Highway Safety Improvement Program
Data Driven Decisions

Maine
Highway Safety Improvement Program
2015 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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Executive Summary

Maine has a data driven approach for HSIP project selection, assessing various aspects of crash performance. Before and After crash results comparsion 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. Maine is looking to expand it's systemic approach to further impact lane departure crash reduction - Maine leading crash concern.

Introduction

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

Program Structure

Program Administration

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

☒Central

☐District

☐Other

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

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.

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

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

☒Design

☒Planning

☒Maintenance

☒Operations

☒Governors Highway Safety Office

☒Other: Other-MPO/RPO; Bike/Pedestrian are being better integrated

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 recently been established that includes a wide operational representation and FHWA presence to look at overall safety needs, funding philosophy and systemic opportunities.

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

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

☒Metropolitan Planning Organizations

☒Governors Highway Safety Office

☒Local Government Association

☐Other:

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

☒Multi-disciplinary HSIP steering committee

☒Other: Other-Continuing adjustments to improve approach.

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

Looking to better 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.

Program Methodology

Select the programs that are administered under the HSIP.

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

☒Left Turn Crash   ☒Shoulder Improvement   ☒Segments

☒Other: Other-Median Cable
Barrier -install completed in
2014

Program: **Median Barrier**

Date of Program Methodology: **7/1/2010**

What data types were used in the program methodology?

Crashes   *Exposure*   *Roadway*

☒All crashes   ☐Traffic   ☒Median width

☐Fatal crashes only   ☐Volume   ☐Horizontal curvature

☐Fatal and serious injury   ☐Population   ☐Functional classification
crashes only

☐Other   ☐Lane miles   ☐Roadside features

                                 ☐Other   ☐Other

What project identification methodology was used for this program?

☐Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☒ Probability of specific crash types

☐ Excess proportions of specific crash types

☐ Other

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

☐ Yes

☒ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☒ selection committee

☐ Other

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

☐ Relative Weight in Scoring

☒ Rank of Priority Consideration

☐Ranking based on B/C

☒Available funding   1

☐Incremental B/C

☐Ranking based on net benefit

☐Other

Program: **Intersection**

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 crashes only	☒Volume	☐Horizontal curvature
☒Fatal and serious injury crashes only	☐Population	☒Functional classification
☐Other	☐Lane miles	☒Roadside features
	☐Other	☒Other-MaineDOT's Highway Corridor Priority classifications

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐ Relative Weight in Scoring

☒ Rank of Priority Consideration

    ☒ Ranking based on B/C   1

    ☒ Available funding   2

    ☐ Incremental B/C

    ☐ Ranking based on net benefit

    ☐ Other

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	☐ Median width
☐ Fatal crashes only	☒ Volume	☒ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☒ Functional classification
☐ Other	☐ Lane miles	☒ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

      ☒Ranking based on B/C   1

      ☒Available funding   2

      ☐Incremental B/C

      ☐Ranking based on net benefit

      ☐Other

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	☐Median width
☐Fatal crashes only	☒Volume	☐Horizontal curvature
☒Fatal and serious injury crashes only	☒Population	☐Functional classification

☐Other   ☐Lane miles   ☒Roadside features

                          ☐Other   ☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☒Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☒Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☒ selection committee

☐ Other

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

☐ Relative Weight in Scoring

☒ Rank of Priority Consideration

    ☐ Ranking based on B/C

    ☒ Available funding   2

    ☐ Incremental B/C

    ☒ Ranking based on net benefit   1

    ☐ Other

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   ☐ Median width

☐ Fatal crashes only   ☒ Volume   ☒ Horizontal curvature

☒ Fatal and serious injury   ☐ Population   ☒ Functional classification
crashes only

☐ Other   ☐ Lane miles   ☒ Roadside features

                               ☐ Other   ☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☒ Crash rate

☒ Critical rate

☒ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☒ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

    ☒Ranking based on B/C   1

    ☒Available funding   2

    ☐Incremental B/C

    ☐Ranking based on net benefit

    ☐Other

Program: **Skid Hazard**

Date of Program Methodology: 8/1/2014

What data types were used in the program methodology?

Crashes

☒ All crashes

☐ Fatal crashes only

☒ Fatal and serious injury crashes only

☐ Other

Exposure

☒ Traffic

☐ Volume

☐ Population

☐ Lane miles

☐ Other

Roadway

☐ Median width

☒ Horizontal curvature

☐ Functional classification

☒ Roadside features

☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☒ Crash rate

☒ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☒ Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☐Other

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

☐Relative Weight in Scoring

☒Rank of Priority Consideration

☐Ranking based on B/C

☒Available funding   2

☐Incremental B/C

☒Ranking based on net benefit   1

☐Other

Program: **Crash Data**

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 crashes only	☐ Volume	☐ Horizontal curvature
☐ Fatal and serious injury crashes only	☐ Population	☐ Functional classification
☐ Other	☐ Lane miles	☐ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☐ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☐ Relative severity index

☐ Crash rate

☐ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☐Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☐Other

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

☐Relative Weight in Scoring

☒Rank of Priority Consideration

  ☐Ranking based on B/C

  ☒Available funding   2

☐Incremental B/C

☒Ranking based on net benefit   1

☐Other

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 crashes only   ☐Volume   ☒Horizontal curvature

☒Fatal and serious injury   ☐Population   ☒Functional classification
crashes only

☐Other   ☒Lane miles   ☒Roadside features

                                  ☐Other   ☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☒Critical rate

☒Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☐Other

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

☐Relative Weight in Scoring

☒Rank of Priority Consideration

◻Ranking based on B/C

☒Available funding   2

◻Incremental B/C

☒Ranking based on net benefit   1

◻Other

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   ◻Median width

◻Fatal crashes only   ☒Volume   ☒Horizontal curvature

☒Fatal and serious injury   ◻Population   ☒Functional classification
crashes only

◻Other   ◻Lane miles   ☒Roadside features

                               ◻Other   ◻Other

What project identification methodology was used for this program?

☒Crash frequency

◻Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☐Other

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

☐ Relative Weight in Scoring

☒ Rank of Priority Consideration

   ☐ Ranking based on B/C

   ☒ Available funding   2

   ☐ Incremental B/C

   ☐ Ranking based on net benefit

   ☒ Cost Effectiveness   1

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	☐ Median width
☐ Fatal crashes only	☒ Volume	☒ Horizontal curvature
☒ Fatal and serious injury crashes only	☐ Population	☒ Functional classification
☐ Other	☐ Lane miles	☒ Roadside features
	☐ Other	☐ Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☐Other

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

☐Relative Weight in Scoring

☒Rank of Priority Consideration

       ☐Ranking based on B/C

       ☒Available funding   2

       ☐Incremental B/C

       ☒Ranking based on net benefit   1

       ☐Other

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	☐Median width
☐Fatal crashes only	☒Volume	☒Horizontal curvature
☒Fatal and serious injury	☐Population	☐Functional classification

crashes only

☐ Other   ☐ Lane miles   ☒ Roadside features

                                ☐ Other   ☐ Other

What project identification methodology was used for this program?

☒ Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☒ Crash rate

☒ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☒ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐ No

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

☒ Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

    ☐Ranking based on B/C

    ☒Available funding   2

    ☐Incremental B/C

    ☒Ranking based on net benefit   1

    ☐Other

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	☐Median width
☐Fatal crashes only	☒Volume	☐Horizontal curvature
☒Fatal and serious injury crashes only	☒Population	☒Functional classification
☐Other	☐Lane miles	☒Roadside features
	☐Other	☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☐Relative severity index

☒Crash rate

☐Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☒selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

    ☐Ranking based on B/C

    ☒Available funding   2

    ☐Incremental B/C

    ☒Ranking based on net benefit   1

    ☐Other

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   ☐Median width

☐Fatal crashes only   ☒Volume   ☐Horizontal curvature

☒Fatal and serious injury   ☐Population   ☒Functional classification
crashes only

☐Other   ☐Lane miles   ☒Roadside features

                                 ☐Other   ☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☒Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

    ☒Ranking based on B/C   1

    ☒Available funding   2

    ☐Incremental B/C

    ☐Ranking based on net benefit

☐Other

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   ☐Median width

☐Fatal crashes only   ☒Volume   ☐Horizontal curvature

☒Fatal and serious injury   ☐Population   ☒Functional classification
crashes only

☐Other   ☐Lane miles   ☒Roadside features

                             ☐Other   ☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☒Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

☒Ranking based on B/C   1

☒Available funding   2

☐Incremental B/C

☐Ranking based on net benefit

☐Other

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	☐Median width
☐Fatal crashes only	☒Volume	☒Horizontal curvature
☒Fatal and serious injury crashes only	☐Population	☒Functional classification
☐Other	☒Lane miles	☒Roadside features
	☐Other	☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐Expected crash frequency with EB adjustment

☐Equivalent property damage only (EPDO Crash frequency)

☐EPDO crash frequency with EB adjustment

☒Relative severity index

☒Crash rate

☒Critical rate

☐Level of service of safety (LOSS)

☐Excess expected crash frequency using SPFs

☐Excess expected crash frequency with the EB adjustment

☐Excess expected crash frequency using method of moments

☐Probability of specific crash types

☒Excess proportions of specific crash types

☐Other

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

☒Yes

☐No

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

☒Yes

☐No

How are highway safety improvement projects advanced for implementation?

☐Competitive application process

☐selection committee

☒Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

    ☒Ranking based on B/C   1

    ☒Available funding   2

    ☐Incremental B/C

    ☐Ranking based on net benefit

    ☐Other

Program: **Segments**

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 crashes only	☒Volume	☒Horizontal curvature
☒Fatal and serious injury crashes only	☐Population	☒Functional classification
☐Other	☐Lane miles	☒Roadside features
	☐Other	☐Other

What project identification methodology was used for this program?

☒Crash frequency

☐ Expected crash frequency with EB adjustment

☐ Equivalent property damage only (EPDO Crash frequency)

☐ EPDO crash frequency with EB adjustment

☒ Relative severity index

☒ Crash rate

☒ Critical rate

☐ Level of service of safety (LOSS)

☐ Excess expected crash frequency using SPFs

☐ Excess expected crash frequency with the EB adjustment

☐ Excess expected crash frequency using method of moments

☐ Probability of specific crash types

☒ Excess proportions of specific crash types

☐ Other

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

☒ Yes

☐ No

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

☒ Yes

☐ No

How are highway safety improvement projects advanced for implementation?

☐ Competitive application process

☐ selection committee

☒ Other-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).

☐Relative Weight in Scoring

☒Rank of Priority Consideration

  ☒Ranking based on B/C   1

  ☒Available funding   2

  ☐Incremental B/C

  ☐Ranking based on net benefit

  ☐Other

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

10

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

☒Cable Median Barriers   ☒Rumble Strips

☒Traffic Control Device Rehabilitation   ☐Pavement/Shoulder Widening

☒Install/Improve Signing   ☒Install/Improve Pavement Marking and/or Delineation

☒Upgrade Guard Rails   ☐Clear Zone Improvements

☒Safety Edge   ☐Install/Improve Lighting

☒Add/Upgrade/Modify/Remove Traffic Signal   ☒Other Other-Wrong Way Driver interstate ramp improvements, rapid flashing beacons for ped crossings,

What process is used to identify potential countermeasures?

☒Engineering Study

☒Road Safety Assessment

☐Other:

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

☐Highway Safety Manual

☐Road Safety audits

☒Systemic Approach

☒Other: Other-Systemic approach continues to develop/mature.

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

Coordination between MaineDOT safety and other MaineDOT operating units continue to deepen, as we look 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

Reporting period for Highway Safety Improvement Program funding.

☒ Calendar Year

☐ State Fiscal Year

☐ Federal Fiscal Year

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

Funding Category	Programmed*		Obligated	
HSIP (Section 148)	12012200	100 %	11089850.56	98 %
HRRRP (SAFETEA-LU)	0	0 %	198269.56	2 %
HRRR Special Rule				
Penalty Transfer - Section 154				
Penalty Transfer – Section 164				
Incentive Grants - Section 163				
Incentive Grants (Section 406)				
Other Federal-aid Funds (i.e. STP, NHPP)				
State and Local Funds				

Totals	12012200	100%	11288120.12	100%

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

0 %

How much funding is obligated to local safety projects?

0 %

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

5 %

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

5 %

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

0 %

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

0 %

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

No impediments seen. Safety Office continues to work with MaineDOT Exec., various MaineDOT operational areas and Regions to improve safety planning corrdination/integration.

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. Systemic opportunities are being evaluated to achieve a better funding balance that is reflective of SHSP priorities - 2015 is seeing an increase in installations on centerline rumble strips - 90 miles planned for this year, compared to the 60 miles currently existing on non-interstate road installations completed since 2006. Additional opportunities are anticipated for future planning years.

Although not directly translating to HSIP funding, there is increased dialogue with MPO's/RPO's and the bike/ ped community.

