Highway Safety Improvement Program

Data Driven Decisions

Maine
Highway Safety Improvement Program
2016 Annual Report

Prepared by: ME

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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2. Executive Summary

Maine has a data driven approach for HSIP project selection, assessing various aspects of crash performance. Before and After crash results comparisons on safety projects have consistently shown performance improvement over the years. HSIP selection process is re-evaluated each year to see if there opportunities for enhancement and for improved alignment for the state's SHSP.

Supplemental safety projects that are more systemic in nature, like centerline rumble strips and median cable barrier are also funded. Systemic approach was used in selecting centerline rumble strips during project years of 2016-2018. 2016 will be Maine's largest rumble strip installation year with about 175 miles going in. Maine is looking to expand it's systemic approach to further impact lane departure crash reduction - Maine leading crash concern. A more involved data analysis process is underway to develop a systemic approach to crashes on curves - a major segment of Maine's Went Off Road Crashes. Other broad strategies are underway for address speed management, pedestrian safety and interstate wrong way ramp entries.

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

3. How are Highway Safety Improvement Program funds administered in the State?

Central

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

Local roads are included with the state-wide project candidates. Maine does capture crash and roadway data for Local roads and so is able to evaluate all locations within the state based on similar crash performance comparisons. Local requests are also receieved based on crash concerns and are reviewed as part of the candidate screening process.

MaineDOT's safety office will be presenting shortly on how to use High Crash Location data with regional planners. Maine will soon have an on-line crash data access system available to them to help with local analysis.

In terms of local road systemic improvements, MaineDOT's funding and approach are being evaluated for future funding periods.

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

Design
Planning
Maintenance
Operations
Governors Highway Safety Office
Other-MPO/RPO; Bike/Pedestrian are being better integrated

6. Briefly describe coordination with internal partners.

Executive, Planning (including local roads and bike/ped), Traffic Engineering, Project Development, all play a part in safety planning. MaineDOT continues to enhance its Work Plan approach to integrate safety into the planning process, looking to get safety in the planning thought process early on to consider not just stand-alone safety needs, but also opportunities that would complement upcoming paving and construction projects. Safety Office is able to review corridor project candidates in advance to identify safety needs that might align with other work.

A Highway Safety Group has been established that includes a wide operational representation and FHWA presence to look at overall safety needs, funding philosophy and systemic opportunities. This group has embraced the systemic approach.

MaineDOT Regions have been very involved with Centerline Rumble Strip strategies, corridor reviews and project implementation.

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

Metropolitan Planning Organizations
Governors Highway Safety Office
Local Government Association

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

Other-Continuing adjustments to improve approach.

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

Continue to seek to balance funding of spot improvements where crash history has been clearly a problem (this has often been concentrated on intersections) with systemic opprtunities related to Lane Departure mitigations and other core safety target areas.

Program Methodology

10. Select the programs that are administered under HSIP.

Median Barrier	Intersection	Horizontal Curve
Bicycle Safety	Rural State Highways	Skid Hazard
Crash Data	Roadway Departure	Low-Cost Spot Improvements
Sign Replacement And Improvement	Local Safety	Pedestrian Safety
Right Angle Crash	Left Turn Crash	Shoulder Improvement
Segments	Other-Median Cable Barrier - install completed in 2014	

11. Program: Median Barrier

Date of Program Methodology: 7/1/2010

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes		Median width

What project identification methodology was used for this program?

Probability of specific crash types

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

No

How are highway safety improvement projects advanced for implementation?

selection committee

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	1

11. Program: Intersection

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	Functional classification
Fatal and serious injury crashes only	Volume	
		Roadside features
		Other-MaineDOT's Highway Corridor Priority classifications

What project identification methodology was used for this program?

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

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

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

How are highway safety improvement projects advanced for implementation?

Other-Benefit to Cost

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	2

11. Program: Horizontal Curve

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only	Volume	
	Other-Highway Corridor Priority	Functional classification
		Roadside features

What project identification methodology was used for this program?

Crash frequency
Crash rate
Critical rate
Probability of specific crash types
Excess proportions of specific crash types
Other-Systemic approach being used to identify corridors of most exposure

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?
selection committee
Other-Benefit to Cost ranking

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	2

11. Program: Bicycle Safety

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

What project identification methodology was used for this program?
Crash frequency
Relative severity index
Crash rate
Critical rate
Probability of specific crash types
Excess proportions of specific crash types

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?
selection committee

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

Available funding	2
Ranking based on net benefit	1

11. Program: Rural State Highways

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

What project identification methodology was used for this program?
Crash frequency
Relative severity index
Crash rate
Critical rate
Level of service of safety (LOSS)
Excess proportions of specific crash types

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

How are highway safety improvement projects advanced for implementation?
Other-Benefit to Cost ranking

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	2

11. Program: Skid Hazard

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	Horizontal curvature
Fatal and serious injury crashes only		Roadside features

What project identification methodology was used for this program?
Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

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?
selection committee

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

Available funding	2
Ranking based on net benefit	1

11. Program: Crash Data

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes		

What project identification methodology was used for this program?

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

How are highway safety improvement projects advanced for implementation?
selection committee

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

Available funding	2
Ranking based on net benefit	1

11. Program: Roadway Departure

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

What project identification methodology was used for this program?
Crash frequency
Crash rate
Critical rate
Level of service of safety (LOSS)
Excess proportions of specific crash types
Other-Systemic for both Head On and Went Off Road (WOR). Curves will be focus for WOR

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?
selection committee

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

Available funding	2
Ranking based on net benefit	1

11. Program: Low-Cost Spot Improvements

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic Volume	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
Critical rate
Excess proportions of specific crash types

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?

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

Available funding	2

Cost Effectiveness	1

11. Program: Sign Replacement And Improvement

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types

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?

selection committee

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

Rank of Priority Consideration

Available funding	2
Ranking based on net benefit	1

11. Program: Local Safety

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

only

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

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?
selection committee
Other-Usually work with MaineDOT's Local Roads unit

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

Available funding	2
Ranking based on net benefit	1

11. Program: Pedestrian Safety

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes	*Exposure*	*Roadway*
All crashes	Traffic	
Fatal and serious injury crashes only	Volume	
	Population	
		Functional classification
		Roadside features

What project identification methodology was used for this program?
Crash frequency
Crash rate
Excess proportions of specific crash types

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?
selection committee
Other-These projects are normally coordinated through MaineDOT's Bike/Ped coordinator

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

Available funding	2
Ranking based on net benefit	1

11. Program: Right Angle Crash

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

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

How are highway safety improvement projects advanced for implementation?
Other-Benefit to Cost ranking

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	2

11. Program: Left Turn Crash

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

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

How are highway safety improvement projects advanced for implementation?
Other-Benefit to Cost prioritization

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	2

11. Program: Shoulder Improvement

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

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

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

How are highway safety improvement projects advanced for implementation?

Other-Benefit to Cost ranking

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	2

11. Program: Segments

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

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

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

How are highway safety improvement projects advanced for implementation?
Other-Benefit to Cost ranking

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	2

11. Program: Other-Median Cable Barrier -install completed in 2014

Date of Program Methodology: 7/1/2016

What data types were used in the program methodology?
Crashes *Exposure* *Roadway*
All crashes

What project identification methodology was used for this program?
Probability of specific crash types

Are local roads (non-state owned and operated) included or addressed in this program?
No

How are highway safety improvement projects advanced for implementation?
selection committee

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	1

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

50%

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

Cable Median Barriers
Rumble Strips
Traffic Control Device Rehabilitation
Install/Improve Signing
Install/Improve Pavement Marking and/or Delineation
Upgrade Guard Rails
Safety Edge
Add/Upgrade/Modify/Remove Traffic Signal
Other-Wrong Way Driver interstate ramp improvements, rapid flashing beacons for ped crossings,
Other-Went Off Road - curves

13. What process is used to identify potential countermeasures?

Engineering Study
Road Safety Assessment

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

Systemic Approach

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

Systemic approach continues to broaden and has brought about coordination between MaineDOT safety and other MaineDOT operating units. The team looks to jointly define safety needs and issues, coordinate best mitigation techniques, and then integrate in Work Plan - coordinating with construction and paving projects when appropriate.

Progress in Implementing Projects

Funds Programmed

16. Reporting period for Highway Safety Improvement Program funding.

Calendar Year

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

Funding Category	Programmed*		Obligated	
	Amount	Percentage	Amount	Percentage
HSIP (Section 148)	$19,519,238.90	97 %	$4,601,539.47	97 %
HRRRP (SAFETEA-LU)	$0.00	0 %	$0.00	0 %
Penalty Transfer – Section 164	$564,552.50	3 %	$0.00	0 %
Incentive Grants (Section 406)	$0.00	0 %	$137,161.00	3 %
Totals	$20,083,791.40	100%	$4,738,700.47	100%

18. How much funding is programmed to local (non-state owned and operated) safety projects?
$0.00
How much funding is obligated to local safety projects?
$0.00

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

0 %

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

0 %

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

0 %

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

0 %

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

No impediments seen. Safety Office continues to work with MaineDOT Exec., various MaineDOT operational areas and Regions to improve safety planning coordination/integration. Process continues to be enhanced over time.

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

Maine's leading crash exposure continues to be Lane Departure, experiencing 70% of state-wide fatalities in this category.

Head-on fatalities were up 50% in 2014 compared to recent prior years, but did come back down in 2015. Systemic opportunities are being evaluated to achieve a better funding mix that is reflective of SHSP priorities. In 2015 there was an increase in installations on centerline rumble strips - 90 miles planned then, compared to the 60 miles that existed on non-interstate road installations completed since 2006. In 2016, 175 more miles are planned, again more miles than the total prior miles already on the system. Additional opportunities are anticipated for future planning years, but won't be as high as current levels.

Although not necessarily directly translating to HSIP funding, but certainly contributing to safety planning, there is continued dialogue with MPO's/RPO's on local safety needs. 2015 saw a sharp increase both in motorcycle and pedestrian traffic fatalities. This has helped drive more intense dialogue both with the bike/ ped advocates and with United Bikers of Maine (the state's leading motorcycle advocacy group.

General Listing of Projects

23. List the projects obligated using HSIP funds for 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
018522.17	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0	157500	0	HSIP (Section 148)		0	0	Town or Township Highway Agency		
018814.00	Roadside Barrier transitions	1 Numbers	2250	50000	HSIP (Section 148)	Rural Major Collector	739	50	State Highway Agency	Lane Departure	Replace obsolete systems
018816.00	Roadside Barrier-metal	1 Numbers	220500	250000	HSIP (Section 148)	Rural Major Collector	3415	50	State Highway Agency	Lane Departure	Install w-beam guardrail
018822.00	Roadside Barrier-metal	1 Numbers	346500	385000	HSIP (Section 148)	Urban Major Collector	0	0	State Highway Agency	Lane Departure	Guardrail improvements
018837.00	Non-infrastructure Training and workforce development	0	27000	30000	HSIP (Section 148)	statewide	0	0	State Highway Agency	Outeach/education	

018844.00	Roadside Barrier - cable	1 Numbers	270000	300000	HSIP (Section 148)	Rural Local Road or Street	0	45	State Highway Agency	Lane Departure	Replace obsolete systems
018857.00	Intersection geometry Intersection geometry - other	1 Numbers	315900	403458.7	HSIP (Section 148)	Urban Principal Arterial - Interstate	15350	65	State Highway Agency	Intersections	Intersection improvements
018874.00	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0	45000	50000	HSIP (Section 148)	Rural Principal Arterial - Interstate	481	65	State Highway Agency	Bicyclists	Construct High Visibility Bike Lane
018876.00	Pedestrians and bicyclists Pedestrian beacons	1 Numbers	180000	195775	HSIP (Section 148)	Statewide	0	0	State Highway Agency	Pedestrians	Rectangular Rapid Flashing Beacons
018877.00	Non-infrastructure Training and workforce development	0	5400	6000	HSIP (Section 148)	NOC	0	0	State Highway Agency	Outreach and education	Public Safety Outreach and Training
018893.00	Roadway signs and traffic control Roadway signs	1 Numbers	37500	50000	HSIP (Section 148)		0	0	State Highway Agency	Sign upgrades	

