Emphasis Areas, and all related safety data. Each district is provided target spending that is align with fatality and serious injuries. As part of this outreach program, HSIP staff presented the target of allocating ten percent to bike and pedestrian safety projects. At least ninety percent of HSIP Section 148 of the previously unallocated future funds would be programmed on existing and new highway safety projects.

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

Metropolitan Planning Organizations
Other-District/Design/Pe and Planning Staff

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

Other-Application submittal through SMARTSCALE Portal

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

Virginia has developed state specific Safety Performance Functions to facilitate the network screening process. This functionality ensures that VDOT's HSIP project selection process is data driven and is focus on systemic type countermeasures.

Virginia launched its new on-line application process tool. For the first time all grant applicants (HSIP, TAP, Revenue Sharing, and other funding)will be required to enter their application request through an on-line tool. Both state and local administered safety applications will go through this validation process. VDOT conducted outreach of its safety programs through webinars and workshops to inform and train all potential applicants on the usage of this tool.

Decisions are made based on several factors: Projects must be link to the SHSP. Projects must have expected reduction in crash and risk after completion. The benefit-cost ratio has to be greater than one to be approved for funding.

HSIP Projects must:

* Be relevant to the program purpose of reducing severe crashes, or risks to transportation users

* Address hazardous situations through good safety planning and identified by safety data driven network screening.

* Demonstrate compliance with the appropriate VDOT design guidelines and standards.

* Upgrade non-standard safety features to existing standards, when those features are related to the targeted crashes identified within the work area of the engineering study (or Roadway Safety Assessment).

Program Methodology

Select the programs that are administered under the HSIP.

Intersection	Bicycle Safety	Crash Data
Roadway Departure	Pedestrian Safety	

Program: **Intersection**
Date of Program Methodology: **7/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	
Fatal and serious injury crashes only	Volume	

What project identification methodology was used for this program?

Crash frequency
Crash rate
Excess expected crash frequency with the EB adjustment

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

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

How are highway safety improvement projects advanced for implementation?

Competitive application process

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

Ranking based on B/C	1
Available funding	3
Targeted K+A crashes/people	2

Program: **Bicycle Safety**
Date of Program Methodology: **7/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	Functional classification
Other-Risk Reduction	Volume	
		Roadside features

What project identification methodology was used for this program?
Crash frequency
Other-Available facilities

Are local roads (non-state owned and operated) included or addressed in this program?
Yes
If yes, are local road projects identified using the same methodology as state roads?
Yes

How are highway safety improvement projects advanced for implementation?
Competitive application process

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

Cost Effectiveness	10
Community Support and comprehensive network plan	15
Problem identification inc crashes and risk	30

Solution study and selection to mitigate risk	45

Program: **Crash Data**
Date of Program Methodology: **7/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic Volume	Functional classification

What project identification methodology was used for this program?

Crash frequency
Crash rate
Excess expected crash frequency using SPFs
Excess expected crash frequency with the EB adjustment

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

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

How are highway safety improvement projects advanced for implementation?

Competitive application process

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

Rank of Priority Consideration

Available funding	3
Cost Effectiveness	1
Targeted K+A crashes/people	2

Program: **Roadway Departure**
Date of Program Methodology: **7/1/2014**

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		Functional classification
		Roadside features

What project identification methodology was used for this program?

Crash frequency
Crash rate
Excess expected crash frequency using SPFs
Excess expected crash frequency with the EB adjustment

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

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

How are highway safety improvement projects advanced for implementation?

Competitive application process

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

Rank of Priority Consideration

Ranking based on B/C	1
Available funding	3
Targeted K+A crashes and people	2

Program: **Pedestrian Safety**
Date of Program Methodology: **7/1/2014**

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic Volume Population	Median width
Other-Risk Reduction		Functional classification Roadside features

What project identification methodology was used for this program?
Crash frequency
Other-Community Support and Missing sidewalk

Are local roads (non-state owned and operated) included or addressed in this program?
Yes
If yes, are local road projects identified using the same methodology as state roads?
Yes

How are highway safety improvement projects advanced for implementation?
Competitive application process

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

Cost Effectiveness	10
Communitysupport, benefit-need and pedestrian accessability	15
Problem identification inc crashes and risk	30
Solution proposed for improvement to mitigate risk	45

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

25%

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

Rumble Strips
Pavement/Shoulder Widening
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Add/Upgrade/Modify/Remove Traffic Signal
Other-High Friction Surface Treatments

What process is used to identify potential countermeasures?

Engineering Study
Road Safety Assessment

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

Systemic Approach

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

VDOT's HSIP is a data driven program based upon network screening, crash data and local input. Virginia's network screening consists of state specific SPFs to identify top candidate locations for potential safety improvements. Using the EB method to develop these SPFs. The VDOT has provided the top 100 intersections and roadway segments of state maintained roadways to it's district and regional engineers to aid in the determining the most appropriate location for these safety investments.

Progress in Implementing Projects

Funds Programmed

Reporting period for Highway Safety Improvement Program funding.

State Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	$53,431,456.00	73 %	$30,389,167.00	52 %
HRRRP (SAFETEA-LU)	$0.00	0 %	$639,714.00	1 %
Penalty Transfer - Section 154	$20,099,258.00	27 %	$27,786,944.00	47 %

Totals	$73,530,714.00	100%	$58,815,825.00	100%

How much funding is programmed to local (non-state owned and operated) safety projects?
$3,200,436.00
How much funding is obligated to local safety projects?
$4,989,013.00

How much funding is programmed to non-infrastructure safety projects?
$3,687,866.00
How much funding is obligated to non-infrastructure safety projects?
$500,000.00

How much funding was transferred in to the HSIP from other core program areas during the reporting period?
$0.00
How much funding was transferred out of the HSIP to other core program areas during the reporting period?
$0.00

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

One of the major impediments that VDOT faces with obligating its Penalty Transfer Section 154 funds is the shortness in time that the Traffic Engineering Division has to obligate the funds once the final

Obligation Authority is release. The Traffic Engineering , Infrastructure Investment, and Financial Planning Divisions met to identify and streamline the process. The three divisions agreed upon a process of forecasting the projected penalty transfer funds out six years to align the process with VDOT's six year improvement project plan.

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

None at this time.

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
90499	Alignment Alignment - other	0.5 Miles	1311346	8156330	HSIP (Section 148)	Urban Major Collector	4600	40	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
93349	Intersection geometry Auxiliary lanes - add left-turn lane	0.325 Miles	589213	2193427	HSIP (Section 148)	Rural Minor Arterial	3400	35	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in
93568	Roadside Barrier- metal	0.724 Miles	2491432	5123344	HSIP (Section 148)	Rural Major Collector	13000	45	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
96857	Intersection traffic control Modify traffic signal -	1 Numbe	148500	345336	HSIP (Section	Urban Minor	7700	35	City of Municipa	Intersections	Reduce the

	modify signal mounting (spanwire to mast arm)	rs			148)	Arterial			l Highway Agency		frequenc y and severity of crashes at in
96933	Intersection traffic control Modify traffic signal - modify signal mounting (spanwire to mast arm)	1 Numbe rs	29195 3	35056 6	HSIP (Section 148)	Urban Minor Arterial	7700	35	City of Municipa l Highway Agency	Intersectio ns	Reduce the frequenc y and severity of crashes at in
10321 0	Shoulder treatments Shoulder treatments - other	0.931 Miles	94431 4	88347 21	HSIP (Section 148)	Rural Principal Arterial - Other	5500	55	State Highway Agency	Roadway Departure	Reduce likelihoo d of vehicles leaving travel lanes
10466 4	Intersection traffic control Modify traffic signal - modernization/replacemen t	13 Numbe rs	24078 37	64900 00	HSIP (Section 148)	Urban Principal Arterial - Other	0	0	State Highway Agency	Intersectio ns	Improve the awarene ss and visibility of traffic co
10467 8	Intersection geometry Auxiliary lanes - add right-turn lane	0.138 Miles	42915 4	91500 0	HSIP (Section 148)	Rural Principal Arterial - Other	1735 2	60	State Highway Agency	Intersectio ns	Reduce the frequenc y and severity of

											crashes at in
104688	Pedestrians and bicyclists Install sidewalk	0.121 Miles	202843	435845	HSIP (Section 148)	Rural Minor Arterial	5400	25	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in
104689	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.0395 Miles	388127	746948	HSIP (Section 148)	Rural Principal Arterial - Other	13000	35	State Highway Agency	Intersections	Improve the awareness and visibility of traffic co
104706	Intersection geometry Auxiliary lanes - modify right-turn lane offset	0.172 Miles	180821	448915	HSIP (Section 148)	Rural Minor Arterial	5787	55	State Highway Agency	Intersections	Improve the awareness and visibility of traffic co
105736	Roadway delineation Roadway delineation - other	2 Numbers	149491	166101	HRRRP (SAFETEA-LU)	Rural Minor Arterial	8900	45	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
105810	Intersection traffic control Modify traffic signal - modernization/replacemen	0 Miles	298694	341850	Penalty Transfer - Section	Rural Principal Arterial -	0	0	State Highway Agency	Intersections	Improve the awarene

	t				154	Other					ss and visibility of traffic co
106238	Roadside Barrier - removal	0.085 Miles	308970	442730	HSIP (Section 148)	Urban Minor Arterial	16553	45	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in
106535	Roadway Rumble strips - center	13.78 Miles	3380579	3854218	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
106572	Roadway Rumble strips - edge or shoulder	22.47 Miles	3239313	3291315	HSIP (Section 148)	Rural Principal Arterial - Other	12354	55	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
106574	Intersection traffic control Modify traffic signal - modernization/replacement	0.02 Miles	236309	359893	HSIP (Section 148)	Urban Principal Arterial - Other	27466	35	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in

107025	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	365367	439367	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107065	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	259521	259521	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107090	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	184033	184033	Penalty Transfer - Section 154	Rural Principal Arterial - Other	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107099	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	292727	292727	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107101	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	56481	70481	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel

											lanes
107102	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	95147	377555	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107118	Roadside Roadside - other	0 Miles	260723	300128	HRRRP (SAFETEA-LU)	Rural Major Collector	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107552	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Miles	216363	216363	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107664	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Miles	38873	74484	Penalty Transfer - Section 154	Rural Local Road or Street	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107772	Advanced technology and ITS Advanced technology and ITS - other	20.89 Miles	1999958	2000000	HSIP (Section 148)	Urban Principal Arterial - Interstate	39480	60	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles

											leaving travel lanes
107949	Roadway signs and traffic control Roadway signs (including post) - new or updated	0 Numbers	126202	126200	Penalty Transfer - Section 154	Rural Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
108448	Roadway Rumble strips - edge or shoulder	20.7 Miles	892232	910000	HSIP (Section 148)	Rural Principal Arterial - Other	33000	55	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
108574	Intersection traffic control Modify traffic signal - miscellaneous/other/unspecified	1 Numbers	92963	115000	HSIP (Section 148)	Urban Minor Arterial	8597	35	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in
109278	Roadway Roadway widening - add lane(s) along segment	1.33 Miles	859906	2300000	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	64000	65	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
103096	Pedestrians and bicyclists Miscellaneous pedestrians	6.5 Miles	2108065	2108065	Penalty Transfer	Rural Local Road or	0	0	City of Municipa	Pedestrians	Reduce the risk