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
18522.14	Pedestrians and bicyclists Miscellaneous pedestrians and bicyclists	0	147972.4	164413.77	HSIP (Section 148)		0	0		Bicyclists	Education/Out reach
20541.16	Non-infrastructure Outreach	0	31500	45000	HSIP (Section 148)		0	0		Speed/Distr acted Driving (in Work Zones)	Work Zone Safety Media Outreach
22506	Intersection geometry Intersection geometrics - modify skew angle	1 Numbers	562500	625000	HSIP (Section 148)	Rural Principal Arterial - Other	13020	40	State Highway Agency	Intersections	Improve intersection design
22672	Intersection traffic control Intersection traffic control - other	1 Numbers	576000	640000	HSIP (Section 148)	Urban Principal Arterial - Interstate	12010	55	State Highway Agency	Intersections	Signals and turn lanes
22673	Intersection geometry Intersection geometrics	1 Numb	148500	165000	HSIP (Secti on	Rural Minor	173	40	State Highwa	Intersection	Improve intersection

	- modify skew angle	ers			on 148)	Arterial	50		y Agency	s	design
22674	Interchange design Acceleration / deceleration / merge lane	1 Numbers	661500	735000	HSIP (Section 148)	Urban Principal Arterial - Other Freeways and Expressways	16557	35	State Highway Agency	Intersections	Improve intersection design
22675	Roadway delineation Roadway delineation - other	1 Numbers	301500	335000	HSIP (Section 148)	Rural Principal Arterial - Other	8400	55	State Highway Agency	Lane Departure	
22677	Intersection geometry Splitter island - remove from one or more approaches	1 Numbers	73350	81500	HSIP (Section 148)	Rural Minor Arterial	4278	50	State Highway Agency	Intersections	Improve intersection design
22679	Interchange design Acceleration / deceleration / merge lane	1 Numbers	58500	65000	HSIP (Section 148)	Urban Principal Arterial - Other Freeways and Expressways	14935	45	State Highway Agency	Intersections	Improve intersection design

22681	Intersection traffic control Intersection flashers - add miscellaneous/other/un specified	1 Numbers	54000	60000	HSIP (Secti on 148)	Urban Major Collector	4966	35	Town or Townsh ip Highwa y Agency	Intersection s	Develop solutions for reviewed locations
22682	Intersection traffic control Modify traffic signal - modernization/replace ment	1 Numbers	184500	205000	HSIP (Secti on 148)	Urban Principal Arterial - Other	26532	40	State Highwa y Agency	Intersection s	Develop solutions for reviewed locations
22683	Interchange design Acceleration / deceleration / merge lane	1 Numbers	634500	705000	HSIP (Secti on 148)	Urban Principal Arterial - Other	7900	45	State Highwa y Agency	Intersection s	Develop solutions for reviewed locations
12745	Intersection geometry Intersection geometry - other	1 Numbers	266437. 43	296222 .88	HSIP (Secti on 148)	Rural Principal Arterial - Other	3652	45	State Highwa y Agency	Intersection s	Improve intersection design
12747	Advanced technology and ITS Congestion detection / traffic monitoring system	1 Numbers	93107.4 3	103452 .68	HSIP (Secti on 148)	Rural Principal Arterial - Other	12812	55	State Highwa y Agency	Unsafe speed	Traffic calming
12757	Intersection geometry Intersection geometry -	1 Numb	611709. 76	691359 .38	HSIP (Secti on	Rural Major	10763	50	State Aid	Intersection s	Improve intersection

	other	ers			148)	Collector					design
12766	Intersection geometry Intersection geometry - other	1 Numbers	194452.73	939105	HSIP (Section 148)	Rural Minor Arterial	11690	40	State Highway Agency	Intersections	Improve intersection design
13856.04	Work Zone	0 Numbers	384.69	384.69	HSIP (Section 148)		0	0		Work Zones	Work Zone Sign - EMT support
15668	Intersection traffic control Intersection traffic control - other	1 Numbers	657627.87	734897.44	HSIP (Section 148)	Urban Minor Arterial	14701	35	State Highway Agency	Intersections	Improve intersection design
15679	Intersection traffic control Intersection flashers - add overhead (continuous)	1 Numbers	30448.15	33831.27	HSIP (Section 148)	Urban Major Collector	2397	35	State Aid	Intersections	Improve intersection traffic control
15989	Intersection traffic control Modify traffic signal timing - signal coordination	1 Numbers	857947.1	1072433	HSIP (Section 148)	Urban Principal Arterial - Other	16471	35	State Highway Agency	Intersections	Develop solutions for reviewed locations
15990	Roadway delineation Longitudinal pavement markings - remarking	1 Numbers	5017463.33	9441278	HSIP (Section	Rural Principal Arterial -	0	0	State Highway	Lane Departure	

					148)	Interstate			Agency		
17000.6	Miscellaneous	0 Numbers	309071	3537500 0	HSIP (Section 148)		0	0			
17241	Intersection geometry Intersection geometrics - miscellaneous/other/un specified	1 Numbers	725621.27	806245.83	HSIP (Section 148)	Urban Minor Arterial	6290	50	State Highway Agency	Intersections	Develop solutions for reviewed locations
17244	Intersection geometry Intersection geometrics - miscellaneous/other/un specified	1 Numbers	753944.76	945038.1	HSIP (Section 148)	Urban Minor Arterial	25826	40	State Highway Agency	Intersections	Develop solutions for reviewed locations
17247	Intersection geometry Intersection geometrics - miscellaneous/other/un specified	1 Numbers	148957.15	165507.95	HSIP (Section 148)	Urban Major Collector	1993	45	State Aid	Intersections	Develop solutions for reviewed locations
17256	Intersection geometry Intersection geometrics - miscellaneous/other/un specified	1 Numbers	192601.78	214801.96	HSIP (Section 148)	Rural Minor Arterial	3797	45	State Highway Agency	Intersections	Develop solutions for reviewed locations

17258	Intersection geometry Intersection geometry - other	1 Numbers	1037876.82	1154196	HSIP (Section 148)	Rural Major Collector	6502	40	State Aid	Intersections	Roundabout
17259	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	1 Numbers	463555.39	523046.9	HSIP (Section 148)	Urban Principal Arterial - Other	7210	40	State Highway Agency	Intersections	Develop solutions for reviewed locations
17261	Intersection geometry Intersection geometry - other	1 Numbers	1203022.55	1336691	HSIP (Section 148)	Rural Major Collector	4730	35	State Aid		Roundabout
17295	Roadway delineation Longitudinal pavement markings - remarking	1 Numbers	5404995.34	9032265	HSIP (Section 148)	Rural Principal Arterial - Other	2000	35	Other State Agency	Lane Departure	
17321	Intersection geometry Intersection geometry - other	1 Numbers	651871.82	814839.86	HSIP (Section 148)	Urban Major Collector	1560	35	State Aid	Intersections	Roundabout
17511.07	Roadside Roadside - other	1 Numbers	48845.51	57272.8	HSIP (Section 148)	Rural Major Collector	2000	45	State Highway Agency	Wntry road surfaces	Blowing snow control

17511.1	Roadside Roadside - other	1 Numbers	31325.17	34805.74	HSIP (Section 148)	Rural Major Collector	2000	45	State Highway Agency	Wntry road surfaces	Blowing snow control
17512.01	Roadside Removal of roadside objects (trees, poles, etc.)	1 Numbers	157606.81	183649.06	HSIP (Section 148)	Rural Major Collector	2500	45	State Highway Agency	Lane Departure	Improve clear zones - Ledge Removal
17512.04	Roadside Barrier - other	1 Numbers	81068.34	94613.53	HSIP (Section 148)	Rural Major Collector	2000	45	State Highway Agency	Lane Departure	
17514.07	Pedestrians and bicyclists Pedestrian warning signs - add/modify flashers	1 Numbers	36389.69	40588.84	HSIP (Section 148)	Urban Minor Arterial	6544	30	State Highway Agency	Pedestrians	High Visibility Pedestrian Crossings
17514.12	Pedestrians and bicyclists Pedestrian warning signs - add/modify flashers	1 Numbers	17847.41	28479.48	HSIP (Section 148)	Urban Major Collector	5600	35	State Aid	Pedestrians	High Visibility Pedestrian Crossings
17516.01	Roadway signs and traffic control Curve-related warning signs and flashers	1 Numbers	105671.49	117503.58	HSIP (Section 148)	Rural Major Collector	2500	45	State Highway Agency	Lane Departure	Provide advanced warning signs

17516.03	Miscellaneous	0 Numbers	136561.96	151735.51	HSIP (Section 148)	Rural Major Collector	5909	40	State Highway Agency	Not defined	
17516.06	Roadway signs and traffic control Curve-related warning signs and flashers	1 Numbers	50075.63	55639.58	HSIP (Section 148)	Rural Major Collector	2500	45	State Highway Agency	Lane Departure	Provide advanced warning signs
17516.09	Shoulder treatments Widen shoulder - paved or other	1 Numbers	62647.93	69608.79	HSIP (Section 148)	Rural Major Collector	2500	45	State Highway Agency	Lane Departure	
17517.02	Roadside Roadside - other	1 Numbers	88339.99	98234.4	HSIP (Section 148)	Rural Minor Arterial	2500	45	State Highway Agency	Lane Departure	Upgrading guardrail
17517.12	Roadside Roadside - other	1 Numbers	23574.27	26193.64	HSIP (Section 148)	Rural Major Collector	1116	50	State Highway Agency	Lane Departure	Upgrading guardrail
17667	Roadside Roadside - other	1 Numbers	137161	137161	HSIP (Section 148)	Rural Major Collector	2000	45	State Highway Agency	Lane Departure	

18148	Work Zone	0 Numbers	31206.38	34673.75	HSIP (Section 148)	All roads	0	0	State Highway Agency	Work Zones	Media outreach
18235	Miscellaneous	0 Numbers	101838.4	138742 9	HSIP (Section 148)	Urban Local Road or Street	286 9	25	Town or Township Highway Agency	Pedestrians	
18356	Roadside Roadside - other	1 Numbers	161.17	179.05	HSIP (Section 148)	Rural Principal Arterial - Other	781 8	55	State Highway Agency	Wintry road surfaces	Blowing snow control
18371	Lighting Continuous roadway lighting	1 Numbers	421650	468500	HSIP (Section 148)	Rural Principal Arterial - Interstate	0	65	State Highway Agency	Lane Departure	
19002	Intersection geometry Intersection geometrics - modify skew angle	1 Numbers	751500	835000	HSIP (Section 148)	Rural Principal Arterial - Other	203 20	40	State Highway Agency	Intersection s	Develop solutions for reviewed locations
19004	Intersection geometry Auxiliary lanes - miscellaneous/other/un	1 Numbers	381320.64	433232.88	HSIP (Section on	Urban Minor Arterial	114 62	35	State Highway y	Intersection s	

	specified				148)				Agency		
19005	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	1 Numbers	11755.42	13061.58	HSIP (Section 148)	Rural Principal Arterial - Other	9133	35	State Highway Agency	Intersections	Develop solutions for reviewed locations
19008	Intersection geometry Intersection geometrics - modify intersection corner radius	1 Numbers	263792.59	293752.59	HSIP (Section 148)	Urban Principal Arterial - Other	5044	35	State Highway Agency	Intersections	Develop solutions for reviewed locations
19010	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	1 Numbers	1386000	1540000	HSIP (Section 148)	Rural Minor Arterial	9947	50	State Highway Agency	Intersections	Develop solutions for reviewed locations
19011	Roadway signs and traffic control Curve-related warning signs and flashers	1 Numbers	14554.29	16171.36	HSIP (Section 148)	Rural Local Road or Street	530	40	Town or Township Highway Agency	Lane Departure	Provide advanced warning signs
19012	Roadway signs and traffic control Curve-related warning signs and flashers	1 Numbers	7881.21	8756.91	HSIP (Section 148)	Rural Major Collector	2010	50	State Highway Agency	Lane Departure	Provide advanced warning signs

19013	Intersection traffic control Intersection flashers - add overhead (continuous)	1 Numbers	55524.42	61693.81	HSIP (Section 148)	Rural Minor Arterial	5900	55	State Highway Agency	Intersections	Develop solutions for reviewed locations
19015	Intersection geometry Intersection geometrics - miscellaneous/other/unspecified	1 Numbers	24178.57	26864.92	HSIP (Section 148)	Rural Principal Arterial - Other	9833	25	State Highway Agency	Intersections	Develop solutions for reviewed locations
19019	Intersection geometry Intersection geometry - other	1 Numbers	330427.56	515862.17	HSIP (Section 148)	Rural Major Collector	3200	45	State Aid	Intersections	Develop solutions for reviewed locations
19020	Intersection traffic control Modify control - two-way stop to all-way stop	1 Numbers	61760.66	68622.93	HSIP (Section 148)	Urban Local Road or Street	2875	25	Town or Township Highway Agency	Intersections	Develop solutions for reviewed locations
19048	Shoulder treatments Widen shoulder - paved or other	1 Numbers	105116.52	116796.15	HSIP (Section 148)	Rural Local Road or Street	1260	45	Town or Township Highway Agency	Lane Departure	Pave shoulders on curves, install warning signs and chevrons.