	(including post) - new or updated										
018893.17	Roadway signs and traffic control Roadway signs (including post) - new or updated	1 Numbers	37500	50000	HSIP (Section 148)		0	0	State Highway Agency	Sign upgrades	
018897.00	Roadway delineation Roadway delineation - other	1 Numbers	12000	15000	HSIP (Section 148)		0	0	State Highway Agency	Large Animals	Use reflective signs/delineators
018898.00	Roadway delineation Roadway delineation - other	1 Numbers	12000	15000	HSIP (Section 148)		0	0	State Highway Agency	Large Animals	Use reflective signs/delineators
018899.00	Roadway Rumble strips - unspecified or other	1 Numbers	45000	64900.9	HSIP (Section 148)		0	0	State Highway Agency	Lane Departure	Install centerline rumble strips
018900.00	Roadway Rumble strips - unspecified or other	1 Numbers	570076.56	950241.27	HSIP (Section 148)	Rural Principal Arterial - Other	0	0	State Highway Agency	Lane Departure	Install centerline rumble strips
018901.	Roadway	1	436500	574208.	HSIP	Rural	0	0	State	Lane Departure	Install

00	Rumble strips - unspecified or other	Numbers		68	(Section 148)	Minor Arterial			Highway Agency		centerline rumble strips
018902.00	Roadway Rumble strips - unspecified or other	1 Numbers	90000	101447.82	HSIP (Section 148)	Rural Minor Arterial	0	0	State Highway Agency	Lane Departure	Install centerline rumble strips
020205.00	Intersection traffic control Intersection traffic control - other	1 Numbers	1485000	2525000	HSIP (Section 148)	Rural Major Collector	4881	40	State Highway Agency	Intersections	Intersection improvements
020207.00	Intersection geometry Intersection geometry - other	1 Numbers	1213200	1911000	HSIP (Section 148)	Rural Principal Arterial - Other	7571	35	State Highway Agency	Intersections	Intersection improvements
020541.17	Non-infrastructure Outreach	0	36000	40000	HSIP (Section 148)	Outreach and education	0	0		Work Zones	Public Education and Outreach
020581.17	Roadway Roadway - other	1 Numbers	6142500	6825000	HSIP (Section 148)	Statewide	0	0	State Highway Agency	Lane Departure	Head ON/Went Off Road

Progress in Achieving Safety Performance Targets

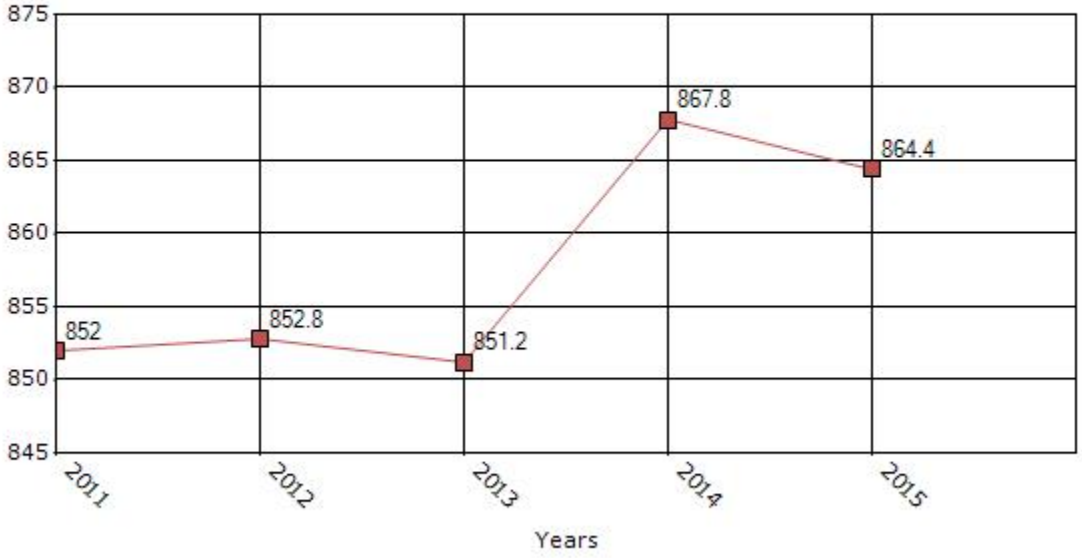
Overview of General Safety Trends

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

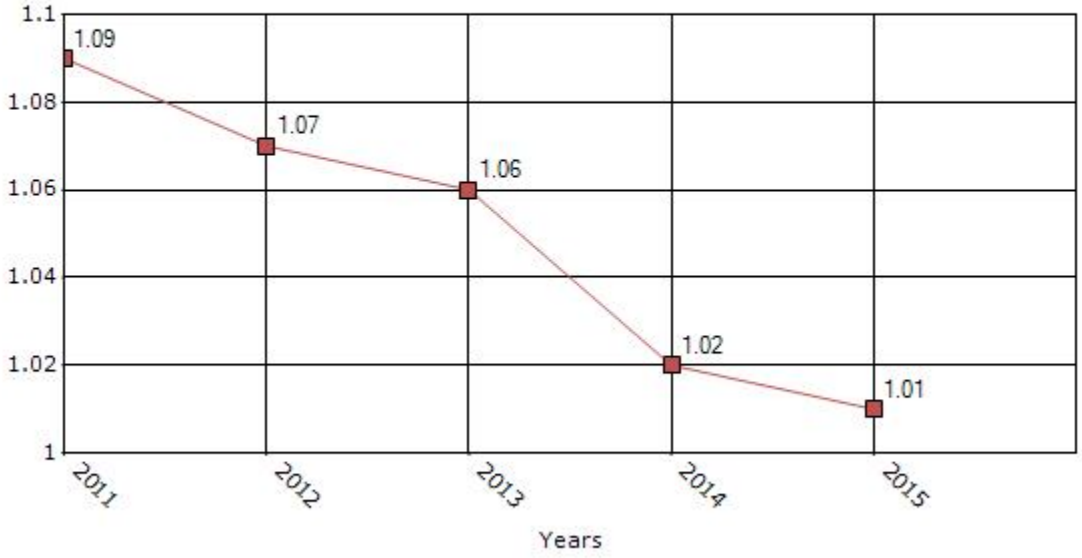
Performance Measures*	2011 (5-yr avg)	2012 (5-yr avg)	2013 (5-yr avg)	2014 (5-yr avg)	2015 (5-yr avg)
Number of fatalities	159	155	153	147.4	146.4
Number of serious injuries	852	852.8	851.2	867.8	864.4
Fatality rate (per HMVMT)	1.09	1.07	1.06	1.02	1.01
Serious injury rate (per HMVMT)	5.85	5.9	5.9	6.01	5.98

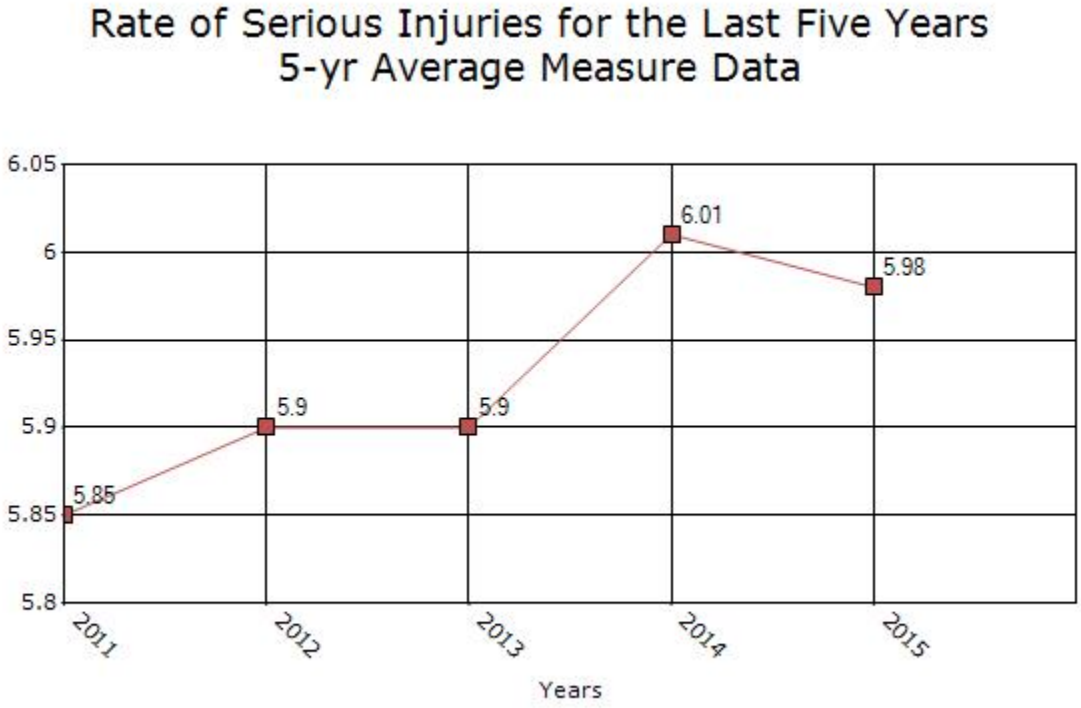
*Performance measure data is presented using a five-year rolling average.