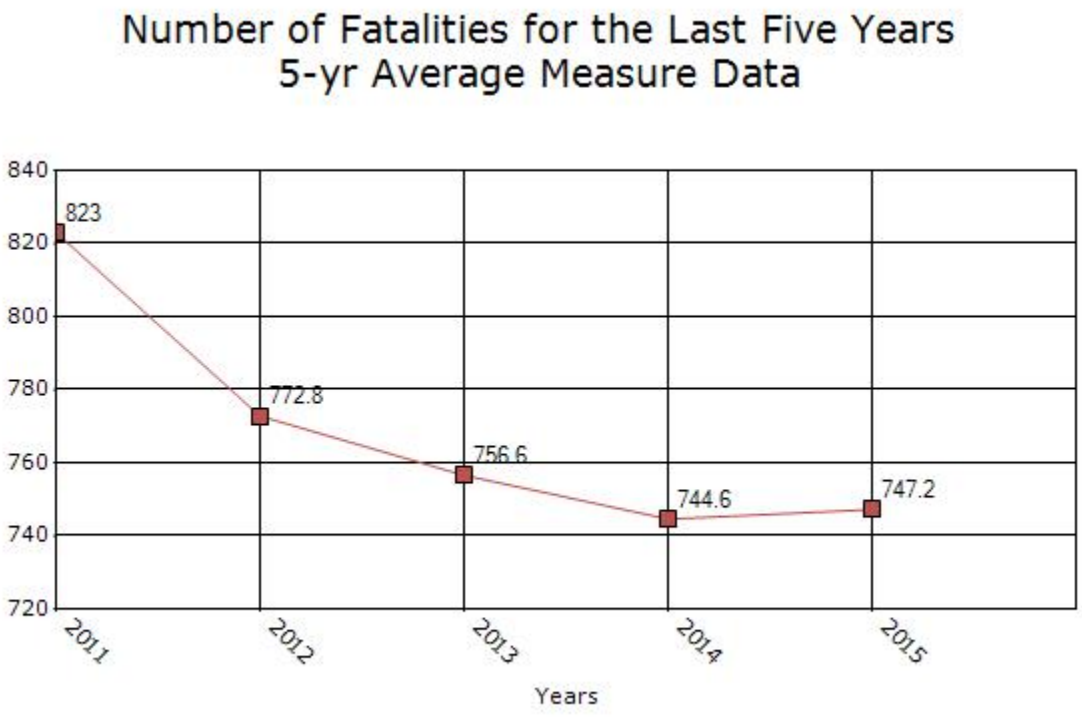
	and bicyclists				- Section 154	Street			l Highway Agency		associated with pedestrian.
104690	Intersection traffic control Modify traffic signal - modernization/replacement	0 Numbers	3500000	3500000	HSIP (Section 148)	Rural Principal Arterial - Other Freeways and Expressways	11827	45	State Highway Agency	Intersections	Reduce the frequency and severity of crashes at in
107011	Roadway signs and traffic control Roadway signs and traffic control - other	0 Numbers	132269	132269	Penalty Transfer - Section 154	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
107802	Non-infrastructure Non-infrastructure - other	0 Miles	500000	500000	HSIP (Section 148)	Urban Principal Arterial - Interstate	0	0	State Highway Agency	Roadway Departure	Reduce likelihood of vehicles leaving travel lanes
108068	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0.5 Miles	609390	609390	Penalty Transfer - Section 154	Rural Local Road or Street	0	0	Town or Township Highway Agency	Pedestrians	Reduce the risk associated with pedestrian.

Overview of General Safety Trends

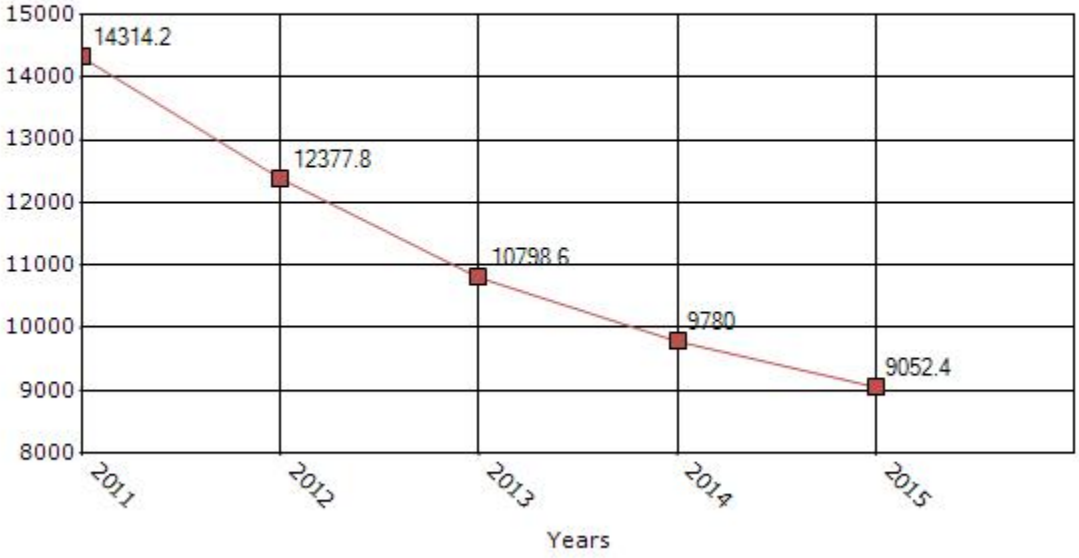
Present data showing the general highway safety trends in the state for the past five years.

Performance Measures*	2011	2012	2013	2014	2015
Number of fatalities	823	772.8	756.6	744.6	747.2
Number of serious injuries	14314.2	12377.8	10798.6	9780	9052.4
Fatality rate (per HMVMT)	1.07	1	0.98	0.97	0.96
Serious injury rate (per HMVMT)	18.58	16.1	14.06	12.71	11.7

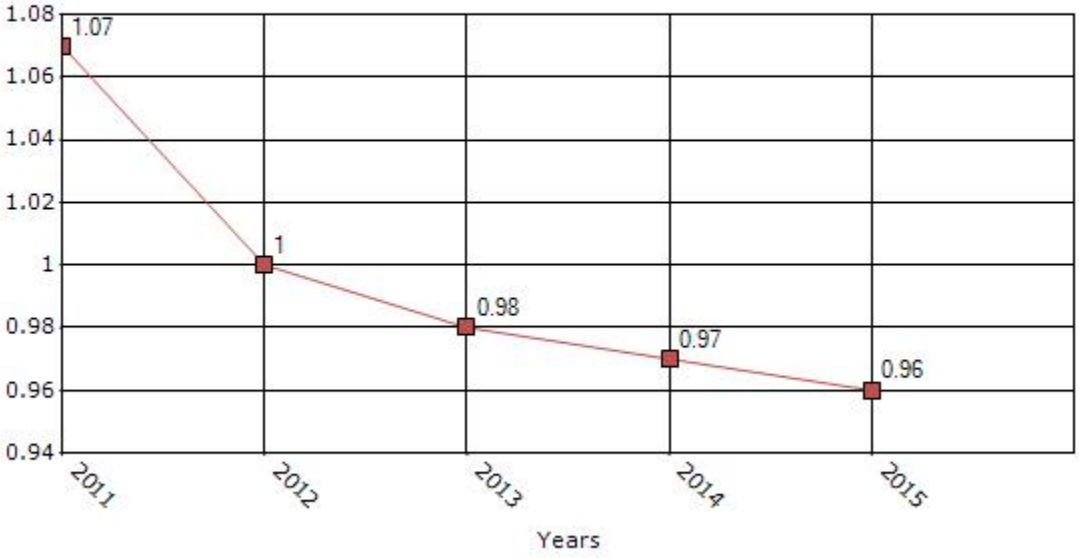
*Performance measure data is presented using a five-year rolling average.