19065	Intersection geometry Intersection geometrics - modify intersection corner radius	1 Numbers	111698.14	158518.53	HSIP (Section 148)	Urban Major Collector	3349	25	State Aid	Intersections	Develop solutions for reviewed locations
19137	Roadside Barrier- metal	1 Numbers	261277.56	290308.28	HSIP (Section 148)	Rural Principal Arterial - Interstate	10170	70	State Highway Agency	Lane Departure	Cross-median head on crash mitigation
19256	Interchange design Acceleration / deceleration / merge lane	1 Numbers	797090.8	892299.7	HSIP (Section 148)	Rural Principal Arterial - Interstate	7112	55	State Highway Agency	Intersections	
19427	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	63313.56	70348.35	HSIP (Section 148)	Rural Principal Arterial - Other	11929	40	State Highway Agency	Intersections	Upgrade Traffic signals
19434	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	10370.2	129421.53	HSIP (Section 148)	Urban Principal Arterial - Other	9297	25	State Highway Agency	Intersections	Upgrade Traffic signals
19435	Intersection traffic control Modify traffic signal - modernization/replace	1 Numbers	31173.88	216992.51	Penalty Transfer -	Urban Principal Arterial -	16625	25	State Highway	Intersections	Upgrade Traffic signals

	ment				Section 154	Other			Agency		
19436	Pedestrians and bicyclists Pedestrian signal - modify existing	1 Numbers	7813.29	62176.82	HSIP (Section 148)	Urban Principal Arterial - Other	8280	25	State Highway Agency	Intersections	Ped and ADA improvements
19438	Pedestrians and bicyclists Pedestrian signal - modify existing	1 Numbers	12761.89	119004.19	Penalty Transfer - Section 154	Urban Principal Arterial - Other	12196	30	State Highway Agency	Intersections	Ped and ADA improvements
19515	Roadside Barrier- metal	1 Numbers	82658.85	91843.15	HSIP (Section 148)	Rural Principal Arterial - Other	1960	75	State Highway Agency	Lane Departure	Cross-median head on crash mitigation
20200	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	280562.38	480388.3	HSIP (Section 148)	Urban Minor Arterial	3094	25	State Highway Agency	Intersections	Ped and ADA improvements
20202	Roadway Roadway narrowing (road diet, roadway reconfiguration)	1 Numbers	170668.05	189631.17	HSIP (Section 148)	Urban Principal Arterial - Other	19123	25	State Highway Agency	Road diet	Center turn lane

20203	Intersection traffic control Modify traffic signal - modernization/replacement	1 Numbers	227070	252300	HSIP (Section 148)	Urban Minor Arterial	15224	35	State Highway Agency	Intersections	Upgrade Traffic signals
20204	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	1098000	1220000	HSIP (Section 148)	Urban Major Collector	9659	30	State Aid	Intersections	Roundabout
20205	Intersection traffic control Modify control - two-way stop to roundabout	1 Numbers	2272500	2525000	HSIP (Section 148)	Rural Major Collector	5014	45	State Aid	Intersections	Roundabout
20207	Intersection geometry Intersection geometrics - realignment to align offset cross streets	1 Numbers	1764900	1961000	HSIP (Section 148)	Rural Minor Arterial	3060	35	State Highway Agency	Intersections	Develop solutions for reviewed locations
20208	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	385200	518190.5	HSIP (Section 148)	Urban Minor Arterial	12599	35	State Highway Agency	Intersections	Develop solutions for reviewed locations
20211	Intersection geometry Auxiliary lanes - add left-turn lane	1 Numbers	477000	530000	HSIP (Section 148)	Rural Minor Arterial	13253	45	State Highway Agency	Intersections	Develop solutions for reviewed locations

20442.1	Pedestrians and bicyclists Install sidewalk	1 Numbers	74999	149999.99	HSIP (Section 148)	Urban Principal Arterial - Other	16471	35	State Highway Agency	Pedestrians	Improve pedestrian connections
20568	Access management Change in access - miscellaneous/unspecified	1 Numbers	876400	976000	HSIP (Section 148)	Urban Minor Arterial	16580	35	State Highway Agency	Intersections	Access control
20570	Intersection traffic control Intersection flashers - add overhead (continuous)	1 Numbers	24404.21	27115.59	HSIP (Section 148)	Rural Principal Arterial - Other	11179	55	State Highway Agency	Intersections	Develop solutions for reviewed locations
20581.14	Roadway delineation Longitudinal pavement markings - remarking	1 Numbers	6072591.42	6121370	HSIP (Section 148)	Various	0	0		Lane Departure	

## Progress in Achieving Safety Performance Targets

Overview of General Safety Trends

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

Performance Measures*	2010	2011	2012	2013	2014
Number of fatalities	169	159	155	153	147.4
Number of serious injuries	875.6	852	852.8	851.2	867.8
Fatality rate (per HMVMT)	1.15	1.09	1.07	1.06	1.02
Serious injury rate (per HMVMT)	5.95	5.85	5.9	5.9	6.01

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

Number of Fatalities and Serious injuries for the Last Five Years
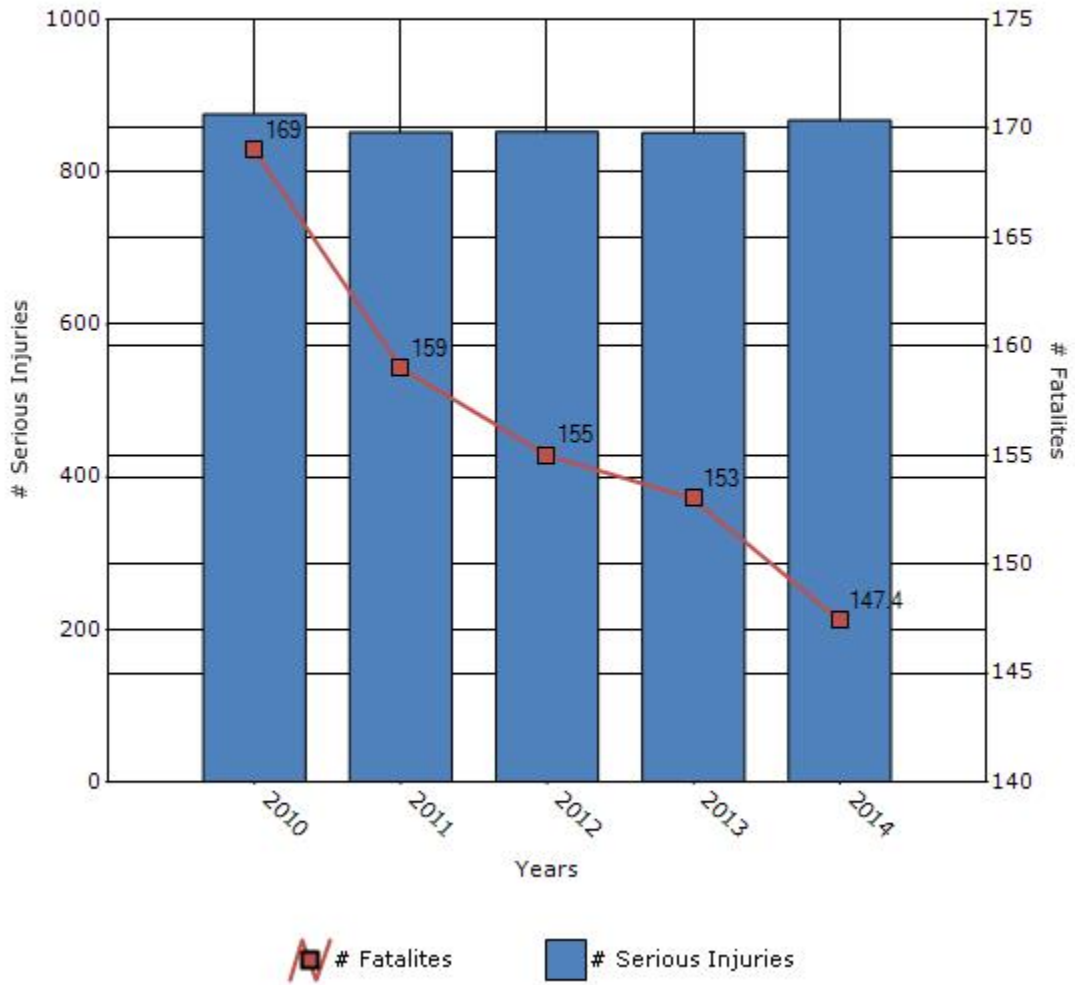
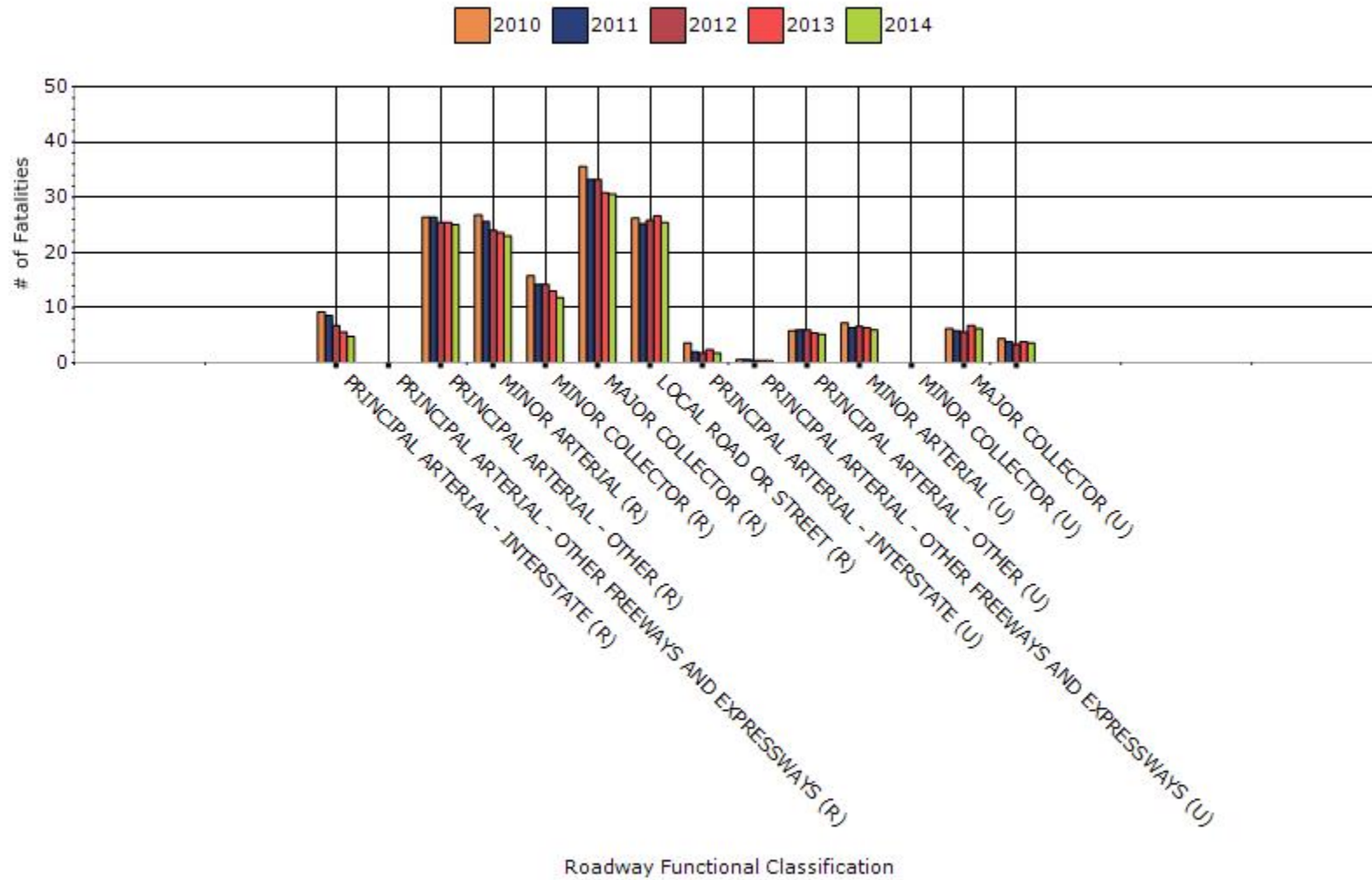## Rate of Fatalities and Serious injuries for the Last Five Years
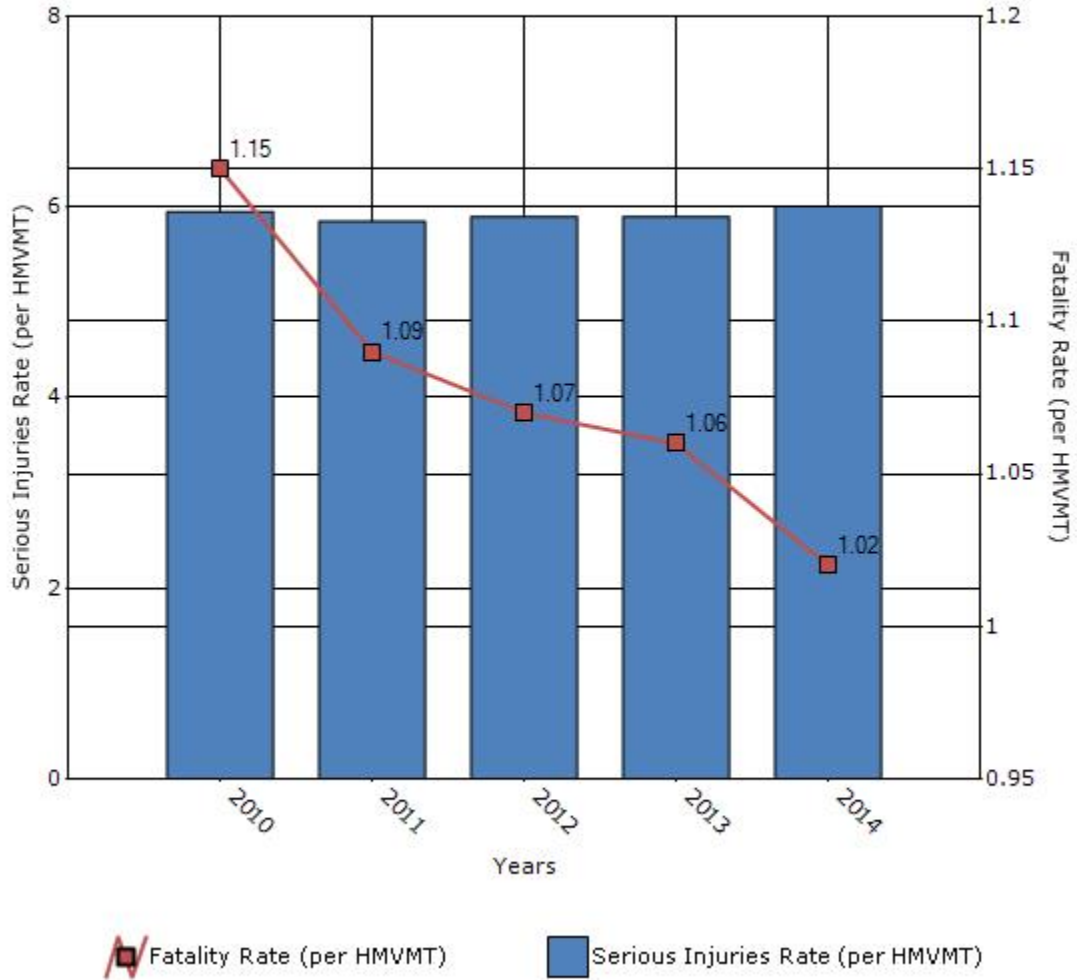
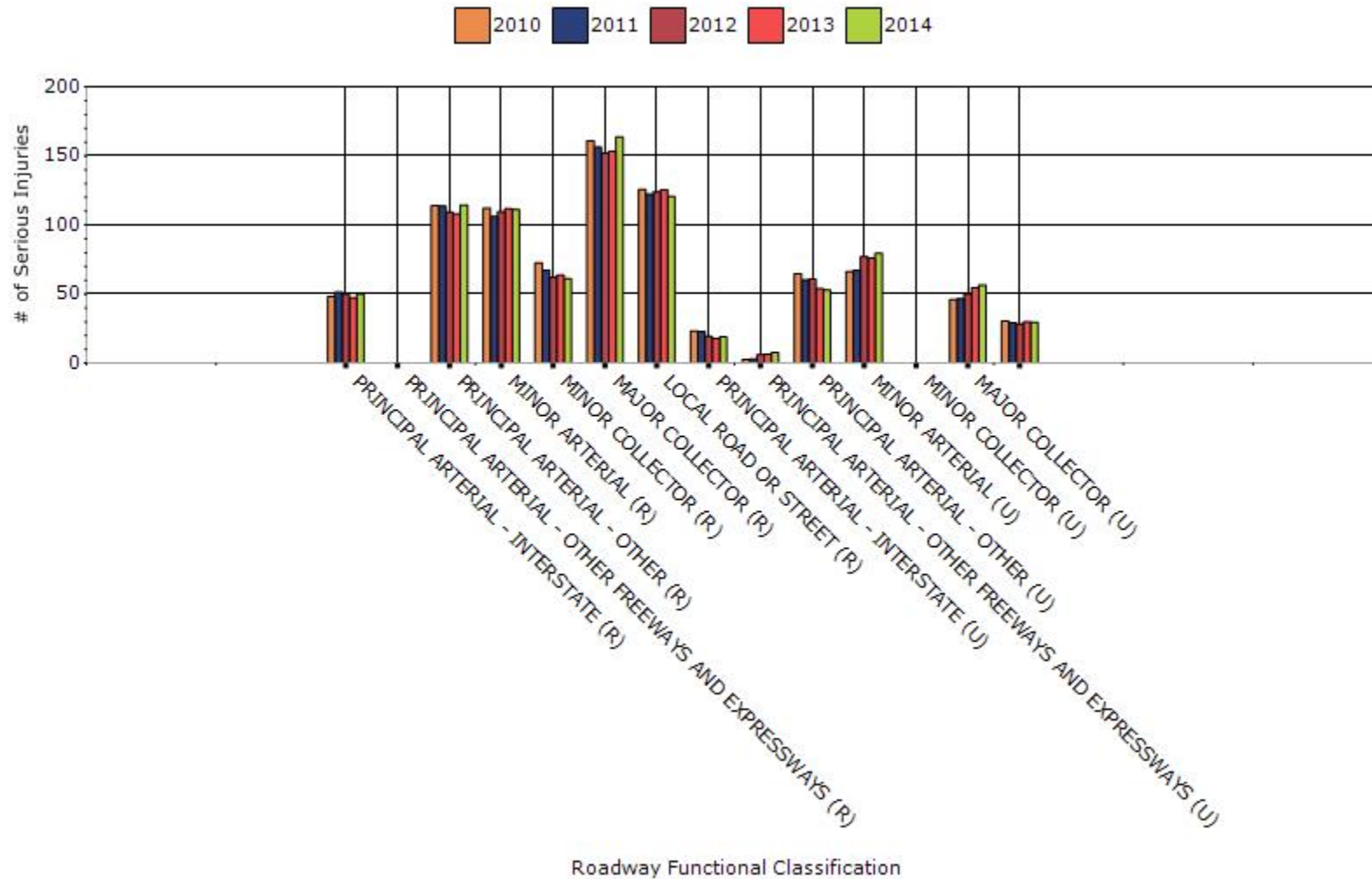**To the maximum extent possible, present performance measure* data by functional classification and ownership.**