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

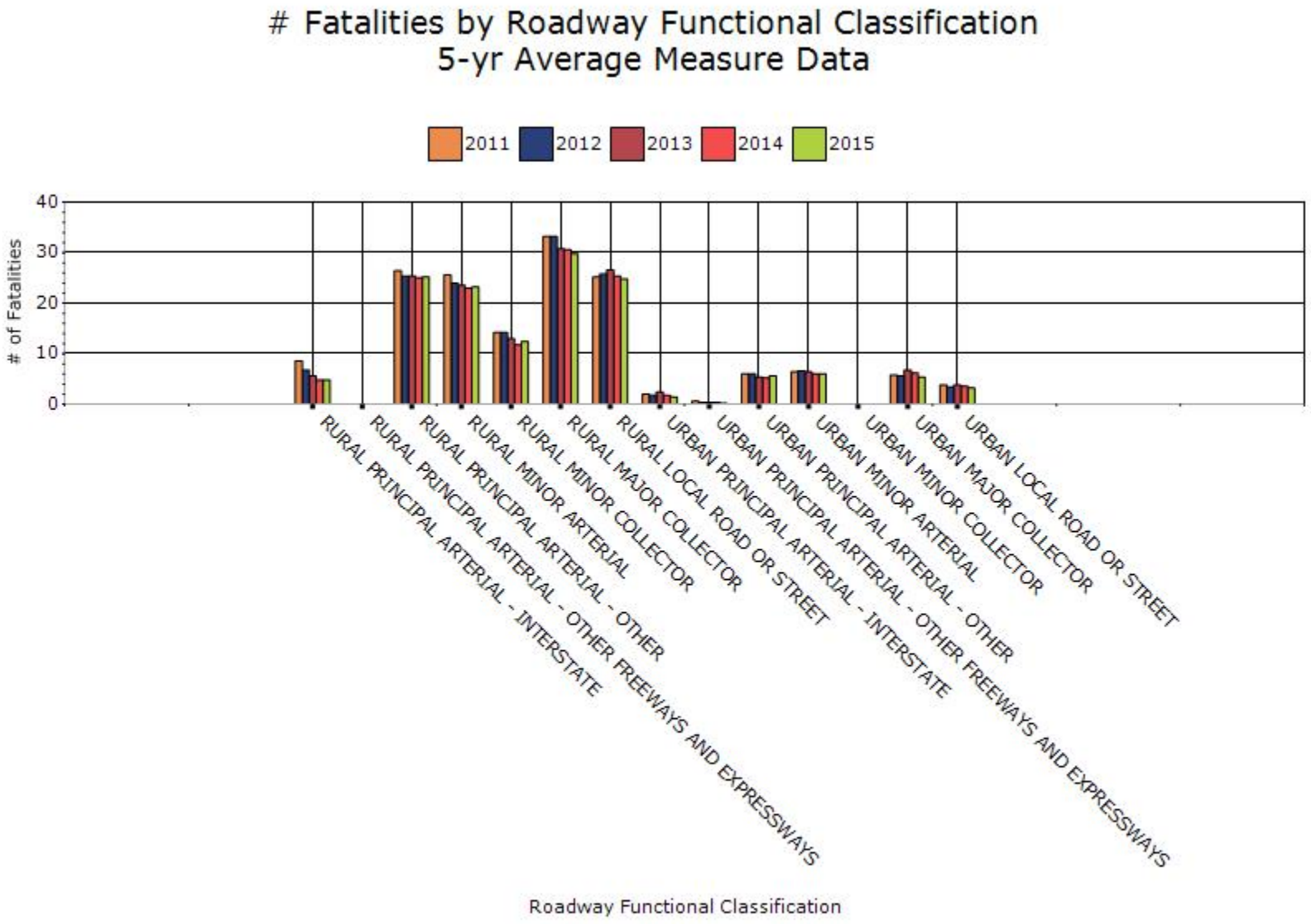


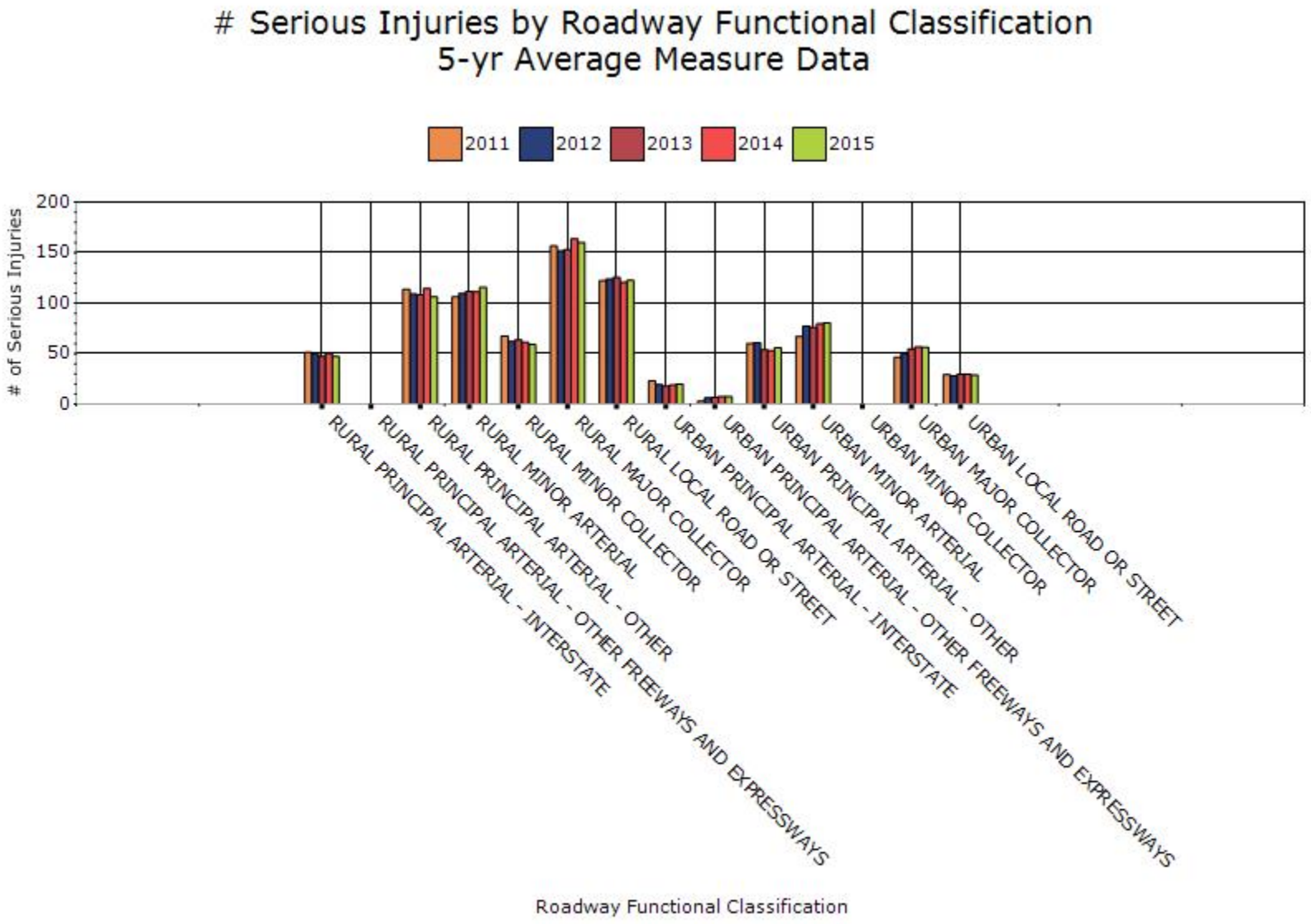

Rate of Serious Injuries for the Last Five Years
5-yr Average Measure Data
6.05
6
5.95
5.9
5.85
5.8
5.85
5.9
5.9
6.01
5.98
2011
2012
2013
2014
2015
Years

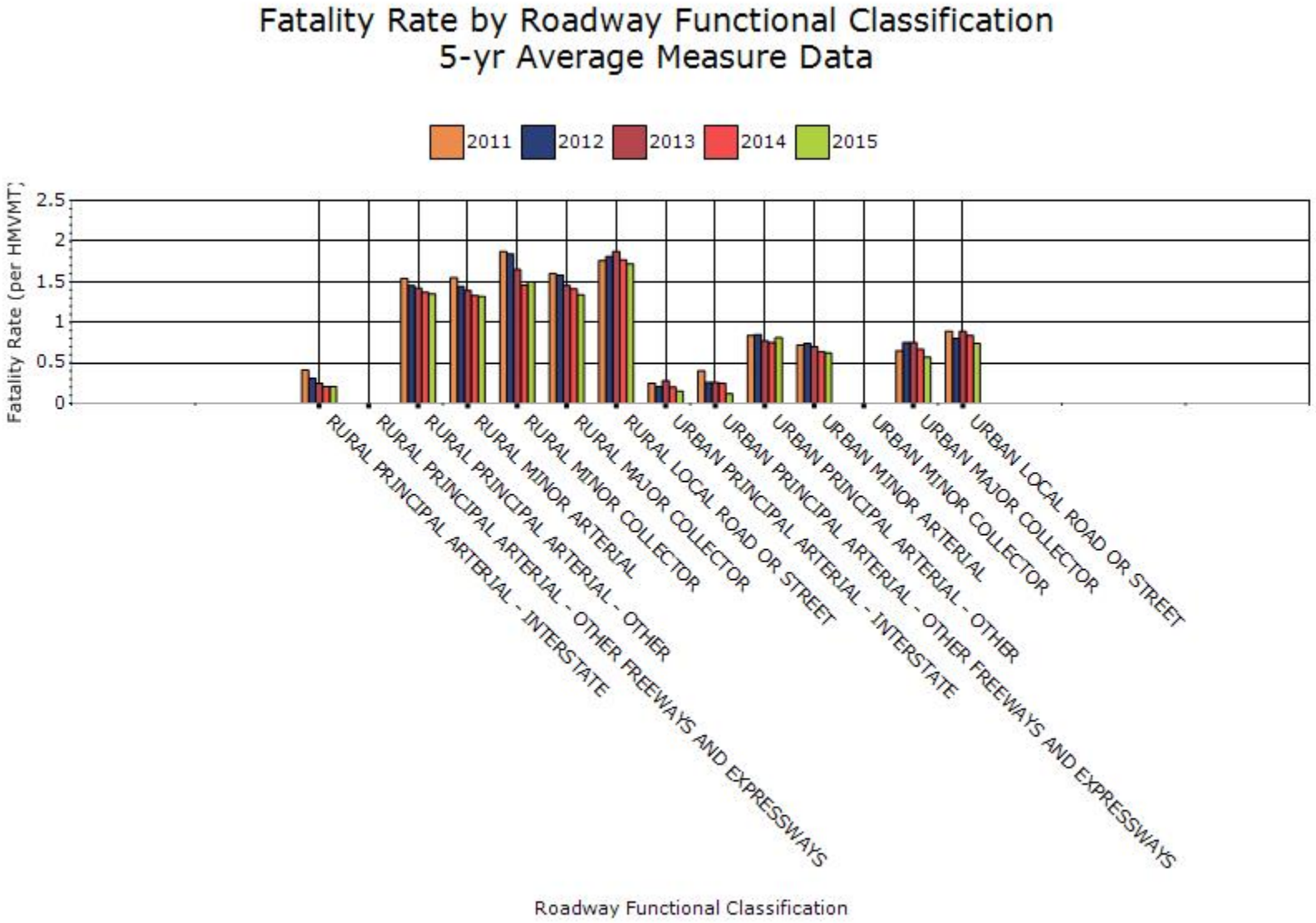
25. To the maximum extent possible, present performance measure data by functional classification and ownership.

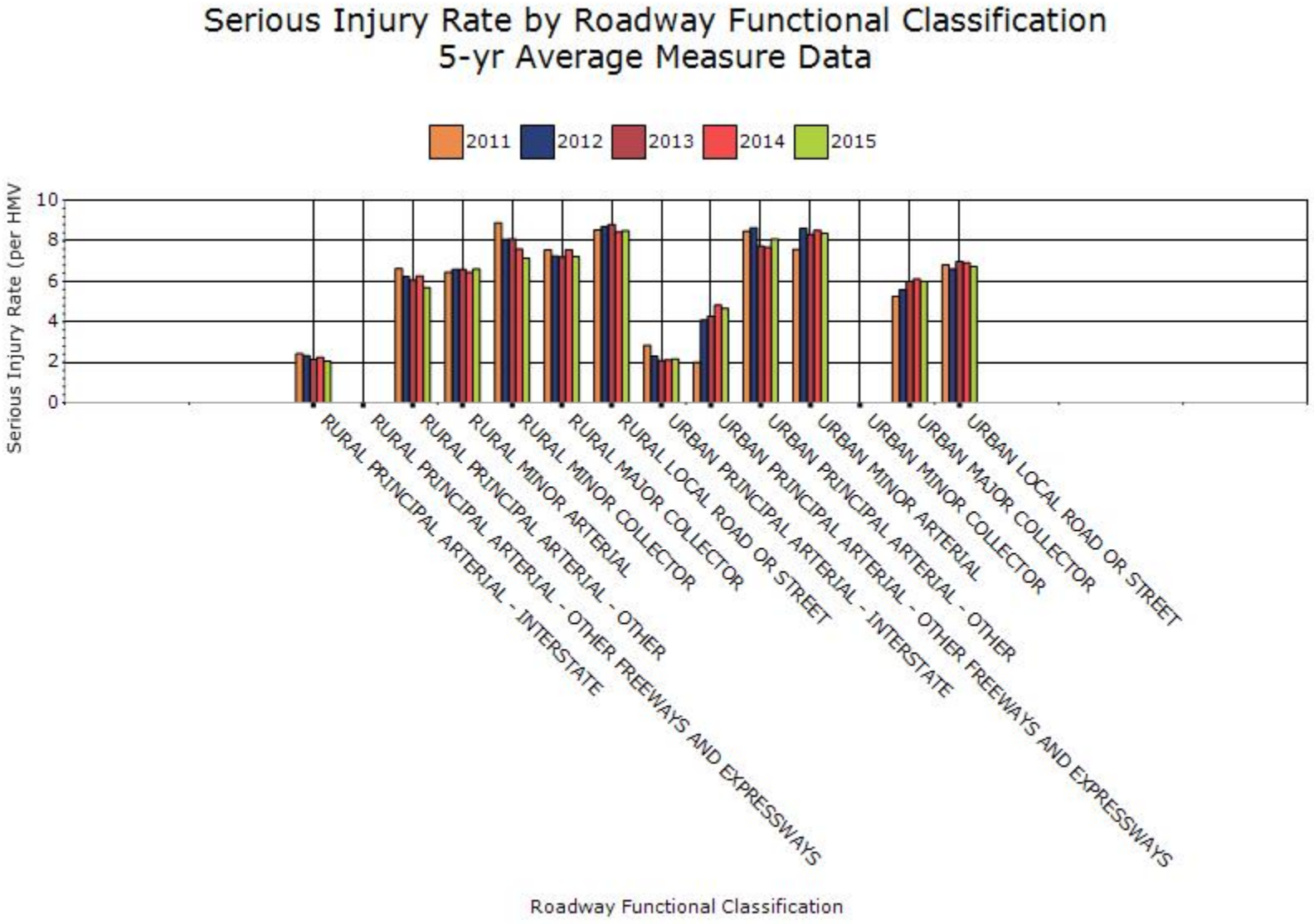
Year - 2015

Function Classification	Number of fatalities (5-yr avg)	Number of serious injuries (5-yr avg)	Fatality rate (per HMVMT) (5-yr avg)	Serious injury rate (per HMVMT) (5-yr avg)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	4.8	47.2	0.21	2.06
RURAL PRINCIPAL ARTERIAL - OTHER	25.2	106.2	1.35	5.69
RURAL MINOR ARTERIAL	23.2	115.6	1.32	6.6
RURAL MINOR COLLECTOR	12.4	59.2	1.5	7.14
RURAL MAJOR COLLECTOR	29.8	160.2	1.34	7.22
RURAL LOCAL ROAD OR STREET	24.8	122.6	1.72	8.5
URBAN PRINCIPAL ARTERIAL - INTERSTATE	1.4	20	0.15	2.17
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0.2	7.6	0.12	4.66
URBAN PRINCIPAL ARTERIAL - OTHER	5.6	55.8	0.81	8.09
URBAN MINOR ARTERIAL	6	80.4	0.62	8.37
URBAN MAJOR COLLECTOR	5.4	56.4	0.57	5.99
URBAN LOCAL ROAD OR STREET	3.2	29	0.74	6.74