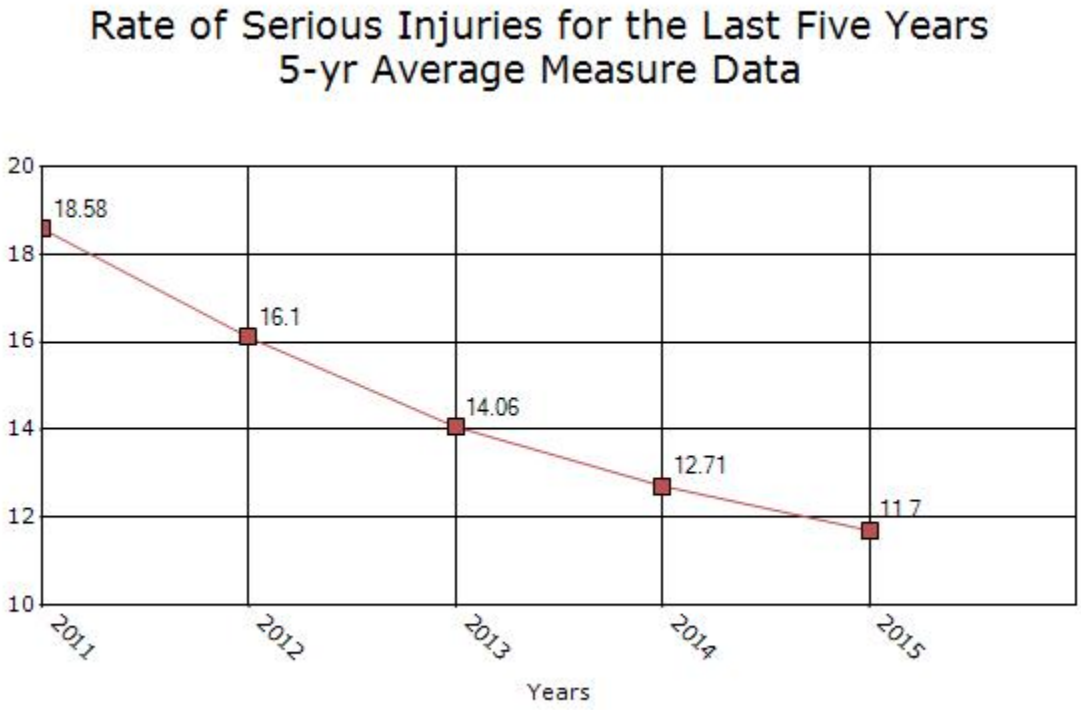


Number of Serious Injuries for the Last Five Years
5-yr Average Measure Data



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



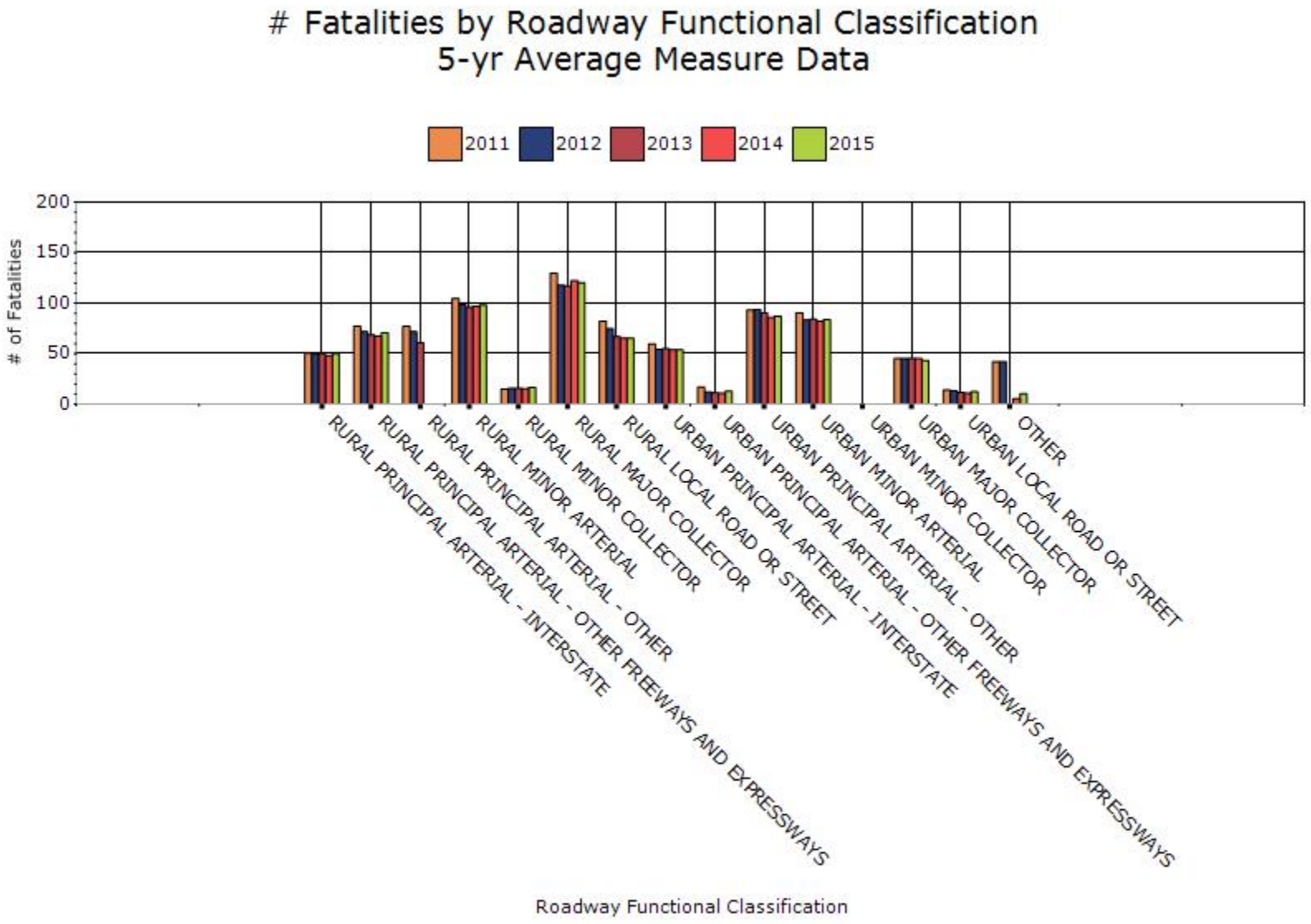

Rate of Serious Injuries for the Last Five Years
5-yr Average Measure Data
20
18
16
14
12
10
18.58
16.1
14.06
12.71
11.7
2011
2012
2013
2014
2015
Years

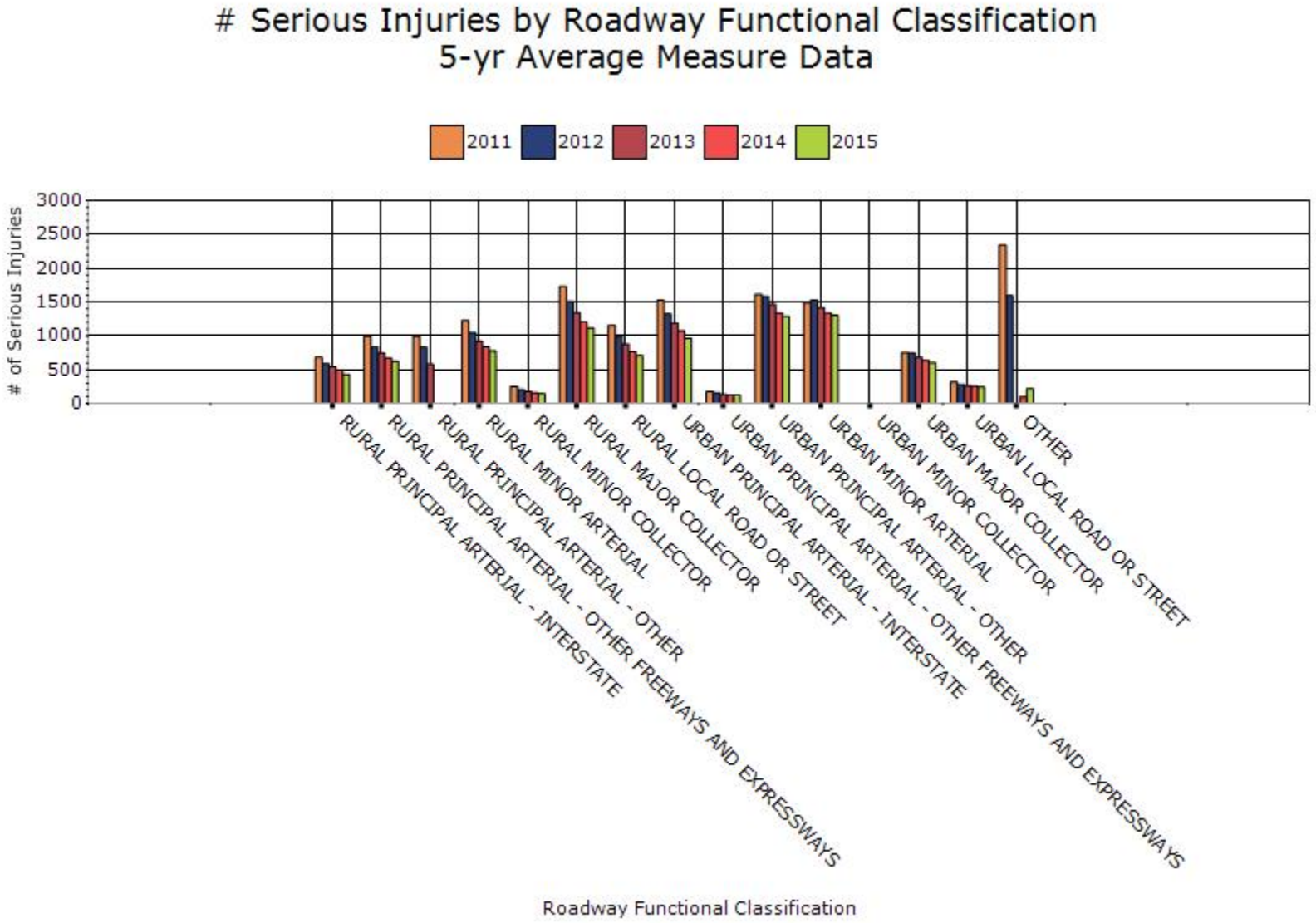
To the maximum extent possible, present performance measure* data by functional classification and ownership.