Year - 2014

Function Classification	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
RURAL PRINCIPAL ARTERIAL - INTERSTATE	4.8	50.2	0.21	2.24
RURAL PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0	0	0	0
RURAL PRINCIPAL ARTERIAL - OTHER	25	114.4	1.37	6.27
RURAL MINOR ARTERIAL	23	111.2	1.33	6.45
RURAL MINOR COLLECTOR	11.8	61.2	1.46	7.59
RURAL MAJOR COLLECTOR	30.6	163.8	1.41	7.55
RURAL LOCAL ROAD OR STREET	25.4	120.6	1.77	8.43
URBAN PRINCIPAL	1.8	19	0.2	2.12

ARTERIAL - INTERSTATE				
URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS	0.4	7.6	0.25	4.82
URBAN PRINCIPAL ARTERIAL - OTHER	5.2	53	0.75	7.67
URBAN MINOR ARTERIAL	6	79.6	0.64	8.51
URBAN MINOR COLLECTOR	0	0	0	0
URBAN MAJOR COLLECTOR	6.2	56.6	0.67	6.11
URBAN LOCAL ROAD OR STREET	3.6	29.6	0.84	6.91

Fatalities by Roadway Functional Classification

Legend: 2010, 2011, 2012, 2013, 2014

Roadway Functional Classification

Serious Injuries by Roadway Functional Classification

Legend: 2010 | 2011 | 2012 | 2013 | 2014

Y-axis: # of Serious Injuries

X-axis categories (Roadway Functional Classification):
- PRINCIPAL ARTERIAL - INTERSTATE (R)
- PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
- PRINCIPAL ARTERIAL - OTHER (R)
- MINOR ARTERIAL (R)
- MINOR COLLECTOR (R)
- MAJOR COLLECTOR (R)
- LOCAL ROAD OR STREET (R)
- PRINCIPAL ARTERIAL - INTERSTATE (U)
- PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
- PRINCIPAL ARTERIAL - OTHER (U)
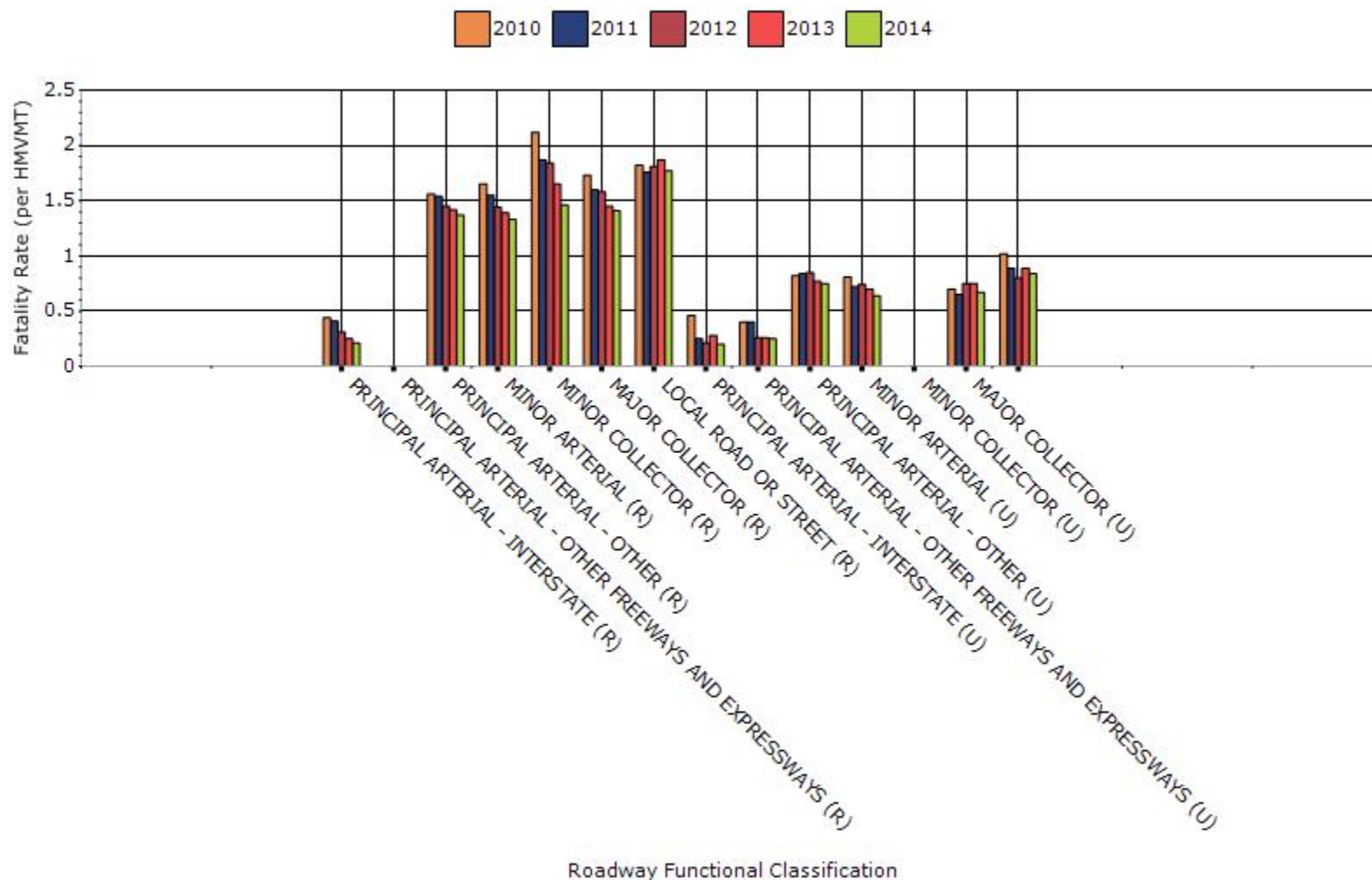- MINOR ARTERIAL (U)
- MINOR COLLECTOR (U)
- MAJOR COLLECTOR (U)

Roadway Functional Classification

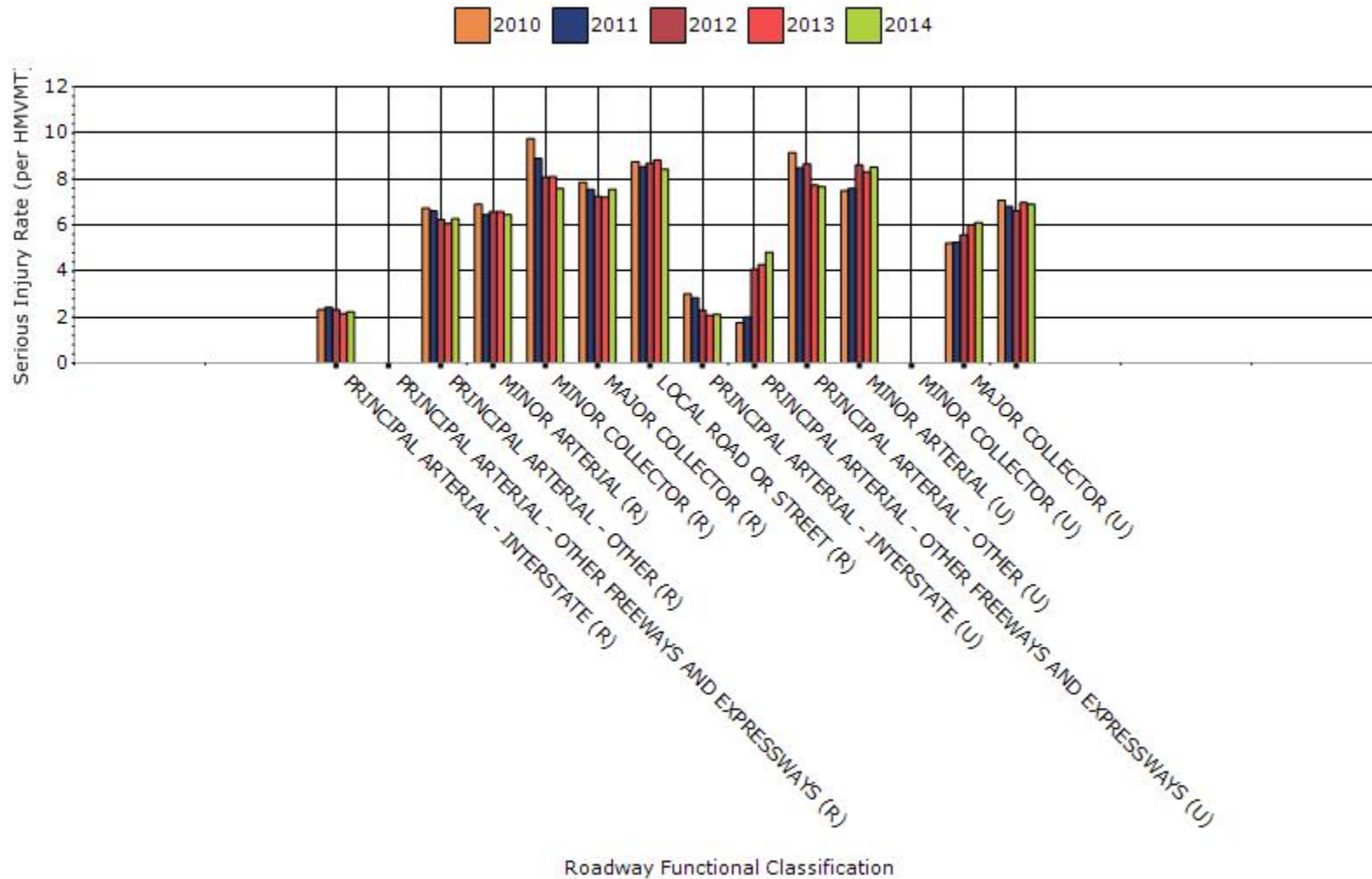## Fatality Rate by Roadway Functional Classification