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

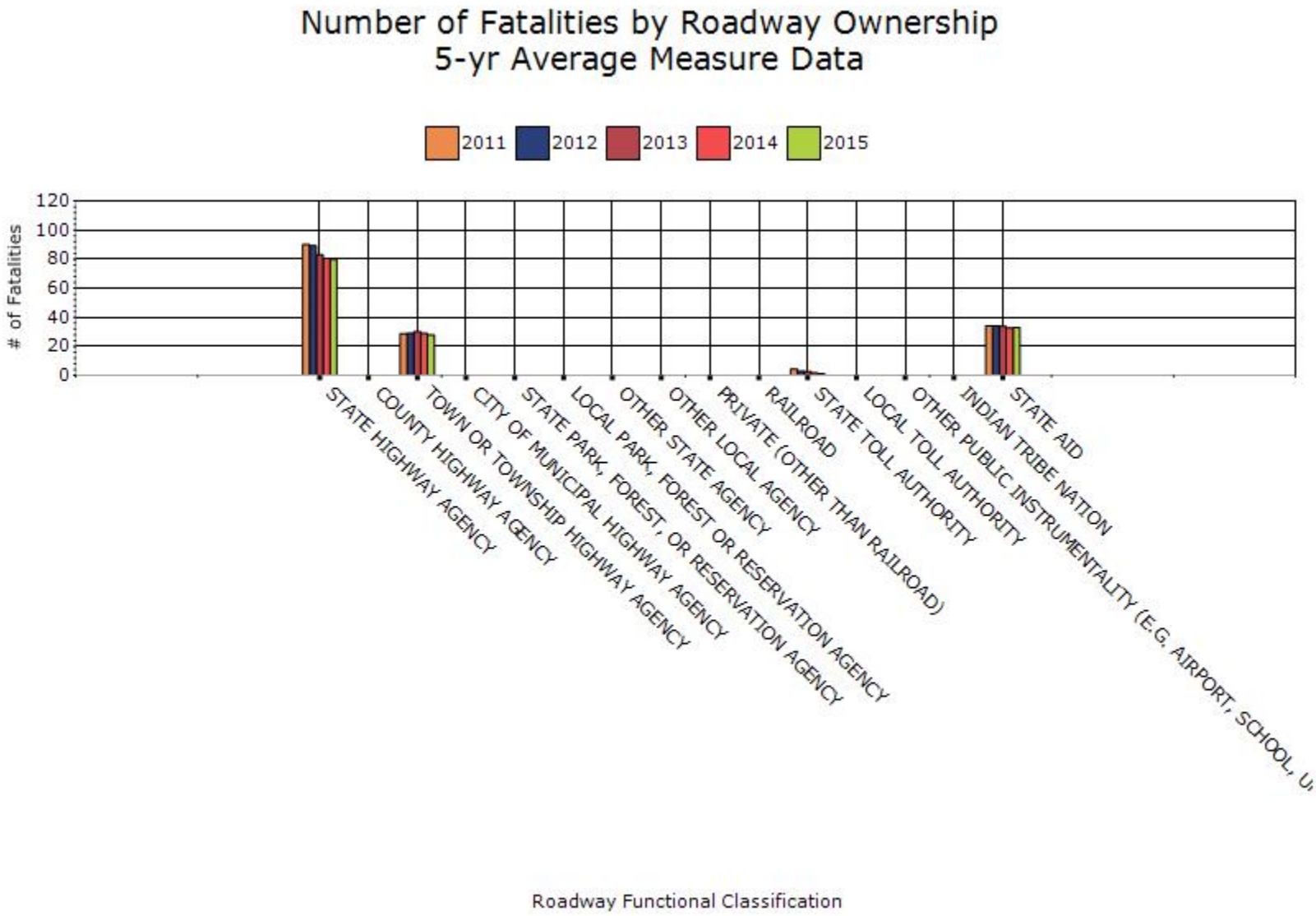

Serious Injuries by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
200
150
100
50
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL MINOR 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
Roadway Functional Classification

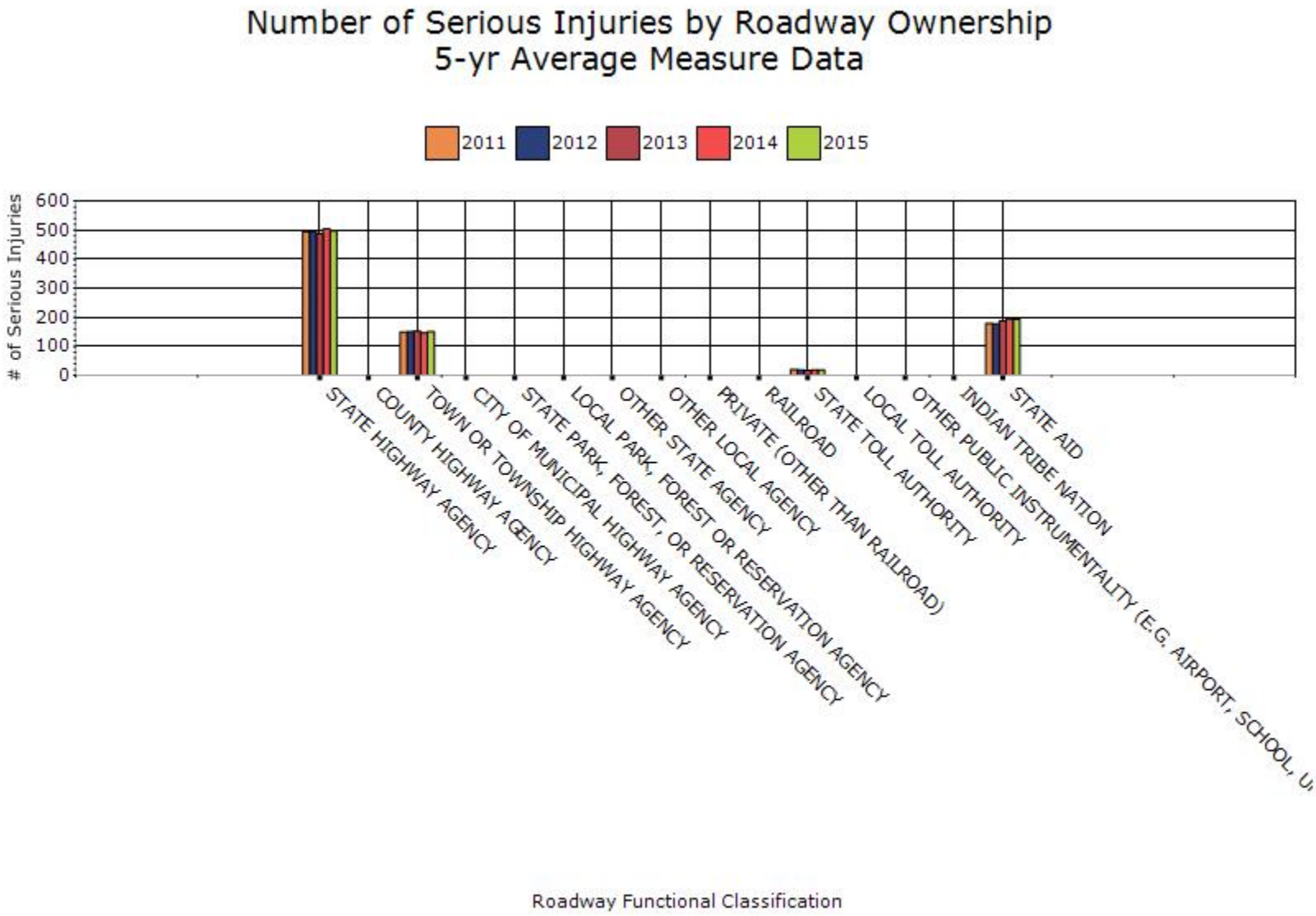

Fatality Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVMT)
2.5
2
1.5
1
0.5
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL 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
Roadway Functional Classification

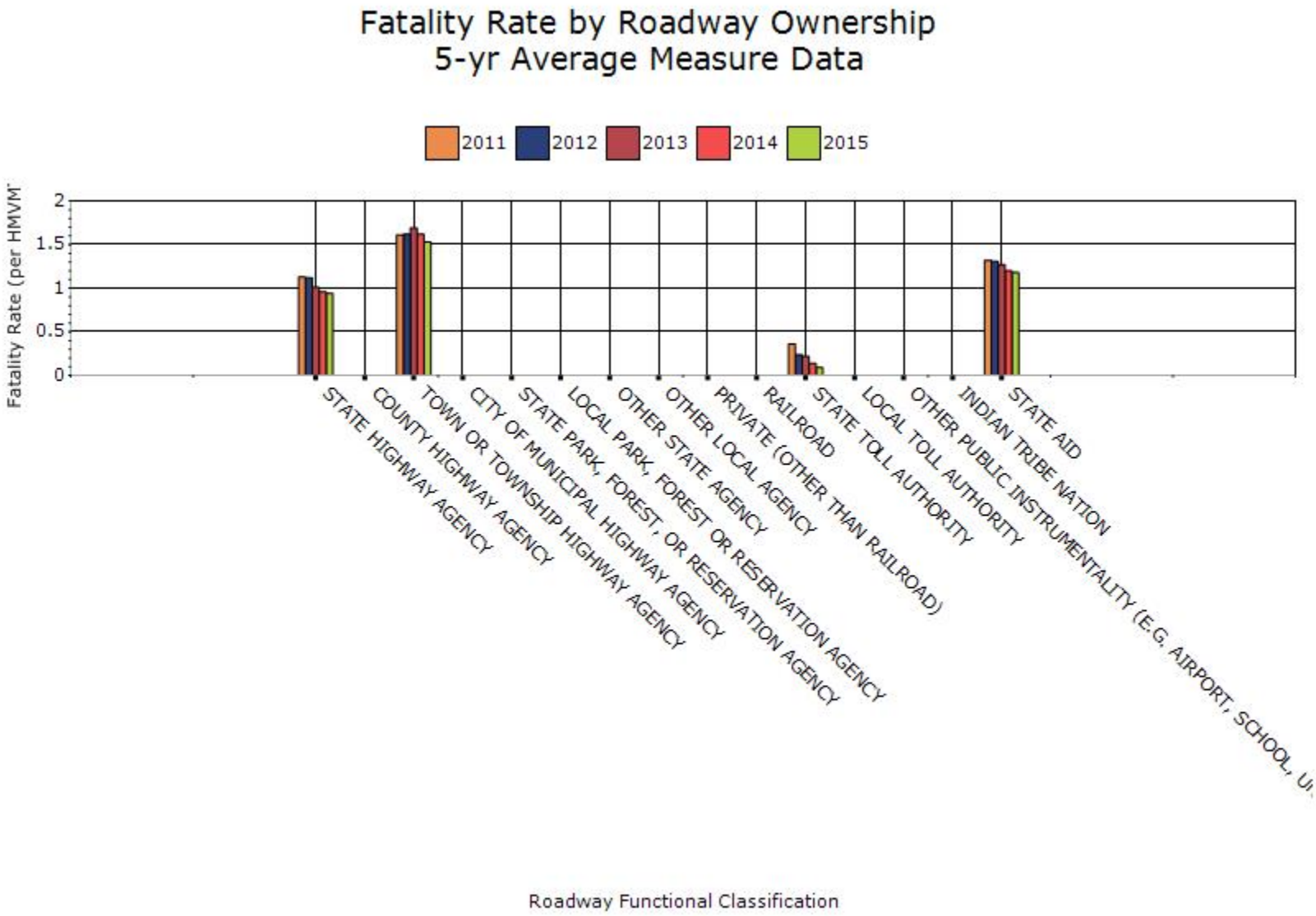

Serious Injury Rate by Roadway Functional Classification
5-yr Average Measure Data
2011
2012
2013
2014
2015
Serious Injury Rate (per HMV
10
8
6
4
2
0
RURAL PRINCIPAL ARTERIAL - INTERSTATE
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS
RURAL PRINCIPAL ARTERIAL - OTHER
RURAL MINOR ARTERIAL
RURAL 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
Roadway Functional Classification