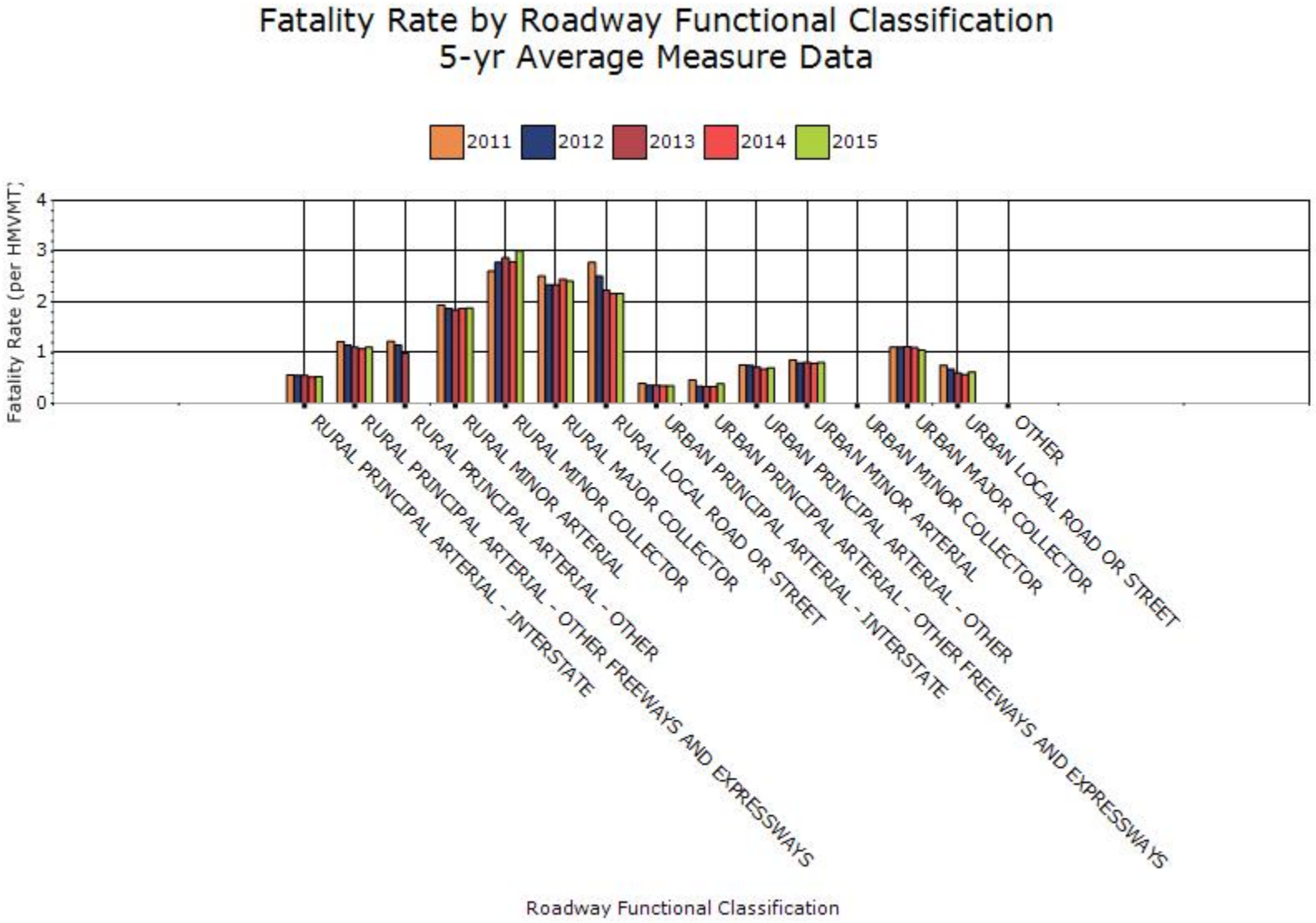
Year - 2015

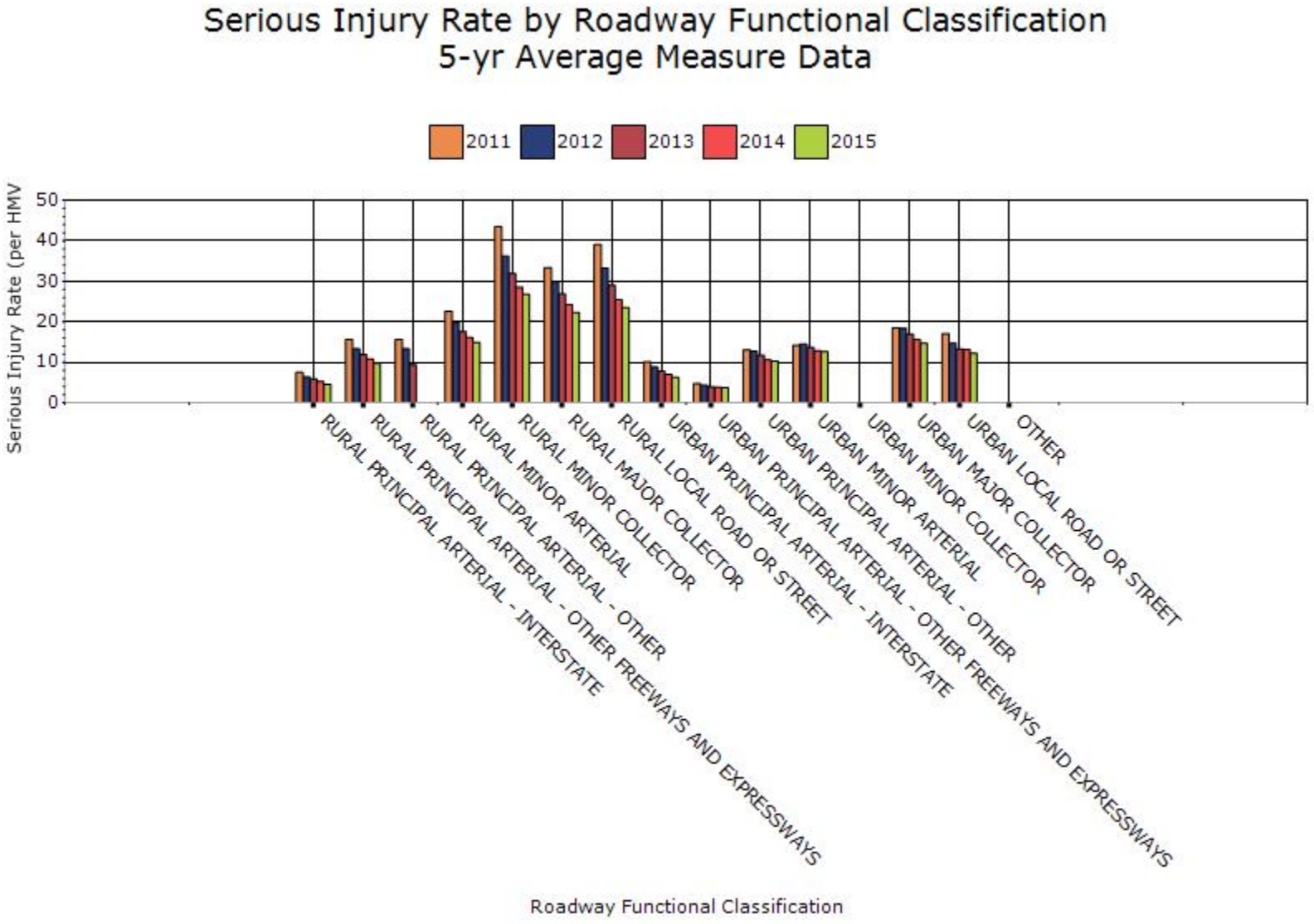
Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	50	429.8	0.53	4.57
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	70.6	621.2	1.11	9.79
RURAL MINOR ARTERIAL	98.2	776	1.88	14.86
RURAL MINOR COLLECTOR	16.4	145.8	3.01	26.75
RURAL MAJOR COLLECTOR	120.4	1117.2	2.41	22.33
RURAL LOCAL ROAD OR STREET	65.4	709	2.17	23.49
URBAN PRINCIPAL ARTERIAL - INTERSTATE	53.8	963.6	0.35	6.26
URBAN PRINCIPAL ARTERIAL - OTHER	12.8	123.8	0.39	3.76

FREEWAYS AND EXPRESSWAYS				
URBAN PRINCIPAL ARTERIAL - OTHER	87.2	1286.6	0.7	10.28
URBAN MINOR ARTERIAL	83.8	1306	0.81	12.62
URBAN MAJOR COLLECTOR	43.4	606.2	1.05	14.71
URBAN LOCAL ROAD OR STREET	12.4	240.8	0.62	12.24
OTHER	10.4	217.4		


Fatalities by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
200
150
100
50
0
# of Fatalities
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
OTHER
Roadway Functional Classification

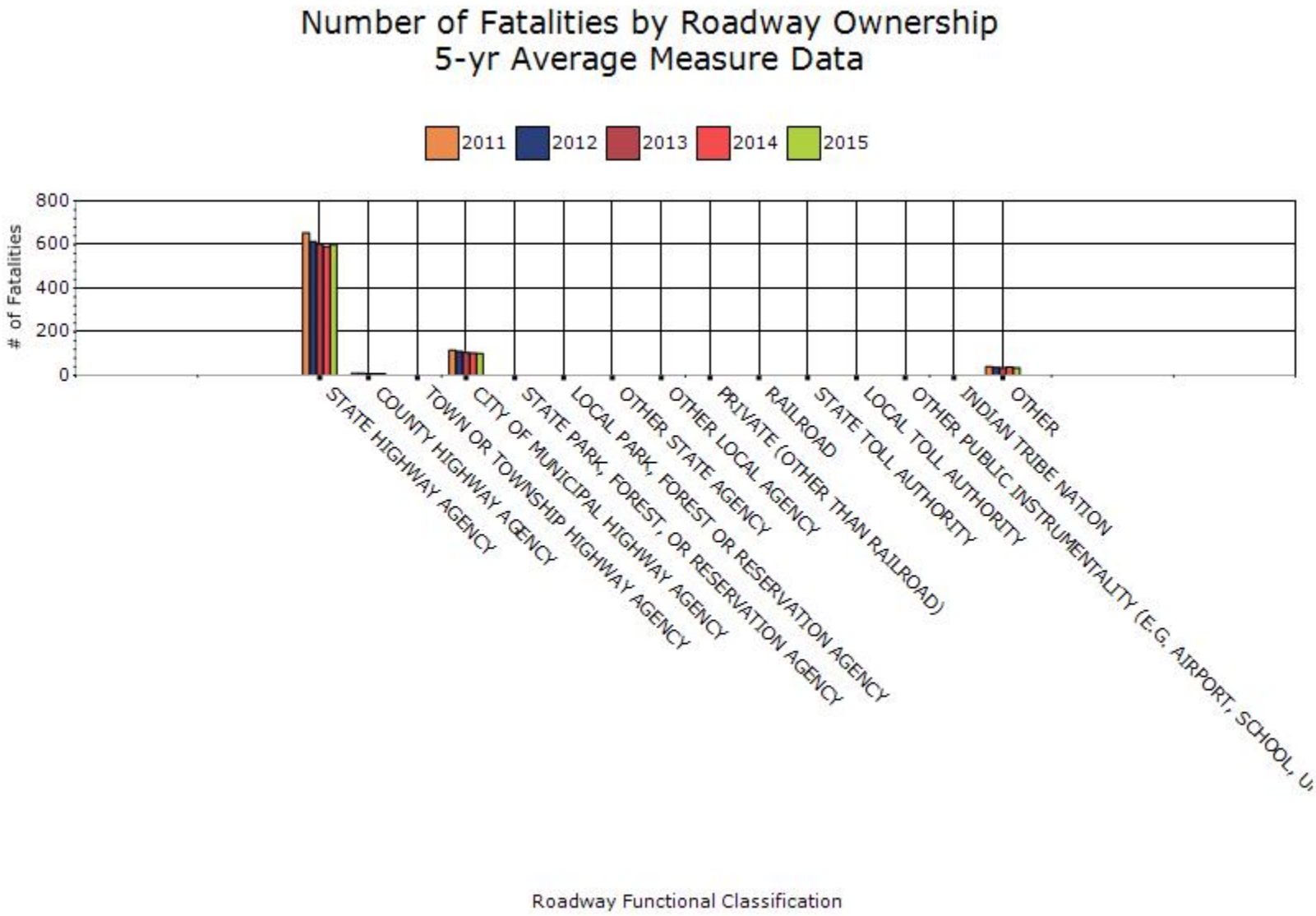

Serious Injuries by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
3000
2500
2000
1500
1000
500
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
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
OTHER
Roadway Functional Classification