Fatality Rate by Roadway Functional Classification

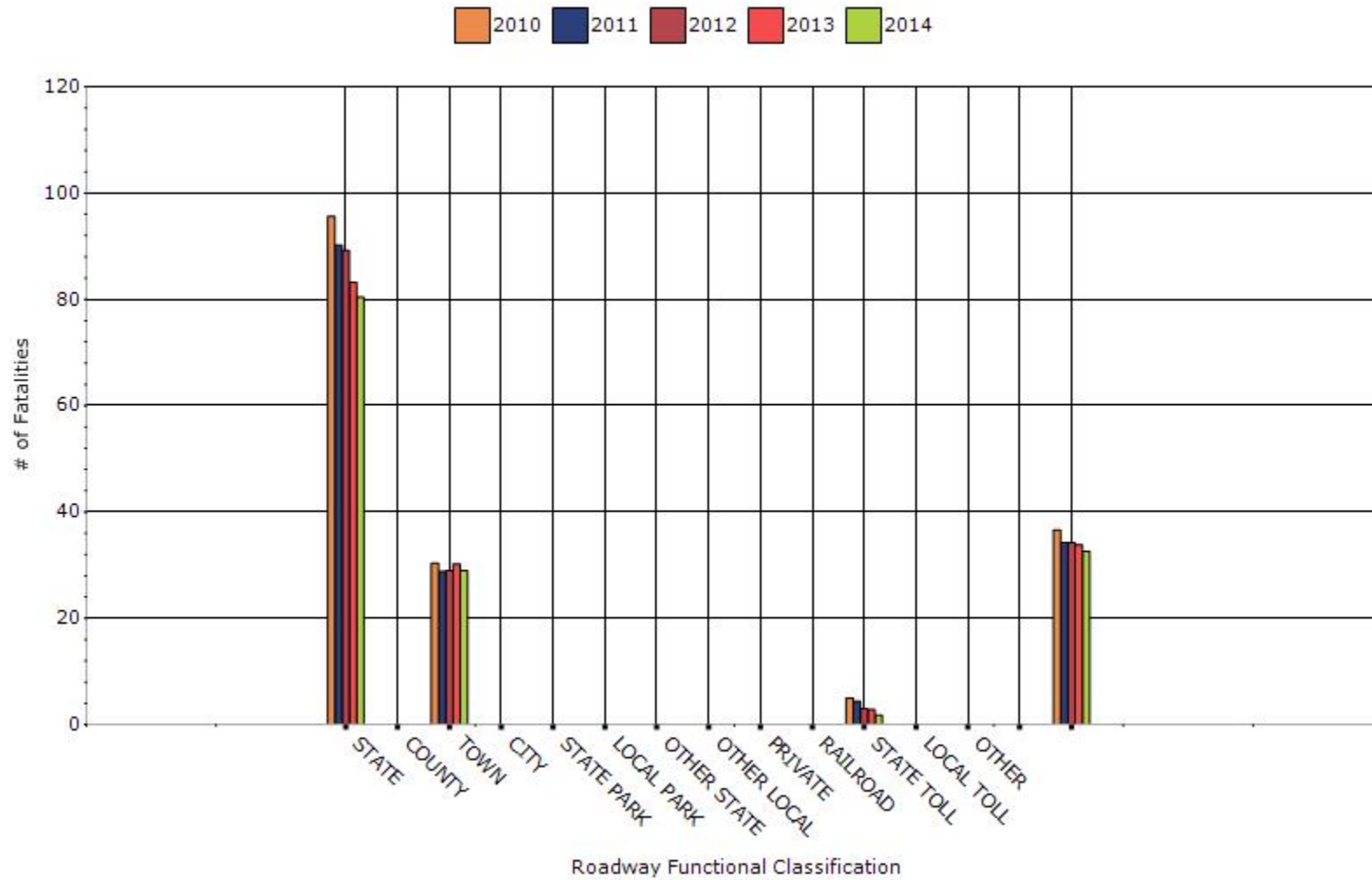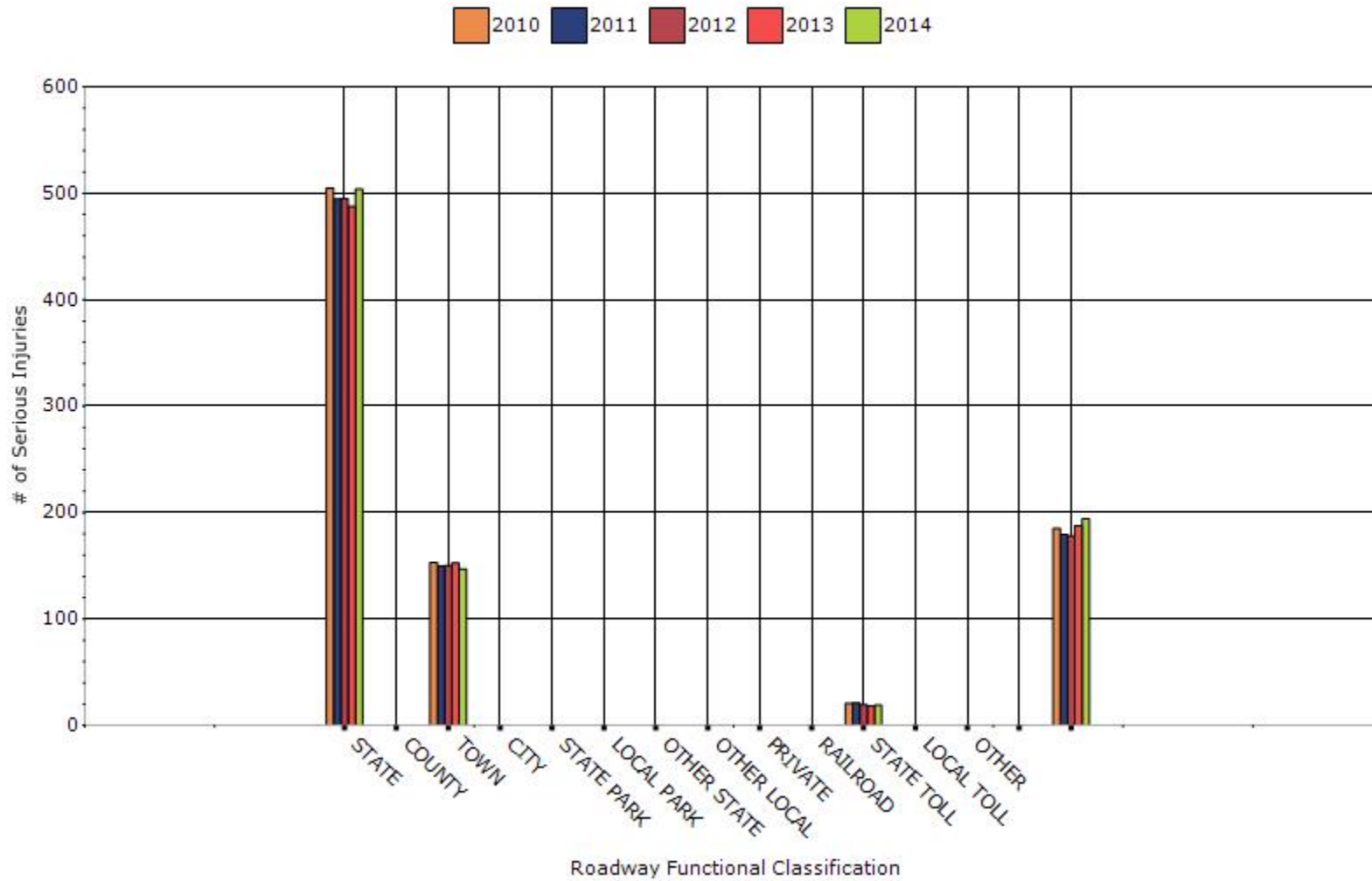## Serious Injury Rate by Roadway Functional Classification

Legend: 2010, 2011, 2012, 2013, 2014

Y-axis: Serious Injury Rate (per HMVMT)

X-axis categories (Roadway Functional Classification):
- PRINCIPAL ARTERIAL - INTERSTATE (R)
- PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (R)
- PRINCIPAL ARTERIAL - OTHER (R)
- MINOR ARTERIAL (R)
- MINOR COLLECTOR (R)
- MAJOR COLLECTOR (R)
- LOCAL ROAD OR STREET (R)
- PRINCIPAL ARTERIAL - INTERSTATE (U)
- PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXPRESSWAYS (U)
- PRINCIPAL ARTERIAL - OTHER (U)
- MINOR ARTERIAL (U)
- MINOR COLLECTOR (U)
- MAJOR COLLECTOR (U)

Roadway Functional Classification

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Year - 2014

Roadway Ownership	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)
STATE HIGHWAY AGENCY	80.4	504	0.96	6.03
COUNTY HIGHWAY AGENCY	0	0	0	0
TOWN OR TOWNSHIP HIGHWAY AGENCY	29	147	1.62	8.21
CITY OF MUNICIPAL HIGHWAY AGENCY	0	0	0	0
STATE PARK, FOREST, OR RESERVATION AGENCY	0	0	0	0
LOCAL PARK, FOREST OR RESERVATION AGENCY	0	0	0	0
OTHER STATE AGENCY	0	0	0	0
OTHER LOCAL AGENCY	0	0	0	0
PRIVATE (OTHER THAN RAILROAD)	0	0	0	0
RAILROAD	0	0	0	0
STATE TOLL AUTHORITY	1.8	19	0.14	1.46
LOCAL TOLL AUTHORITY	0	0	0	0
OTHER PUBLIC INSTRUMENTALITY (E.G. AIRPORT, SCHOOL, UNIVERSITY)	0	0	0	0
INDIAN TRIBE NATION	0	0	0	0

| STATE AID | 32.6 | 194 | 1.2 | 7.12 |

Number of Fatalities by Roadway Ownership

☐ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014

Roadway Functional Classification

Number of Serious Injuries by Roadway Ownership

☐ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014

Roadway Functional Classification

Fatality Rate by Roadway Ownership

Roadway Functional Classification

Serious Injury Rate by Roadway Ownership

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

Maine's fatality trends have been generally positive and continue to improve, with 2014 fatalities being the lowest in the past 70 years. Maine continues to agressively work with Police agencies to make sure there has been complete reporting submissions. We have identified limited departments that have had issues with successful electronic report exporting. Incapacitating injuries are not improving as much but have stabilized after hitting a recent high in 2012, and have been improving in the last two years.

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. Head On fatalities were about about 50% as compared to recent prior years.

Application of Special Rules

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

| Older Driver Performance Measures	2009	2010	2011	2012	2013
Fatality rate (per capita)	0.17	0.18	0.16	0.15	0.16
Serious injury rate (per capita)	0.5	0.468	0.476	0.498	0.514
Fatality and serious injury rate (per capita)	0.674	0.644	0.636	0.65	0.67

*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.

Using those crash ID's, summed all resulting crash serious injuries by year. Obtained fatal numbers through Maine's FARS analyst.

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 population #s .