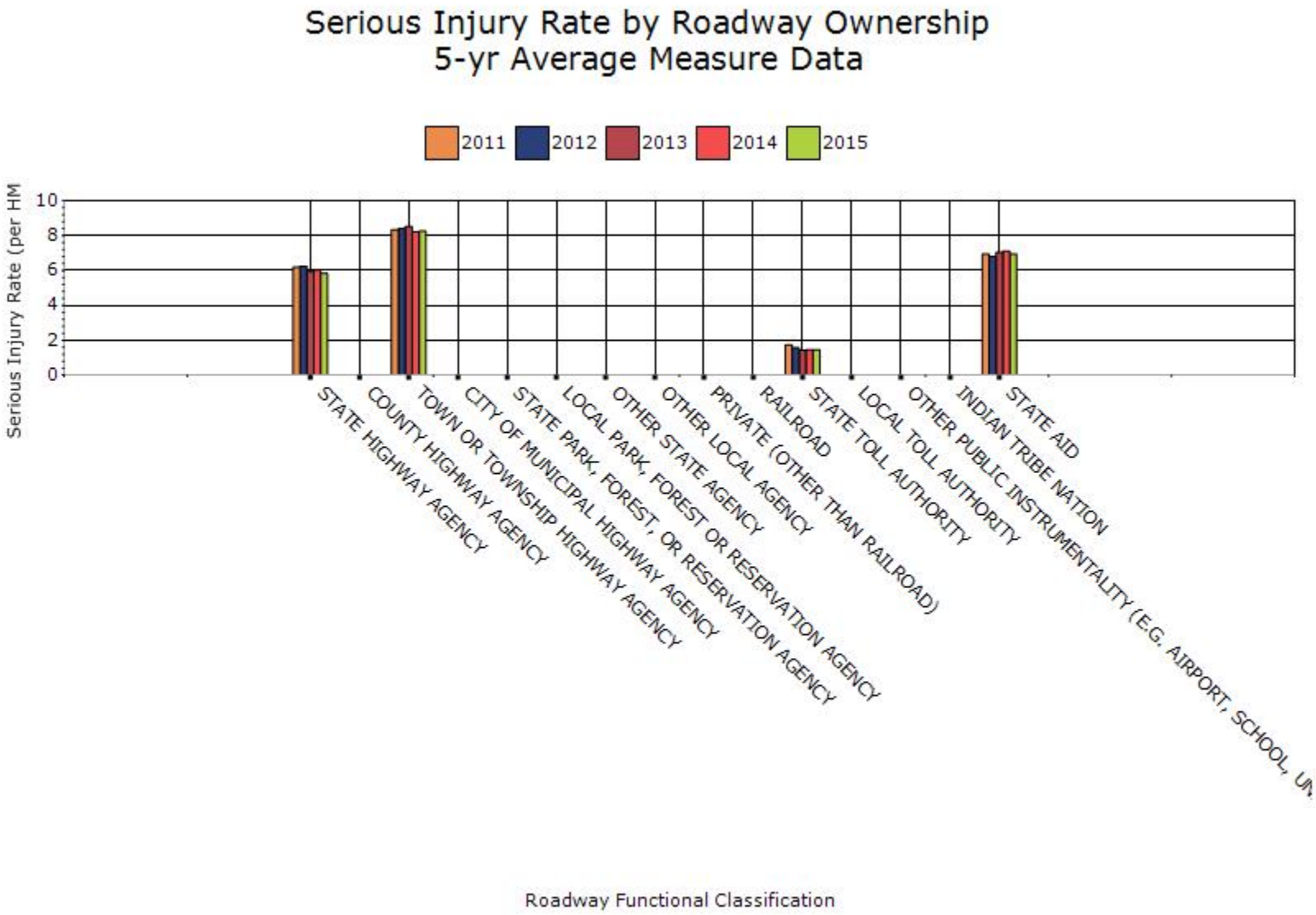
Year - 2015

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	80	496.8	0.94	5.84
TOWN OR TOWNSHIP HIGHWAY AGENCY	28	151	1.53	8.26
STATE TOLL AUTHORITY	1.2	19.6	0.09	1.46
STATE AID	33	193.8	1.18	6.95


Number of Fatalities by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Fatalities
120
100
80
60
40
20
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
STATE AID
Roadway Functional Classification


Number of Serious Injuries by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
# of Serious Injuries
600
500
400
300
200
100
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
STATE AID
Roadway Functional Classification


Fatality Rate by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
Fatality Rate (per HMVM
2
1.5
1
0.5
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, U
INDIAN TRIBE NATION
STATE AID
Roadway Functional Classification


Serious Injury Rate by Roadway Ownership
5-yr Average Measure Data
2011
2012
2013
2014
2015
Serious Injury Rate (per HM
10
8
6
4
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, UN
INDIAN TRIBE NATION
STATE AID
Roadway Functional Classification

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

Maine's fatality trends have been generally been positive, but 2015 showed an increase over 2014 fatalities when Maine experienced the lowest fatality total in the past 70 years. The biggest swing in performance was for Motorcycles. In 2014, this population experienced a recent historical low of 10 fatalities, and then in 2015, rose to 32. Maine's 5 year fatality average is now 146.4. During the years of 2001-2004, the average was over 200.

Maine continues to monitor crash report submission volumes with Police agencies, providing ALL agencies quarterly volume reports and following up with those that seem to be well outside the norm. Most corrections are caught now by the police agencies themselves, with less intervention needed by MSP & DOT.

Incapacitating injuries are improving after hitting a recent high in 2012. 2015 incapacitating injuries are the second lowest in the last 13 years at 754. To put that in context, 2003 through 2006 had totals ranging from 1000 to over 1100.

Maine's lead crash concern continues to be lane departure. While overall numbers are trending down, Lane Departure still represents 70% of the state's fatalities.

Application of Special Rules

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

Older Driver Performance Measures	2010 (5-yr avg)	2011 (5-yr avg)	2012 (5-yr avg)	2013 (5-yr avg)	2014 (5-yr avg)
Fatality rate (per capita)	0.15	0.126	0.11	0.112	0.11
Serious injury rate (per capita)	0.396	0.372	0.36	0.368	0.358
Fatality and serious injury rate (per capita)	0.64	0.64	0.45	0.46	0.46

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

Queried in Maine's Crash Reporting database all crashes resulting in fatality or serious injury when fatality or injury occurred to Crash Report Person Type: *Driver, Driver Owner or Pedestrian* over 65 years old. (Older injuries only were counted)

All resulting crash fatalities/serious injuries by year were summarized.

Developed rates based on Section 148: Older Drivers and Pedestrians Special Rule Interim Guidance; Attachment 2: Number of People 65 Years of Age and Older (Per 1,000 Total Population) for Maine.

For example:

1. **5 YR AVG** data 'Fatality rate (per capita) for 2014.

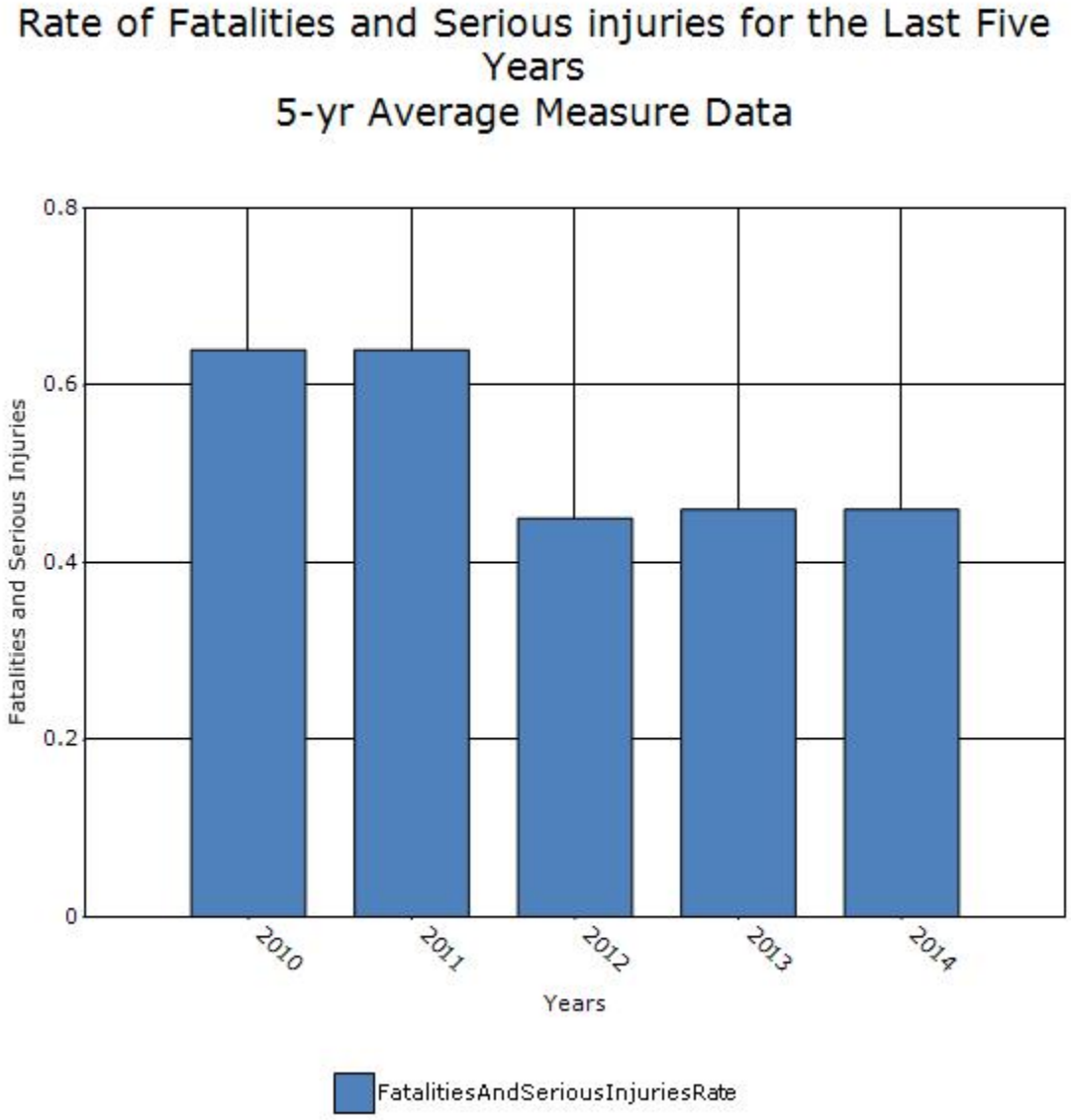
FATAL RATE: 24.8 5yr avg fatals/226.6 5yr avg pop = .109

INCAPACITATING RATE: 81/226.5 = .357

2. 2014 single year data 'Fatality rate (per capita) for 2014

FATAL RATE: 24 fatals/243 population = .987

INCAPACITATING RATE: 74/243 = .304



28. Does the older driver special rule apply to your state?

No

Assessment of the Effectiveness of the Improvements (Program Evaluation)

29. 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.

See attached BEFORE and AFTER project table (provided with Q 36).

Policy change

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

Highway Safety Group continues to take on systemic analysis to identify best opportunities for Head On and Went Off Road mitigation. Very good cooperative work done to accomplish current work plan's rumble strip installation contract with related policy/guideline updates

Other-Colloboration efforts continue, including networking every 2 months with other NE states.

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

Other-Increased application of systemic analysis

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

Maine has employed systemic (risk based selection) of safety improvements for some time. Basic risk criteria was established for installation of median cable barrier back when installed on limited access roads (primarily interstate) in 2010.