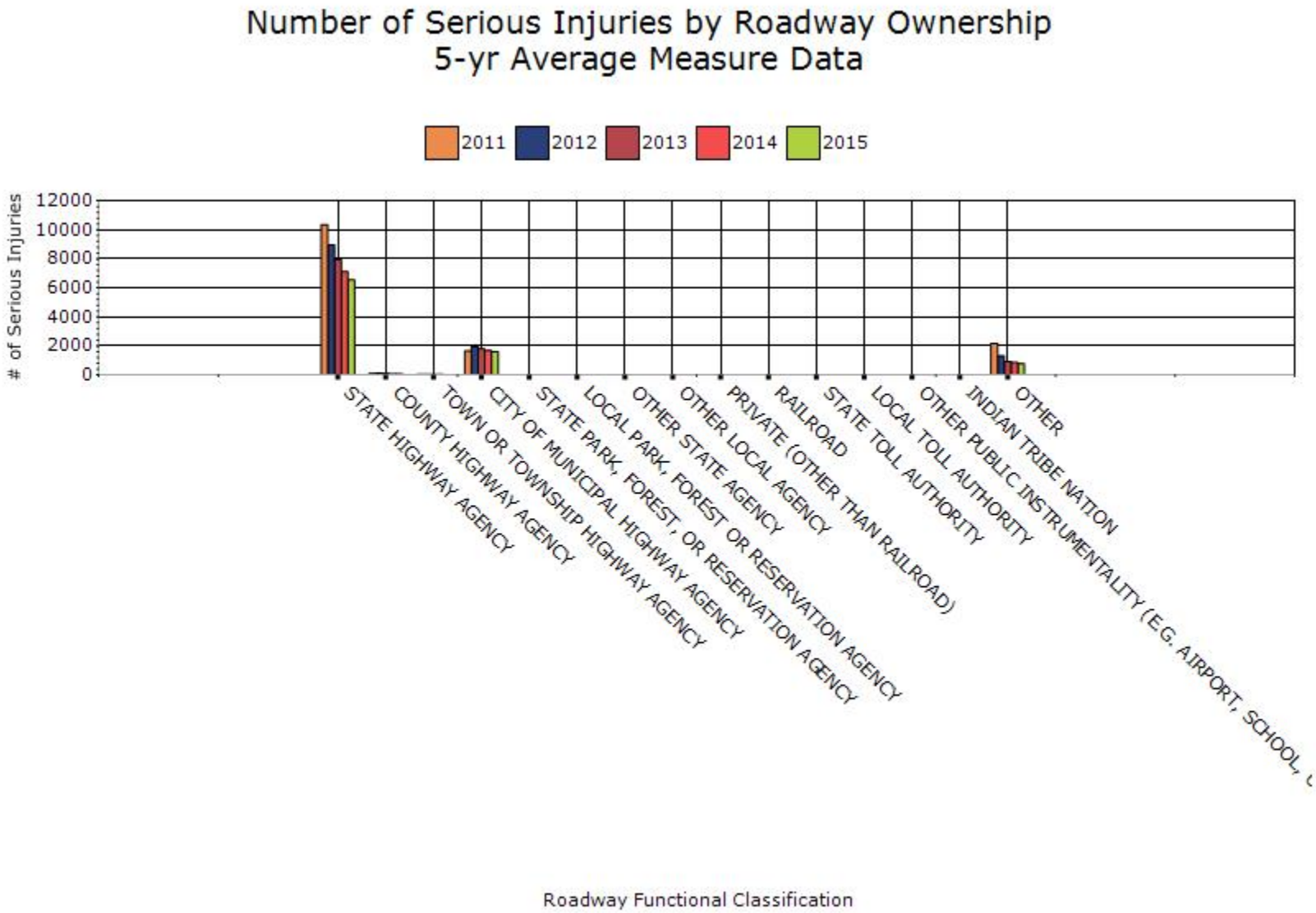

Fatality Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVMT)
0
1
2
3
4
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR COLLECTOR
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
OTHER
Roadway Functional Classification

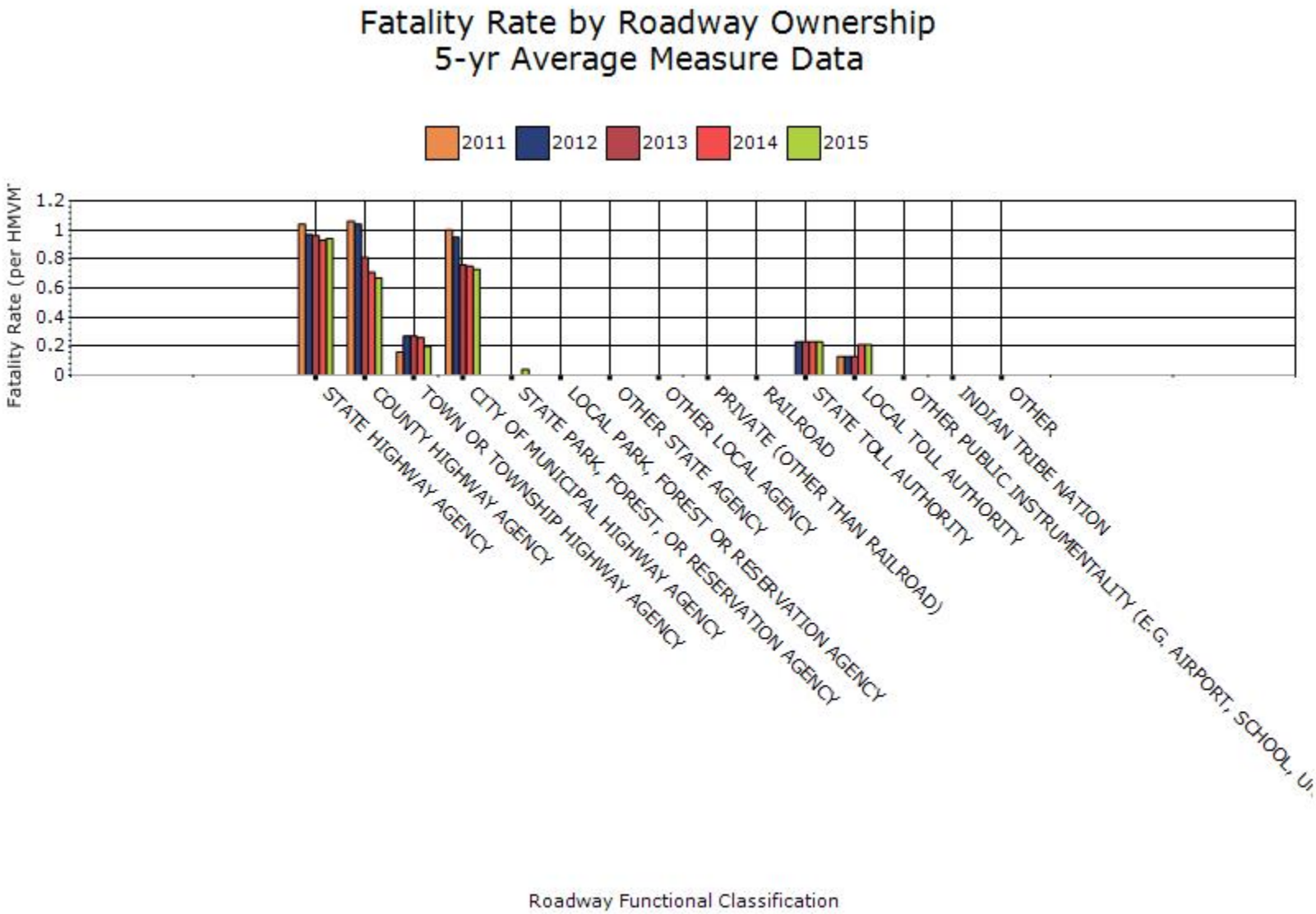

Serious Injury Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Serious Injury Rate (per HMV
50
40
30
20
10
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
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
OTHER
Roadway Functional Classification

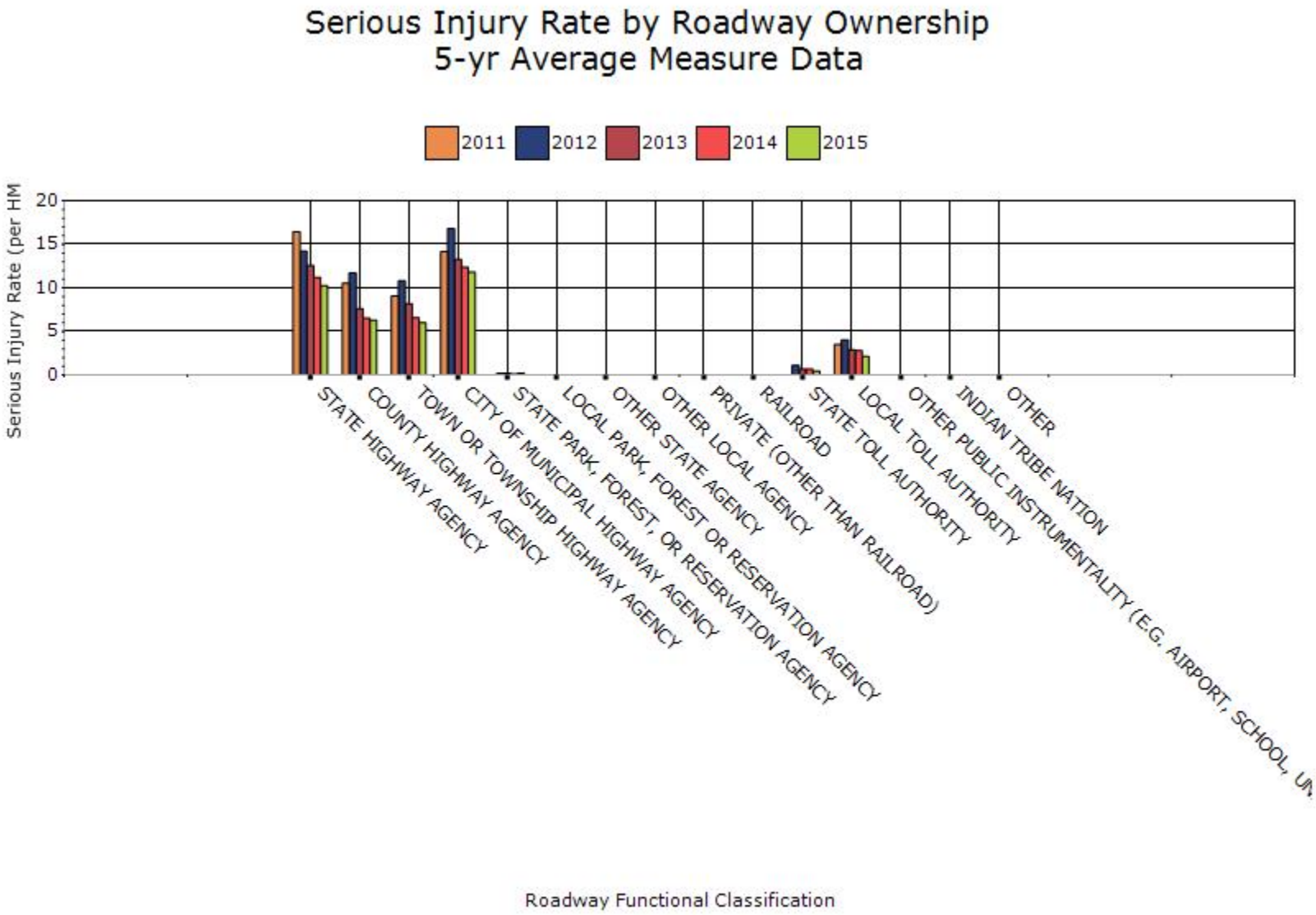
Year - 2015

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	600.8	6546	0.94	10.25
COUNTY HIGHWAY AGENCY	8.4	80.2	0.67	6.3
TOWN OR TOWNSHIP HIGHWAY AGENCY	1.2	27.8	0.2	6
CITY OF MUNICIPAL HIGHWAY AGENCY	100	1611.6	0.73	11.81
STATE PARK, FOREST, OR RESERVATION AGENCY	0.2	1.2	0.04	0.19
STATE TOLL AUTHORITY	0.2	0.4	0.23	0.46
LOCAL TOLL AUTHORITY	0.8	6	0.21	2.15
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0.4	2	NaN	NaN
OTHER	35.2	779.6	NaN	NaN


Number of Fatalities by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Fatalities
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
OTHER
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
12000
10000
8000
6000
4000
2000
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,
INDIAN TRIBE NATION
OTHER
Roadway Functional Classification


Fatality Rate by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVM
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
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
20
15
10
5
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, UN
INDIAN TRIBE NATION
OTHER
Roadway Functional Classification

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

None at this time.