Rate of Fatalities and Serious injuries for the Last Five Years
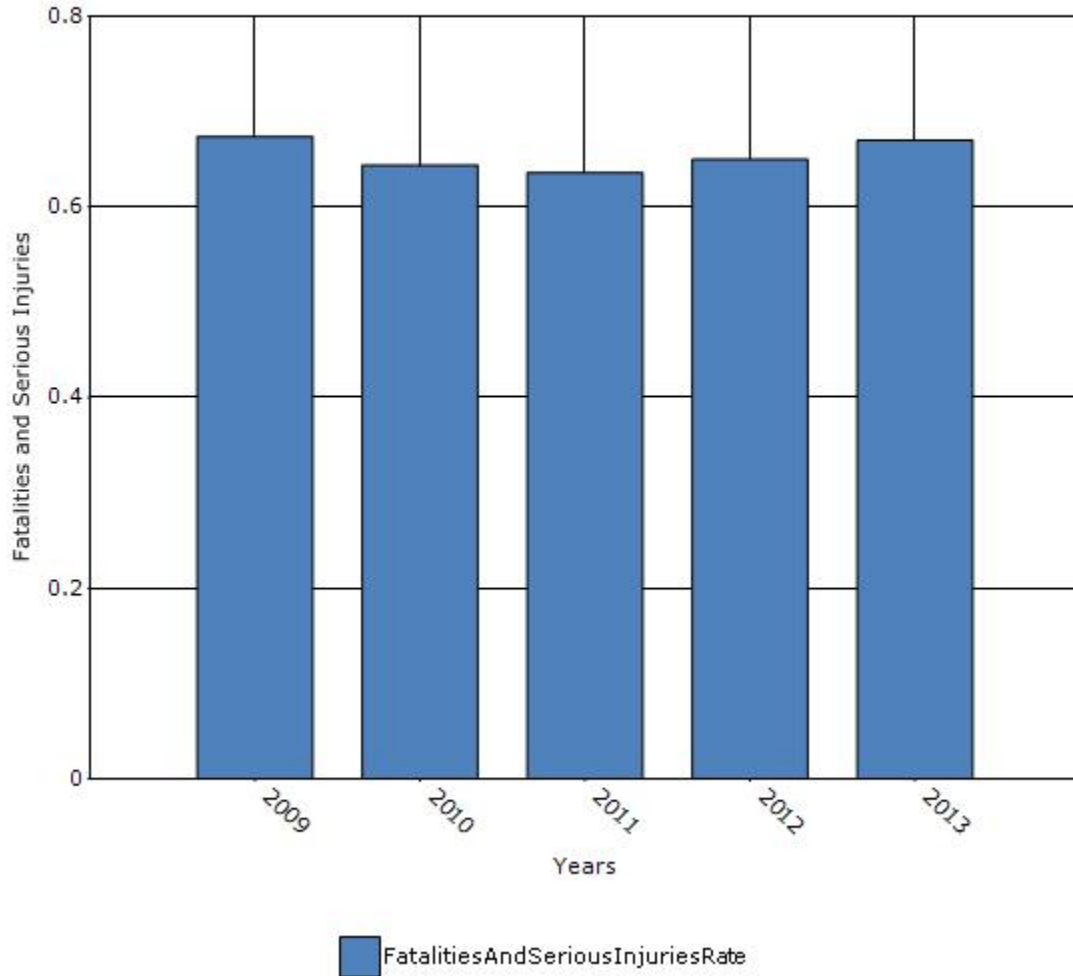
Does the older driver special rule apply to your state?

Yes

If yes, describe the approach to include respective strategies to address the increase in those rates in the State SHSP.

Main continuing activity is driven by the Maine's Mature Driver Safety working group that is looking to enhance public outreach to mature drivers, family members, clinicians and other support services to emphasize importance of driver assessments and provide guidance on appropriate driver interventions when demonstrated skills are diminishing. Mature Drivers is a focus area in Maine's current SHSP and

has been updated in the new 2014 SHSP edition. The Mature Driver Safety Group has met together with a media consultant to identify best strategies to meet the above objectives.

Assessment of the Effectiveness of the Improvements (Program Evaluation)

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

☐ None

☒ Benefit/cost

☒ Policy change

☐ Other:

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

☒ Shift Focus to Fatalities and Serious Injuries

☐ Include Local Roads in Highway Safety Improvement Program

☐ Organizational Changes

☐ None

☐ Other:

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

Maine's SHSP had a major update in 2014 that meshed with strategies within HSP. It also added performance results and targets for both Fatalities and Incapacitating Injuries for each focus area in line with anticipated MAP-21 guidance.

As noted else where in this report, Maine is expanding installation of centerline rumble strips - with 90 miles of new centerline RS being installed within the next couple of months.
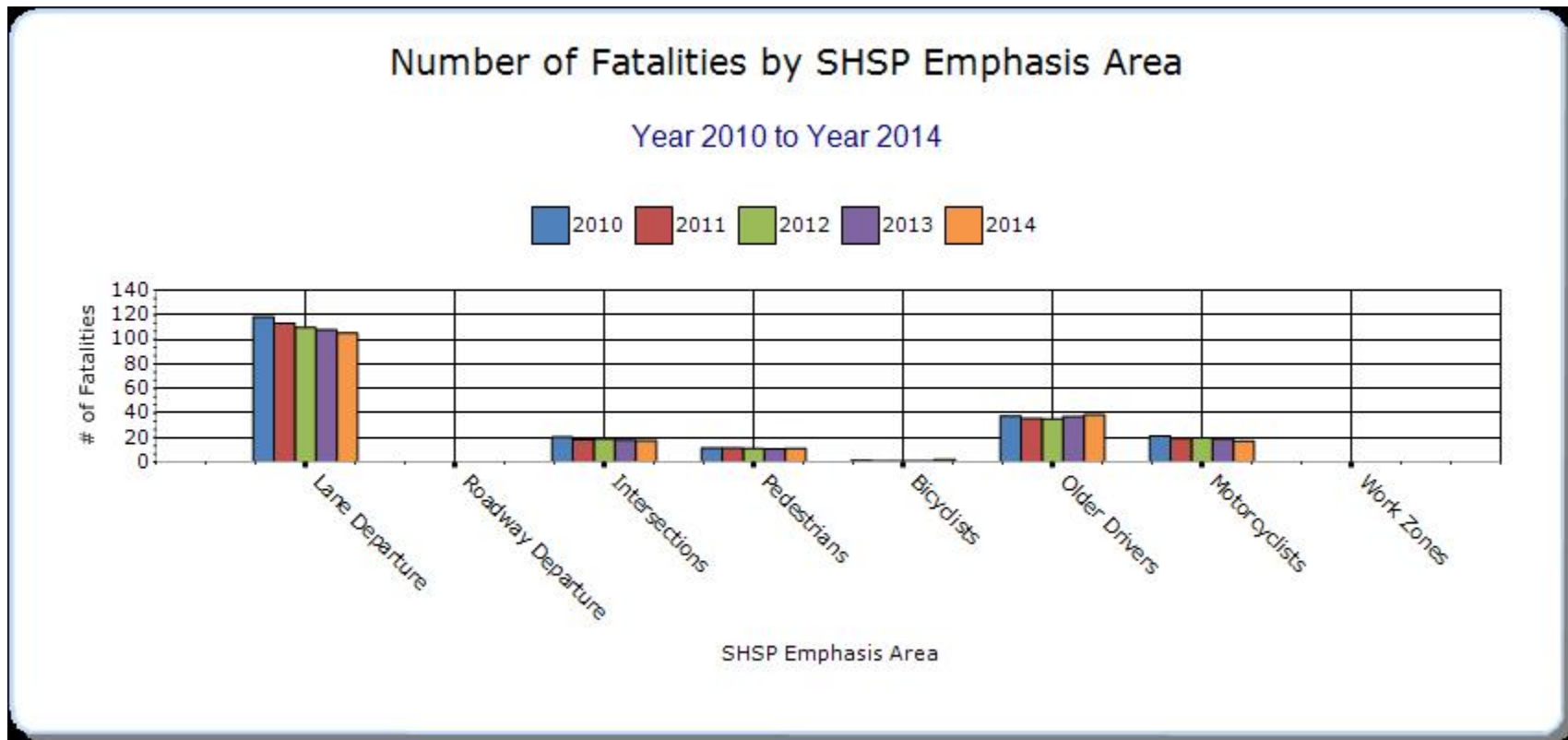
Coordination with Planning (Paving and construction work), Regions, Traffic Engineering and other MaineDOT operational areas for safety planning continues to see process improvement. There is a renewed look at crash data to try to evaluate systemic funding opportunities.
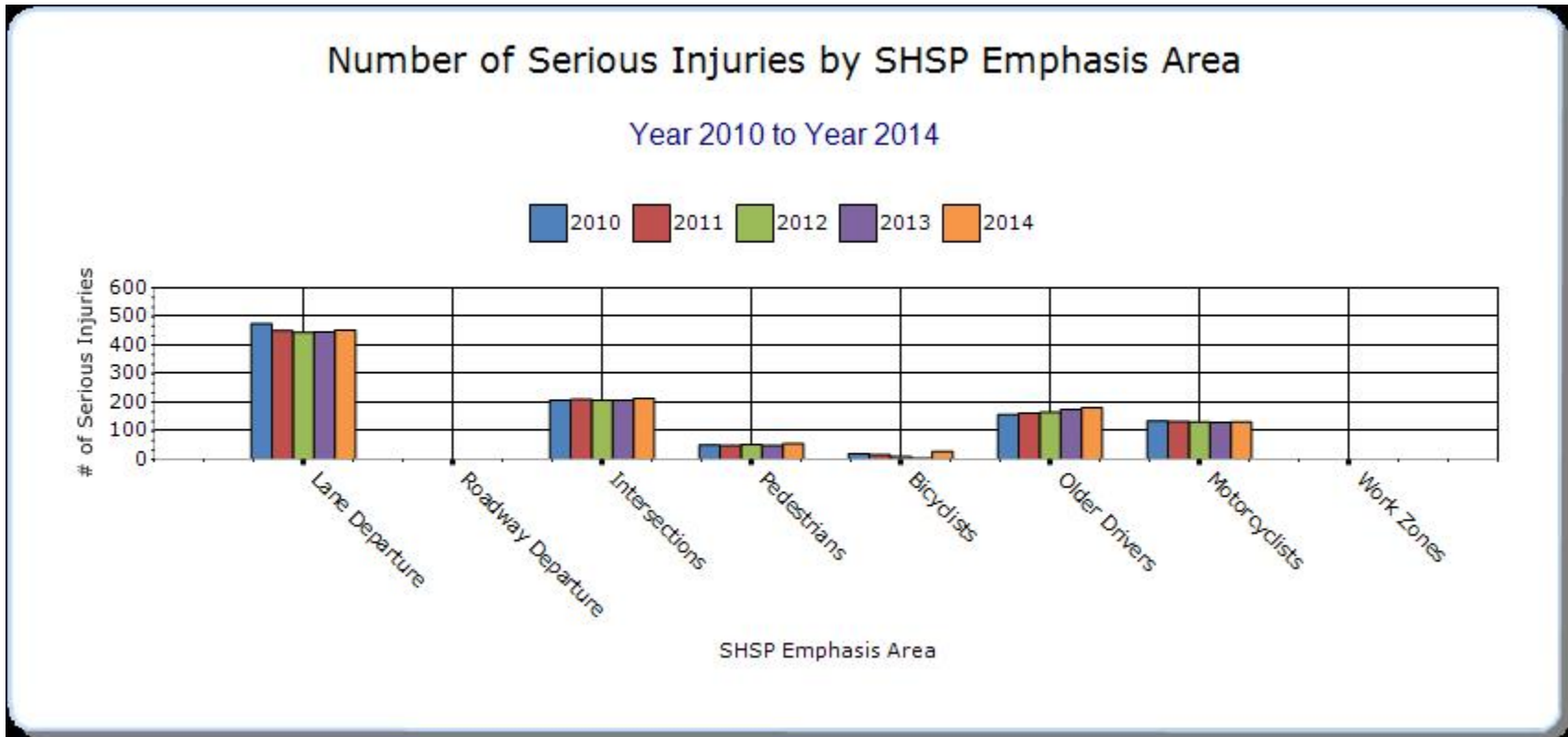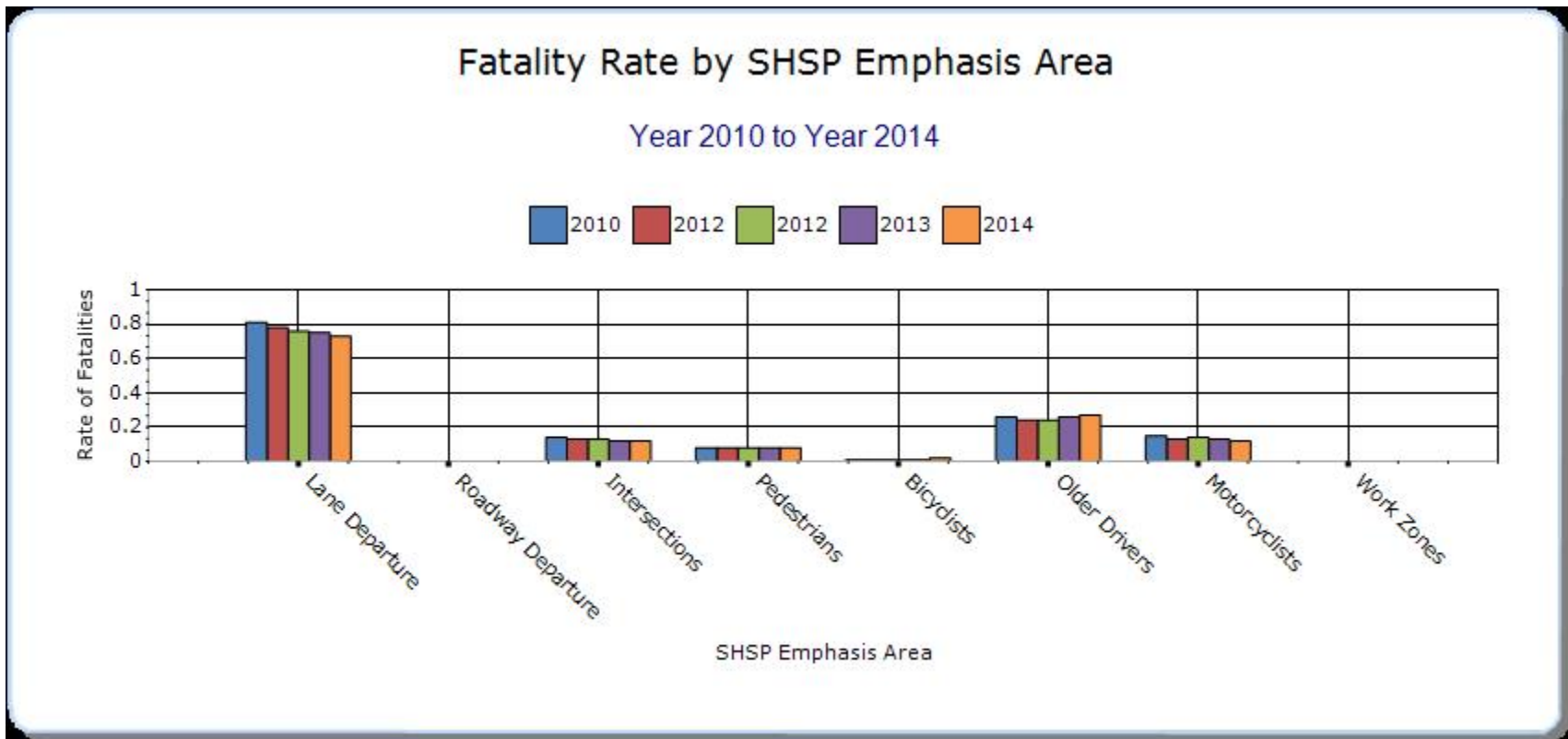
SHSP Emphasis Areas