Rumble strip installations started as a reactive solution - if there was a high incidence of head on crashes, MaineDOT would put them in. This planning year we became very systemic - and chose corridors based on Highway Corridor Priority, Posted Speed Limit, and traffic volume as qualifying criteria. That screened criteria identified a disproportionate serious exposure on a limited number of miles of priority roadway.

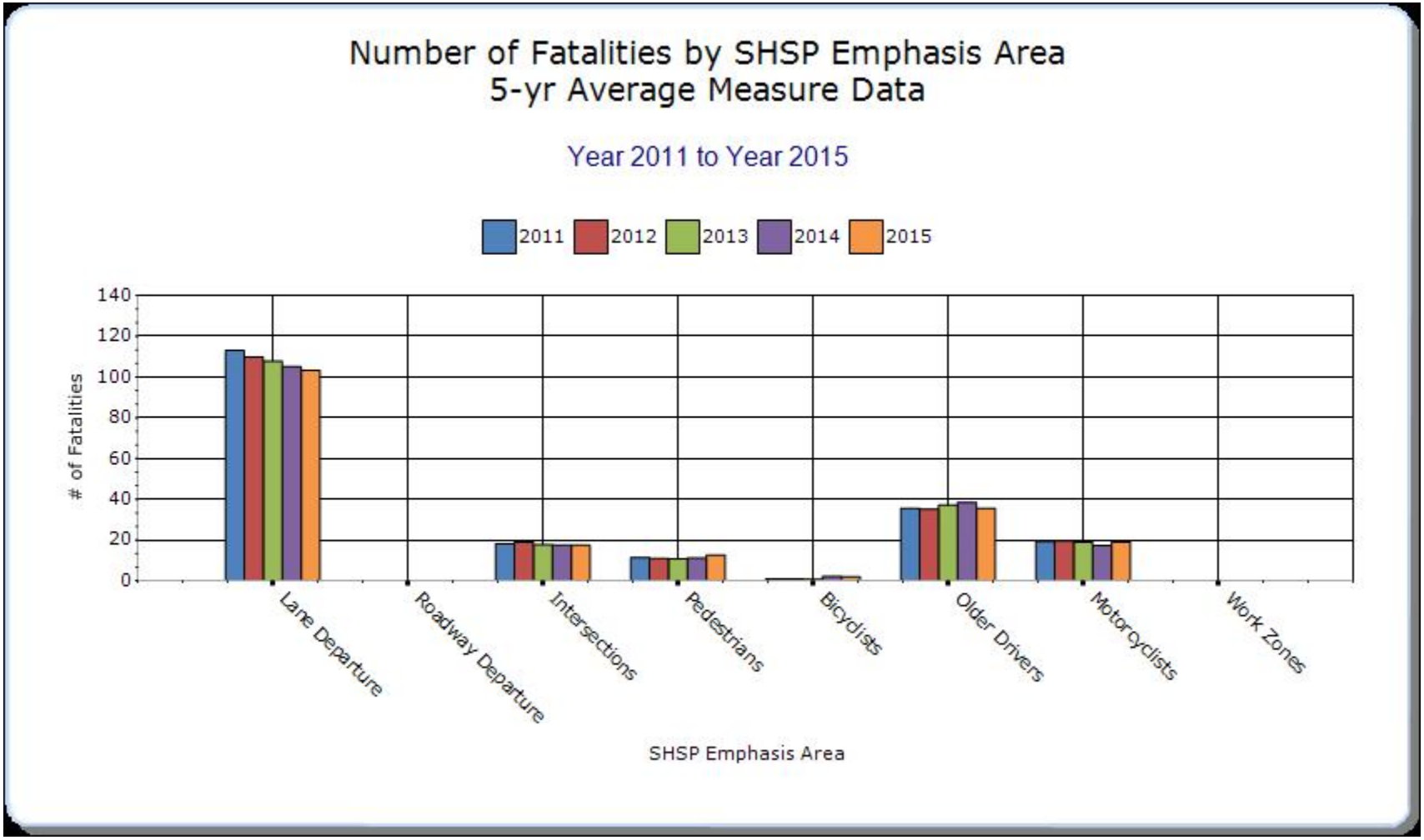
Went Off Road analysis is underway now, and represents our most complex systemic data drill down so far. We have identified that curves and night time are over-represented and will be determining other risk criteria to select corridors of most need.

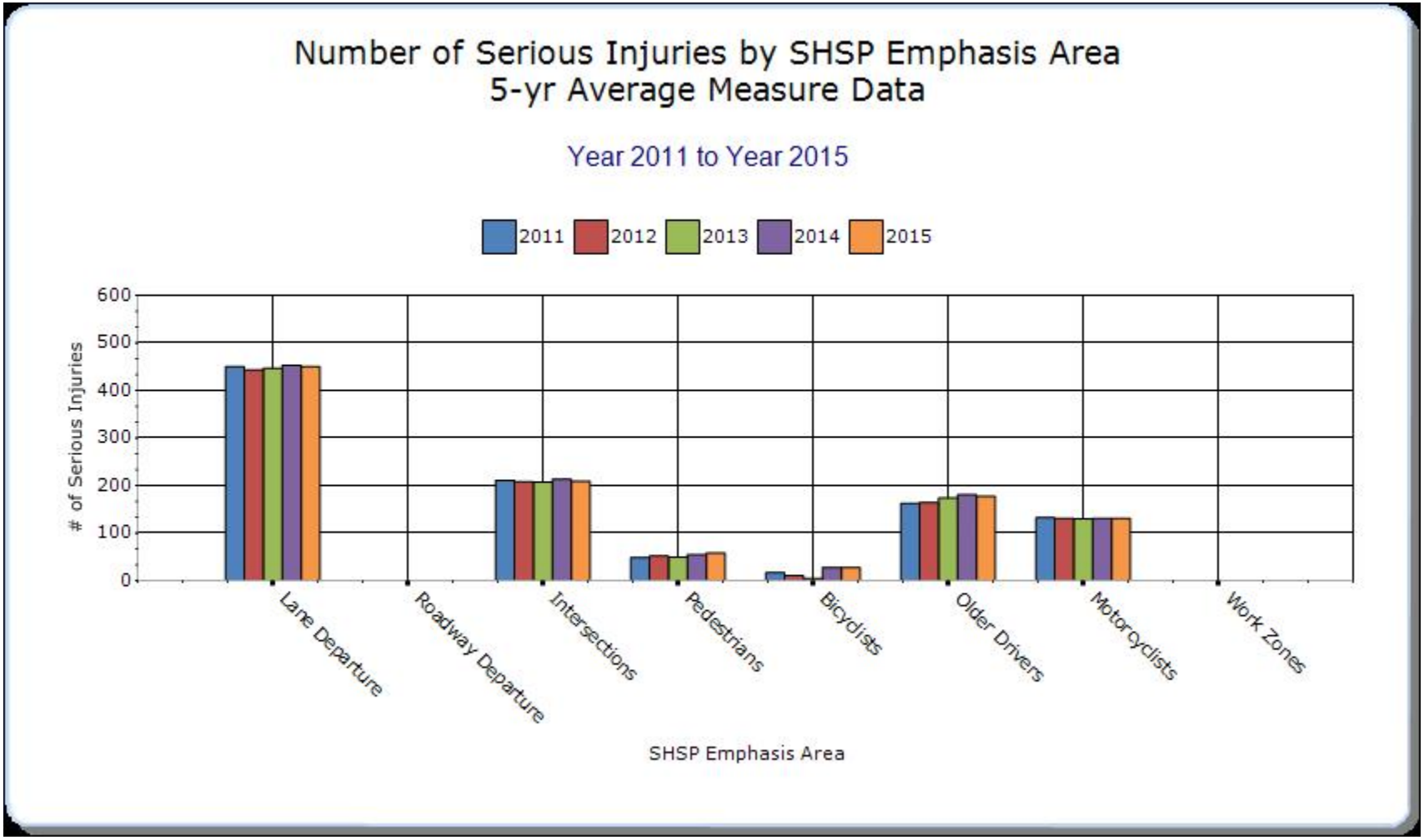
SHSP Emphasis Areas

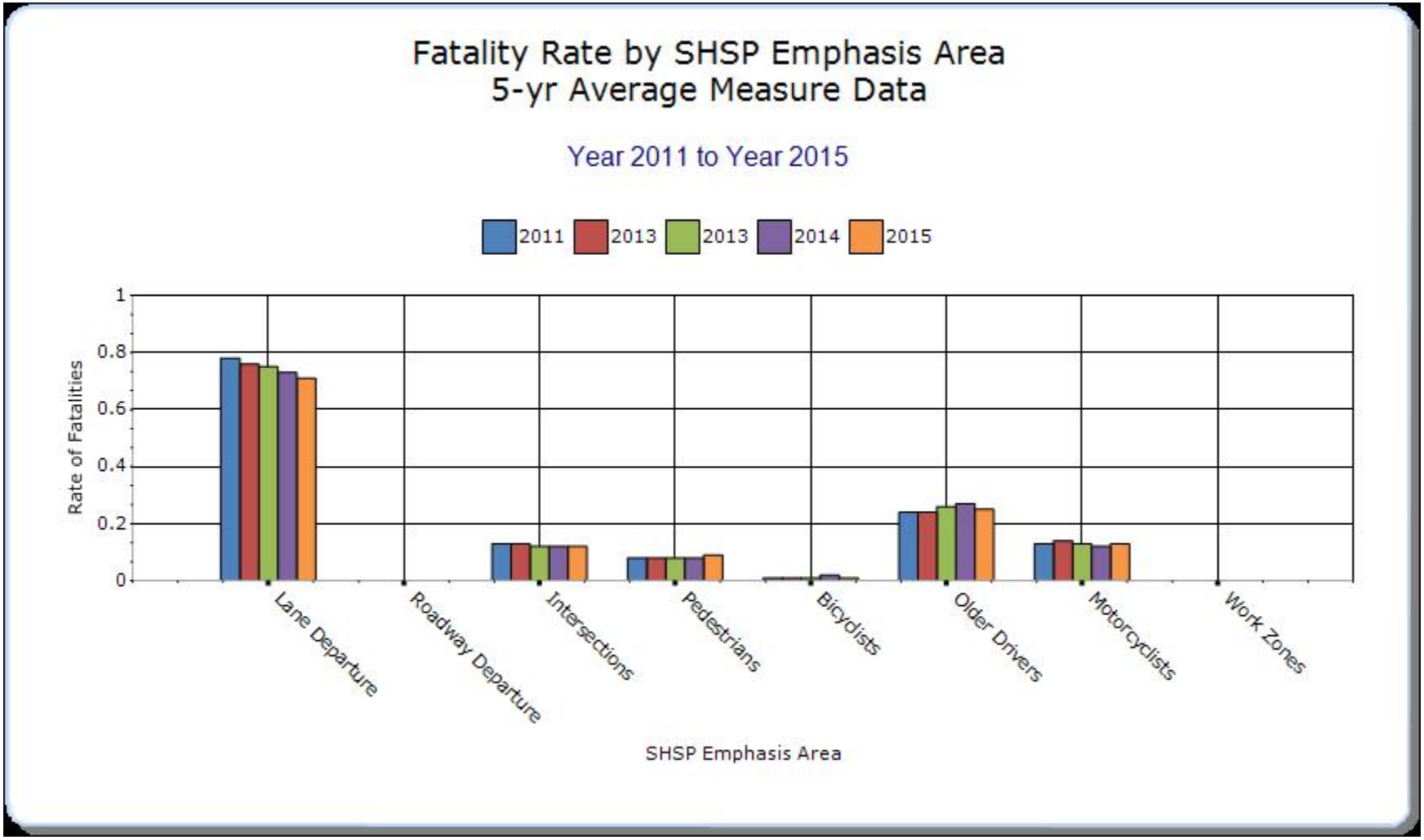
32. Present and describe trends in SHSP emphasis area performance measures.