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)	9.21	12.16	15.29	15.76	15.49
Serious injury rate (per capita)	113.05	142.85	171.67	152.11	139.29
Fatality and serious injury rate (per capita)	122.26	155.01	186.95	167.88	154.78

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

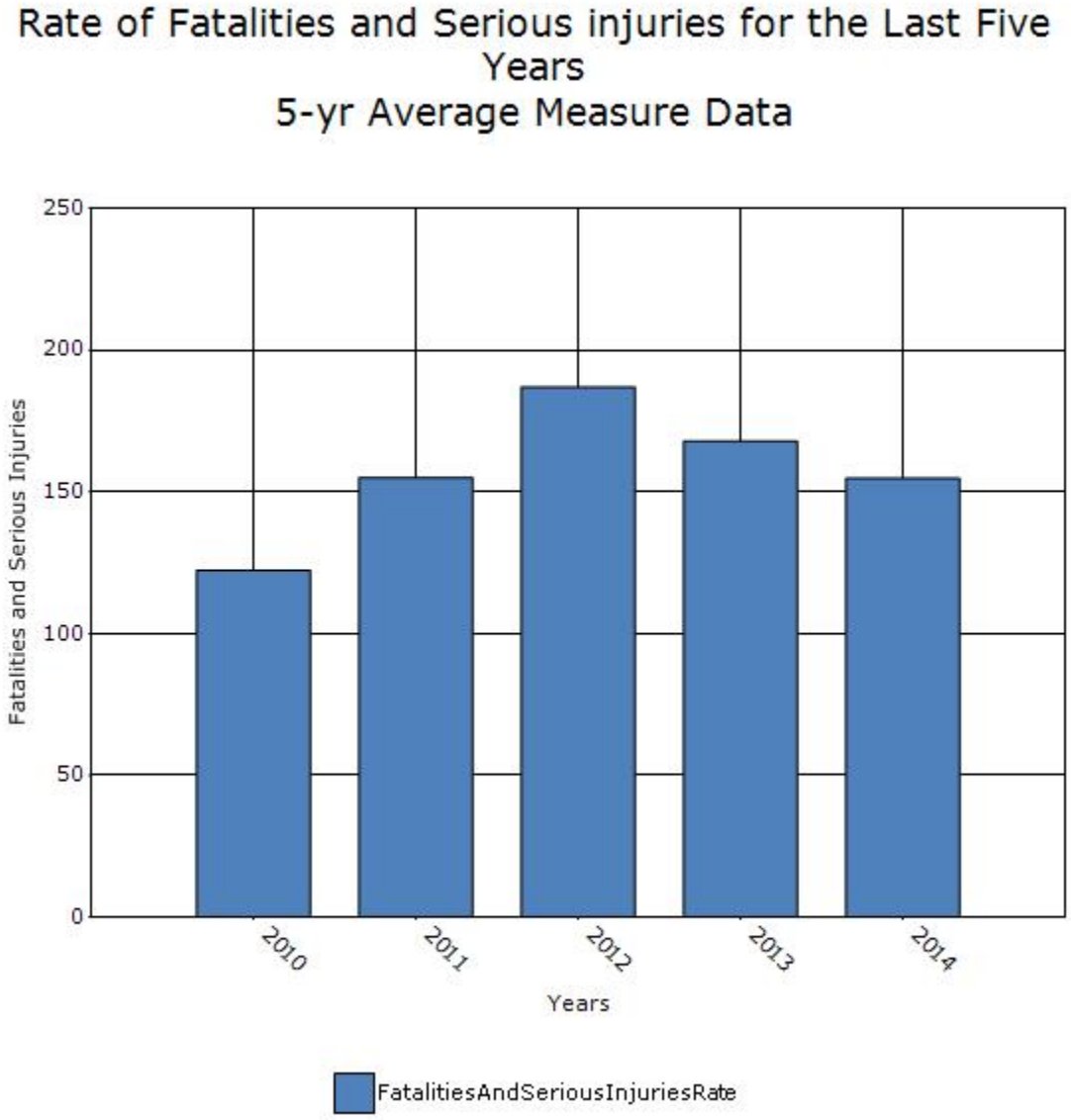
Note: Data for driver and pedestrian age 65 and over was not available for inclusion in this report.

Formula:
Fatality Rate (Per Capita):

$$\frac{(Number\ of\ Fatalities\ for\ drivers\ and\ pedestrian\ 65\ years\ of\ age\ and\ older\ in\ Virginia \times 10^5)}{(Population\ of\ drivers\ and\ pedestrian\ 65\ years\ of\ age\ or\ older\ in\ Virginia)}$$

Injury Rate (Per Capita):

$$\frac{(Number\ of\ Injuries\ for\ drivers\ and\ pedestrian\ 65\ years\ of\ age\ and\ older\ in\ Virginia \times 10^5)}{(Population\ of\ drivers\ and\ pedestrian\ 65\ years\ of\ age\ or\ older\ in\ Virginia)}$$



Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

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

Other-Increase in the number of safety projects implemented and programmed

Other-Percentage of HSIP projects completed on time and budget in the 24 month project delivery report

Other-Development of Tableau Project Tracking and Crash Analysis Tools

Other-Enhanced Virginia specific PSI and SPF development. Systemic Improvement Implementation

Other-Decrease in observed crash occurence.

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

Other-Development of Smartscale Portal
Other-Development of improved BCR and Systemic Worksheets
Other-Implemantation of Virginia HSIP Guide and Crash Analysis Manual

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

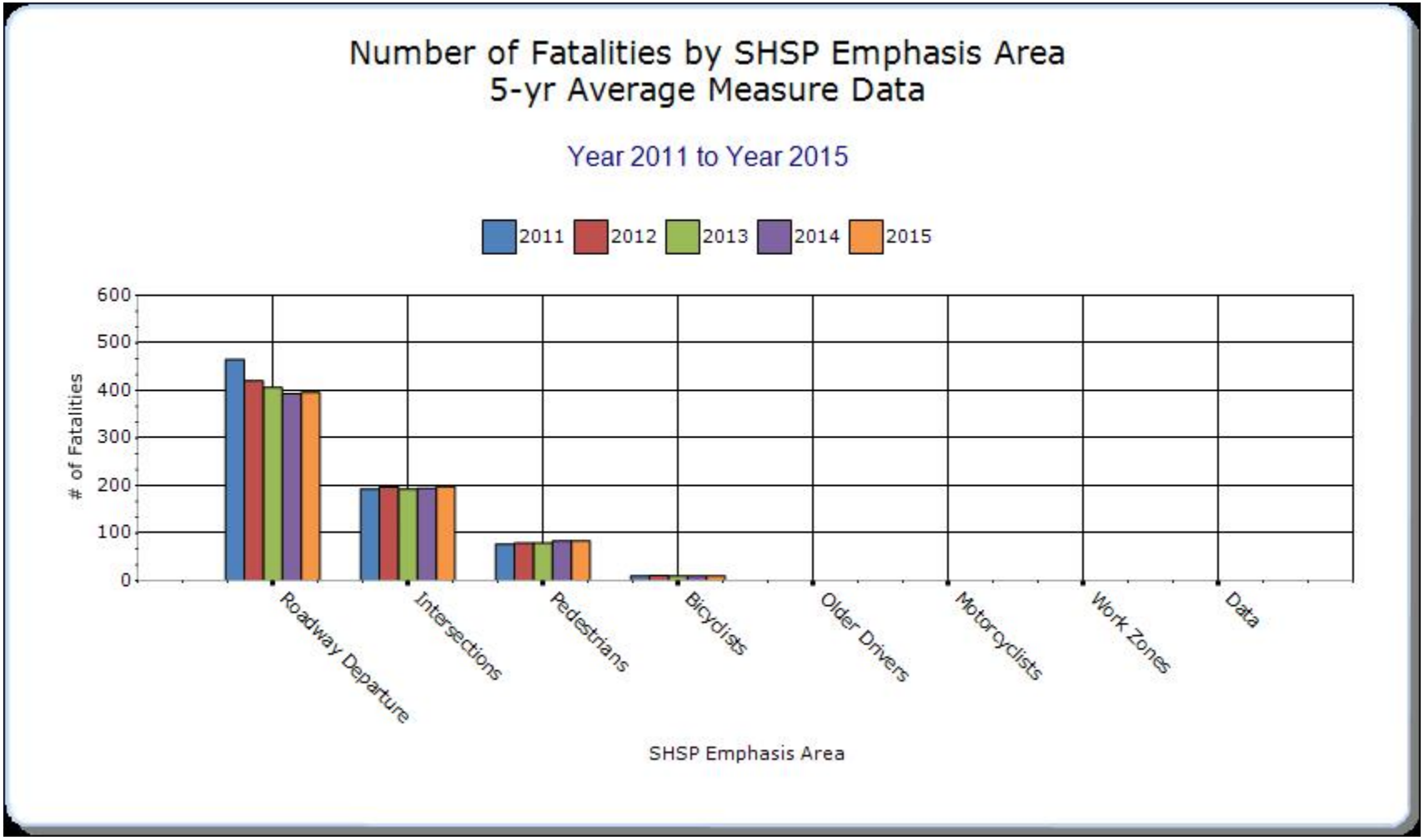
All HSIP applications and proposals are to use the new VDOT SMARTSCALE Portal for submitting applications to the department.