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

Year - 2014

HSIP-related SHSP Emphasis Areas	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Lane Departure	All	105	453	0.73	3.14	0	0	0
Intersections		17.6	213.4	0.12	1.48	0	0	0
Pedestrians		11.2	55.2	0.08	0.38	0	0	0
Bicyclists		2.2	28	0.02	0.19	0	0	0
Older Drivers		38.4	180.8	0.27	1.25	0	0	0
Motorcyclists		17.2	131.2	0.12	0.91	0	0	0

Number of Fatalities by SHSP Emphasis Area

Year 2010 to Year 2014

Number of Serious Injuries by SHSP Emphasis Area

Year 2010 to Year 2014

Fatality Rate by SHSP Emphasis Area

Year 2010 to Year 2014

Serious Injury Rate by SHSP Emphasis Area

Year 2010 to Year 2014

Groups of similar project types

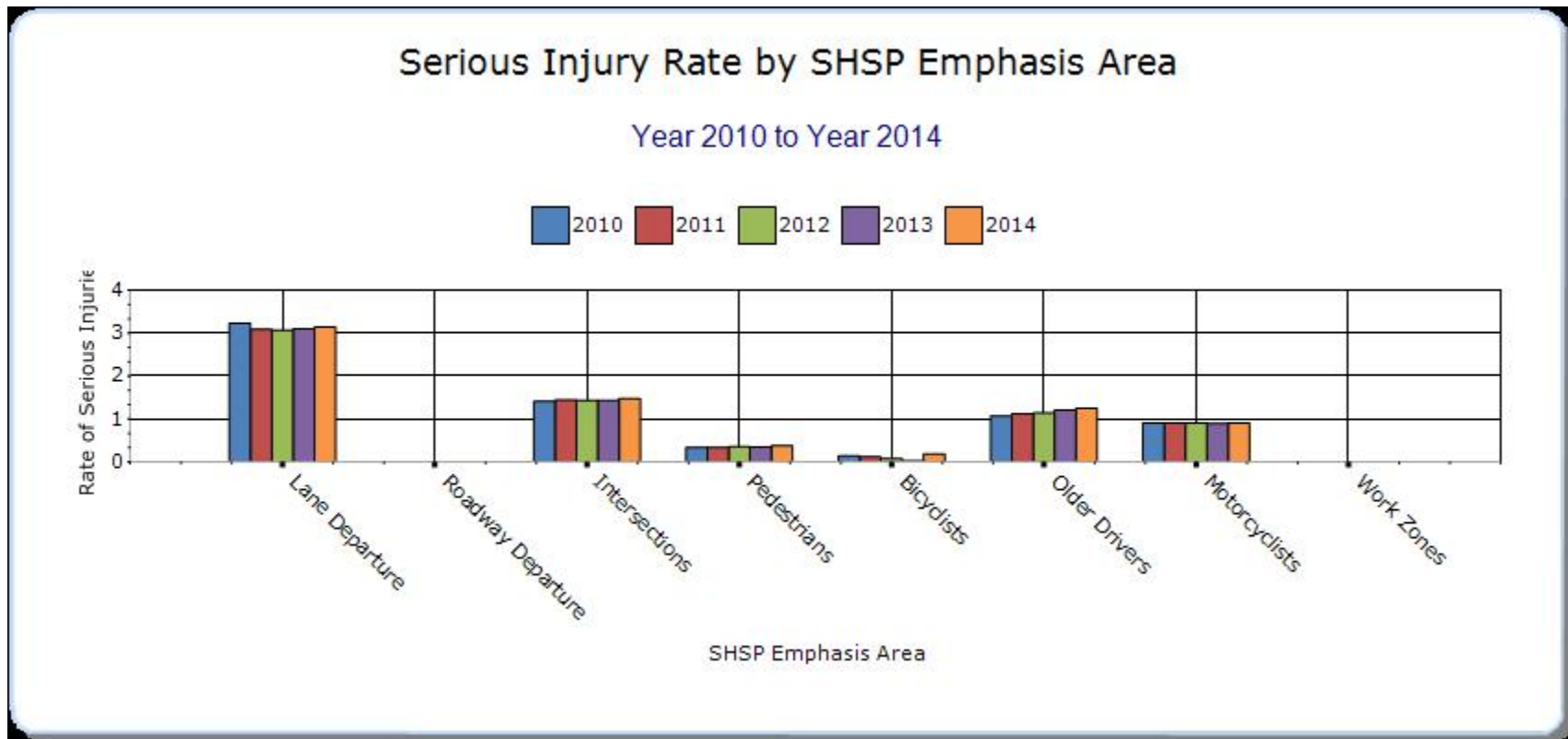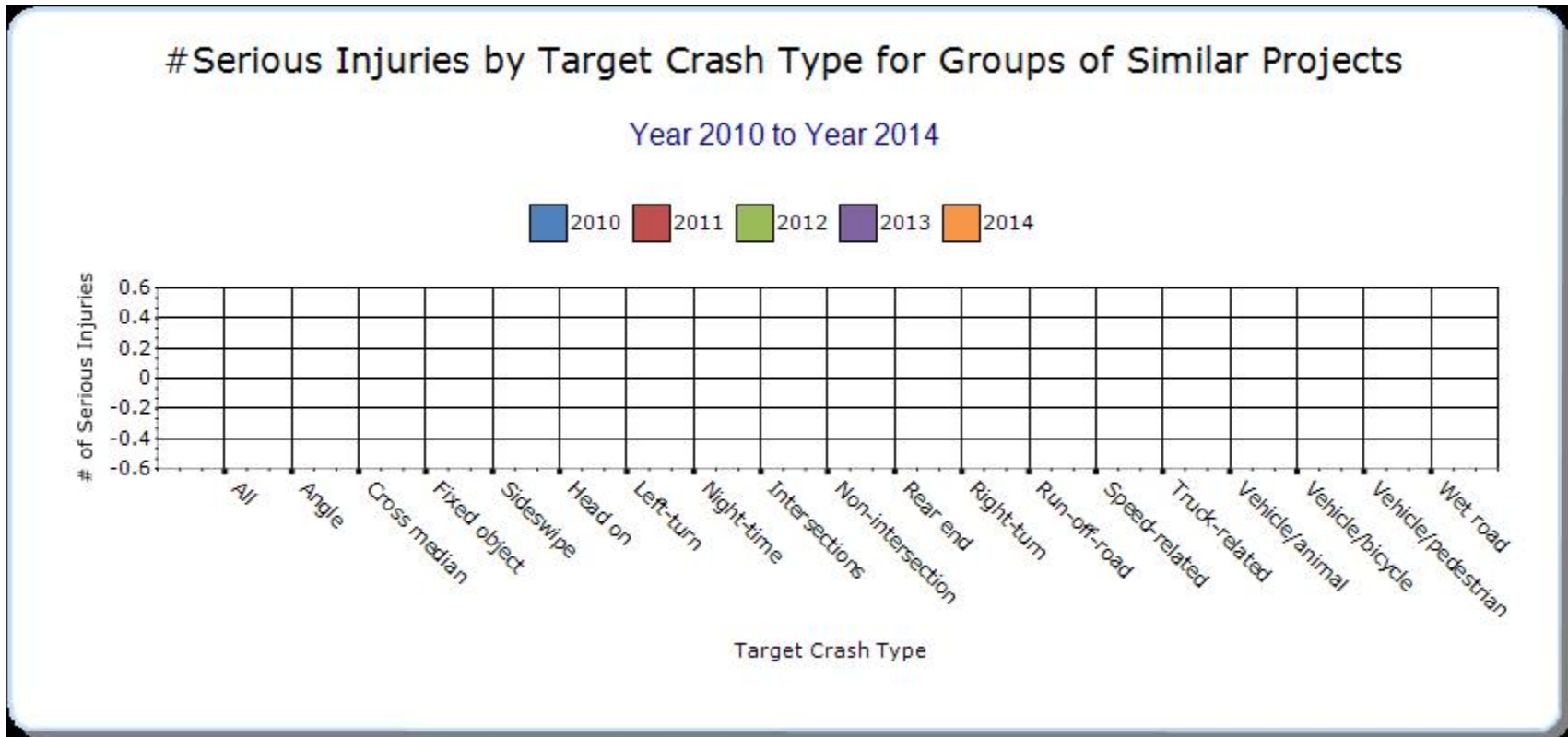**Present the overall effectiveness of groups of similar types of projects.**

Year - 2014

HSIP Sub-program Types	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Crash Data		0	0	0	0	0	0	0

Fatalities by Target Crash Type for Groups of Similar Projects

Year 2010 to Year 2014

2010   2011   2012   2013   2014

# of Fatalities

Target Crash Type

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

#Serious Injuries by Target Crash Type for Groups of Similar Projects

Year 2010 to Year 2014

2010 2011 2012 2013 2014

Fatality Rate by Target Crash Type for Groups of Similar Projects

Year 2010 to Year 2014

Legend: 2010, 2012, 2012, 2013, 2014

Rate of Fatalities vs Target Crash Type (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)

Serious Injury Rate by Target Crash Type for Groups of Similar Projects

Year 2010 to Year 2014

Systemic Treatments

Present the overall effectiveness of systemic treatments.