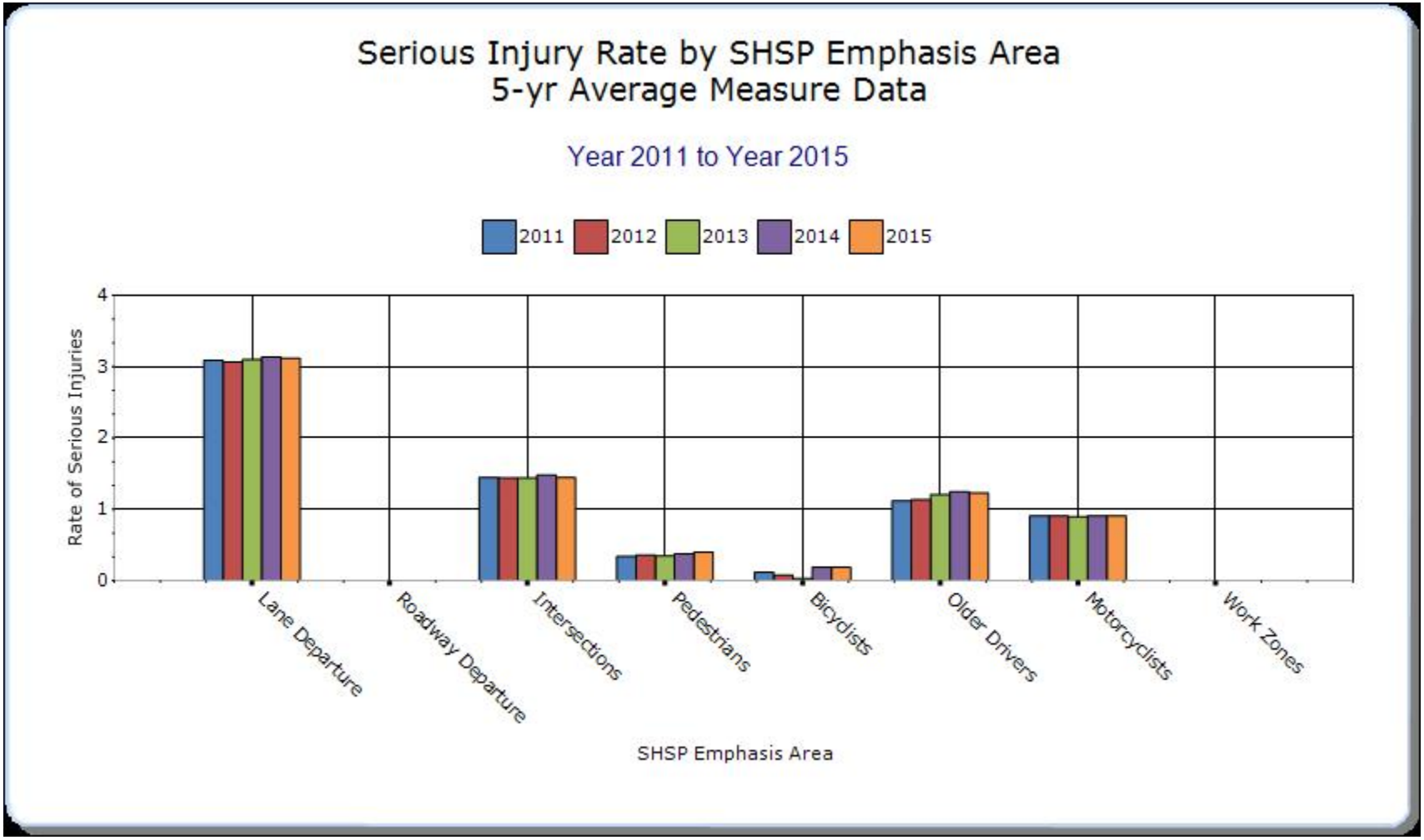
Year - 2015

HSIP-related SHSP Emphasis Areas	Target Crash Type	Number of fatalities (5-yr avg)	Number of serious injuries (5-yr avg)	Fatality rate (per HMVMT) (5-yr avg)	Serious injury rate (per HMVMT) (5-yr avg)	Other-1 (5-yr avg)	Other-2 (5-yr avg)	Other-3 (5-yr avg)
Lane Departure		103.2	450.2	0.71	3.12			
Intersections		17.4	209.2	0.12	1.45			
Pedestrians		12.6	58.2	0.09	0.4			
Bicyclists		2	27.6	0.01	0.19			
Older Drivers		35.6	177.8	0.25	1.23			
Motorcyclists		19	131.2	0.13	0.91			


Number of Fatalities by SHSP Emphasis Area
5-yr Average Measure Data
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Fatalities
140
120
100
80
60
40
20
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
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
600
500
400
300
200
100
0
# of Serious Injuries
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
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
SHSP Emphasis Area



Groups of similar project types

33. Present the overall effectiveness of HSIP subprograms.

Year - 2015

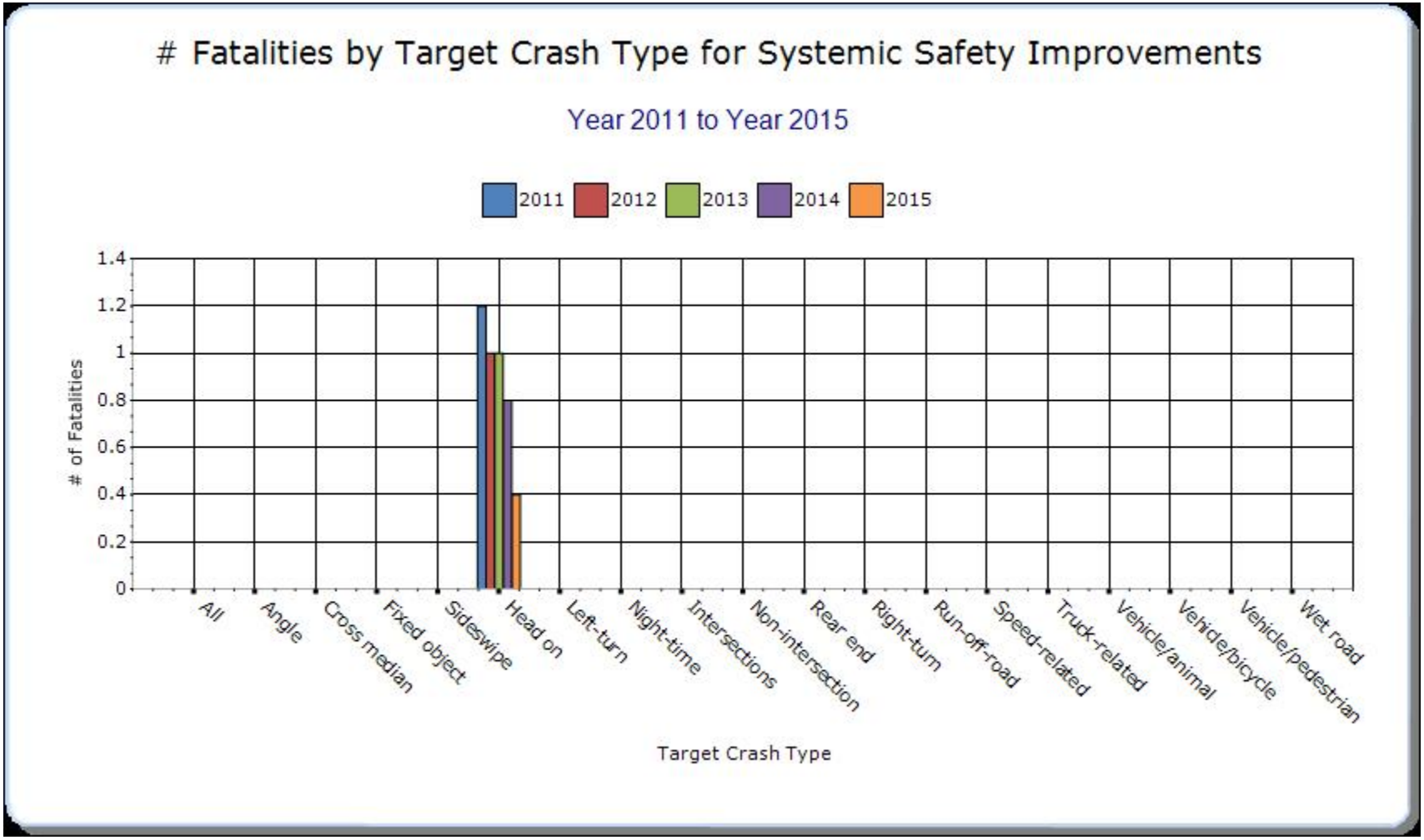
HSIP Sub-program Types	Target Crash Type	Number of fatalities (5-yr avg)	Number of serious injuries (5-yr avg)	Fatality rate (per HMVMT) (5-yr avg)	Serious injury rate (per HMVMT) (5-yr avg)	Other-1 (5-yr avg)	Other-2 (5-yr avg)	Other-3 (5-yr avg)
Other-Median Cable Barrier -install completed in 2014								
Crash Data								