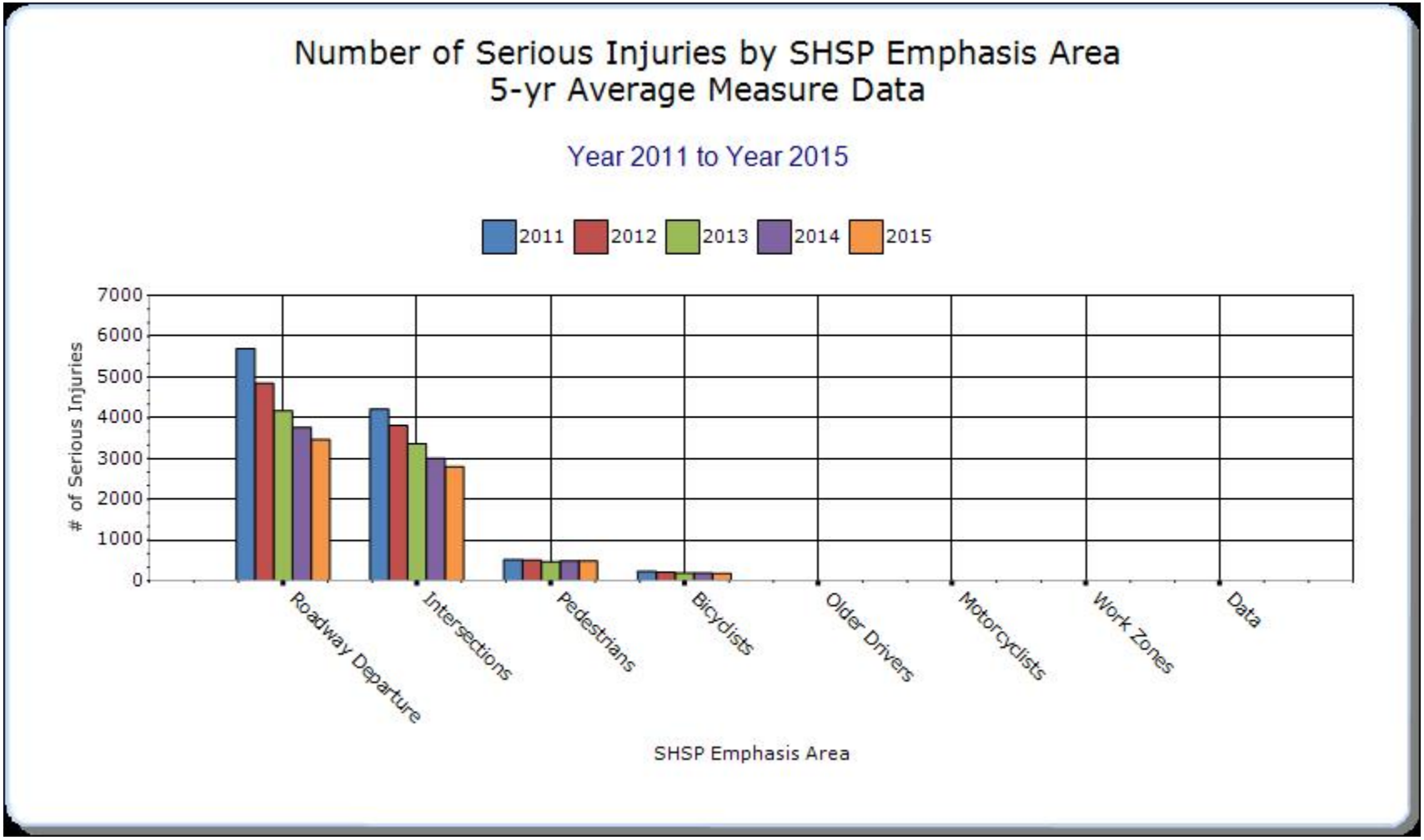
SHSP Emphasis Areas

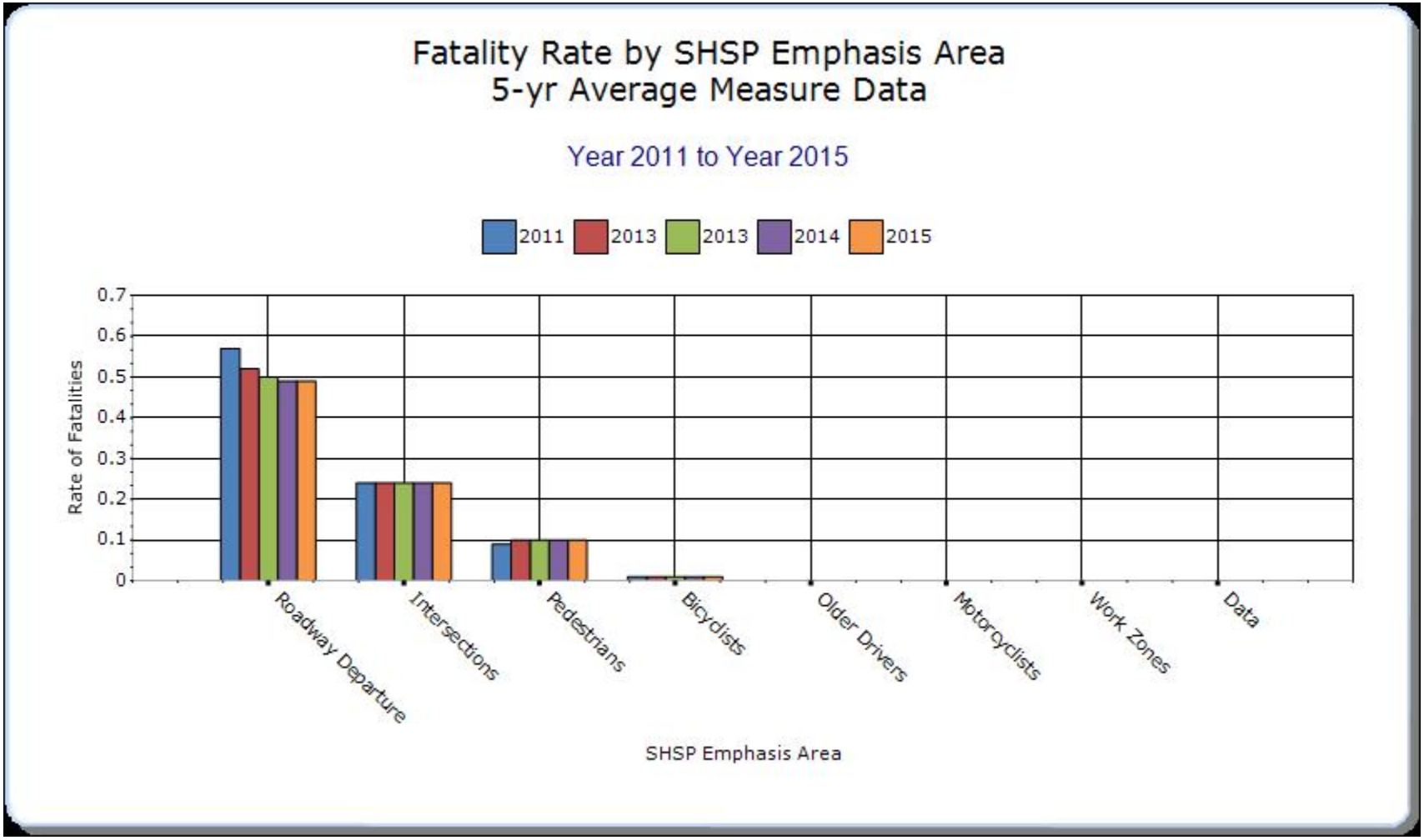
For each SHSP emphasis area that relates to the HSIP, present trends in emphasis area performance measures.

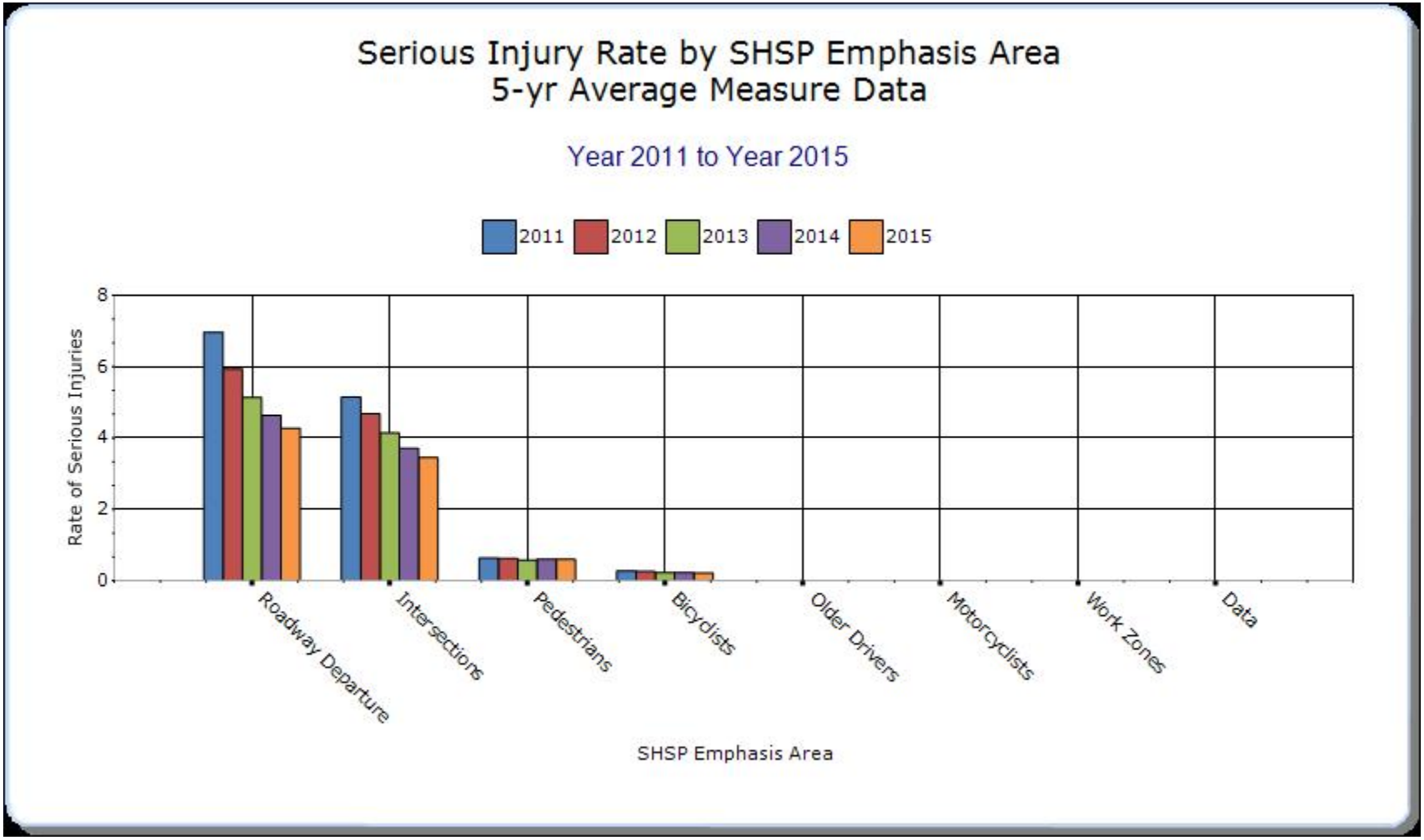
Year - 2015

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		395.8	3468.4	0.49	4.28			
Intersections		198	2802	0.24	3.46			
Pedestrians		84.2	486.8	0.1	0.6			
Bicyclists		10.4	179	0.01	0.22			


Number of Fatalities by SHSP Emphasis Area
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
600
500
400
300
200
100
0
# of Fatalities
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
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
7000
6000
5000
4000
3000
2000
1000
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
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
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Data
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
Pedestrian Safety		84.2	486.8	0.1	0.6			
Roadway Departure		395.8	3468.4	0.49	4.28			
Intersection		198	2802	0.24	3.46			
Bicycle Safety		10.4	179	0.01	0.22			
Crash Data		747.2	9052.4	0.96	11.7			

Systemic Treatments

Present the overall effectiveness of systemic treatments.