Year - 2014

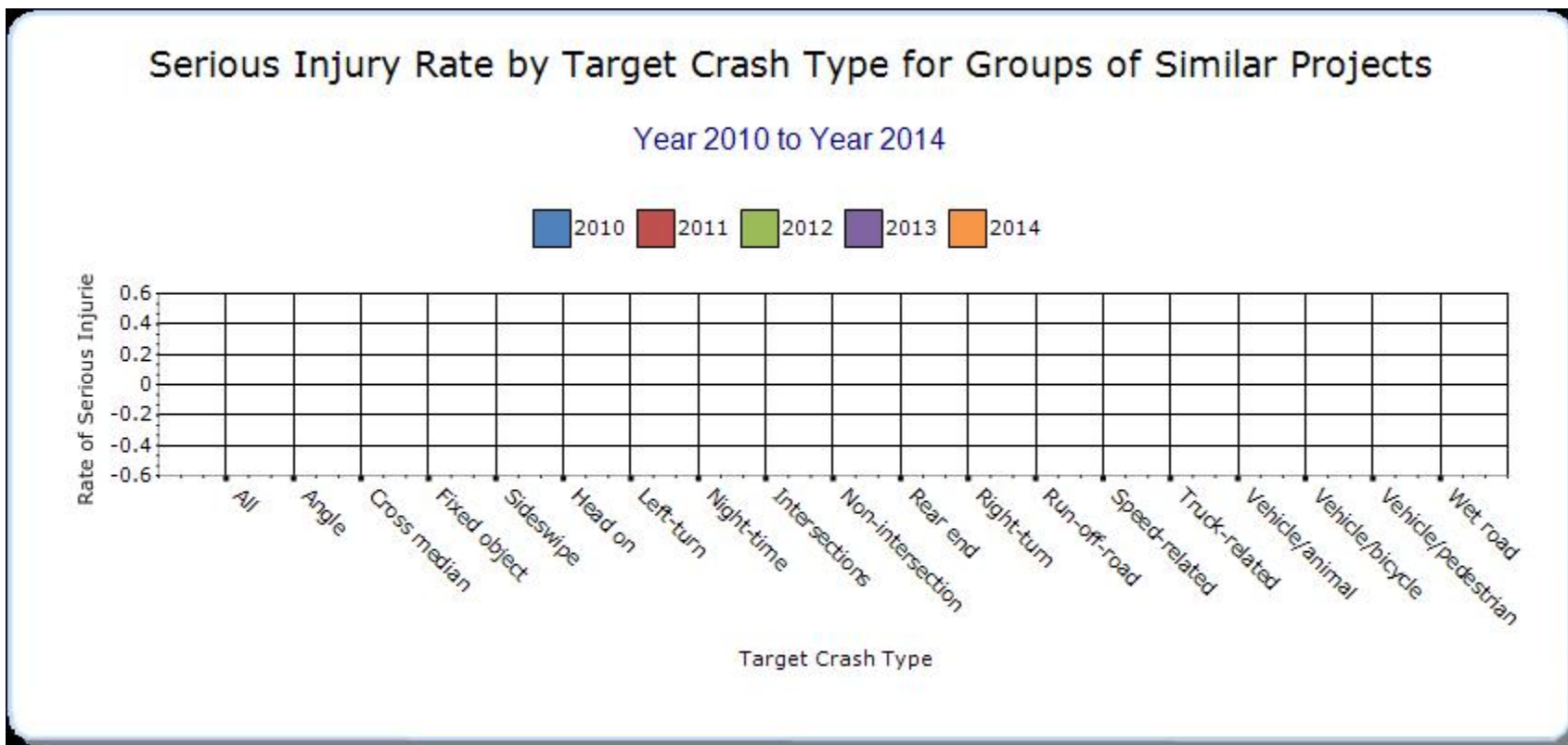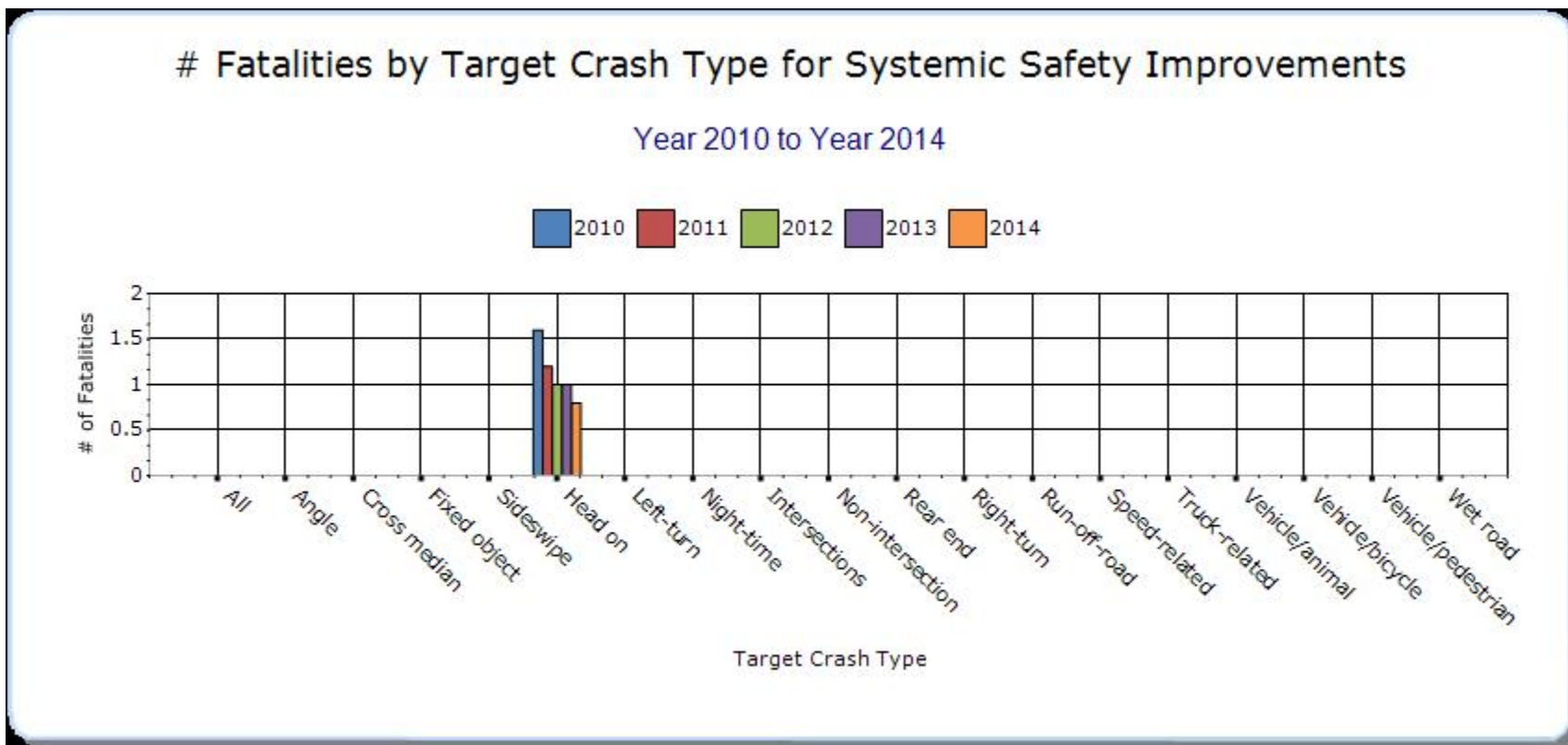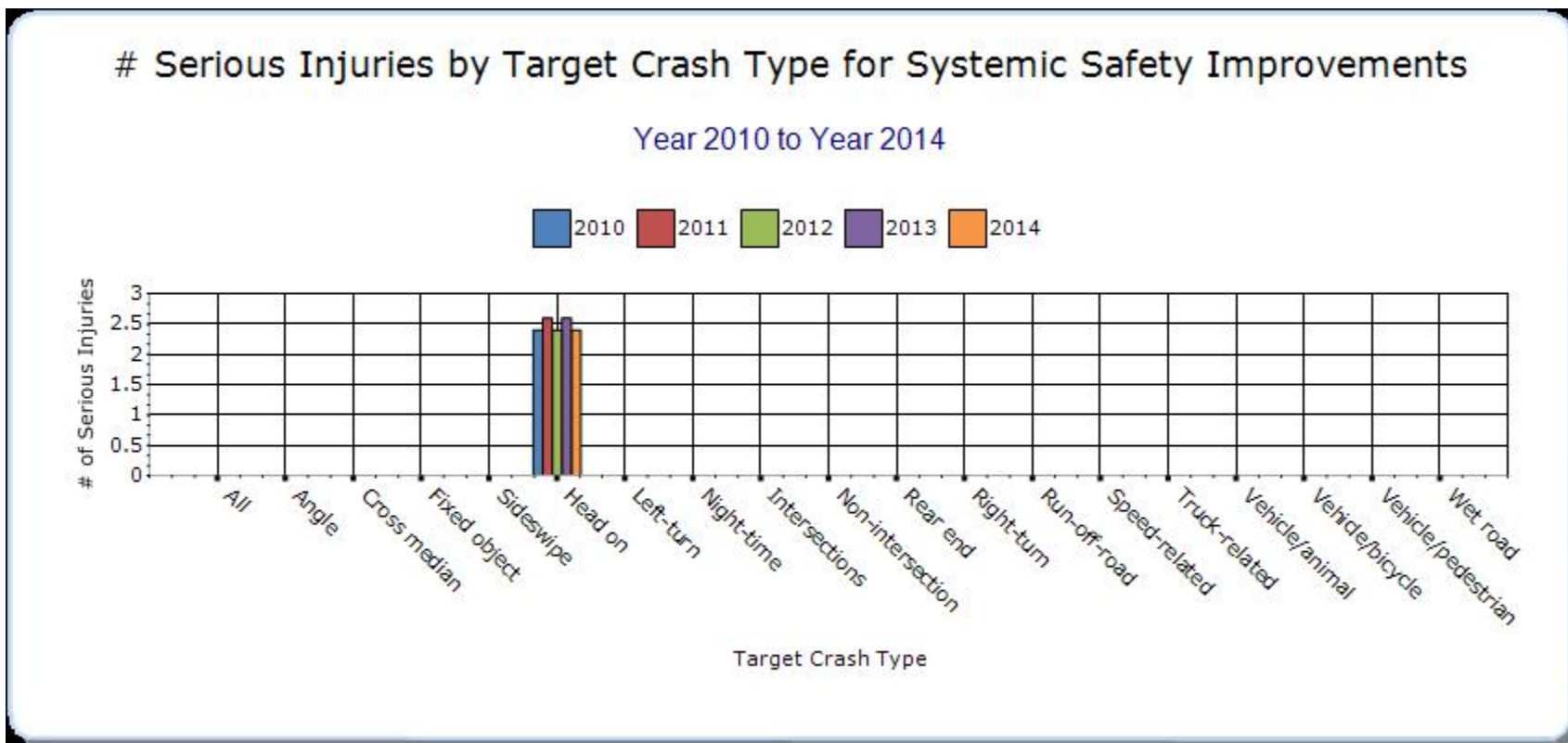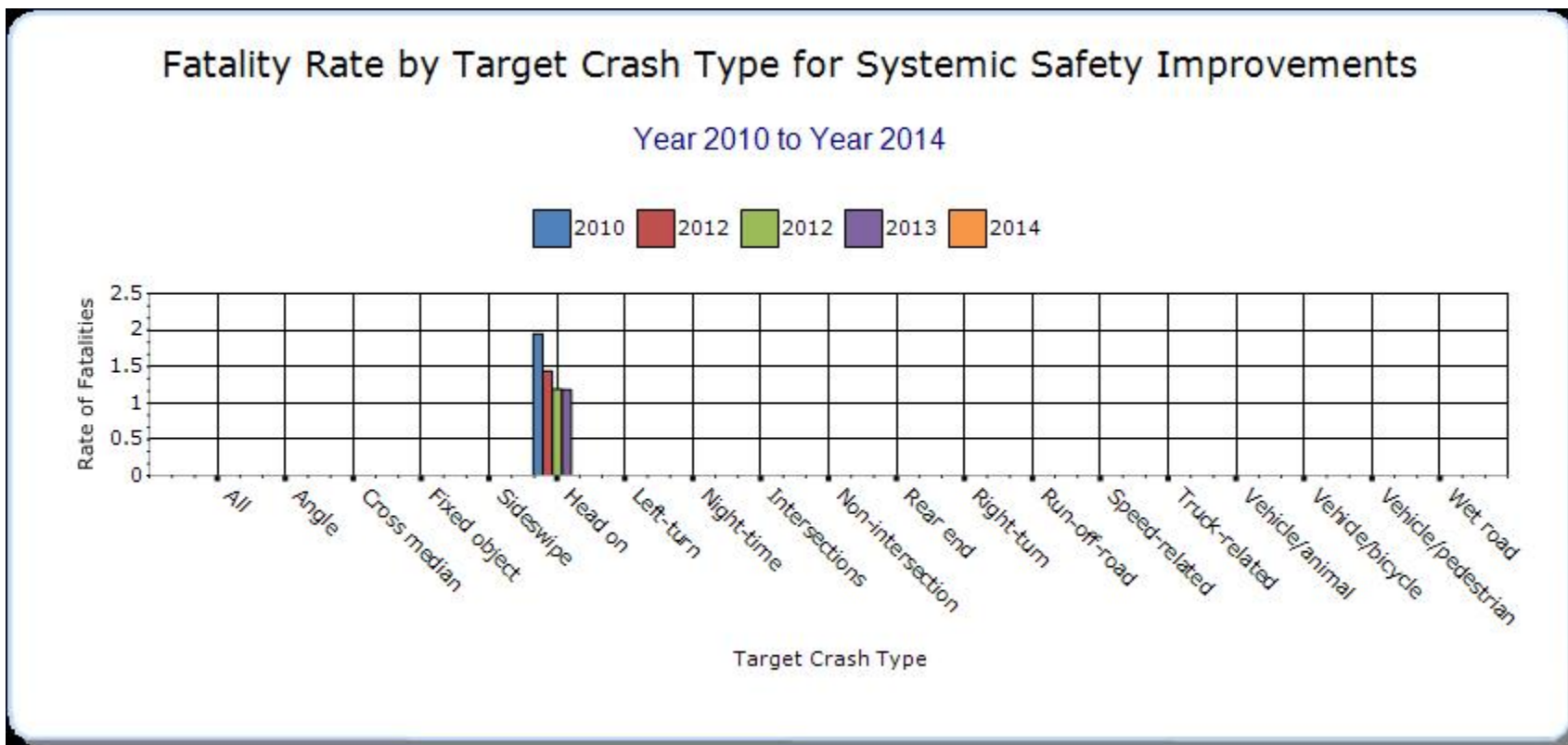| Systemic improvement	Target Crash Type	Number of fatalities	Number of serious injuries	Fatality rate (per HMVMT)	Serious injury rate (per HMVMT)	Other-1	Other-2	Other-3
Rumble Strips	Head on	0.8	2.4	0	0.02	0	0	0

Fatalities by Target Crash Type for Systemic Safety Improvements

Year 2010 to Year 2014

2010   2011   2012   2013   2014

Serious Injuries by Target Crash Type for Systemic Safety Improvements

Year 2010 to Year 2014

| | 2010 | | 2011 | | 2012 | | 2013 | | 2014 |

Fatality Rate by Target Crash Type for Systemic Safety Improvements

Year 2010 to Year 2014

| 2010 | 2012 | 2012 | 2013 | 2014 |

Serious Injury Rate by Target Crash Type for Systemic Safety Improvements

Year 2010 to Year 2014

Legend: 2010 | 2011 | 2012 | 2013 | 2014

Rate of Serious Injurie (y-axis: 0 to 4)

Target Crash Type (x-axis): 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

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

A new SHSP was developed and released in late 2014, along with a crash data book. The SHSP aligns with Maine Bureau of Highway Safety's Highway Safety Plan and establishes performance targets matching what's being featured in MAP-21.

Maine has provided median cable barrier installations on all narrow (<50-60' wide) interstate medians. MaineDOT does plan to automate that feature in its road inventory to enable easier monitoring of performance in the future. No fatalities have occured on sections where median cable barrier has been installed, but incidental barrier/guardrail hits have increased. Maine experienced 4 interstate median crossover fatalities from 2005 to 2009, none since.

Centerline Rumble strips were added to three selected corridors in late 2013, two more are planned for later 2014 (which will bring Maine's total to 10 sections of non-interstate Centerline Rumble Strip installations). Ninety miles of rumble strips were installed in 2015, with more planned for 2016-17. One 2014 head-on fatality has occurred on corridors where installed, but overall performance has significantly improved. A systemic approach to determine the next wave of rumble strip installations is underway.

MaineDOT is employing more of a proactive systemic safety approach for future planning. With head on crash mitigation (rumble strips) well underway, the next area of attention will be Went Off Road crashes and then other areas will be added, like intersections.

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)
See attached project sheet.														

Optional Attachments

Sections   **Files Attached**

Glossary

5 year rolling average means the average of five individual, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT means hundred million vehicle miles traveled.

Non-infrastructure projects are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP) means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systemic safety improvement means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.