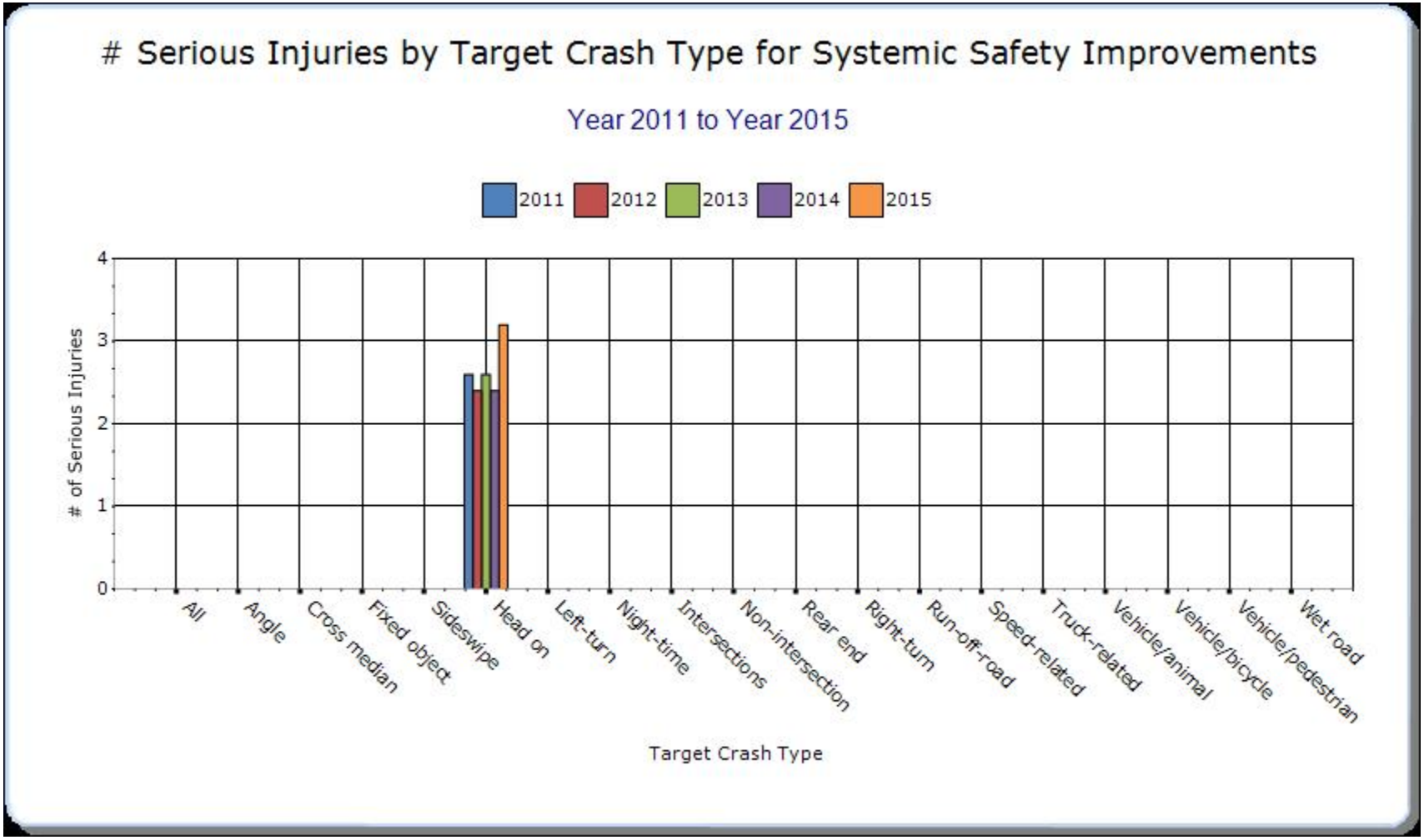
Systemic Treatments

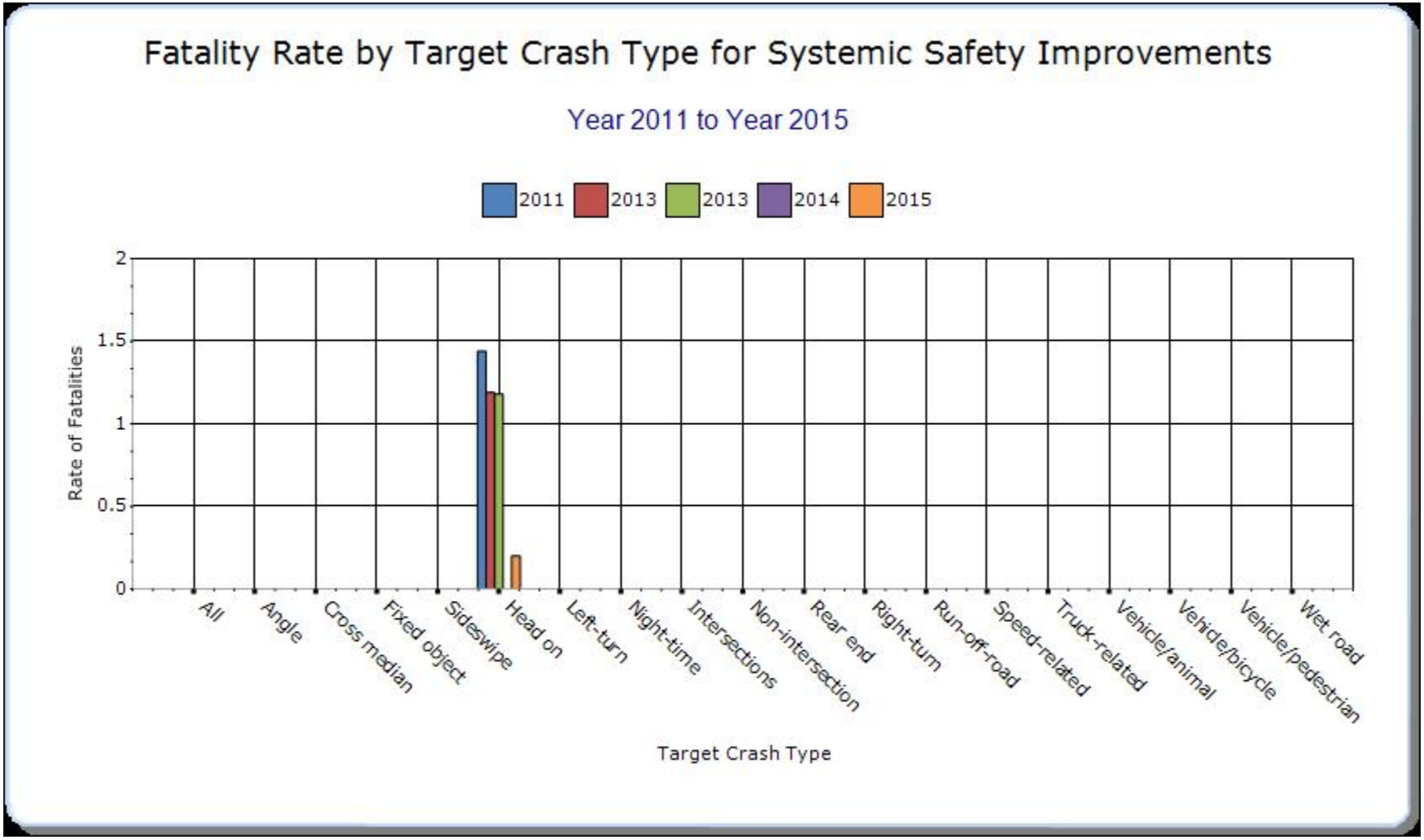
34. Present the overall effectiveness of systemic treatments.

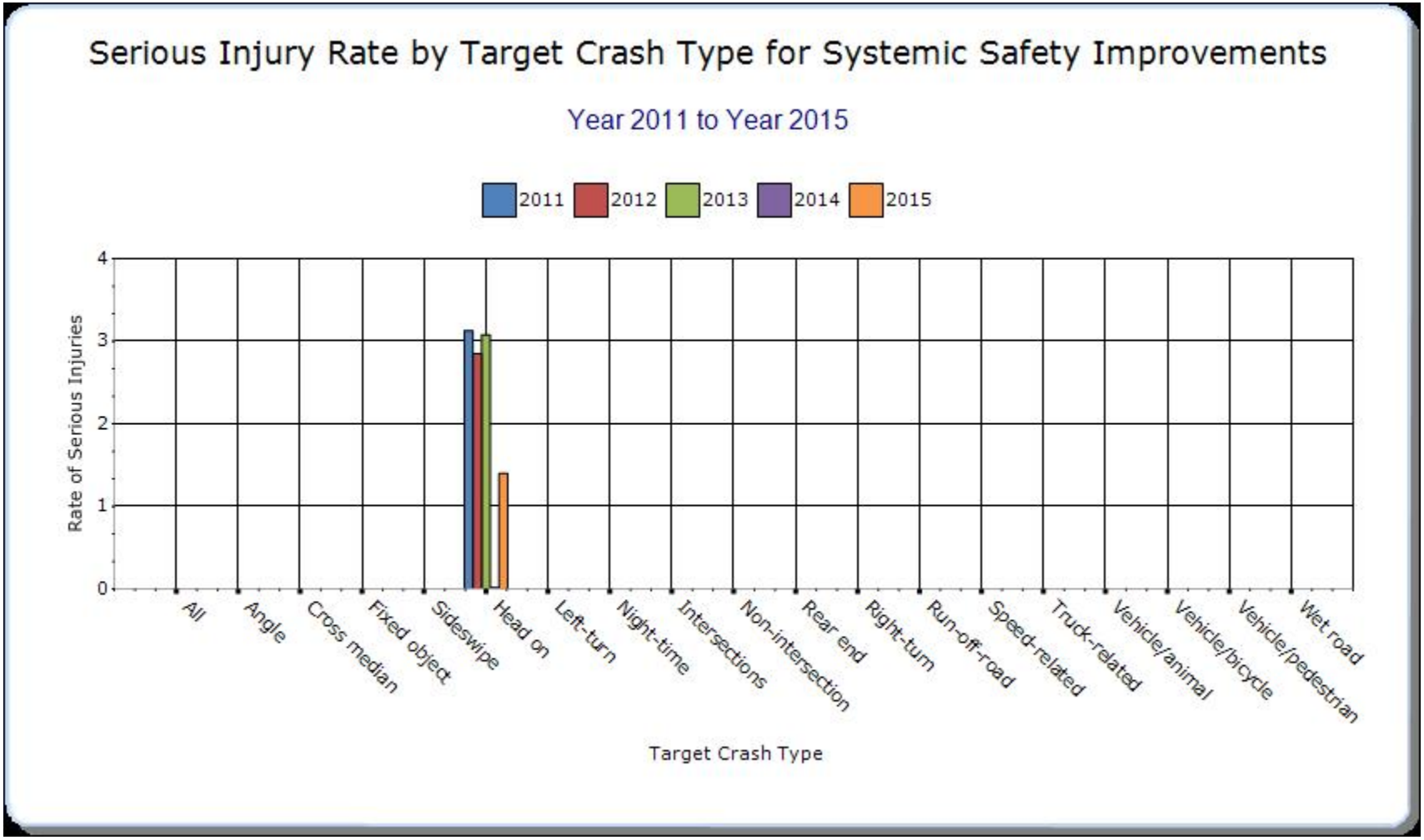
Year - 2015

Systemic improvement	Target Crash Type	Number of fatalities (5-yr avg)	Number of serious injuries (5-yr avg)	Fatality rate (per HMVMT) (5-yr avg)	Serious injury rate (per HMVMT) (5-yr avg)	Other-1 (5-yr avg)	Other-2 (5-yr avg)	Other-3 (5-yr avg)
Rumble Strips	Head on	0.4	3.2	0.2	1.4			


Fatalities by Target Crash Type for Systemic Safety Improvements
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Fatalities
1.4
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


Serious Injuries by Target Crash Type for Systemic Safety Improvements
Year 2011 to Year 2015
2011
2012
2013
2014
2015
# of Serious Injuries
0
1
2
3
4
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
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
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
0
1
2
3
4
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

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

The 2016 systemic evaluation of centerline rumble strip performance looks at an expanded set of rumble strip installations compared to the 2015 HSIP report (2014 data). Increases in latest 5 yr performance data is due to major increase in lane miles of exposure.

Project Evaluation

36. 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)
AUBURN, MINOT AVE @ HOTEL RD	Urban Minor Collector	Intersection geometry	Auxiliary lanes - add left-turn lane		3	27	8	38			11	2	13	3.41
MADISON, ROUTE 201 @ ROUTE 148	Rural Major Collector	Intersection geometry	Auxiliary lanes - add left-turn lane		2	5	1	8				9	9	3.70

BRUNSWICK, ROUTE 1	Rural Major Collector	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			1	4	5			5	7	12	-0.44
GORHAM, ROUTE 22 AND BURNHAM R	Urban Minor Arterial	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			5	2	7			4	1	5	0.20
SANFORD, HANSON RIDGE RD	Rural Major Collector	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified				4	4		1		8	9	-4.99
WISCASSET, INT. RTE 1 & RTE 27	Rural Principal Arterial - Other	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			4	7	11				7	7	2.04

NEWBURGH - ROUTE 69 AND ROUTE 9	Rural Major Collector	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified		1	13	1	15			1	7	8	9.46
BRUNSWICK - MAINE ST AND RTE 24	Urban Minor Arterial	Intersection geometry	Intersection geometry - other				4	4			5	1	6	-0.38
WATERVILLE-OAKLAND	Urban Minor Arterial	Intersection traffic control	Modify traffic signal timing - signal coordination		5	95	74	174		15	153	141	309	-6.13
BANGOR, HOGAN ROAD	Urban Minor Arterial	Intersection traffic control	Intersection traffic control - other		1	74	44	119		5	65	53	123	-102.44

BANGOR, MAINE AVENUE @ GODFREY	Urban Major Collector	Intersection traffic control	Modify control - two-way stop to roundabout				5	5				4	4	0.03
STANDISH, BOUNDARY RD	Rural Local Road or Street	Roadway signs and traffic control	Curve-related warning signs and flashers			7	5	12			1	5	6	1.64
WATERBORO OLD ALFRED & RT 202	Rural Major Collector	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			3	9	12			7	3	10	-33.02
AUGUSTA, EASTERN AVE & HOSPITAL	Urban Major Collector	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			10	13	23			3	18	21	9.93

MONMOUTH, INT RT 202 & 132	Rural Minor Arterial	Intersection traffic control	Intersection flashers - add overhead (continuous)			4	2	6			5	5	10	2.55
NORRIDGEWOCK, HOTEL STREET & MAIN STREET	Rural Minor Arterial	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified		2	5	6	13			1	8	9	53.25
FARMINGTON, HIGH ST & MAPLE AV	Urban Local Road or Street	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			1		1						5.56
BANGOR, CEDAR & THIRD ST.	Rural Local Road or Street	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			7	3	10		1	3	3	7	-4.34

OTISFIELD, GORE ROAD	Rural Local Road or Street	Roadway signs and traffic control	Curve-related warning signs and flashers			1	1	2				2	2	10.32
GREENE, NORTH RIVER ROAD	Rural Minor Collector	Roadway signs and traffic control	Roadway signs (including post) - new or updated			6	2	8		2	2	7	11	-5.01
MILLINOCKET, RTE. 11	Urban Minor Arterial	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified			2	3	5				2	2	1.26
DRESDEN, ROUTES 197 AND 128	Rural Minor Collector	Intersection traffic control	Intersection flashers - add overhead (continuous)	2	1	3		6			2	1	3	1066.94

ALFRED, RTE 111 @ KENNEBUNK RD	Rural Principal Arterial - Other	Intersection traffic control	Intersection flashers - add miscellaneous/other/unspecified		5	8		13		1	10	4	15	36.12
BREWER - WILSON @ ACME	Urban Principal Arterial - Other	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified				5	5			1	2	3	-6.22
BREWER - WILSON @ MAIN	Urban Principal Arterial - Other	Pedestrians and bicyclists	Pedestrian signal - audible device			7	15	22			10	19	29	-36.99
BREWER - STATE @ EASTERN	Urban Principal Arterial - Other	Pedestrians and bicyclists	Pedestrian signal - install new at intersection			1	8	9			6	5	11	-30.82

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.