Systemic	Target Crash Type	Number of	Number of	Fatality rate (per	Serious injury rate	Other-1	Other-2	Other-3

improvement		fatalities	serious injuries	HMVMT)	(per HMVMT)			

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

None at this time.

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)
90150	Urban Minor Collector	Intersection traffic control	Modify traffic signal - modernization/replacement	1	1		5	7				1	1	0.432957978713392
81437	Rural Major Collector	Shoulder treatments	Pave existing shoulders	1		1	3	5		1	2		3	1.662568788418886

96866	Rural Major Collector	Roadway	Roadway widening - travel lanes		4	1	2	7			2	1	3	0.745350421124582
96942	Rural Minor Arterial	Intersection geometry	Auxiliary lanes - add right-turn lane			6	4	10			1	3	4	3.65816260235813
100553	Rural Principal Arterial - Other Freeways and Expressways	Roadway	Rumble strips - edge or shoulder	2	29	15	44	90		11	16	25	52	5.2764609444013
96869	Rural Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Intersection flashers - add overhead (actuated)	1	1	2		4			1	2	3	3.03374762691448

96870	Rural Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Intersection flashers - add overhead (actuated)		2	2	2	6			1	3	4	7.8044750582598 2
18902	Rural Minor Arterial	Alignment	Alignment - other				1	1				2	2	1.9550209555470 7
94972	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting		9	20	46	75			7	12	19	55.553293199480 2
98392	Rural Major Collector	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	1	2		2	5				2	2	4.1030887084988 2

90316	Rural Principal Arterial - Other Freeways and Expressways	Roadside	Drainage improvements	1	3	6	23	33	1		3	5	9	2.3855489047476 2
94837	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		3	5	4	12		1	4		5	2.8565125974680 1
98439	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			10	18	28		4	24	33	61	149.17619865671 7
98440	Rural Major Collector	Intersection traffic control	Modify traffic signal - modernization/replacement			6	13	19			1	1	2	2.2023027933531

98441	Rural Major Collector	Intersection traffic control	Modify traffic signal - modernization/replacement		3	7	15	25		4	6	5	15	8.8689861419853 9
90149	Urban Minor Arterial	Access managemen t	Raised island - remove existing		3	31	74	108						0
90151	Urban Principal Arterial - Other Freeways and Expresswa ys	Intersection geometry	Auxiliary lanes - add right-turn lane		1	49	88	138		3	63	45	111	54.837019234362 7
93989	Urban Principal Arterial - Other Freeways and Expresswa ys	Intersection geometry	Auxiliary lanes - extend acceleration/deceleration lane		8	40	101	149		1	82	59	142	6.8209291421485 6

93990	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - add left-turn lane		6	13	35	54		1	15	8	24	10.3247310722983
93991	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - extend acceleration/deceleration lane		6	23	35	64			23	19	42	11.4446998427165
93992	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - modify left-turn lane offset		2	11	26	39				2	2	1.2523654475115
95425	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Intersection traffic control - other		5	8	13	26		1	3	3	7	4.0678920436167 6

96038	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		2	7	11	20		1	17	8	26	37.9363792074176
98435	Urban Minor Arterial	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		1	8	8	17		2	12	16	30	37.16
17522	Rural Minor Collector	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)			9	7	16			10	5	15	0.680884339535427
90150	Urban Minor Collector	Intersection traffic control	Modify traffic signal - modernization/replacement	1	1		5	7				1	1	0.432957978713392

93641	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Intersection flashers - add overhead (continuous)		13		39	52			7	14	21	13.4324302678384
95411	Rural Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Intersection flashers - add overhead (actuated)		6	5	8	19	1	6	20		27	76.4464187892137
95421	Rural Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			4	12	16			5	10	15	1.59174430299977
95422	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		6	17	18	41		5	25	24	54	83.9797054907463

95424	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			2	9	11			12	10	22	53.6136951692086
95430	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - add emergency vehicle preemption		2	5	6	13			9	7	16	949.424131116225
95986	Urban Minor Arterial	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		1	4	8	13		2	19	8	29	44.5719780099575
96035	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		2	9	14	25		1	5	2	8	4.7795762524851 6

96036	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		1	3	14	18			4	1	5	2.4027372410856 2
96037	Urban Minor Arterial	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		4	4	12	20		1	14	12	27	39.374984642393
81296	Urban Minor Arterial	Alignment	Horizontal and vertical alignment		3	7	12	22				4	4	0.6037189940378 48
86514	Urban Principal Arterial - Other Freeways and Expressways	Alignment	Alignment - other		3	12	20	35			5	2	7	2.8877654516461

90199	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting		1	5		6			1	1	2	1.28096255899605
90200	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting		5	4		9		1	6	14	21	21.0876562203414
90202	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting		4	2		6			6		6	0
90204	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting	1	2			3		4	3	2	9	43.3921063557853

90205	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting	1	5	4		10		1	9	14	24	80.65004413314
90207	Urban Principal Arterial - Other Freeways and Expressways	Lighting	Continuous roadway lighting	2	3	2	2	9		1	10	17	28	70.1094489205187
90213	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified		1	10	17	28			2	1	3	1.3896220410388 2
90214	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified		1	21	35	57			6	20	26	5.077691531824

91946	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		2	15	28	45			4	2	6	2.41928964215216
93513	Urban Minor Arterial	Alignment	Vertical alignment or elevation change	1	3	11	6	21			2		2	0.572851602226154
94859	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		4	15	29	48		1	10	21	32	12.0154779878752
94862	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		3	5	13	21			9	14	23	25.4424857348321

94863	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		1	15	17	33		3	12	17	32	0.844947665465399
94865	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		3	5	4	12		3	5	6	14	18.4749706324588
94866	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		1	14	18	33		2	15	10	27	5.97154155620399
94867	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			13	12	25		1	14	15	30	63.9116510463114

95835	Urban Minor Arterial	Lighting	Intersection lighting		1	2	9	12						0
95838	Urban Minor Arterial	Intersection traffic control	Intersection traffic control - other		1	6	21	28			1		1	0.788502977517334
96998	Urban Local Road or Street	Intersection geometry	Auxiliary lanes - add two-way left-turn lane		3	14	24	41				2	2	0.526783682505653
97004	Urban Minor Arterial	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		2	10	19	31				1	1	0.890285272887265

97006	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement			16	11	27				1	1	1.1628911484389 5
97383	Urban Principal Arterial - Interstate	Intersection traffic control	Modify traffic signal - modernization/replacement			4	10	14			10	5	15	26.844284808138 1
98284	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement			3		3			2	1	3	0
98422	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement									1	1	0.8232240855731 43

98429	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		2	9	19	30		1	19	11	31	25.9864699244193
98436	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			1	8	9						0
98442	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		1	1	9	11		1	1		2	1.40078202667215
101015	Rural Principal Arteria - Interstate	Roadside	Barrier- metal			1	9	10		3	1	23	27	48.9161269633168

100646	Urban Minor Arterial	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified		1	8	10	19						0
90304	Rural Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - add right-turn lane	2	3	1	2	8				1	1	1.816014228863665
98122	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)		1	4	4	9			6	6	12	16.0359126312657
98389	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		3	5	5	13						0

89937	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			4	15	19		1	2	6	9	3.6120891981574 1
89938	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)		2	4	15	21			4	5	9	5.4675759252627 7
89939	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		4	7	22	33		1	4	6	11	9.9150135732833 9
95500	Urban Local Road or Street	Intersection traffic control	Intersection flashers - add overhead (actuated)		2	7	11	20			5	5	10	23.881143287886 6

96729	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement			22	65	87		1	5	8	14	12.1856786378938
98910	Rural Major Collector	Roadway	Pavement surface - high friction surface			2	1	3						0
71459	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)			12	42	54			6	36	42	4.56086324478989
77154	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		4	4	9	17			8	6	14	5.191335516863779

77156	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - modernization/replacement		6	17	14	37		1	3	16	20	8.4374712206427 4
93394	Urban Minor Arterial	Intersection traffic control	Modify traffic signal - add railroad preemption		1	4	12	17			6	18	24	69.502558986462 9
95509	Rural Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - extend existing left-turn lane		1	3	4	8			3	3	6	0.6148937464145 81
98358	Urban Principal Arterial - Other Freeways and Expressways	Access management	Median crossover - close crossover		1	1	2	4						0

98421	Rural Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		2	4	9	15			5	7	12	2.0287041158414 1
98433	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)			7	16	23			3	16	19	3.2757909495916 4
98434	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)			1	3	4			3	3	6	8.0775893751238 5
98445	Rural Principal Arteria - Interstate	Roadside	Barrier - cable	3	12	10	22	47		3	10	50	63	4.7608993168039

100543	Urban Principal Arterial - Other Freeways and Expressways	Intersection geometry	Auxiliary lanes - extend existing left-turn lane			2	6	8			1		1	3.3073901920333 8
98357	Urban Principal Arterial - Other Freeways and Expressways	Intersection traffic control	Modify traffic signal - modernization/replacement		3	1	10	14			3	10	13	10.491099757054 9
9300	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - miscellaneous/other/unspecified			9	17	26			2	7	9	1.87
98457	Rural Major Collector	Shoulder treatments	Widen shoulder - paved or other		2		5	7		1		1	2	1.78

98458	Rural Local Road or Street	Shoulder treatments	Widen shoulder - paved or other		1	1	2	4						0
93661	Urban Minor Arterial	Intersection geometry	Auxiliary lanes - add left-turn lane	1	25	1	22	49				3	3	2.30
93467	Rural Principal Arterial - Other Freeways and Expressways	Shoulder treatments	Widen shoulder - paved or other	2	7	2	11	22			3	6	9	2.19

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.